THE INFLUENCE OF E-COMMERCE QUALITY ELEMENTS ON THE SATISFACTION OF ONLINE SHOPPING AMONG UTeM STUDENTS.

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DECLARATION

I declare that this thesis entitled "The Influence Of E-Commerce Quality Elements On The Satisfaction Of Online Shopping Among UTeM Students" is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in the candidature of any other degree.

SIGNATURE :

NAME   :   TAN YEN LING

DATE   :   1/2/2023

I certify that this thesis entitled "**THE INFLUENCE OF E-COMMERCE QUALITY ELEMENTS ON THE SATISFACTION OF ONLINE SHOPPING AMONG UTeM STUDENTS.** was prepared by **TAN YEN LING (B061910214)** and has meet the required standard for submission in partial fulfillment of the requirement for the award of Bachelor of Technopreneurship with Honours at Universiti Teknikal Malaysia Melaka (UTeM).

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DEDICATION

To dearest parents, siblings, family, lecturers, and friends

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ABSTRACT

This study examines the impact of the influence of e-commerce quality elements on the satisfaction of online shopping among UTeM students. The quantitative method has been deva eloped in this study and a five-point Likert scale will be used for to data collection. A sample size of 370 respondents in UTeM students have gathered data from them. The data were examined using Statistical Packages for Social Sciences (S.P.S.S.) version 27.0. The Cronbach's Alpha test was used to guarantee the instrument's dependability. Pearson To assess the type and extent of the link between variables and test hypotheses, correlation and multiple regression tests were used. The result shows a significant relationship between three of the variables used in measuring the influence of e-commerce quality elements on the satisfaction of online shopping. Lastly, this study can help e-commerce pay attention to quality elements all the time because this will affect customer satisfaction.

ABSTRAK

Kajian ini mengkaji kesan pengaruh elemen kualiti e-dagang terhadap kepuasan membeli-belah dalam talian di kalangan pelajar UTeM. Kaedah kuantitatif telah menyimpang dalam kajian ini dan skala Likert lima mata akan digunakan untuk pengumpulan data. Saiz sampel seramai 370 orang responden dalam kalangan pelajar UTeM telah mengumpulkan data daripada mereka. Data telah diperiksa menggunakan Pakej Statistik untuk Sains Sosial (S.P.S.S.) versi 27.0. Ujian Alpha Cronbach digunakan untuk menjamin kebolehpercayaan instrumen. Pearson Untuk menilai jenis dan sejauh mana hubungan antara pembolehubah dan hipotesis ujian, korelasi dan pelbagai ujian regresi digunakan. Hasilnya menunjukkan hubungan yang signifikan antara tiga pemboleh ubah yang digunakan dalam mengukur pengaruh elemen kualiti e-dagang terhadap kepuasan membeli-belah dalam talian. Akhir sekali, kajian ini dapat membantu e-dagang memberi perhatian kepada elemen kualiti sepanjang masa kerana ini akan mempengaruhi kepuasan pelanggan.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

In this chapter will be discussed on the background of study related to the e-commerce quality elements on the satisfaction of online shopping. Followed by the development the problem statement, research question and research objective, scope, significant ofstudy and the summary of the study.

1.2 Background of the Study

Since the Internet is essential to e-commerce, it stands to reason that the growth of the Internet will also be essential to the expansion of e-commerce. Dr. Leonard Kleinrock of the Massachusetts Institute of Technology released a study on packet switching technology in 1961, which served as the inspiration for the creation of the global Internet. From 1961 until 1995, the Internet was developed. It took the commercialization of the Internet another 35 years to provide the groundwork for its use around the globe. Furthermore, traditional Internet websites were initially founded on "content and service as the core form" during the Internet's evolution. Static websites and the content aggregation of search engines made this possible for the display of data. Users are dispersed across the Internet, content creators have no way to interact with them, websites exist in isolation from one another, and neither users nor creators of content are easy to locate; as a result, there is a breakdown in communication and a consequent need for some services to shift their focus to more personal mediums like email and social networks.

With the rapid advancement of electronic signal technology, e-commerce (Anam et al., 2017; Irene, 2018) has evolved as an unavoidable result of the passage of time and is also a type of transaction that responds to market demand. Malaysia's digital platform has advanced quickly in recent decades. Due to their hectic lifestyles consumers are increasingly opting for online purchasing and selling-commerce signified a shift away from the basic sale of goods and services for money and toward the interchange of information between firms and their consumers. Malaysia's eCommerce revenue surpassed the RM1 trillion barrier for the first time in 2021, increasing by about 22% over the previous year. Aside from that, according to the Statistics Department, eCommerce income increased to RM1.09 trillion in 2021 from RM896.39bil in 2020 because to the Covid-19-induced adverse economic conditions.Manufacturing and services were the primary drivers of growth.

Many consumers have made the transition from brick-and-mortar stores to online marketplaces during the past few years. Shopping online has been increasingly popular around the world since it is more convenient and often provides better deals than traditional retailers. In addition, the 2020 pandemic has swept the world, and e-commerce platforms have grown dramatically, and online shopping has become the first choice for modern consumers. According to Langvinien and Guobyt (2014) research, the fast rise of information and communication technology is transforming online shopping into a variety of businesses.

Internet services in Malaysia were launched in 1987 and MIMOS (Malaysian Institute of Microelectronic Systems) was the sole provider. In 1985, MIMOS was founded to lay the groundwork for the flourishing of the local electronics sector. In order to facilitate communication amongst Malaysia's academic community, the country's first internet service, "Rangkaian Komputer Malaysia (RangKoM)," links all universities in Malaysia to MIMOS. Since the primary users are academics and researchers,the material communicated is often intellectual.

Information technology (IT) is the study and practise of developing, deploying, securing, monitoring, and improving the software and hardware used to store and process data. Information technology is the use of computing hardware and

software to the tasks of updating, protecting, creating, and disseminating data. The phrase "information technology" (IT) has become more commonplace than ever before due to its broadened scope. The subject of information technology may be broad, including numerous subjects. IT specialists are responsible for a wide range of tasks, from installing apps to developingsophisticated computer networks.

According to the Bureau of Statistics in 2021, Internet users of e-commerce in Malaysia increased by 11.9% to 85.2%, computer users increased by 7.3% to 86.2%, and Online Presence increased by 16.1% to 53.9%. In addition, the information and communication, finance, takaful and insurance industries also make full use of the Internet and computers in their business.

Data released by the Malaysian Department of Statistics shows that in the first quarter of 2021, Malaysia's e-commerce revenue increased by 30% year-on-year to 254.6 billion ringgits, while Malaysia's total e-commerce revenue in 2020 increased by 32.7% year-on-year to 896.4 billion ringgits. In the first quarter of 2020, Malaysia's e-commerce revenue reached 195.9 billion ringgit, 216.9 billion ringgit in the second quarter, 238.2 billion ringgit in the third quarter, and 245.4 billion ringgits in the fourth quarter, increasing each quarter. The bureau's chief statistician, Dr Mohd Uzir, said the use of information and communication technology (ICT) and e-commerce by businesses has grown significantly during the Movement Control Order (MCO). According to the data, only 38.1% of the companies were open during the Movement Control Order, while 92.4% were open during the Recovery Movement Control Order (RMCO) period; 80.6% of them disclosed that from MCO to RMCO, their E-commerce revenue has maintained a steady growth trend.

Joint Advanced Research Integrated Network (JARING) was Malaysia's first and most well-known Internet access provider. (Harn Harn, Khatibi, and Ismail, 2006) After building its first international satellite leased circuit at 64kps which is linking Kuala Lumpur to Stockton that was commercialized in 1992.

For research, I choose UTeM students because students prefer to buy online plus the university has a lot of assignments to complete so online shopping can save

them time. Most online stores do more advertising because they can easily attract customers. In addition to this, advertising needs to use a good image so that it can convey the real meaning. To advertise in an online store, sellers need to write in polite and easy-to understand language. Buyers to sellers can be satisfied with good online service and a good advertisement. Besides, college students are a wide range of Internet users, they could control digital media as well as standard knowledge of e-commerce.(Cheng and Yee, 2014).

1.3 Problem Statement

In this study, the researchers wanted to highlight the issue of influencing factors that influence e-commerce and customer satisfaction with online shopping. When they use e-commerce, there are certain concerns such as security, product quality and others when customers doing online shopping especially the older generation. The elements quality of online shopping is the main consideration for customers which will affect customers make a choose to the best e-commerce. Customer pleasure is the targeted goal of this investigation. There are times when corporations accept orders for out-of- stock products when purchasing online. Customers will be disappointed if their orders cannot be completed (Carroll & Broadhead, 2001).

Malaysians are not ready to quit their historic shopping malls, but the Covid-19 outbreak pushed the country's steadily emerging e-commerce business headfirst into the major leagues, and huge players Lazada and Shopee are now increasingly crucial in Malaysia's retail environment. Other than that, the

Furthermore, according to Forsythe ad Shi (2003), the issue that arises in the case of online buying is that the amount of perceived risk may be amplified owing to limited physical access to items and salespersons. The main barrier in this research is the e- commerce quality elements such as privacy and security and so on when doing online shopping. Furthermore, the security and privacy of an e-commerce is very important for a customer because the leakage of data will bring them great troubles such as their data being abused by criminals. According to Akram (2018), many consumers are hesitant to make online purchases owing to concerns about their privacy and the security of their online transactions, particularly in developing countries where internet shopping is becoming more popular but lacks a comprehensive set of rules. While fraud may occur on occasion at a physical shop, it is far more likely in an eCommerce setting, particularly if the payment procedure is not secure. Purchases purchased using a forged phone number, address, or stolen payment information can result in enormous income loss.

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Moreover, the quality of e-commerce allows customers to choose the platform they want because without good management, such as product quality, the platform will lose its due customers. Other than that, in recent years, there has been a growth in cybercriminals primarily targeting new growing online retail industries, which has a significant influence on online shoppers' considerations for purchasing online and their pleasure (Marotti, 2018). On the other side, there have been reports that an online shopping consumer's identity has been sold on the dark web. Credit card numbers, social security numbers, billing addresses, and even the identities of family members would be sold online for $1,170 on the dark web (Brandon, 2018).

Lastly, these issues are often severe enough to make potential customers reconsider their decision to buy something online. However, when these problems occur, they can cause a lot of stress and frustration for online shoppers. Therefore, online sellers should play an important role to ensure that the information provided is correct and clear so that customers can be persuaded to be satisfied. In addition, researchers also need to know what factors influence customers to buy online. Apart from this, the most important task for online sellers is that they must be aware of effective advertising on the Internet. This is important to convince customers of their trust because if they fail to have confidence in these shopping platforms, it will affect customer purchase intentions.

1.4 Research Question

The researcher generated the study questions from the problem statements based on the problem statements discovered from secondary sources. The research questionis built as follows:

1. Is there a link between security and customer satisfaction that is positive or negative?
2. Is there a link between product quality and customer satisfaction that is positive or negative?
3. Is there a link between reliability and customer satisfaction that is positive or negative?
4. Is there a link between responsiveness and customer satisfaction that is positive or negative?

1.5 Research Objectives

This research is to investigate the factor that influencing the customers to purchase through online to increase the customers satisfaction toward online shopping. The research questions of this research that are:

1. To analyze the relationship of security and customer satisfaction on e-commerce.
2. To determine the relationship of product quality and customer satisfaction on e-commerce.
3. To investigate the relationship of reliability and customer satisfaction on e-commerce.
4. To identify the relationship of responsiveness and customer satisfaction on e-commerce.

1.6 Scope of Research

The research focusses mainly on the influence of e-commerce quality elements on the satisfaction of online shopping among UTeM students. Questionnaire is distributed through Google Form to who are affected by online shopping because of that quality element for data collections.

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1.7 Significant of Study

This research studies about the influence of quality element on the satisfaction of online shopping. The findings of this research study will benefit e-commerce users which is UTeM students and sellers in the online shopping. Ultimately, the findings of this study have significant implications for the extent to which consumers enjoy their online purchasing experiences. This study report will also give a detailed explanation of the aspects that influence customer satisfaction.

Furthermore, e-commerce can change people's traditional consumption habits. The consumption behavior of college students is often relatively independent and the individual requirements for goods and services are getting higher and higher, As a result, people are dissatisfied with the design, packaging, specifications, and overall quality of the goods and are no longer content with accepting them passively from businesses. And so will continue to put forward their own new requirements. With the development of e-commerce, there are new changes in customer behaviours and preferences. Under the conditions of e-commerce, UTeM students get information much faster and more content than before, so their desire for innovation and change is stronger. Customers' needs for consumer goods are evolving daily as a result of the ongoing development of new technologies and the quickening pace at which products are being upgraded. Future customers' expectations for shopping convenience and fun will rise along with the accelerated pace of life.

Moreover, with the trend of specialization e-commerce. This is because the first is the specialization trend towards individual consumers. With the increase of my country's online shopping population, they have strong purchasing power and strong requirements for personalization of consumption. Therefore, providing a good e-commerce can make e-commerce more professional and have greater development potential.

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1.8 Summary

The researcher fully defines the subject and background of the study in Chapter 1. This chapter also identifies all research questions. In addition, the researchers describe the goals of the investigation. Following this, in this study, research questions and research objectives were formulated. Because these all help to create a clear path towards the completion of the whole study and the meaning of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter summarizes the literature review that was conducted based on the major findings of earlier research. This chapter will be starts with introducing e-commerce quality and customers satisfaction of online shopping as it is an important term in this research. To achieve the second goal of this study, the researcher will consider consumer happiness. Finally, the researcher will develop the theoretical foundation forthe research investigation in the last subdivision.

2.2 E-Commerce

As Internet technologies (IT) have become more widely available and continue to grow, they have opened up vast opportunities for individuals everywhere. To conduct business over computer networks, like in the case of the World Wide Web, is known as electronic commerce (E-Commerce). E-commerce is unquestionably one of the business possibilities available today. It has a wide range of options for both regular customers and small, medium, and large organisations. E-commerce is gaining popularity as network and computer technology develops at a rapid pace. From 1969 until 2020, the evolution of e-commerce took place. This research tries to describe how the e- commerce journey began and how it evolved year by year. Individuals, organisations, and governments are all undergoing significant changes because of information and communication technology (ICT). The Internet has become a significant route for transmitting information, products, and services in today's information society.

