

**THE FACTORS AFFECTING THE SUCCESS OF E-LOGISTIC ON  
CUSTOMER PERCEPTION IN MALAYSIA**




**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

**JANUARY 2023**


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### DECLARATION

I hereby declare that the work has been done myself and no portion of the work in this research project proposal has been submitted in support of any application for any other degree or qualification of this or any other university or institute of learning.

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: 25 OF JANUARY 2023

### **DEDICATION**

I would like to dedicate this research to my beloved parents who have raised me up, siblings, companion in love who always give encouragement and guidance through my journey to complete study. On the other hand, I would like to thank Dr. Siti Norbaya binti Yahaya who guide me all the way to complete my thesis.

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## ABSTRACT

E-commerce in Malaysia was steady but counter various problems in the logistics industry. Malaysia lacks in terms of logistics industry compared to developing countries such as China, Vietnam, and India. The problem lack of availability of modern logistics facility and technology adoption will make dissatisfaction higher among the customers. The use of e-logistics on organization provides benefit such as increase customer response, enhance efficiency, and reduce cost. E-logistic can describe as a data, hardware, software, and information rules-based system that automates logistics processes like fulfilments, warehousing, and transportation of goods while also providing data integration, visibility, optimization, and data tracking of supply chain management from beginning to end. In this research, the researcher intended to study on factors affecting the success of e-logistic. The factors such as customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality. Furthermore, descriptive and explanatory studies are applied in this study. This study conducted using quantitative method. Primary data will obtain using survey by distributing questionnaire to the public who experience using e-logistic. Besides, probability sampling will be applied for selecting 384 respondents. Pilot test, reliability analysis will be done to ensure the consistency of the data. In addition, the results obtained from respondents will be analyzed using Statistical Package for Social Sciences (SPSS). Descriptive statistics, Pearson's correlation coefficient and multiple regression analysis are used to test hypothesis developed by the researcher. From the result, customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality has significant factor affecting the success of e-logistic. While the most significant factor to the success of e-logistic based on the result is flexibility of e-logistic. In future research, the researchers can use the proposed new conceptual framework to carry out the study or add other variables for the study.

**Keywords:** e-commerce, logistic, e-logistic, supply chain

## ABSTRAK

*E-dagang di Malaysia stabil tetapi hadapi pelbagai masalah dalam industri logistik. Malaysia kekurangan dari industri logistik berbanding negara membangun seperti China, Vietnam, dan India. Antara masalah ini, kekurangan kemudahan logistik moden dan penggunaan teknologi mendorong rasa tidak puas hati lebih tinggi di kalangan pelanggan. Penggunaan e-logistik pada organisasi memberi manfaat iaitu meningkatkan tindakbalas pelanggan, meningkatkan kecekapan, dan mengurangkan kos. E-logistik menerangkan sebagai sistem berasaskan peraturan data, perkakasan, perisian dan maklumat yang mengautomasikan proses logistik seperti pemenuhan, pergudangan dan pengangkutan barangan sambil turut menyediakan penyepaduan data, keterlihatan, pengoptimuman dan penjejakan data pengurusan rantai bekalan dari awal hingga akhir. Dalam penyelidikan ini, pengkaji berhasrat untuk mengkaji faktor yang mempengaruhi kejayaan e-logistik. Faktor antaranya kepuasan pelanggan, infrastruktur teknologi, fleksibiliti e-logistik dan kualiti perkhidmatan kakitangan. Seterusnya, kajian deskriptif dan penerangan digunakan dalam kajian ini. Kajian ini dijalankan menggunakan kaedah kuantitatif. Data primer diperoleh dari tinjauan dengan mengedarkan borang soal selidik kepada mereka yang menggunakan e-logistik. Selain itu, persampelan kebarangkalian akan digunakan untuk 384 responden. Ujian rintis, analisis kebolehpercayaan dilakukan bagi memastikan ketekalan data. Selain itu, keputusan yang diperoleh daripada responden akan dianalisis menggunakan Statiscal Package for Social Sciences (SPSS). Statistik deskriptif, pekali korelasi Pearson dan analisis regresi berganda digunakan untuk menguji hipotesis yang dibuat oleh penyelidik. Daripada hasilnya, kepuasan pelanggan, infrastruktur teknologi fleksibiliti e-logistik. Dan kualiti perkhidmatan kakitangan adalah faktor penting dalam mempengaruhi kejayaan e-logistik. Manakala faktor yang paling ketara kepada kejayaan e-logistik adalah fleksibiliti e-logistik. Dalam kajian datang, penyelidik boleh merangka kerja konsep baru yang dicadangkan untuk kajian atau menambah pembolehubah lain untuk kajian.*

*Kata kunci: E-dagang, logistik, e-logistik, rantai bekalan*

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## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

This chapter explained regarding the introduction of the research. The introduction of research analyses about the background of the study, problem statement, research objectives, research questions, scope and limitations of the study, and significance of the research.