Carter and Belanger (2003) emphasised the importance of integrating ICT at all levels of government (G2B, G2C, G2E, and G2G) to improve service delivery and participation. Furthermore, governments have recognised the value of the internet and have made significant changes to use it to offer public services so that individuals may access them at any time and from any location (Abdulkarim, 2003). E-commerce has the potential to build a virtual market that is far more cost-effective, efficient, and effective. The number of businesses and marketers will continue to grow, and they will complement one another as e-commerce develops. This is because e-commerce is growing at a rapid pace every year. Online shopping has come a long way in the last 20 years, thanks in large part to the popularity of e-commerce sites like Amazon and eBay. In 2011, e-commerce constituted 5% of total retail sales, as reported by the US Census Bureau. By the year 2020, when the COVID-19 pandemic broke out, this percentage had risen to almost 16% of total retail sales.

2.3 E-Commerce Quality

According to Zeithaml et al. (2002), e-commerce quality is defined as the extent to which an e-website shop's allows customers to make trouble-free purchases in the delivery of goods and services. Furthermore, quality in e-commerce has a direct and beneficial influence on client satisfaction, according to Ribbink et al. (2004). If a company wants to compete on e-commerce platforms, it must have quality assurance. Customers have more alternatives to choose from as competition grows. Furthermore, many e-commerce shops provide coupons for various types of items in order to encourage clients to return to their stores. That implies that every error, no matter how minor, such as a delayed loading page, can cost a company's clients, resulting in lossesin the long run.

2.4 Customer Satisfaction

Given the importance of customer satisfaction, it is likely that a few studies have been done to determine what aspects influence consumer satisfaction (Huiqin & Xin, 2012:359). Customer happiness may be measured by both subjective and

objective criteria, according to Huiqin and Xin (2012:359). The expectations disconfirmation hypothesis, which stresses satisfaction as the gap between performance and expectation, lies at the basis of consumer satisfaction (Romadhoni et al., 2015:3; Ismail & Yunan, 2016:270). Furthermore, according to Ganiyu, Uche, and Elizabeth (2012:14), customer satisfaction should be viewed as the core of marketing. A brand's unhappiness may result in unfavorable word-of-mouth and encourage others to boycott it. Other than that, "Satisfaction is a person's sentiments of pleasure or disappointment that follow from comparing a product's perceived performance to expectations," according to Kotler and Armstrong (2014).

According to Lovelock and Wright (2011), customers experience different levels of pleasure or dissatisfaction after experiencing each service depending on how well their expectations are met or exceeded. However, the post-purchase reaction may be anger, dissatisfaction, neutrality, satisfaction, or joy. This is because satisfaction is an emotional state. Satisfaction is also a feeling of excitement or disappointment that arises by comparing the perceived performance of a product to 'ts expectations (Kotler & Keller, 2016).

According to Hill, et al. (2007), customer satisfaction is "the most suitable descriptor for the spectrum of attitudes and sentiments that consumers have about their experience with a firm." Next, customers will often refer to various criteria or dimensions when evaluating satisfaction with a product, service, or specific company. The following are some of the characteristics that are frequently utilised in determining customer satisfaction with a particular product (Tijptono et al., 2008). Moreover, according to Kotler and Armstrong (2014), the following are the elements that determine customer satisfaction: Quality, dependability, responsiveness, accessibility, courtesy, communication, and credibility are all factors to consider.

2.5 Online Shopping

Michael Aldrich founded Redifon's Office Revolution in March 1980, a forerunner to the World Wide Web that linked retailers, wholesalers, and customers. With the help of videotex technology, companies were able to buy products from vendors and sell them to customers over the internet. It is widely recognised as a

crucial precursor to and influence on the growth of modern online business. In 1995, Intershop Communications AG launched Intershop Online, an e-commerce platform used by several pioneering online retailers. The Intershop Online programme simplified the process of incorporating e-commerce (online shopping) into a company's website while assuring customers of the security of their purchases. Furthermore, Although the World Wide Web didn't debut until 1990, it wasn't until 1994 that e-commerce and online banking really took off. Online buying has been popular since 1994, when NetMark and the Internet Shopping Network processed the first online purchases. In 1995, online retailers Amazon.com and eBay launched their websites, expanding consumers' access to new kinds of goods. E-commerce takes the form of online shopping where consumers directly transact with merchants to acquire goods and services. Compared with the real experience, website design, high-quality content, and video clip narration of products influence consumers' purchasing decisions (Kolesar and Galbraith, 2000).

Furthermore, customers cannot touch, smell, or feel the things when they purchase online, which is akin to purchasing from a paper catalogue. Customers may explore the company's products and services online by seeing these photographs and images, which contain the information of the product specs, features, and price, and make real- time purchases. Furthermore, online shopping entails retrieving product information over the Internet, issuing a purchase order via an electronic purchase request, and then filling in personal check or credit card account details, with manufacturers shipping via mail order or courier to the customer's house.

2.6 Theoretical framework
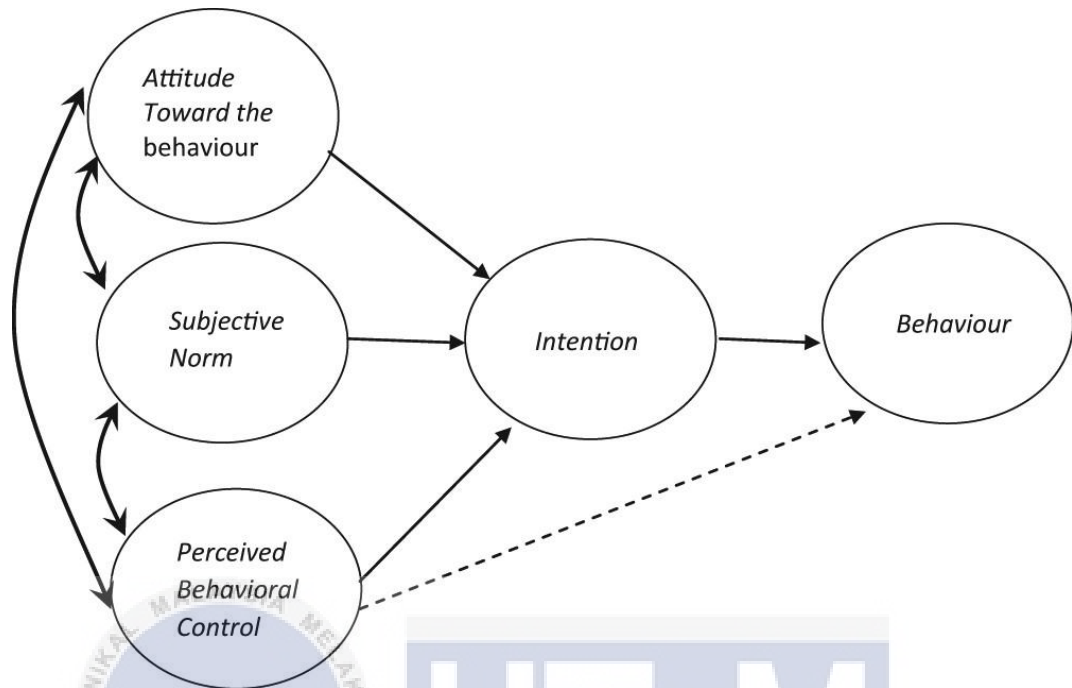
FIGURE 1: THEORETICAL MODEL – THEORY OF PLANNED BEHAVIOUR(TPB)

Theory Planned Behaviour is predicts whether or not a person will do something at a given time and location. Attitude toward behaviour, subjective norms, and perceived behavioural control are the three variables that shape individual conduct and drive behaviour intents (Ajzen, 1991). It's not a novel idea that success in achieving a goal requires both motivation (intention) and skill (behavioural control). Many other theories build off of it, including those about animal learning (Hull, 1943), aspiration (Lewin, Dembo, Festinger, & Sears, 1944), and psychomotor and cognitive task performance (e.g., Fleishman, 1958; Locke, 1965; Vroom, 1964), as well as person perception and attribution (Fleishman, 1958; Locke, 1965; Vroom, 1964). (e.g., Heider, 1944; Anderson, 1974). Other theories of human behaviour, such as those based on "facilitating circumstances" (Triandis, 1977), "the context of opportunity" (Sarver, 1983), "resources" (Liska, 1984), or "action control," have also recommended include some element of behavioural control (Kuhl, 1985). It's

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commonly believed that both intrinsic drive and innate talent play a role in shaping people's level of success in a certain behaviour.

2.7 Servqual Model

SERVQUAL, developed by A. Parasuraman, V. A. Zeithaml, and L. L. Berry (1985), service quality was described as the gap between actual and desired customer experiences with an organisation. A large gap would indicate poor service quality. In their study, Five dimensions of service quality were proposed by Parasuraman et al. (1988): "tangibles," "reliability," "assurance," "responsiveness," and "empathy." Most experts agree that SERVQUAL is an important factor in gauging customer satisfaction, especially when combining products and services.
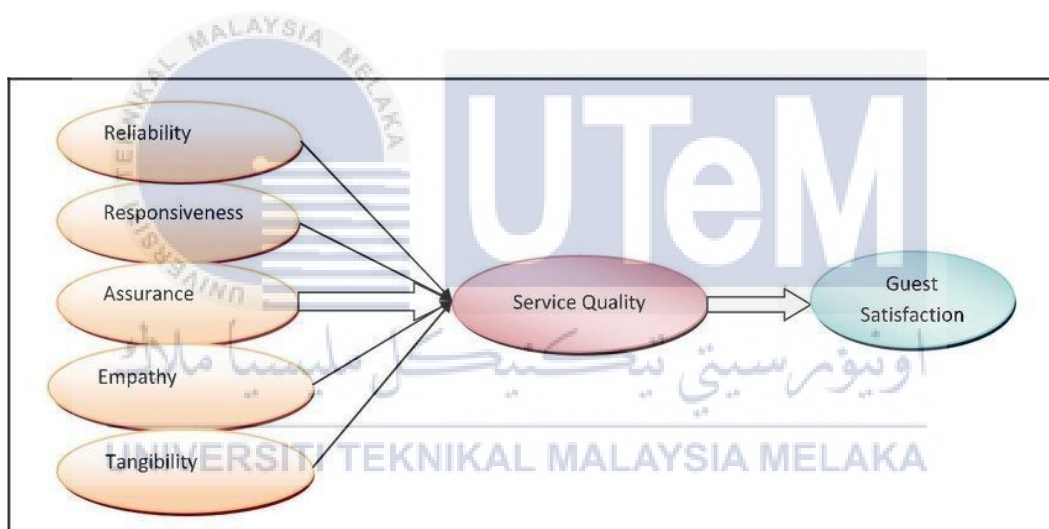
Figure 2: Servqual Model

2.8 Conceptual/research framework
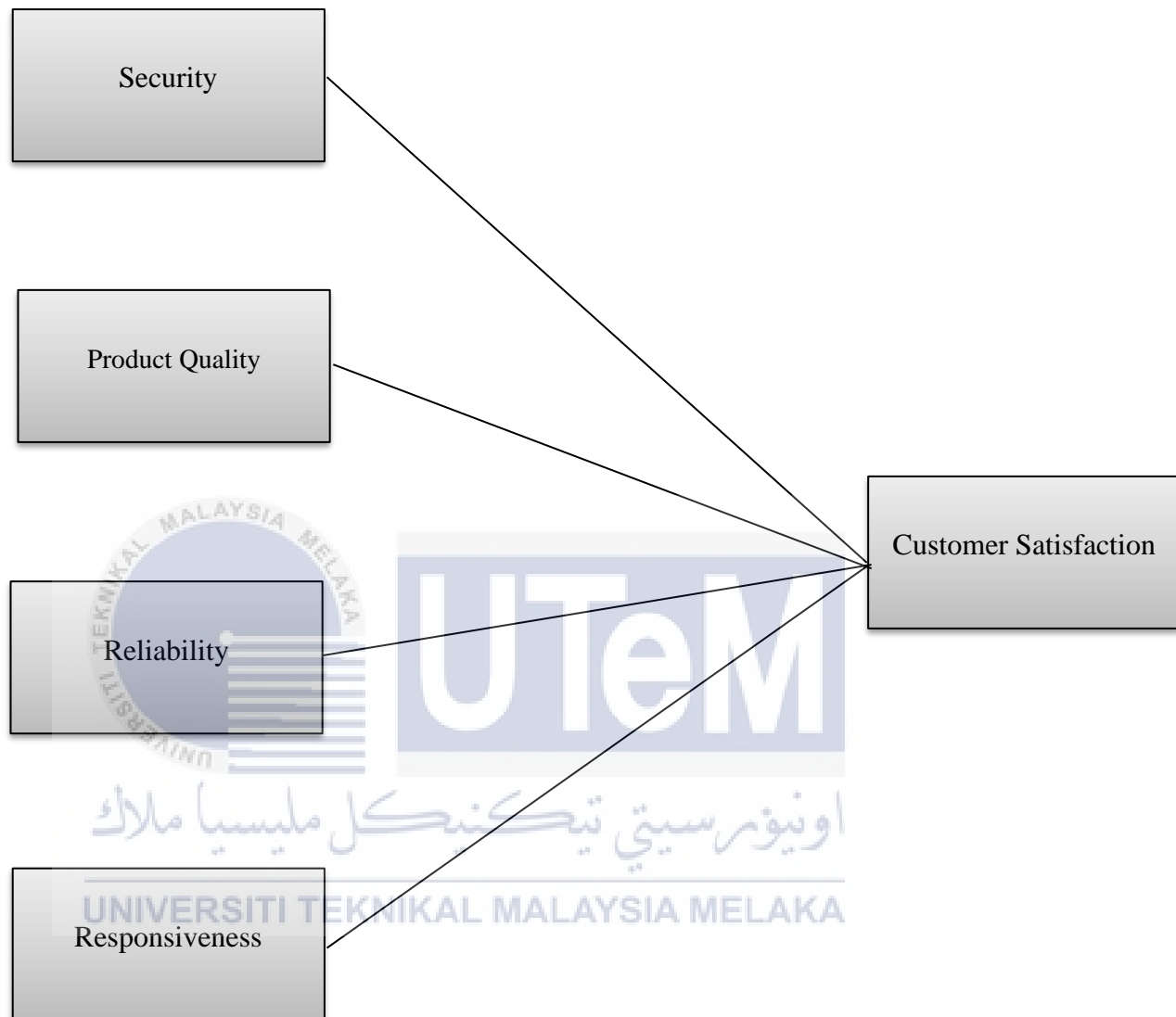
Figure 3: Proposal Conceptual/Research Framework

Based on the research framework, this research will look at the e-commerce of quality elements that will influence when students UTeM doing online shopping. Other than that, researcher will collect the four factors that influence of e-commerce quality elements on the satisfaction customers of online shopping. Security, product quality, reliability and responsiveness are among these elements. Other than that, all relevant research will be conducted in the context of customer satisfaction because customer satisfaction will bring great benefits to this e-commerce because the

existence of these elements will allow customers to continue shopping in this e-commerce.

2.9 Independent Variables

Dr. Saul McLeod claims that experimental research employ a special term for variables. As the name implies, the independent variable is the one that is manipulated by the researcher in order to see what effect it has on the dependent variable. When conducting experiments, the effects of many factors can be studied by manipulating or controlling independent variables. It is called "independent" since it does not interact with any of the other factors being studied.

2.9.1 The Influence of E-Commerce Quality Elements

2.9.1.1 Security

Table 1: Definition of Security

Author	Definition
Van Dat Tran, 2020	Both seasoned and inexperienced Internet users express anxiety about the perception of security risks online.
Juan Carlos Roca, 2009	A standard for safety was established as "a danger that generates a circumstance, condition, or event that has the potential to inflict economic hardship to data or network resources through destruction, disclosure, data alteration, service denial, and fraud cases, wastage, and misuse"

Information security concerns are widely regarded by both government and industry organisations as a key impediment to the expansion of e-commerce from the

consumer's perspective. Both seasoned and inexperienced Internet users express anxiety about the perception of security risks online. (Van Dat Tran, 2020). Moreover, A standard for safety was established as "a danger that generates a circumstance, condition, or event that has the potential to inflict economic hardship to data or network resources through destruction, disclosure, data alteration, service denial, and fraud cases, wastage, and misuse" (Juan Carlos Roca, 2009).

As much as 32.4% of all successful cyber attacks in 2018 were aimed at businesses operating online. Therefore, a reliable business will employ tried and true eCommerce security procedures. This will prevent cyber attacks on the business and its customers. Security is an essential component of every online transaction. Clients would lose faith in e-commerce if its security were compromised. Online business security refers to the standards that govern secure electronic transactions, allowing the acquiring and selling of items and services via the Internet, but with rules in place to protect individuals involved. Online success is dependent on customers' belief that a company has implemented eCommerce security measures. Ecommerce security is the protection of online business resources from unauthorized access, use, modification, or deletion.

H_0: There is a negative relationship between security and customer satisfaction.
H_1: There is a positive relationship between security and customer satisfaction.

2.9.1.2 Product Quality

Table 2: Definition of Product Quality

Author	Definition
(Athiyah, 2016)	The quality of an organization's products or services is a critical factor in the company's long-term viability, growth, and stability.
Laras Putri Handoko,2016	One definition of product quality is "those aspects of a good or service that have an impact on its ability to fulfil explicit or tacit consumer needs."

The quality of an organization's products or services is a critical factor in the company's long-term viability, growth, and stability. (Athiyah, 2016). In addition, it will increase loyalty as well as the organisation's short-term and long-term advantage. (Athiyah, 2016). In other words, quality leads to satisfaction, which leads to loyalty, and finally, loyalty leads to profits. As a result, there is a significant link between product quality and consumer pleasure (Athiyah, 2016) According to (Laras Putri Handoko,2016), One definition of product quality is "those aspects of a good or service that have an impact on its ability to fulfil explicit or tacit consumer needs." Product quality is critical since it influences the company's performance and helps develop its reputation in client marketplaces. When businesses can produce high-quality products that continue to match client needs, they may reduce production costs, boost investment returns, and increase revenue.

Furthermore, quality in a product is measured by how well it satisfies the needs of the target market, performs as expected, and conforms to established standards in the market. When determining if a product is of sufficient quality, businesses take into account a wide range of factors, including whether or not it efficiently addresses an issue, delivers on its promises, and satisfies its target audience. A company's evaluation of a product's quality could also take into account

contrasting perspectives on the product's value. It is important to consider multiple perspectives when determining if a product is of high quality, including those of customers, those involved in production, those interested in the product's features and benefits, and those with a more transcendental understanding of the product's value relative to its price. Customers who regard a company's responsiveness to their needs and preferences also place a high value on the quality of the goods they purchase from that business. Businesses create products to fill a gap in the market, and buyers assume those items will function as promised. People are looking for ways to connect with a company and develop trust in the products and services it offers. If a product is of high quality, it will help customers solve their problems in a reliable and effective way.

H_0: There is a negative relationship between product quality and customer satisfaction.
H_2: There is a positive relationship between product quality and customer satisfaction.

2.9.1.3 Reliability

Table 3: Definition of Reliability

Author	Definition
Ho and Wu's (1999)	Site display and dependability are the most critical elements that influenceonline buying.
Lee and Joshi (2007), Shih (2004), Grewal et al (2004), Ahn et al (2004), and Ho (2004)	The level of customer satisfaction is influenced by how well packages are delivered.
Jun et.al.2004; Satya & Kuraesin 2016	Consumers also expected to be properly billed

According to Ho and Wu's (1999) study, site display and dependability are the most critical elements that influence online buying. It may be claimed that online buyers want to obtain the correct quality and quantity of the things they bought within the time frame set by the online seller. Consumers also expected to be properly billed (Jun et.al.2004; Satya & Kuraesin 2016). The major advantages of internet purchasing are time and money savings. Time and store efficiency, according to (Devaraj et al, 2002), are expressed in time cost and price savings, respectively. Furthermore, according to research by Lee and Joshi (2007), Shih (2004), Grewal et al (2004), Ahn et al (2004), and Ho (2004), The level of customer satisfaction is influenced by how well packages are delivered. The cornerstone of e-commerce security is e-commerce dependability, which refers to the secure running of an e-commerce system free of malicious assault. It offers it strength through gaining trust, confidence, and increasing acceptance and usage of the internet's services. Moreover, dependability refers to how consistently a measurement procedure yields the same results. If the same result can be reliably achieved by repeating the same steps under the same conditions, then the measurement can be considered reliable.

H_0: There is a negative relationship between reliability and customer satisfaction.
H_3: There is a positive relationship between reliability and customer satisfaction.

2.9.1.4 Responsiveness

Table 4: Definition of Responsiveness

Author	Definition
Liao and Cheung, 2002	Online shoppers anticipate a speedy response from businesses.
Parasuraman et al., 1988; Yang, 2001;Kim and Lee, 2002	The responsiveness of an online store can be measured by how quickly and willingly essential services, such as quick responses to consumer questions and easy access to product details, are provided.

According to the Liao and Cheung, 2002, Online shoppers anticipate a speedy response from businesses. The responsiveness of an online store can be measured by how quickly and willingly essential services, such as quick responses to consumer questions and easy access to product details, are provided. (Parasuraman et al., 1988; Yang, 2001; Kim and Lee, 2002). Customer responsiveness measures how fast and efficiently a business reacts to customers. From the standpoint of customer service, this is the time it takes for a support person to reply to a client. It is vital to remember that customer response encompasses the time it takes to receive the initial answer, as well as the frequency and consistency of contact until the issue is resolved. Customers will be thrilled if they can speak with an agent straight quickly, but if they don't get a speedy solution to their problem, it all fades away. The most difficult problem for customer service representatives is balancing speed and quality. So that may assist clients set the correct expectations by explicitly disclosing projected wait and inquiry resolution times in advance.

H_0: There is a negative relationship between responsiveness and customer satisfaction.
H_4: There is a positive relationship between responsiveness and customer satisfaction.

2.10 Dependent Variable

Dr. Saul McLeod states that the term "dependent variable" refers to the variable being tested and measured in an experiment and that it is "dependent" on the independent variable.

2.10.1 The Satisfaction of Online Shopping

A study of customer satisfaction with internet purchasing in the Chittoor area. Customers' satisfaction ratings with the chosen items were investigated in this study. According to the findings, most respondents prefer to buy things on the Flipkart website, followed by Amazon, and they are extremely happy with product delivery on time. Customers will be happy with a product if its performance satisfies their expectations, says American marketing master Philip Kotler. Customers will be overjoyed when a product's performance far outstrips their expectations. The converse is true if the product's performance is subpar and the consumer is dissatisfied. Furthermore, many businesses strive to provide customer happiness to their customers. There are a variety of possible establishments, including online stores. One dissatisfied customer probably won't stop an online store from running, but it could affect how frequently the consumer shops there in the future. (Rudansky-Kloppers, 2014).

According to Li and Zhang (2002), Satisfaction among buyers can be measured by how closely the reality of an online transaction matches the buyer's expectations. According to a model developed by the European Public Administration Network (EUPAN), customer satisfaction can be measured as the extent to which one's basic wants and needs are disregarded when doing business with a given organisation (Guo et al., 2012). In layman's terms, Customer happiness is a metric for judging the value of a service or product. In addition, it offers the peace of mind that comes with satisfying a requirement, whether that requirement is addressing a customer's basic requirements or addressing a desire. The satisfaction of customers can then be defined as the presence or absence of positive or negative emotions over the value of services received from specialised businesses. Before purchasing further products and services online, customers should be pleased with

their e- commerce shopping experience. Furthermore, consumers' opinions of online buying experiences that fulfil their expectations. Therefore, all of their anticipations will influence their attitudes and intentions in the online shopping platform, which in turn will affect their decision making and buying habits (Li & Zhang, 2002). Customers who are satisfied with their purchases are likely to stick with the same brands and products. Customers who are satisfied with a product or service are more likely to become repeat buyers and advocates for the business (Schiffman et al., 2015).

2.11 Hypotheses

The following hypotheses is being formulated after the section of literature review:

H_0: There is a negative relationship between security and customer satisfaction.

H_1: There is a positive relationship between security and customer satisfaction.

H_0: There is a negative relationship between product quality and customer satisfaction.

H_2: There is a positive relationship between product quality and customer satisfaction.

H_0: There is a negative relationship between reliability and customer satisfaction.

H_3: There is a positive relationship between reliability and customer satisfaction.

H_0: There is a negative relationship between responsiveness and customer satisfaction.

H_4: There is a positive relationship between responsiveness and customer satisfaction.

2.12 Summary

In summary, this chapter cover about the meaning of independent variables which are security, product quality, reliability, and responsiveness and dependent variable which is the influence of e-commerce quality. This chapter helps the researcher to clearly defined the area of study and produced a theoretical framework for the research topic.

CHAPTER 3

RESEARCH METODOLOGY

3.1 Introduction

The methodology section of a research paper, thesis paper, or dissertation details the processes you went through to investigate and learn more about a topic and provides an explanation of the methods and approaches you utilised to find and collect data and analyse it. Moreover, the goal of this research was to determine the link between e-commerce and customer satisfaction. Furthermore, this chapter discusses study design, methodological options, data collecting, research strategy, a more detailed explanation of the data gathering methodology, primary data collection method, interview procedure, and data analysis process. The researcher will supply all the explanations in this chapter.

3.2 Research Design

The many sorts of research designs, according to Davis (2017:74), include descriptive research, pragmatic research, explanatory research, correlational research, predictive research, and exploratory research. This study employed both descriptive and correlational research methods since its primary goal was to provide a vivid account of the state of affairs as it stands right now. This study employs a descriptive research strategy since our goal is to characterise the interrelationships between the variables in an objective manner. (Davis, 2017:75). Other than that, according to (Vaneet Kaur, 2019), by planning out how data will be analysed, collected, and interpreted, researchers can more effectively and efficiently gather the knowledge they need. Because qualitative research requires a larger sample size of target respondents and multiple types of method measurement and analysis, the researchers in this study will employ the quantitative research approach instead. Researchers can use this method to collect and analyse data for hypothesis testing

because of its capacity to identify the connection between dependent and independent variables. This study approach will assist researchers in determining the link between the independent factors of security, product quality, reliability, and responsiveness, as well as the dependent variable of customer satisfaction among UTeM students.

3.3   Methodological choices

Methodological options can be broken down into three broad categories which are quantitative, qualitative, and mixed methodologies approaches. (Muhammad Ishtiaq, 2019) In addition, Quantitative research methods will be employed because qualitative research requires a larger sample size of target respondents and a plethora of method measurement and analysis, neither of which are appropriate for this study.

3.4 Research Philosophies

A researcher's research philosophy is their set of assumptions about the world they're exploring, and the type of research philosophy employed in any given field depends on the specifics of that field's body of knowledge. (J. Scotland, 2012) Because this study is intended to be quantitative, the positivist paradigm method is being examinedto validate the deduced theory.

3.5 Data Collection

In order to answer research questions, test hypotheses, and evaluate outcomes, researchers must engage in the process of data collecting, which entails the systematic acquisition and quantification of information on variables of interest. (Syed Muhammad Sajjad Kabir 2016) Aside from these exceptions, data collection is an integral aspect of research in every academic field. This includes the hard sciences, the soft sciences, the humanities, business, and more. The goal of any data collection effort should be to amass sufficient data for thorough analysis, which can then be used to formulate a convincing and credible response to the questions at hand. The credibility of research relies on the collection of accurate data, which is why it is important to use appropriate definitions for both quantitative and qualitative

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information. Errors can be reduced with the right choice of data collection technologies and clearly established guidelines for their use. Essentially, Primary data and secondary data are two distinct categories of information gathered. Both primary and secondary information are needed to fully understand the problem under investigation.

3.5.1 Primary Data

The term "primary data" refers to information that has been acquired directly from an original source. The primary data that has not yet been made public is more reliable, genuine, and objective. The original data has not been tampered with or changed by humans in any way. Thus, it has more credibility than secondary sources. Surveys, observations, physical tests, postal questionnaires, questionnaires filled and sent by enumerators, personal interviews, telephone interviews, focus groups, case studies, and other approaches can all be used to obtain the necessary data. (Surbhi S, 2020) Furthermore, The primary method of data collection in this study will be the distribution of questionnaires to the intended respondents, which will be UTeM students using Google form.

3.5.2 Secondary Data

Secondary data refers to information that has been gathered from sources other than primary sources, such as data collected by other researchers or data that was collected in the past but is still necessary for the current study. In addition, The information used in this study comes from secondary sources like scholarly articles and online media as well as previously published reports and official investigations. Moreover, One of the many benefits of using secondary data is that it can help researchers save both time and money. However, the data's relevance and quality may be compromised because it was gathered for purposes unrelated to the problem at hand.