#### 1.2 Research Flow





### 1.3 Background of Study

Coronavirus has transformed the nature of business and has affected global e-commerce. According to studies, 52 % avoid going to physical stores and congested places. Furthermore, 36% said they won't go shopping until they obtain the coronavirus vaccine. Coronavirus has varying effects on different types of items, which implies that COVID-19 has a large influence on certain products and a low impact on others (Andrienko, 2020). Because of this illness, individuals are avoiding going out, keeping social distance, and shopping and working from home, such as Walmart supermarket e-commerce, which has increased by 74% (Nakhate & Jain, 2020; Whiteford, 2020).

Nowadays, technological advancement going smoothly and used almost all over the country in this 21<sup>st</sup> century. More company transformed their business by practice the use of e-commerce since it is a platform to develop the company. The utilization of e-commerce in logistic sector and supply chain are essential for operation process (Wang, 2006). This is because the use of e-logistics on organization provides benefit including increase customer response, enhance efficiency, and reduce cost (Molla, 2005). Logistics and e-logistic are different in terms of their explanation whereby logistics describe as the total handling how resources are bought, stored, and transported to their eventual destination (Kenton, 2022) while e-logistic is the managing of an organization's physical flows when it sells things on the internet such as website, marketplace.

Item	Traditional logistics	E-logistics
Shipment type	Bulk	Parcel
Customer	Strategic	Unknown
Customer service	Reactive, Rigid	Responsive, flexible
Distribution model	Supply-driven push	Demand-driven pull
Inventory/order flow	Unidirectional	Bidirectional
Destinations	Concentrated	Highly dispersed
Demand	Stable, consistent	Highly seasonal, fragmented
Orders	Predictable	Variable

**Table 1.3: The different between logistic and e-logistic (Georgise, 2020)**

Next, consumption of information technology very encouraging within logistic company due to current circumstances that is pandemic Covid-19 which is contagious to people whereby can lead to death (Hashim, Adman, Hashim, Mohd Radi, & Kwan, 2021). Many companies running work from home during the pandemic to prevent spreading the virus. Hence, the use of technology highly encouraged to all people in order to facilitate the daily life regardless personal or for organization.

To go deeper, the use of e-logistic also have many benefits to e-commerce such as partnership, warehousing, help business function, and inventory management (Miller & Addington, 2022). Besides that, e-logistic can allows company gain competitive advantage and growing to future ahead since it is key important for competitive advantage (Kenyon & Meixell, 2007) and successful in competitive environment.



#### 1.4 Problem Statement

According to (Shamsi and Syed, 2015; Ristovka, Kozuharov&Petkovski, 2017), e-commerce in Malaysia was steady but counter various problems in the logistics industry. Malaysia lacks in terms of logistics industry compared to developing countries such as China, Vietnam, and India (Hameed, 2018; Xiaomin & Yi, 2017). One of the problems issues involved is staff employee service comprising of problems associated with delivery services, communication, distribution of information, courtesy, competence, and understanding of the customers

With the advancement of the focus through e-logistics, more problems occur at Malaysian logistics companies like an insufficient tracking system. This system produces disappointment among customers (Anand & Grover, 2015) besides lessening the level of customer satisfaction and requirements. Hence, it will be prompting to decrease in sales and affects the company's performance. (Osasuyi & Mwakipsile, 2017). Moreover, despite the fact that several security methods have been established to address payment problems, several security problems still remain. In this problem, customers must have faith and confidence in the installation approach provider. We can be misled in some instances. Before making a purchasing decision, it is necessary to check the honesty and reputation of online retailers. (Kanavagalli G., 2019)

The utilization of technology in this today's century may face some problems. In this problem lack of availability of modern logistics facility and technology adoption will make dissatisfaction higher among the customers. The tracking of the essential products, on the other hand, had an impact on the company's performance (Kidane & Sharma, 2016; Shansi & Syed, 2015). Because customers are less likely to buy something through e-logistics because of these issues, and certain logistic providers cannot guarantee the product bought by the customer.

Furthermore, due to inappropriate site design led to the corporate logistic design does not include all the necessary information about the company and the logistics facility, particularly the payment system (Miraz & Habib, 2016). To ensure the success of e-logistic, this study is conducted to identify the success contribute to e-logistic.

### 1.5 Research Objectives

The purpose of the study is to inspect the factors affecting the success of e-logistic on customer perception in Malaysia. The research objectives developed in this study were based on the problem statement above as listed follow:

1. To identify the factors affecting the success of e-logistic on customer perception in Malaysia
2. To evaluate the relationship between the factor to the success of e-logistic on customer perception.
3. To examine the most significant factors to the success of e-logistic on customer perception

### 1.6 Research Questions

The purpose of this study is to respond to the following questions

1. What are the factors affecting the success of e-logistic on customer perception in Malaysia?
2. What is the relationship between the factor to the success of e-logistic on customer perception?
3. What is the most significance factors to the success of e-logistic on customer perception?

### **1.7 Scope and Limitations of Study**

The research is about the factors affecting the success of e-logistic. The scope of this study includes the factors for the success of e-logistic. This research will be held in Malaysia and the respondents will be taken among the people who experience while using e-logistic only. This study shows Malaysia from the side of the interesting advancement as Malaysia one of the rapid growing e-commerce among emerging countries in Asia.

### **1.8 Significance of Study**

From research perspective, this study is anticipated to be essential in terms of factors affecting the success of e-logistic and motivating people who using e-logistic to be conducted in developing countries to decide the similarity of studies conducted. Furthermore, this study comes out with advantages to e-logistic to act as a reference for logistic people to have great level of understanding about e-logistic in Malaysia. As logistic is increasing, this study can identify the factors affecting the success of e-logistic.

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### **1.9 Summary**

This chapter underline the overview of the research study. The researcher has briefly explained the background of study, defined problem statement, research objectives, and research questions of the study. The research objectives and questions are getting from the problem statement. Moreover, the researcher described scope and limitations of study the coverage and restrictions of this study. Finally, significance of study explained by defining the goal of study and benefit of this research.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter examines empirical knowledge on independent and dependent variable of this study. The related literature is explained in terms of customer satisfaction, technology, flexibility of e-logistic and staff service quality. This section come out with background information regarding the conceptual framework developed to evaluate on the relationship between factors affecting the success of e-logistic and e-logistic. In this chapter, hypothesis testing is covered to forecast the anticipated outcome of this study.

#### **2.2 E-logistics**

Before going deeper about the definition of e-commerce logistic, it is necessary to understand the definition of e-commerce and logistic one by one. Referring to Andrew (2021), e-commerce is described as a business model that allows individuals and organizations to involve in the purchase or sale of the goods and services over the internet by using computers, smartphones, tablets, and other devices. In addition, it does not engage logistics and distribution but instead ease connecting sellers and buyers via the internet (Diana M, Pirra M, Woodcock A, 2020). As for logistic, it is a form of retailing by means provides room for investment in logistics components and

initiating logistical activities. Logistic is various and dynamic functions that require it to be flexible and need to change according to some constraints and demands imposed on it and with respect to the environment in which it functions (Schönsleben, P., 2022). Moreover, according to Havenga (2018), logistics is meant to be the main component of the supply chain process which assists to the implementation, planning, controlling the physical flow of goods. It also increases the success and efficiency of the storage of goods.