3.6 Research Strategy

The goal of a research strategy is to help the researcher organise and make sense of the data they collect from their numerous research methods and initiatives. (Tahu Kukutai & Maggie Walter,2017) Research methods include interview, focus group, case study, interview, and survey. These strategies contribute to the growth of secondary data collection. No random events occurred over the course of this investigation. It has been chosen via direct information collection. The tactics have acquired a large amount of data. This necessitates the use of secondary data analysis. The methods used to acquire secondary data included which is online libraries, academic publications, websites, and news stories are examples of useful resources. Other than that, this study used a survey and questionnaire to collect information about UTeM students experiences with online shopping in order to determine what characteristics have an impact on the quality of the service they receive while making purchases through an e-commerce website. Security, product quality, reliability and responsiveness are the dependent variable in this research theoretical models and research frameworks while the customers satisfaction is the independent variables.

The research survey is developed using a five-point Likert scale to explore the dependent and independent variables. In survey research, a Likert scale is a type of scale used to measure respondents' attitudes on a certain issue. In contrast to open-ended, multiple-choice questions, those based on the Likert scale only allow for a single correct answer. The main benefit of using a Likert scale over a simple yes/no question is that it provides more nuanced data about respondents' opinions. A Likert scale allows researchers to measure a wide range of agreement, relevance, quality, and other criteria. The term "Likert scale" is sometimes used interchangeably with "rating scale" due to the widespread adoption of these types of scales.

Rensis Likert, a social psychologist, coined the term "Likert" after creating the Likert Scale in the 1930s. (Roxana Elliott, 2021) The five-point likert scale would begin on the negative side, with 1 indicating significant disagreement, and end on the positive side, with 5 indicating strongagreement.

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

Figure 4: Five-Point Like Scale

3.7 Questionnaire Design

The term "questionnaire design" refers to the procedure through which the format and questions of a survey instrument used to collect data on a specific event are developed. Making a questionnaire means thinking about every step of the survey process, from conception to completion. Questions like these are also frequently used in the fields of survey research and experimental design. A questionnaire serves four purposes: it gathers information from respondents, organizes interviews, provides a consistent format for responses, and facilitates data analysis. In this study, participants are encouraged to fill out the questionnaire by providing their contact information on the first page and reading the cover sheet, which identifies the researchers and provides a promise of confidentiality. There are three components to this questionnaire which is section A, Section B and Section C.

In Section A, the demographic profile such as age, gender, education, and frequency of using online shopping are asked which is measured using a nominal and ordinal scale. The purpose of this part is to acquire the respondents' broad demographic background information. In next section which is section B will focus mainly on the independent variables of research. The variables include security, product quality, reliability, and responsiveness where each of it consists of 4-5 questions. From this section, the third part identifies the aspects that will influence the e-commerce quality element's impact on the satisfaction of online shopping. So, in section C will focus on the dependent variable which is the satisfaction of online shopping among UTeM students. The information gathered in all these parts is utilized to see if there is a link between each of the constructs measured.

On each of the assertions in Sections B and C, the degree of agreement and disagreement is measured using a five-point Likert scale, with 1 representing' strongly disagree,' 2 representing 'disagree,' 3 representing 'neutral,' 4 representing 'agree,' and 5 representing' strongly agree.' The survey is built with Google Forms and disseminated entirely digitally to the selected respondents. When compared to the traditional technique of questionnaire dissemination, online questionnaire distribution is less expensive, more flexible, and takes less time. Rapid, accurate data and findings from the disseminated questionnaire may be acquired in a short amount of time.

3.8 Sampling Design

Defined as selecting a sample from a larger population to collect data on the basis of prior knowledge or assumptions. Since it would be impractical to study everyone in the population of interest, researchers will instead select a subset of the population to serve as a representative sample of the entire population of interest. (McLeod, 2014)

3.8.1 Population and Sampling Frame

For any given population, the sampling frame is a comprehensive list of all potential research subjects. In other words, it's a long list of everything and everyone that has to be investigated. There is a significant difference between a population and a sampling frame, with the latter being a more selective subset of the former. (Stephanie, 2017). In this research, the targeted population is the users of e-commerce while the samplingframe include UteM students who are using the e-commerce.

3.8.2 Sampling Strategy

Sampling is a technique used to choose individuals from a group in order to extrapolate generalizations about that community and to assess its characteristics. Several different sampling procedures are frequently used in market research so that

researchers don't have to probe the entire community for answers. In the sampling strategy two type of sampling which is probability sampling and non-probability sampling. Convenience sampling, judgmental or purposive sampling, snowball sampling, and quota sampling are the other four types of non-probability sampling. A non-probability sampling method known as convenience sampling was used for this study's data collection. Personal judgements may be utilized when selecting samples for non-probability sampling, which is also known as nonrandom sampling (Malhotra, 2014) to generalize and reflect the entire population.

3.8.3 Sample Size

The phrase "sample size" refers to a strategy for determining and selecting the repetitions and numbers from the observations used in statistical sample work. Researchers based their sample size on the total population, which is shown in the table below..

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—N is population size. S is sample size.
Source: Krejcie & Morgan, 1970

Figure 5: Table for Determining Sample Size

Source: Krejcie Morgan
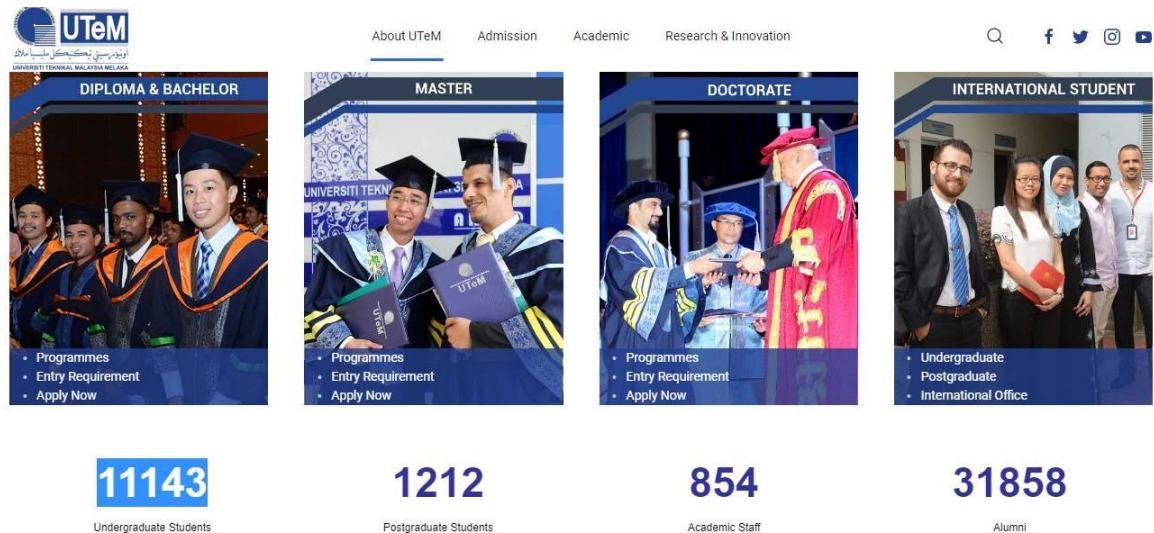
Figure 6: Population UTeM students

Based to the table Krejcie and Morgan Table, the sample size in this study is 370 respondents. Although more than 10000 but less than 15000 which is 11143 that been stated in the table 3.1. As a result, to make this study more accurate, researchers used a sample size of 370 respondent.

3.9 Pilot Test

A pilot study is a test run of a survey or questionnaire before collecting real data. Therefore, a pilot study was conducted to analyse the results and make adjustments to the questionnaire to make it more effective. (Ruel et al., 2016).

The primary objective of a pilot test is to help researchers find and fix problems, such as those caused by ambiguous questions, poorly phrased questions, or inadequate instructions for completing the questionnaire. For reliable results, the pilot study's target sample size should be 10% smaller than the full study's target sample size (Connelly, 2008). So, in this research 37 respondents will select to carry out this pilot test.

Developed by Lee Cronbach in 1951, the reliability or internal consistency metric known as Cronbach's alpha or coefficient alpha. The term "reliability" is often used interchangeably with the term "consistency." For determining the validity of a

multi-question survey using a Likert scale, Cronbach's alpha is the gold standard. Latent variables, such as a person's level of openness, conscientiousness, or neurotic, are measured using these types of inquiries. For the simple reason that it is challenging to quantify these in practise.

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Figure 7: Cronbach's Alpha Coefficient Range

3.10 Time Horizon

There are two types of time horizon studies: longitudinal and cross-sectional. Due to the research's time constraints, a cross-sectional study will be conducted in which datawill be gathered just once at a particular moment in time.

3.11 Data Analysis

In business, data analysis refers to the process of cleaning, transforming, and modelling data to extract actionable insights. The purpose of data analysis is to gain useful insights from data and base decisions on those insights. (Johnson, Daniel, 2022).

3.11.1 Descriptive analysis

This is the procedure through which unprocessed data is transformed into information that may be used to respond to specific questions (Munoz & Civille, 1992). In this study, demographic information was summarised using a pie chart, and important details like proportion and frequency of respondents were included.

3.11.2 Reliability analysis

Data reliability can be evaluated with the help of a useful tool called dependability analysis (Bonett & Wright, 2015). Because of the importance of providing accurate answers, reliable data is essential when conducting research. Inconsistencies in the data will make it hard to draw conclusions if the data sets are extremely different from one another. Finally, the Cronbach Alpha coefficients derived from the dependability analysis performed in SPSS.

3.11.3 Correlation analysis

Assessing the significance of a dependent variable's relationship with an independent variable can be done with the help of the Pearson correlation coefficient (Williams, 1996). Positive and negative linear relationships can be distinguished by the sign of the correlation coefficient: a positive correlation coefficient of +1 indicates a strong positive influence of the independent variables on the dependent variable, while a negative correlation coefficient of -1 indicates a strong negative influence of the independent variables on the dependent variable.

3.11.4 Regression analysis

This is a common and very adaptable technique for analysing data where the dependent variable is numerical in nature and the relationship between the independent variables is investigated. It's a well-liked approach to determining cause and effect that's essential for doing statistical tasks like hypothesis testing, estimating, and calculating power. Multiple regression analysis is a flexible method of data analysis with applications in the behavioural, social, biological, and technological disciplines. (Cohen & Cohen, 1984). Multiple regression analysis is used in this study to examine the hypotheses from the previous chapter.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Where:

Table 5: Symbol of Multiple Regression Equation

Symbol	Refers to
Y	Dependent Variable (influence of e-commerce quality)
α	Constant
β_1	Coefficient 1
β_2	Coefficient 2
β_3	Coefficient 3
β_4	Coefficient 4
X_1	Independent Variable 1 (Security)
X_2	Independent Variable 2 (Product quality)
X_3	Independent Variable 3 (Reliability)
X_4	Independent Variable 4 (Responsiveness)

3.11.5 Inferential Analysis

Inferential analysis goes beyond simple data collection to draw conclusions or make inferences about the world around us.

3.12 Summary

In a nutshell, this chapter covers the research methodology. The researcher picked quantitative method to undergo this research. Besides that, it also covers about the data collection method, selection of sample for the research and the design of questionnaire.

CHAPTER 4

DATA ANALYSIS

4.1 Introduction

In this chapter, the results of the research conducted utilizing a quantitative approach were discussed. The data was collected by questionnaires involving students as respondents which consist of UTeM students. This will analyze the relationship between security and customer satisfaction of e-commerce, then determine the relationship between product quality and customer satisfaction of e-commerce, investigate the relationship between reliability and customer satisfaction of e-commerce, and finally identify the relationship between responsiveness and customer satisfaction of e-commerce.

Testing hypotheses, conducting a Pearson correlation, and conducting a multiple regression were the next steps in the data analysis process. The data analysis is tested based on 370 respondents at UTeM with a questionnaire of 4 sections which is Section A for demographic, Section B for the factors that influence e-commerce quality elements on the satisfaction of online among UTeM students, and Section C for the customer satisfaction of online shopping.

To verify that no mistakes or errors were made in the questionnaires, the validity of the questionnaires had been tested through a pilot test involving 30 respondents. Before distributing the actual survey, it is vital to understand the potential errors and weaknesses in the questionnaire. Some changes were made to ensure proper grammar and spelling. Cronbach's Alpha was also obtained during the pilot test and reliability test.

4.2 Pilot Test

The sample size for the preliminary test, also known as a pilot test, was S = 370, and 37 questionnaires were used to organize the test. The sample size for the test sample should be 10% of the total sample size. The goal of the pilot study is to verify that the questionnaire effectively gathers the specified data. In this way, we may examine both the pilot's efficacy and the questionnaire's dependability. Cronbach's Alpha can be used to evaluate the consistency of responses in a pilot study.

Table 6 Reliability Statistic of Variables

Source: SPSS Output

Variable	Cronbach's Alpha	N of items	Strength of Association
Independent Variables			
Security	0.776	6	Acceptable
Product Quality	0.562	5	Acceptable
Reliability	0.681	5	Acceptable
Responsiveness	0.674	5	Acceptable
Dependent Variables			
Customer Satisfaction	0.768	5	Acceptable

Table 7 Reliability Statistic of Overall Pilot Test

Source: SPSS Output

Cronbach's Alpha	N of items
0.723	26

Table 6 above showed all variables can be assumed to have reasonable internal consistency since Cronbach's Alpha is greater than 0.5. The Cronbach's Alpha for Security is 0.776 measured by 6 items. Next, Cronbach's Alpha for Product Quality is 0.562 measured by 5 items. Then, Cronbach's Alpha for Reliability is 0.681 measured by 5 items. And Cronbach's Alpha for Responsiveness

is 0.674 measured by 5 items. The Cronbach's Alpha for Customer Satisfaction is 0.768 measured by 5 items. To conclude, all have good correlations within items of each variable.

According to table 7, Cronbach's Alpha coefficients of overall variables are 0.723, which was excellent with 26 of the number items. Hence, it can be concluded that the items have relatively internal consistency.

4.3 Reliability Test

Cronbach's Alpha is used to determine the internal consistency or average correlation of items for each of the independent variables which are security, product quality, reliability, and responsiveness. Rahman, et al. (2022) have pointed out that the reliability result should be equal to or above 0.6, and 0.6 indicates an acceptable level of reliability coefficient is an acceptable reliability coefficient, but sometimes lower thresholds are used in the literature.

Table 8 Reliability Statistic of Variables

Source: SPSS Output

Variable	Cronbach's Alpha	N of items	Strength of Association
Independent Variables			
Security	0.740	6	Acceptable
Product Quality	0.661	5	Acceptable
Reliability	0.642	5	Acceptable
Responsiveness	0.757	5	Acceptable
Dependent Variables			
Customer Satisfaction	0.653	5	Acceptable

Table 9 Reliability Statistic of Overall Reliability Test

Source: SPSS Output

Cronbach's Alpha	N of items
0.794	26

Table 8 above showed all variables can be assumed to have reasonable internal consistency since Cronbach's Alpha is greater than 0.5. The Cronbach's Alpha for Security is 0.740 measured by 6 items. Next, Cronbach's Alpha for Product Quality is 0.661 measured by 5 items. Then, Cronbach's Alpha for Reliability is 0.642 measured by 5 items. And Cronbach's Alpha for Responsiveness is 0.757 measured by 5 items. The Cronbach's Alpha for Customer Satisfaction is 0.653 measured by 5 items. To conclude, all have good correlations within items of each variable.

According to table 9, Cronbach's Alpha coefficients of overall variables are 0.794, which was excellent with 26 of the number items. Hence, it can be concluded that the items have relatively internal consistency.

4.4 Respondents Rate

Table 10: Respondent Rate

Source: Develop from the Research

	Total	Percent (%)
Number Of Questionnaires Distributed	380	100
Fully Response	370	97.37
Not Qualified	10	2.63

The total distributed questionnaire to the respondents which are UTeM students was 380 sets. Furthermore, most of the form was distributed over Google Form in UTeM through online. The total number of a questionnaire distributed is 370 (97.37%) sets as there is 10 (2.63%) set of the questionnaire is deemed unqualified since those respondents do not complete all the questions that need to be answered.

4.5 Descriptive Data Analysis

4.5.1 Socio-Demographic

Descriptive statistics have been used to describe the data collected such as basic characteristics through using a questionnaire. It gives a succinct rundown of samples and measurement results. 370 respondents provided socio-demographic information for this data study, which produced security, product quality, reliability, and responsiveness.

Table 4.11: Summary of Socio-demographic of respondent

Source: SPSS Output

Demographic	Demographic Details	Frequency	Percentage (%)
Gender	Male	144	38.91
	Female	226	61.08
Age Group	18 to 20-year-old	36	9.73
	21 to 23-year-old	163	44.05
	24 to 26-year-old	85	22.97
	27 to 30-year-old	86	23.24
Ethnic	Malay	82	22.16
	Chinese	202	54.59
	Indian	86	23.24

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How often do you purchase online	Everyday	84	22.70
	Weekly	143	38.65
	Monthly	69	18.65
	Once within several months	74	20

4.5.1.1 Gender

Table 12: Gender

Source: SPSS Output

	Frequency	Percent	Valid Percent
Male	144	38.91	38.91
Female	226	61.08	61.08
Total	370	100.0	100.0
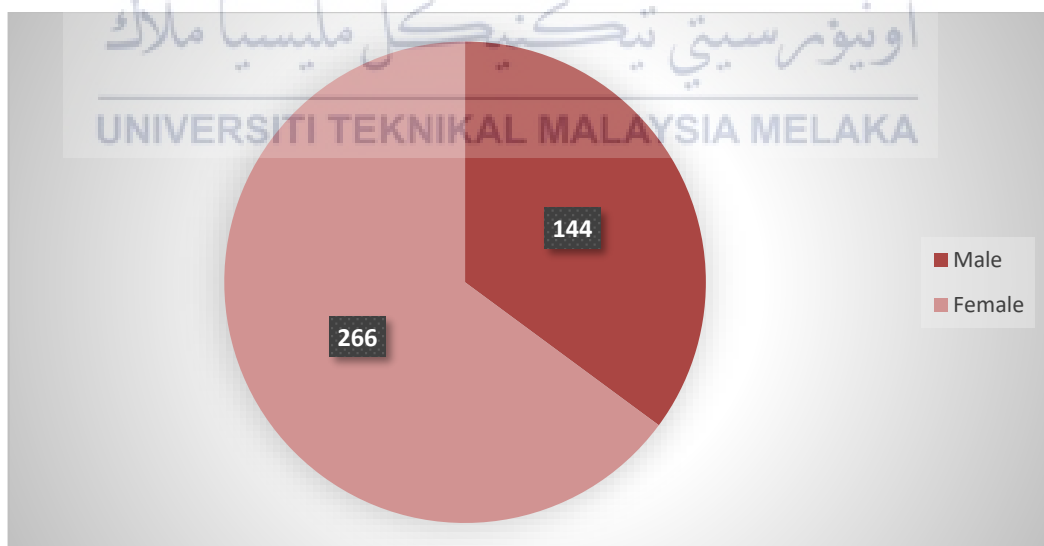
Figure 8: Gender

In the sample of 370 respondents shown in Table 12 and Figure 8 above, there are a total of 144 (38.91%) male respondents and 266 (61.08%) female

respondents. The percentage shows that female respondents are much higher than male respondents.

4.5.1.2 Age

Table 13: Age Group
Source: SPSS Output

	Frequency	Percent	Valid Percent
18 to 20-year-old	36	9.73	9.73
21 to 23-year-old	163	44.05	44.05
24 to 26-year-old	85	22.97	22.97
27 to 30-year-old	86	23.24	23.24
Total	370	100.0	100.0
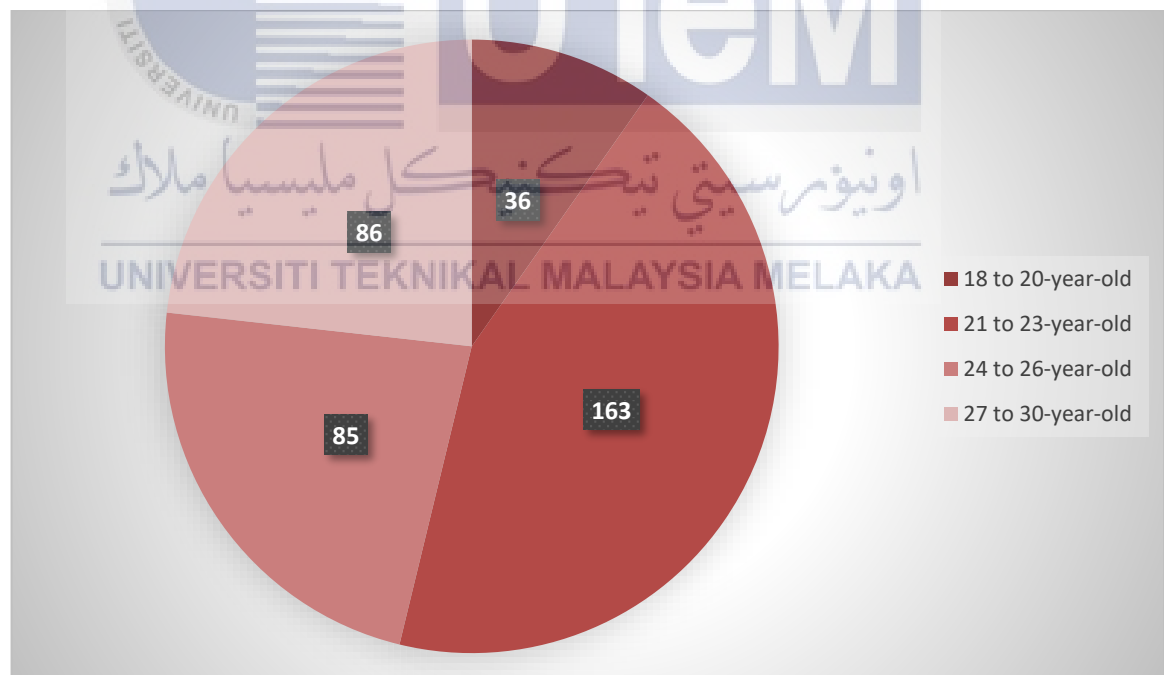
Figure 9: Age Group

Table 13 shows the age group who take part in the questionnaire. In this study, most of the respondents are from the age of 21 to 23-year-old with 163 respondents (44.05%) and followed by the age group of 27-30-year-old with 86

respondents (23.24%). The minority of the respondents are from the age group which is 18 to 20-year-old with 36 respondents representing 9.73% and the last age group is 27-30-year-old with 85 respondents representing 22.97%.

4.5.1.3 Ethnic

Table 14: Ethnic

Source: SPSS Output

	Frequency	**Percent**	**Valid Percent**
Malay	82	22.16	22.16
Chinese	202	54.59	54.59
Indian	86	23.24	23.24
Total	370	100.0	100.0
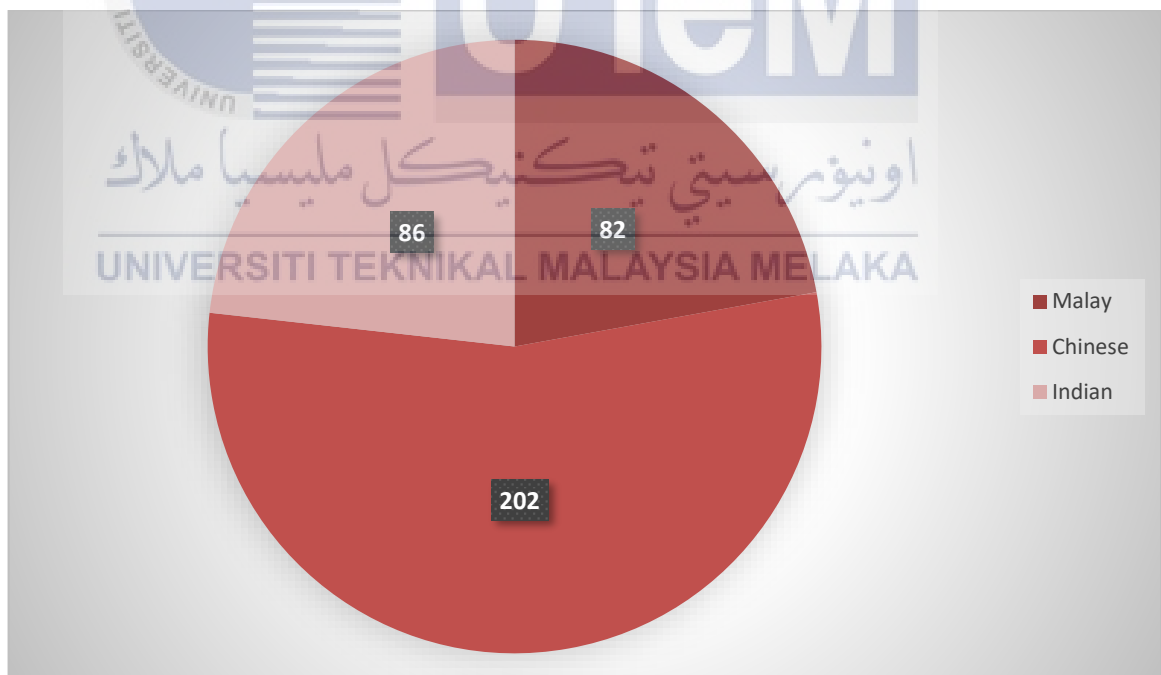
Figure 10: Ethnic

Table 14 shows that most of the respondents are Chinese with 202 respondents (54.59%). Next is followed by Indian which is 86 respondents or 23.24 and the last is Malay with 82 respondents or 22.16%.

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4.5.1.4 How often do you purchase online

Table 15: How often do you purchase online

Source: SPSS Output

	Frequency	Percent	Valid Percent
Everyday	84	22.70	22.70
Weekly	143	38.65	38.65
Monthly	69	18.65	18.65
Once within several	74	20	20
months	370	100.0	100.0
Total			
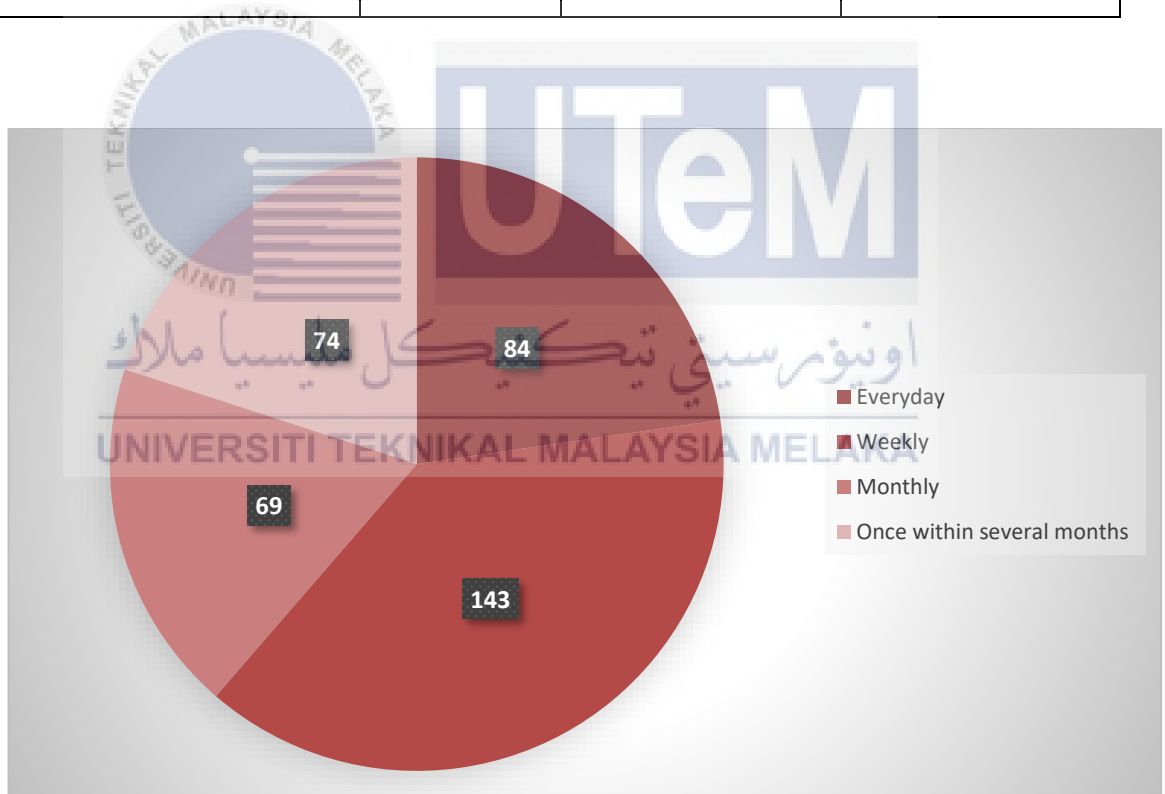
Figure 11: How often do you purchase online

Table 15 shows how often the respondents purchase online. Most of the respondents will purchase online weekly which is 143 respondents or 38.65% and followed by everyday with 84 respondents (22.70%). Next are the respondents who

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will purchase once within several months with 74 respondents or 20%. There 69 respondents (18.65%) will purchase online monthly.