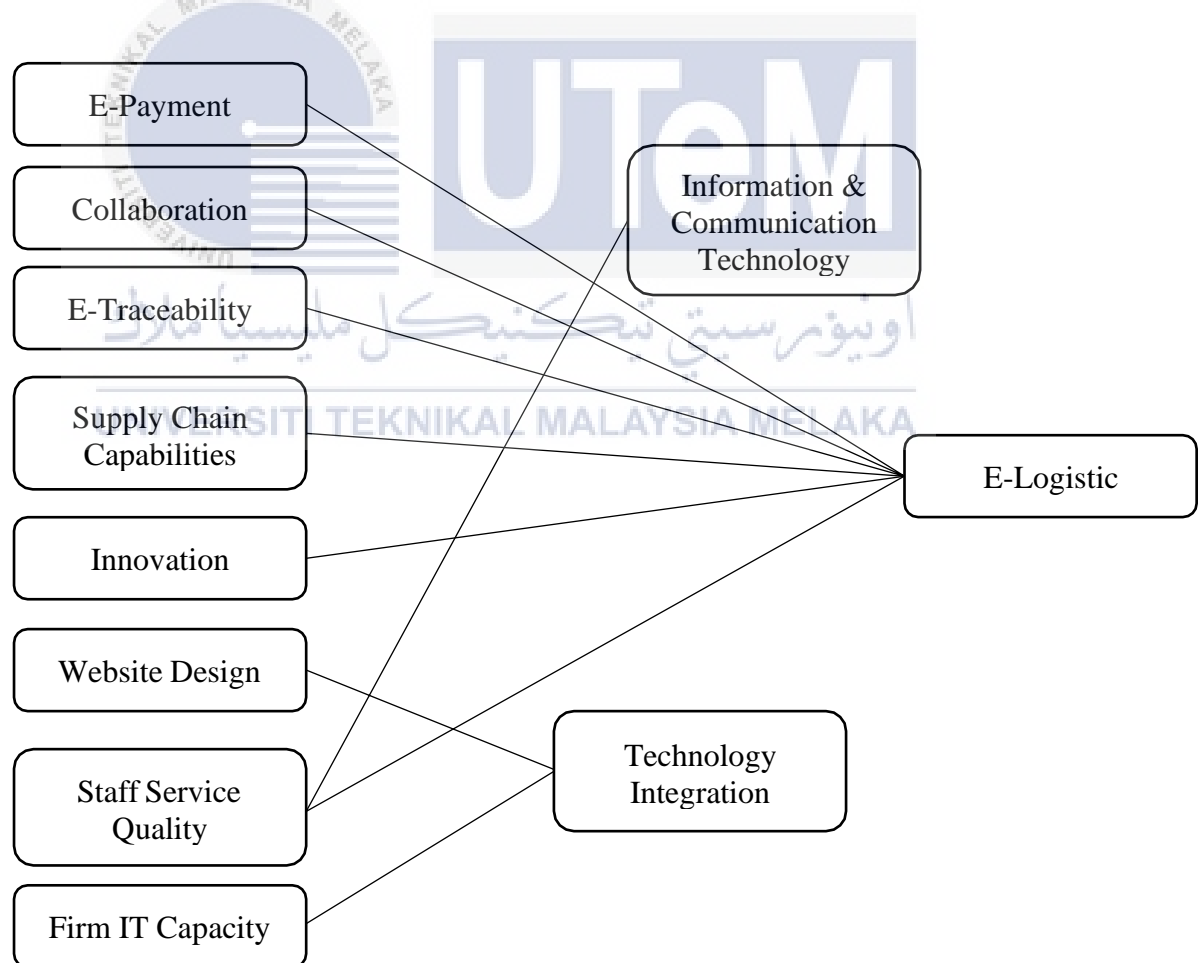
Managing logistics is the more challenging for e-commerce companies. With developments in e-commerce, even logistic industry is viewing innovation and applying technologies supporting to meet the high demand (Lopienski K., 2021). Today, the use of e-commerce allows online buyers to track their consignment from the date of a ship from the factory or warehouse until it delivered to consignee's address (Bhalla P., 2017). Next, before the arrival e-commerce industry, retailers acquired goods either distributors or manufacturers but now they are much online shopping store, the use of intermediaries do not exist whereby leading to offers made directly between suppliers and end users (Fernando J., 2022). The elimination of intermediaries makes e-commerce shipping become vital part of supply chain management besides arise as a particularly specialized service with the most of them being administered by e-commerce companies. In Malaysia, e-commerce boosting because the utilization of the internet and mobile devices besides the outbreak Covid-19 making people buy or selling online more rather than physical buying. At this 21<sup>st</sup> century e-commerce considered as an essential role for people's daily life because it is giving several benefits such as reduce the cost, sell on Global Scale, manage business, and market the business (Kerick, 2019).

The definition of e-logistic or e-commerce logistic can describe as a data, hardware, software, and information rules-based system that automates logistics processes like fulfilments, warehousing, and transportation of goods while also providing data integration, visibility, optimization, and data tracking of supply chain management from beginning to end (Gong, Wei., & Xuan Kan, 2013). It can be summarized as implement the concept of logistics electronically through internet.