4.5.2 Descriptive Analysis

4.5.2.1 The factors that influence e-commerce quality elements on the satisfaction of online shopping among UTeM students- Security

Table 16: Descriptive Statistics of Security

Source: SPSS Output

		N	Minimum	Maximum	Mean	Std. Deviation
S1	Buyers' transactions, personal information, and financial security can all be protected through e-commerce.	370	1	5	3.64	1.04
S2	E-commerce had clear sales rules, such as complaint and return policies.	370	1	5	3.64	1.04
S3	E-commerce is risky.	370	1	5	3.75	0.98
S4	System guards are sufficient.	370	1	5	3.82	0.93
S5	E-commerce has its own safe payment system.	370	1	5	3.70	0.87

		370	1	5	3.81	0.85
S6	Will not share their credit card information lightly.					
Overall		370	1	5	3.73	0.64
Valid N (listwise)		370				

Based on table 16 above indicated that descriptive statistics of security which are the factors that influence e-commerce quality elements among 370 respondents. The overall mean value of the security is 3.73 and a standard deviation of 0.64. For item of S4, "system guards are sufficient" are the most major concern of respondents with an average of 3.82 and a standard deviation of 0.93 has agreed on the statement. The highest statement disagreed by respondents is items S1 and S2 which is "Buyers' transactions, personal information, and financial security can all be protected through e-commerce." and "E-commerce had clear sales rules, such as complaint and return policies." Whereas with an average of 3.64 and a standard deviation of 1.04. Followed by the statement that disagreed most is item S5, "E-commerce has its own safe payment system." With an average of 3.70 and a standard deviation of 0.87.

4.5.2.2 The factors that influence e-commerce quality elements on the satisfaction of online shopping among UTeM students- Product Quality

Table 17: Descriptive Statistics of Product Quality

Source: SPSS Output

		N	Minimum	Maximum	Mean	Std. Deviation
PQ1	Products purchased online are of higher quality.	370	1	5	3.70	0.89
PQ2	When buyers received the actual product, the product descriptions on e-commerce were accurate.	370	1	5	3.91	0.92
PQ3	The product performed as well as buyers anticipated.	370	1	5	3.93	0.87
PQ4	High-quality products reduce customer complaints and returns.	370	1	5	3.87	0.84
PQ5	Product reviews of sellers will determine	370	1	5	3.58	0.92

	whether to make a purchase.					
Overall	370	1	5	3.80	0.56
Valid N (listwise)	370				

Based on table 17 above indicated the descriptive statistics of independent variables among 370 respondents. The overall mean value of the security is 3.80 and a standard deviation of 0.56. For an item of PQ3, "The product performed as well as buyers anticipated." An average of 3.93 and a standard deviation of 0.87 agreed with the statement. The second highest statement agreed by respondents is item PQ2, "When buyers received the actual product, the product descriptions on e-commerce were accurate." Whereas with an average of 3.91 and a standard deviation of 0.92. Followed by the statement agreed is item PQ4, "High-quality products reduce customer complaints and returns." With an average of 3.87 and a standard deviation of 0.84.

4.5.2.3 The factors that influence e-commerce quality elements on the satisfaction of online shopping among UTeM students- Reliability

Table 18: Descriptive Statistics of Reliability

Source: SPSS Output

		N	Minimum	Maximum	Mean	Std. Deviation
R1	E-commerce fulfils its promise to do certain things by a certain time	370	1	5	3.85	0.92
R2	E-commerce demonstrates a genuine interest in resolving customer issues.	370	1	5	3.79	0.81
R3	E-commerce creates a good impression.	370	1	5	3.76	0.89
R4	The reliability of e-commerce gives customers confidence in the authenticity of products.	370	1	5	3.89	0.86
R5	To expedite the shipping, e-commerce can provide dependable and skilled express, online shopping,	370	1	5	3.85	0.86

and courier services.					
Overall	370	1	5	3.83	0.57
Valid N (listwise)	370				

Based on table 18 above indicated the descriptive statistics of independent variables among 370 respondents. The overall mean value of the security is 3.83 and a standard deviation of 0.57. For an item of R4, "The reliability of e-commerce gives customers confidence in the authenticity of products." An average of 3.89 and a standard deviation of 0.86 agreed with the statement. The second highest statement agreed by respondents is item R1, "E-commerce fulfills its promise to do certain things by a certain time." with an average of 3.85 and standard deviation of 0.92 and R5, "To expedite the shipping, e-commerce can provide dependable and skilled express, online shopping, and courier services." Whereas with an average of 3.85 and a standard deviation of 0.86. Followed by the statement agreed is item R2, "E-commerce demonstrates a genuine interest in resolving customer issues." With an average of 3.79 and a standard deviation of 0.81.

4.5.2.4 The factors that influence e-commerce quality elements on the satisfaction of online shopping among UTeM students- Responsiveness

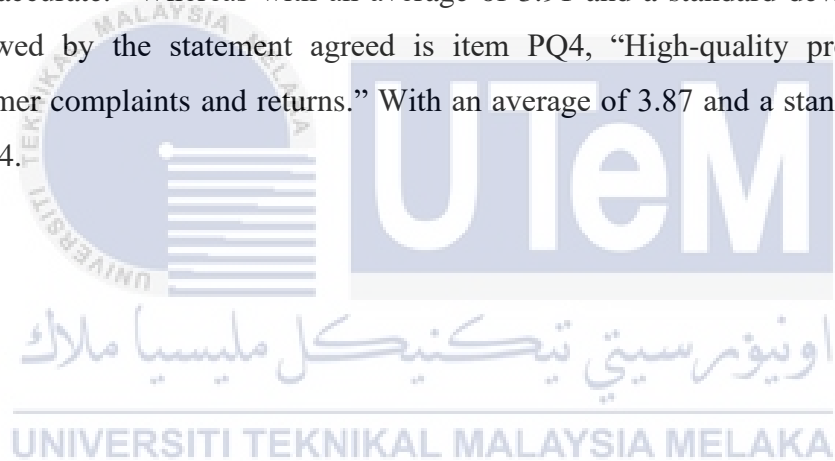**Table 19: Descriptive Statistics of Responsiveness**

Source: SPSS Output

		N	Minimum	Maximum	Mean	Std. Deviation
REP1	E-commerce provides quick service.	370	1	5	3.73	0.89
REP2	E-commerce is eager to assist customers.	370	1	5	3.76	0.91
REP3	Customer service in e-commerce can help customers solve problems.	370	1	5	3.78	0.89
REP4	Responsive website design provides a pleasant user experience that meets or exceeds customer expectations.	370	1	5	3.78	0.99

		370	1	5	3.72	0.98
REP5	E-commerce has a clear division of labor and rules and regulations to protect the legitimate rights and interests of operators and consumers and promote the healthy and sustainable development of e-commerce.					
Overall		370	1	5	3.73	0.63
Valid N (listwise)		370				

Based on table 19 above indicated the descriptive statistics of independent variables among 370 respondents. The overall mean value of the security is 3.73 and a standard deviation of 0.63. For an item of REP3, "Customer service in e-commerce can help customers solve problems. An average of 3.78 and a standard deviation of 0.89 agreed with the statement and REP4, "Responsive website design provides a pleasant user experience that meets or exceeds customer expectations." With an average of 3.87 and /standard deviation of 0.99. The second highest statement agreed by respondents is item REP2, E-commerce is eager to assist customers." with an average of 3.76 and a standard deviation of 0.91. Followed by the statement agreed is item REP5, "E-commerce has a clear division of labor and rules and regulations to protect the legitimate rights and interests of operators and consumers and promote the healthy and sustainable development of e-commerce." With an average of 3.72 and a standard deviation of 0.98.

4.5.3 Customer Satisfaction

Table 20: Descriptive Statistics of Customer Satisfaction

Source: SPSS Output

		N	Minimum	Maximum	Mean	Std. Deviation
CS1	Satisfied with e-commerce purchases.	370	1	5	3.61	1.04
CS2	Will share information about e-commerce sites with others.	370	1	5	3.67	0.99
CS3	Recommendation to others.	370	1	5	3.65	1.02
CS4	Will be pleased with the online shopping experience.	370	1	5	3.73	0.98
CS5	E-commerce can meet the needs of customers.	370	1	5	3.84	0.94
Overall		370	1	5	3.70	0.69
Valid N (listwise)		370				

Table 20 above shows descriptive statistics of customer satisfaction among 370 respondents. The overall mean value of customer satisfaction is 3.70 and the standard deviation of 0.69. The item of CS5, "E-commerce can meet the needs of customers." are the major concern of respondents as an average of 3.84 and a standard deviation of 0.69 agreed with the statement. The statement that has the lowest agreed by respondents is items CS 1 which is "Satisfied with e-commerce purchases." Whereas an average of 3.61 and a standard deviation of 1.04. Followed by a statement agreed by respondents on an item "Will be pleased with the online shopping experience." With an average of 3.73 and a standard deviation of 0.98. Also, item CS2 has recorded a third higher rate of agreed, "Will share information about e-commerce sites with others." With an average of 3.67 and a standard deviation of 0.99. Lastly, the statement of item CS3, "Recommendation to others." recorded an average rate of agreed (3.65) and a standard deviation of 1.02.

4.6 Inferential Statistics

Inferential statistics are used to draw conclusions that are not directly supported by the data. Inferential statistics derive the population's idea from sample data. Furthermore, it can be utilized to establish whether the observed difference between groups is credible or if it happened by chance in this study. In this study, inferential statistics are only employed to interpret the data.

4.6.1 Pearson Correlation Coefficient Analysis

Pearson's correlation analysis is a statistical method for determining how closely the independent and dependent variables are related. Pearson's correlation coefficient is a test statistic for determining the statistical link between two continuous variables.

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Table 21: The scale of Pearson's Correlation Coefficient

Source: Saunders, Lewis, & Thornhill, 2016

Value of Correlation	Strength of Correlation
±0.70 to ±1.0	Very strong relationship
±0.40 to ±0.69	Strong relationship
±0.30 to ±0.39	Moderate relationship
±0.20 to ±0.29	Weak relationship
±0.01 to ±0.19	No relationship

Table 22: Pearson Correlation Coefficient Analysis

Source: SPSS Output

	Correlations	Security	Product Quality	Reliability	Responsiveness	Customer Satisfaction
Security	Pearson Correlation	1	-.027	.274[**]	.438	.432[**]
	Sig. (2-tailed)		.000	.000	.000	.000
	N	370	370	370	370	370
Product Quality	Pearson Correlation	-.027	1	-.053	-.050	-.0.11
	Sig. (2-tailed)	.609		.309	.342	.831
	N	370	370	370	370	370
Realibility	Pearson Correlation	.274[**]	-.053	1	.329[**]	.333[**]
	Sig. (2-tailed)	.000	.309		.000	.000
	N	370	370	370	370	370
Resonsiveness	Pearson Correlation	.438	-.050	.329[**]	1	.583[**]
	Sig. (2-tailed)	.000	.342	.000		.000
	N	370	370	370	370	370

Customer Satisfaction	Pearson Correlation	.422**	-.011	.333	.583**	1
	Sig. (2-tailed)	.000	.831	.000	.000	
	N	370	370	370	370	370
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 22 shows the correlation value between the independent variables (security, product quality, reliability, and responsiveness) and dependent variables (customer satisfaction). A significant value of 0.05 or less indicates that the association between variables is significant and apparent. Firstly, the correlation value between responsiveness and customer satisfaction recorded a strong correlation relationship which is 0.583 between the independent variable and dependent variable. Next, it followed the correlation value between security and customer satisfaction recorded at 0.432. it shows a strong relationship between the independent variable and dependent variables. Then, the correlation between reliability and customer satisfaction is 0.333. It shows that is a moderate relationship between the independent variable and the dependent variable. Lastly, the correlation value between product quality and customer satisfaction is -0.11 which represents no relationship between the independent variable and dependent variable.

Table 23: Strength of Pearson's Correlation Coefficient
Source: Develop from research

Independent Variables	Dependent Variables	Pearson's Correlation	Association Strength
Security	Customer Satisfaction	0.432	**Strong Relationship**
Product Quality	Customer Satisfaction	-0.11	**No Relationship**
Reliability	Customer Satisfaction	0.333	**Moderate Relationship**
Responsiveness	Customer Satisfaction	0.583	**Strong Relationship**

4.6.2 Multiple Regression Analysis

Table 24: Model Summary

Source: SPSS Output

Model Summary				
Model	R	R Square	Adjusted R Square	St. Error of the Estimate
1	.628ᵃ	.394	.388	.54311
a. Predictors: (Constant), Responsiveness, Product Quality, Reliability, Security				
b. Dependent: Customer Satisfaction				

Based on table 24 above, the result from the model summary shows that the correlation coefficient (R) value is 0.682, while the R Square is 0.394 which is 39.4%. The R square =39.4% indicated that 39.4% of the variance affected customer satisfaction among UTeM students can be determined by the variance of security, product quality, reliability, and responsiveness.

Table 4.25: ANOVA

Source: SPSS Output

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.111	4	17.528	**59.422**	**.000ᵇ**
	Residual	107.665	365	.295		
	Total	177.776	369			

ANOVA is a statistical tool for determining how different the means of more than two samples are. It is a hypothesis test based on parameters. Based on table 25 shows the overall result indicating that the F-test value is 59.422 with a significant level of 0.000. Furthermore, the result shows that the independent variable of Security, Product Quality, Reliability, and Responsiveness has a significant

relationship with Customer Satisfaction among UTeM students as the p-value is less than 0.05 (p<0.05).

Table 26: Coefficients^a

Source: SPSS Output

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.434	.310		1.440	.163
	Security	.215	.050	.198	4.313	.000
	Product Quality	.029	.050	.024	.580	.563
	Reliability	.160	.053	.131	3.001	.003
	Responsiveness	.465	.048	.455	9.735	.000
a. Dependent Variable: Customer Satisfaction						

Based on table 26, the result shows that the independent variable of Responsiveness is the stronger predictor which has the value β =0.465, t(370)=9.735, p<0.05(0.000). The reason why is due to the unstandardized beta, β of Responsiveness has the highest positive value as well as the highest influence of significant relationship on the dependent variable which is customer satisfaction.

The second stronger predictor which is security has the value β =0.215, t (370) =4.313 p<0.05(0.000). The reason why is due to the unstandardized beta, β of Security has the second highest positive value as well as the second highest influence of significant relationship on the dependent variable which is customer satisfaction. Next, the third stronger predictor which has the value β =0.160, t (370) =3.001, p<0.05(0.000). The reason why is due to the unstandardized beta, β of Reliability has the second lowest positive value as well as the highest influence of significant relationship on the dependent variable which is customer satisfaction.

Lastly, the lowest strongest predictor is belonging to Product Quality which has the value $\beta = 0.290$, t (370) $= 0.580$, p>0.05(0.000). The reason why is due to the unstandardized beta, β of Product Quality has no significant relationship in customer satisfaction among UTeM students.

Based on the following multiple regression equation, the relationship between the independent variables and dependent variables can be determined. The equation of multiple regression analysis is as follows:

$$Y = a + bX_1 + cX_2 + dX_3 + eX_4$$

$Y = 0.434 \text{ (Constant)} + 0.215 \text{ (S) } X_1 + 0.029(PQ)X_2 + 0.16(R)X_3 + 0.465(REP)X_4$

Based on the equation above, there is a positive relationship between Security (S), Product Quality (PQ), Reliability(R), and Responsiveness (REP) on customer satisfaction. Thus, the regression equation is developed to demonstrate how the variables are associated with each other.

4.7 Hypotheses Testing

Hypotheses 1

H0: There is a negative relationship between security and customer satisfaction.
H1: There is a positive relationship between security and customer satisfaction.

Based on Table 4.21, security has a significant value of 0.000, p<0.05 (0.000) Therefore, security is a significant relationship with customer satisfaction among UTeM students. Hence, the hypotheses of H1 are accepted.

Hypotheses 2

H0: There is a negative relationship between product quality and customer satisfaction.
H2: There is a positive relationship between product quality and customer satisfaction.

Based on Table 4.21, product quality has a significant value of 0.563, p>0.05. Therefore, product quality is not significant relationship with customer satisfaction among UTeM students. Hence, the hypotheses of H2 are not accepted.

Hypotheses 3

H0: There is a negative relationship between reliability and customer satisfaction.
H3: There is a positive relationship between reliability and customer satisfaction.

Based on Table 4.21, reliability has a significant value of 0.003, p<0.05 (0.000) Therefore, reliability is a significant relationship with customer satisfaction among UTeM students. Hence, the hypotheses of H3 are accepted.

Hypotheses 4

H0: There is a negative relationship between reliability and customer satisfaction.
H4: There is a positive relationship between reliability and customer satisfaction.

Based on Table 4.21, responsiveness has a significant value of 0.000, p<0.05 (0.000) Therefore, responsiveness is a significant relationship with customer satisfaction among UTeM students. Hence, the hypotheses of H4 are accepted.

4.8 Summary

In summary, this chapter is covering the data analysis which is collected from 370 UTeM students through Google Forms. There have four types of analysis which are the Reliability test, Descriptive statistics analysis, Pearson's correlation coefficient analysis, and Multiple regression analysis by using IBM software 27.0 version. The researcher can determine the relationship between the independent and dependent variables after analyzing the obtained data. The theory has then been tested in this chapter. Finally, additional debate and research will take place in the following chapter which is Chapter 5.

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The findings of this investigation are reviewed and discussed in this chapter. All the topics of study objectives, literature review, and research methodology were skim-read in this part. A discussion on the study was then had after that. The test results and data analysis findings are introduced in this chapter. The results of this study's ramifications are then examined. There are several suggestions for additional research that come after this. Finally, the thesis's conclusion follows.

5.2 Justification of Research Objective

The discussion is based on the research objective of this study. There are four research objectives are included in this study which is to analyze the relationship between security and customer satisfaction on e-commerce, to determine the relationship between product quality and customer satisfaction on e-commerce, to investigate the relationship between reliability and customer satisfaction on e-commerce, and to identify the relationship between responsiveness and customer satisfaction on e-commerce. Based on the results of the data analysis, the researcher will respond to each of the research objectives.

5.2.1 Research Objective 1: To analyze the relationship between security and customer satisfaction on e-commerce

The first research objective was to explore the relationship between security and customer satisfaction among UTeM students. Based on table 4.21 which is the

Coefficient, security has the second highest positive value as well as the highest influence of positive relationship among UTeM students which is 4.313 which is p<0.05(0.000). Furthermore, the study stated that security has a strong relationship with customer satisfaction among UTeM students.

This study agrees with the previous one which is the outcome was consistent with the finding that consumers cannot trust and rely on online buying due to concerns over personal privacy and the online payment system. The results were further supported by the discovery that, in addition to information quality, payment systems, delivery, and customer service, security was one of the five antecedents that determine consumer happiness (Kevin Chai, 2018).

Other than that, investigates the connection between customer happiness with online purchases and security. Consumers worry about the website's security, liability, and privacy. Additionally, one of the most important aspects that affect security is trust because customers making an online purchase must have confidence in the company before completing the transaction. It was noted that the greatest barrier to consumer engagement in e-commerce and one of the main challenges to the acceptance of internet transactions was the absence of consumer trust online. Therefore, based on earlier research by Sarita Ibrahim (2019), this study reaffirmed that security and customer satisfaction have a distinct and important link.

5.2.2 Research Objective 2: To determine the relationship between product quality and customer satisfaction on e-commerce

The second research objective was to determine the relationship between product quality and customer satisfaction among UTeM students. Referring to table Pearson Correlation Coefficient Analysis which table 4.21, product quality has no relationship with customer satisfaction because product quality recorded a lower correlation among UTeM students. This is because the p-value in the table Coefficient of the product quality is p>0.05(0.563).

Other than that, online shoppers has a harder time making informed decisions because they can't view the products in person before buying them (Katawetawaraks

and Wang, 2011; Al-Debei et al., 2015) pick a product to buy. In addition, people are wary of making purchases on the internet since they cannot check and feel the goods to determine their quality before making a purchase. This is especially true for clothing and footwear. (Katawetawaraks and Wang, 2011; Comegys et al., 2009)

According to research conducted by Alam and Elaasi (2016), consumers' first concern when shopping online is the reliability of the products they plan to buy. Furthermore, there have been reports of buyers receiving counterfeit and imitation goods in their orders (Jun and Jaafar, 2011). Online shoppers are wary of retailers who sell low-quality goods. The most common reason people don't buy anything online is that they don't trust the online store (Lee and Turban, 2001).

5.2.3 Research Objective 3: To investigate the relationship between reliability and customer satisfaction on e-commerce

The third research objective was to investigate the relationship between reliability and customer satisfaction. SPSS software is used to analyze it. Focusing on the correlation value allows us to examine the connection between these two variables. Firstly, based on the Coefficients of reliability, the p-value is $p<0.005(0.003)$ and the t is 3.001 considered third higher in the Coefficients and this is acceptable. This study agrees with the previous ones which are increased reliability and improved customer satisfaction. This is evident from the study of the three parameters. Compared with service accuracy and promised service, the third indicator is the credible information with the greatest value, indicating that the indication of promised service is the indicator that most affects consumer pleasure. This shows that if the company can deliver the promised service in a better, more accurate, and more trustworthy manner, the customer's psychological state will be positively affected, resulting in a higher evaluation of the company's products. Consistent with the findings of Martini et al. (2018) and Albayrak et al. (2010), found that reliability affects customer satisfaction.

Previous research investigated the connection between trustworthiness and online shopping satisfaction. Customer questions like whether they were happy with the service they received online. Authors Parasuraman et al (2005) Online stores'

interface with the Web makes the manageable quality of Web services especially crucial. Kateranttanakul (2002) stated that customers' contentment and propensity to shop online are affected by the trustworthiness of the information provided on websites.

Based on the previous study, in online purchasing the reliability component is a strong determinant of total service quality, customer happiness, and purchase intentions. Other research has discovered that reliability is an effective predictor of the quality of web-based services (Kuo, 2003; Wolfinbarger and Gilly, 2003). To improve consumer happiness and purchase intentions, online retailers can begin enhancing reliability aspects such as the ability to deliver products as promised, provide up-to-date and correct information, and ensure the security of online transactions.

5.2.4 Research Objective 4: To identify the relationship between responsiveness and customer satisfaction on e-commerce

The fourth research objective was to identify the relationship between responsiveness and customer satisfaction among UTeM students. Referred to table 4.21, the t for the responsiveness was recorded as the highest which is 9.735 and the p-value is $p<0.005(0.000)$. other than that, Responsiveness achieves the highest excellent correlation with Cronbach's Alpha value of 0.757. Furthermore, the study stated that responsiveness has a strong relationship with customer satisfaction among UTeM students. This study agrees with the previous ones which are for online stores, responsiveness has a minor impact on overall service quality and customer satisfaction. This finding could be explained by the fact that customers expect high responsiveness from prompt product delivery but may tolerate slower financial transactions if they are more secure (van Riel et al., 2001)

This study agrees with previous ones such as that a positive correlation between responsiveness and customer satisfaction shown by Saad Andaleeb and Conway (2006). This indicates that the satisfaction of customers is positively correlated with the degree to which a company's staff is responsive. Other than that,

according to Siddiqi (2011), one facet of service quality that might affect customer satisfaction is how quickly problems are resolved.

As in previous research stated that online shoppers count on speedy responses to their questions and concerns (Liao and Cheung, 2002). How quickly and willingly an online store addresses consumer concerns is a measure of its responsiveness (Parasuraman et al., 1988; Yang, 2001; Kim and Lee, 2002). This includes responding to questions, retrieving data, and navigating the site.

5.3 Implication of the study

This study built on the positive relationship between customer satisfaction and security, reliability, and responsiveness in e-commerce by focusing on these three factors. With this study, we can learn more about the fastest-growing sector of the economy. The study's findings can be used as a blueprint by businesses interested in boosting their online sales and customer satisfaction. Every business needs to consider the four elements that have an impact on customer satisfaction and use that information to inform their future decisions.

Further elucidating the connection between e-commerce quality elements and customer satisfaction could be accomplished by other researchers using different samples, and these findings could point them in the right direction (Subrahmanyam, 2016). Furthermore, this study is adaptable and can be replicated in other countries because customer satisfaction is a global phenomenon.

When it comes to surveys of customers' impressions of the value they receive from online merchants, we have some interesting findings to maintaining current customers while also drawing in new ones should become a top priority. Because of this, can give the e-commerce customers peace of mind that they'll receive satisfactory service.

5.4 Recommendation for Future Research

People prefer to shop online because it allows them to save time and because there is a greater variety of goods available. With this data, we can pick the most appropriate scale for the final exam. Investigating categories of components, such as those with a social impact that aren't typically found in the literature of this field, necessitated the incorporation of new classes of variables and characteristics. A time series analysis of consumer tastes over multiple decades would be fascinating. The connection between service quality and customer purchase behavior in online shopping contexts can be studied further in the future using a variety of research methods, including longitudinal studies, focus groups, and interviews.

The findings of this study, which show that hypotheses 1, 3, and 4 have a significant relationship and hypothesis that hypothesis 2 does not, bolster previous research that found that security, product quality, reliability, and responsiveness were important criteria in determining customer satisfaction in an online purchase.

5.5 Summary

Finally, the purpose of this research is to have a deeper knowledge of the aspects of quality of online shopping on customer satisfaction. Three of the four objectives of this research have been met. The first goal of this research is to examine the relationship between security and customer satisfaction using hypotheses. For aim 2, the researcher discovered that there is a relationship between reliability and consumer satisfaction in this research. The third objective of this research is to determine the relationship between responsiveness and customer satisfaction. Furthermore, the researcher made several suggestions for future investigation. The findings of this study may benefit society because they can be used as a reference for prospective researchers who intend to do additional research in this field.

REFERENCES

Ahuja, V., Akhtar, A., & Wali, O. P. (2019). Development of a comprehensive model of social entrepreneurial intention formation using a quality tool. *Journal of Global Entrepreneurship Research*, *9*(1). https://doi.org/10.1186/s40497-019-0164-4

Akram, U., Hui, P., Khan, M. K., Yan, C., & Akram, Z. (2018). Factors affecting online impulse buying: Evidence from Chinese social commerce environment. *Sustainability (Switzerland)*, *10*(2). https://doi.org/10.3390/su10020352

Al Karim, R. (2013). Customer Satisfaction in Online Shopping: a study into the reasons for motivations and inhibitions. *IOSR Journal of Business and Management*, *11*(6), 13–20. https://doi.org/10.9790/487x-1161320

Ali, N. I., Samsuri, S., Brohi, I. A., Soomro, A. B., Soomro, S., & Shah, A. (2018). Preliminary study on factors affecting e-commerce success: A modified Delone and McLean model. *Proceedings - International Conference on Information and Communication Technology for the Muslim World 2018, ICT4M 2018*, *July*, 120–125. https://doi.org/10.1109/ICT4M.2018.00031

Al-Jahwari, N. S., Khan, M. F. R., Al Kalbani, G. K., & Al Khansouri, S. S. (2018). Factors influencing customer satisfaction of online shopping in Oman – Youth perspective. *Humanities and Social Sciences Reviews*, *6*(2), 64–73. https://doi.org/10.18510/hssr.2018.628

Annisa, D. N., Tentama, F., & Bashori, K. (2021). The role of family support and internal locus of control in entrepreneurial intention of vocational high school students. *International Journal of Evaluation and Research in Education*, *10*(2), 381–388. https://doi.org/10.11591/ijere.v10i2.20934

Bădîrcea, R. M., Manta, A. G., Florea, N. M., Popescu, J., Manta, F. L., & Puiu, S. (2022). E-commerce and the factors affecting its development in the age of digital technology: Empirical evidence at EU–27 level. *Sustainability (Switzerland)*, *14*(1), 1–17. https://doi.org/10.3390/su14010101

Battin, P. (1987). The electronic library. *Collection Management*, *9*(2–3), 133–141. https://doi.org/10.1300/J105v09n02_12

Bezos, J., & Online, A. (2021). *Malaysians are by no means ready to abandon their legacy shopping malls , but a slowly growing e- commerce industry in the country was shoved headlong into the major leagues by the Covid-19 pandemic , and big players Lazada and Shopee are now increasingly.*

Bhatt, A. K., & Bhanawat, D. S. (2016). *Measuring Customer Satisfaction Using ServQual Model – An Empirical Study. 3*(1).

Biglu, M., Nateqv, F., Ghojazadeh, M., & Asgharzadeh, A. (2017). Communication Skills of Physicians and Patients' Satisfaction. *Materia Socio Medica*, *29*(3), 192. https://doi.org/10.5455/msm.2017.29.192-195

Botha, B. (2019). *Online Service Quality and its Influence on Customer Satisfaction : A Descriptive Study*.

Cardella, G. M., Hernández-Sánchez, B. R., & Sánchez García, J. C. (2020). Entrepreneurship and Family Role: A Systematic Review of a Growing Research. *Frontiers in Psychology*, *10*(January), 1–17. https://doi.org/10.3389/fpsyg.2019.02939

Chai et al. (2018). *Factor Influencing Consumer Satisfaction In Online Shopping*. *August*, 1–187. http://eprints.utar.edu.my/3078/1/fyp_BA_2018_CKYS.pdf

Chen, L., & Yang, X. (2019). Using EPPM to Evaluate the Effectiveness of Fear Appeal Messages Across Different Media Outlets to Increase the Intention of Breast Self-Examination Among Chinese Women. *Health Communication*, *34*(11), 1369–1376. https://doi.org/10.1080/10410236.2018.1493416

Gajewska, T., Zimon, D., Kaczor, G., & Madzík, P. (2020). The impact of the level of customer satisfaction on the quality of e-commerce services. *International Journal of Productivity and Performance Management*, *69*(4), 666–684. https://doi.org/10.1108/IJPPM-01-2019-0018

Gureva, M. A., Litvinenko, I. L., Shichiyakh, R. A., Kolpak, E. P., & Novoselova, N. N. (2016). Cluster-management as a technology for increasing the efficiency of territory resource exploitation in a region. *International Journal of Economics and Financial Issues*, *6*(8Special Issue), 143–147.

How does e-commerce work ? (2020).

Ibrahim, S., Raihan, M. E., Rose, R. M., Lumat, Y., & Ismail, N. L. (2019). Customer satisfaction towards online shopping in Klang Valley. *International Journal of Innovation, Creativity and Change*, *6*(4), 243–257. https://doi.org/10.3126/pragya.v7i1.35115

iSALT Team. (2014). Cornerstone : A Collection of Theory of Planned Behavior. *ISALT Resources: Theories, Concepts, and Measures*, 1–4. https://cornerstone.lib.mnsu.edu/cgi/viewcontent.cgi?article=1000&context=isalt_res ources#:~:text=What is Theory of Planned Behavior%3F&text=It posits that individual behavior,control (Ajzen%2C 1991).

Kabango, C. M., & Asa, A. R. (2015). Factors influencing e - commerce development : implications for the developing countries Factors influencing e - commerce development : implications for the developing countries 2 . UNDERSTANDING THE CONCEPT OF E - COMMERCE. *International Journal of Innovation and Economic Development*, *1*(1), 64–72.

Kualitas, P., Dan, P., Pengiriman, J., Kepuasan, T., Di, O., & Indonesia, Z. (n.d.). *THE EFFECT OF PRODUCT QUALITY AND DELIVERY SERVICE ON ONLINE-CUSTOMER SATISFACTION IN ZALORA INDONESIA*. *4*(1), 1189–1199.

Lee, G. G., & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail and Distribution Management*, *33*(2), 161–176. https://doi.org/10.1108/09590550510581485

Lim, K. B., Sook Fern, Y., & A/l Bhajan Singh, H. S. K. (2021). The Study of Customer Satisfaction of Shopee Customers In Malaysia. *International Journal of Entrepreneurship, Business and Creative Economy*, *1*(2), 30–44. https://doi.org/10.31098/ijebce.v1i2.602

Mahmud, S. M. H., Kabir, M. A., Salem, O. A. M., & Fernand, K. N. G. (2017). The comparative analysis of online shopping information platform's security based on customer satisfaction. *Proceedings of 2016 5th International Conference on Computer Science and Network Technology, ICCSNT 2016*, *2012*, 157–161. https://doi.org/10.1109/ICCSNT.2016.8070139

man, N., Eka J, M. G., & harto, S. (2019). The Effect Of Tangibles, Responsiveness, And Reliability On Customer Satisfaction Of Delivery Services. *International Journal of Economics and Management Studies*, *6*(5), 86–92. https://doi.org/10.14445/23939125/ijems-v6i5p113

Mascarenhas, J. B. (2018). *Customer satisfaction in online shopping - Retail industry*. 1–111.
https://esource.dbs.ie/bitstream/handle/10788/3658/mba_mascarenhas_j_2019.pdf?se quence=1&isAllowed=y

Memon, M. A., Ting, H., Cheah, J.-H., Thurasamy, R., Chuah, F., & Cham, T. H. (2020). Sample Size for Survey Research: Review and Recommendations. *Journal of Applied Structural Equation Modeling*, *4*(2), i–xx. https://doi.org/10.47263/jasem.4(2)01

Moussa, N. Ben, & Kerkeni, S. (2021). The role of family environment in developing the entrepreneurial intention of young Tunisian students. *Entrepreneurial Business and Economics Review*, *9*(1), 31–45. https://doi.org/10.15678/EBER.2021.090102

No Title. (n.d.).

Omran, M. G. H., Engelbrecht, A. P., & Salman, A. (2007). An overview of clustering methods. *Intelligent Data Analysis*, *11*(6), 583–605. https://doi.org/10.3233/ida-2007-11602

Pangeiko Nautwima, J., & Romeo Asa, A. (2022). The Impact of Quality Service on Customer Satisfaction in the Banking Sector amidst Covid-19 Pandemic: A Literature Review for the State of Current Knowledge. *The International Journal of Management Science and Business Administration*, *8*(3), 31–38. https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.83.1004

Rita, P., Oliveira, T., & Farisa, A. (2019). The impact of e-service quality and customer satisfaction on customer behavior in online shopping. *Heliyon*, *5*(10), e02690. https://doi.org/10.1016/j.heliyon.2019.e02690

Roslan, A., Tun, U., Onn, H., Nor, N. M., Wahab, E., Tun, U., & Onn, H. (2015). *Service Quality : A Case Study Using SERVQUAL Model*. *June*. https://doi.org/10.1166/asl.2015.6243

Sasono, I., Jubaedi, A. D., Novitasari, D., Wiyono, N., Riyanto, R., Oktabrianto, O., Jainuri, J., & Waruwu, H. (2021). The Impact of E-Service Quality and Satisfaction on Customer Loyalty: Empirical Evidence from Internet Banking Users in Indonesia. *Journal of Asian Finance, Economics and Business*, *8*(4), 465–473. https://doi.org/10.13106/jafeb.2021.vol8.no4.0465

Smith, A. A., Synowka, D. P., & Smith, A. D. (2014). E-commerce quality and adoptive elements of e-ticketing for entertainment and sporting events. *International Journal of Business Information Systems*, *15*(4), 450–487. https://doi.org/10.1504/IJBIS.2014.060397

Susanti, F. (2021). The Effect of Service Quality on Customer Satisfaction and Trust in Using Tokopedia Services. *Conference Series*, *3*(1), 241–255. https://adi-journal.org/index.php/conferenceseries/article/view/364

Tran, V. D. (2020). The relationship among product risk, perceived satisfaction and purchase intentions for online shopping. *Journal of Asian Finance, Economics and Business*, *7*(6), 221–231. https://doi.org/10.13106/JAFEB.2020.VOL7.NO6.221

Tzavlopoulos, I., Gotzamani, K., Andronikidis, A., & Vassiliadis, C. (2019). Determining the impact of e-commerce quality on customers' perceived risk, satisfaction, value and loyalty. *International Journal of Quality and Service Sciences*, *11*(4), 576–587. https://doi.org/10.1108/IJQSS-03-2019-0047

Wiani, A., Ahman, E., & Machmud, A. (2018). Effect of Family Environment on Interest in Entrepreneurship. *Jurnal Kajian Pendidikan Ekonomi Dan Ilmu Ekonomi*, *2*(2), 122–132.

Zhang, K. (2018). Theory of Planned Behavior:Origins, Development and Future Direction. *International Journal of Humanities and Social Science Invention (IJHSSI)*, *7*(5), 76–83. www.ijhssi.org

APPENDIX A
(Gantt Chart)

GANNT CHART – PSM 1

Task	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Briefing about PSM	▓															
First Meeting Supervisor		▓														
Topic Discussionand Confirmation			▓	▓												
Read Journals and Articles				▓	▓											
Forming Theoretical, Research Framework and objective						▓										
Chapter 1 Introduction							▓									
Revised Introduction to Supervisor								▓								
Chapter 2Literature review								▓								
Revised LR to Supervisor										▓						
Chapter 3 Methodology Research										▓	▓					
Revised Methodology with supervisor												▓				
Submission FYP												▓	▓			
FYP1 Presentation													▓	▓		
Revised of FYP 1														▓	▓	▓

GANTT CHART – PSM 2

Task	Sembreak (07-10'22)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		Week															
Create questionnaire	■																
Do correction for questionnaire	■																
Proceed to collect data for pilot test	■																
Done collect data for pilot test		■															
Analyze pilot test data by using SPSS			■														
Briefing about PSM II				■													
Collect questionnaire data from respondent					■	■	■										
Chapter 4: Data Analysis							■	■									
Amendment for Chapter 4								■									
Chapter 5: Discussion, Conclusion and Recommendation									■	■	■						
Amendment for Chapter 5											■	■					
FYP Report Checking												■	■				
Prepare presentation slides													■	■			
Final checking & revise FYP report														■	■	■	
Submission Final Report FYP																	■

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APPENDIX B

(Questionnaire)

SECTION A: DEMOGRAPHIC INFORMATION OF RESPONDENT

This section lists several personal information about participants. Please tick (/) the appropriate answer in the provided space.

1. Gender

Male ☐

Female ☐

2. Age

18-20 ☐

21-23 ☐

24-26 ☐

27 and above ☐

3. Ethnic

Malay ☐

Chinese ☐

Indian ☐

4. How often do you purchase online?

Everyday ☐

Weekly ☐

Monthly ☐

Once within several months ☐

SECTION B: THE FACTORS THAT INFLUENCE E-COMMERCE QUALITY ELEMENTS ON THE SATISFACTION OF ONLINE SHOPPING AMONG UTEM STUDENTS.

This section reflects your views on the factors that influence e-commerce quality elements on the satisfaction of online shopping among UTeM students. Please provide as much information as you can honestly and objectively. Use the scales provided to express your agreement or disagreement with each statement.

Please tick (/) your answer in the appropriate blank to demonstrate your agreement with each statement using the following 5-point interval scale:
1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree
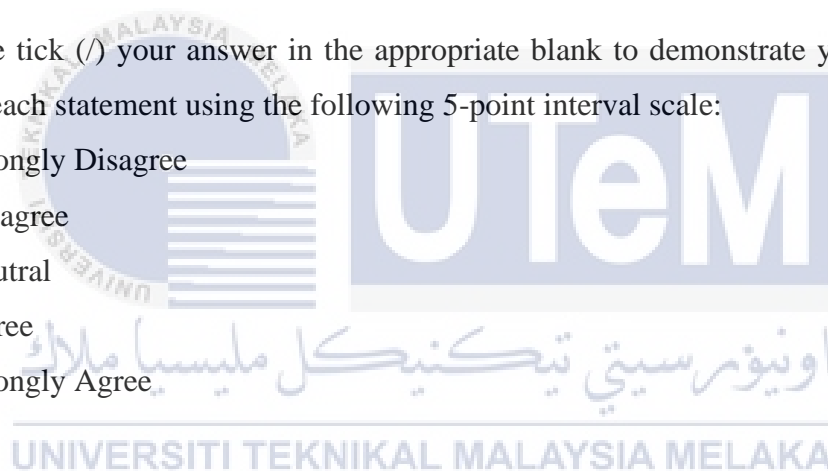
Part A- Security

Security is the impression of danger when it comes to internet security has been identified as a source of concern for both experienced and new Internet users.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Buyers' transactions, personal information, and financial security can all be protected through e-commerce.					
2.	E-commerce had clear sales rules, such as complaint and return policies.					
3.	E-commerce is risky.					
4.	System guards are sufficient.					
5.	E-commerce has its own safe payment system.					
6.	Will not share their credit card information lightly.					

Part B- Product Quality

Product quality is defined as "the features of a product or service that bear on its capacity to meet stated or implicit consumer demands."

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Products purchased online are of higher quality.					
2.	When buyers received the actual product, the product descriptions on e-commerce were accurate.					
3.	The product performed as well as buyers anticipated.					
4.	High-quality products reduce customer complaints and returns.					
5.	Product reviews of sellers will determine whether to make a purchase.					

Part C- Reliability

Site display and dependability are the most critical elements that influence online buying.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	E-commerce fulfils its promise to do certain things by a certain time					
2.	E-commerce demonstrates a genuine interest in resolving customer issues.					
3.	E-commerce creates a good impression.					
4.	The reliability of e-commerce gives customers confidence in the authenticity of products.					
5.	To expedite the shipping, e-commerce can provide dependable and skilled express, online shopping, and courier services.					

Part D- Responsiveness

Responsiveness specifies how frequently an online retailer willingly delivers services that are crucial to its clients, such as customer inquiries, information retrieval, and navigation speed.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	E-commerce provides quick service.					
2.	E-commerce is eager to assist customers.					
3.	Customer service in e-commerce can help customers solve problems.					
4.	Responsive website design provides a pleasant user experience that meets or exceeds customer expectations.					
5.	E-commerce has a clear division of labor and rules and regulations to protect the legitimate rights and interests of operators and consumers and promote the healthy and sustainable development of e-commerce.					

SECTION C: Dependent Variables- Customer Satisfaction

This section reflects your views on the satisfaction of online shopping among UTeM students. Please provide as much information as you can honestly and objectively. Use the scales provided to express your agreement or disagreement with each statement.

Please tick (/) your answer in the appropriate blank to demonstrate your agreement with each statement using the following 5-point interval scale:

1. Strongly Disagree

2. Disagree

3. Neutral

4. Agree

5. Strongly Agree

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Satisfied with e-commerce purchases.					
2.	Will share information about e-commerce sites with others.					
3.	Recommendation to others.					
4.	Will be pleased with the online shopping experience.					
5.	E-commerce can meet the needs of customers.					

END OF QUESTIONS

THANK YOU FOR YOUR PARTICIPATION.