**Figure 2.2: The processes of e-logistic (Wang, 2006)**

E-Logistics, according to Coyle (2003), is a system made up of numerous elements, each of which can be run independently. Planning System, Execution System, Research and Intelligence System, Reports and Outputs System are all part of the E-Logistics module. Reduced operational expenses, additional revenue from advertising and marketing, rapid responsiveness to customer requests, and reduced inefficiencies are all advantages of E-Logistics. E-Logistics within an E-Commerce organization will allow them to develop customized logistics process needs estimations (Hwang, 2016).



**Figure 2.2: Framework developed by A.K. MahbubulHye, (2020)**



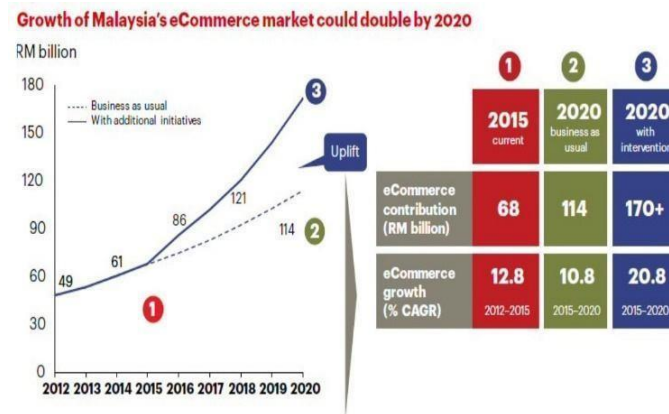
### 2.3 Customer satisfaction factor

The fulfilment response of the consumer is customer satisfaction. It is the customer's assessment of a product or service to determine whether it has satisfied the customer's requirements and expectations (Franklin, 2021). If the product or service meets the customer's requirements and expectations, it is supposed that the customer will be satisfied with it (Oliver, 2014). Customer satisfaction is vital for the success of e-logistic since it engages interaction between the customer and seller (Meidutė-Kavaliauskienė, Aranskis, & Litvinenko, 2014)

Subsequently, it also a tool to enable the company success in future as well as enhance the competitive advantage that generate profits for the company. Furthermore, according to Ogunleye (2013), the view of customer of the service they receive is influenced by the product return experience. When customers not satisfied with a product because it does not achieve their requirements and expectations, the product will be returned, which may cause customer dissatisfaction (Fuchs, 2022). For instances, almost half of Malaysian consumers, or 43%, are dissatisfied with their online shopping experience, citing delivery time, shipping charges, and product pricing as their top three worries (S Birruntha, 2020). As a result, online sellers should consider product returns as a service recovery opportunity. The ability to recover from a service failure is critical. Customers who have experienced service failure are more likely to be loyal to the online shop and repurchase if they are satisfied with the online seller's service recovery efforts (Mazhar, Nadeem, Abbasi, Tariq, Jan & Jaffar, (2022).

During pandemic Covid-19, the growth of e-commerce become increase whereby people loved to buy online purchase instead of physical purchase due to lockdown which people cannot leave the house until further order from governments (Ullah, 2020). At that time, many consumers provide some their expectations about the product either they satisfied or not. Thus, with their feedback about satisfaction, it will assist the seller will fixing if the customer not satisfaction with the product (Szyndlar, 2022). With the data they collected, they would find out the solution for increase the customer satisfaction. When they provide the best customer service, customer must have considered them as the good for handle the problem (Gupta, 2020). Hence, it will be prompting to success in e-commerce.

There are various aspects that have been shown to have an impact on customer satisfaction with a company. It is comprising of reliability, responsiveness, and advertising.



**Figure 2.3: Malaysia E-Commerce Growth (Hafiz, 2020)**

### 2.3.1 Reliability

Reliability can describe as the ability from organization or company to dispatch promised services to customer precisely and trusted (Auka., Bosire, & Matern, 2015). The promised shown is company promised whereby not making the mistakes in delivering the services to customer. The using word of reliability also can describe as the good performance on service, accessible products to be sold, and non-error for transaction (Ambarita, Matondang, & Silalahi, 2019). Additionally, reliability improved customer trust to being a loyal with the goods or services given. In e-logistic, reliability considered as correlated by which utilization of website also can consider as intermediaries between customer and sellers because it is communication medium between them (Hong & Cho ,2011). The instances of reliability in e-logistic are fulfilling the correct request, website works smoothly, always update website, honest about the product in online, personal information secure and safe, not lagging for online transactions and delivering quickly (Pregoner, Opalla, Uy & Palacio ,2020)

### 2.3.2 Responsiveness

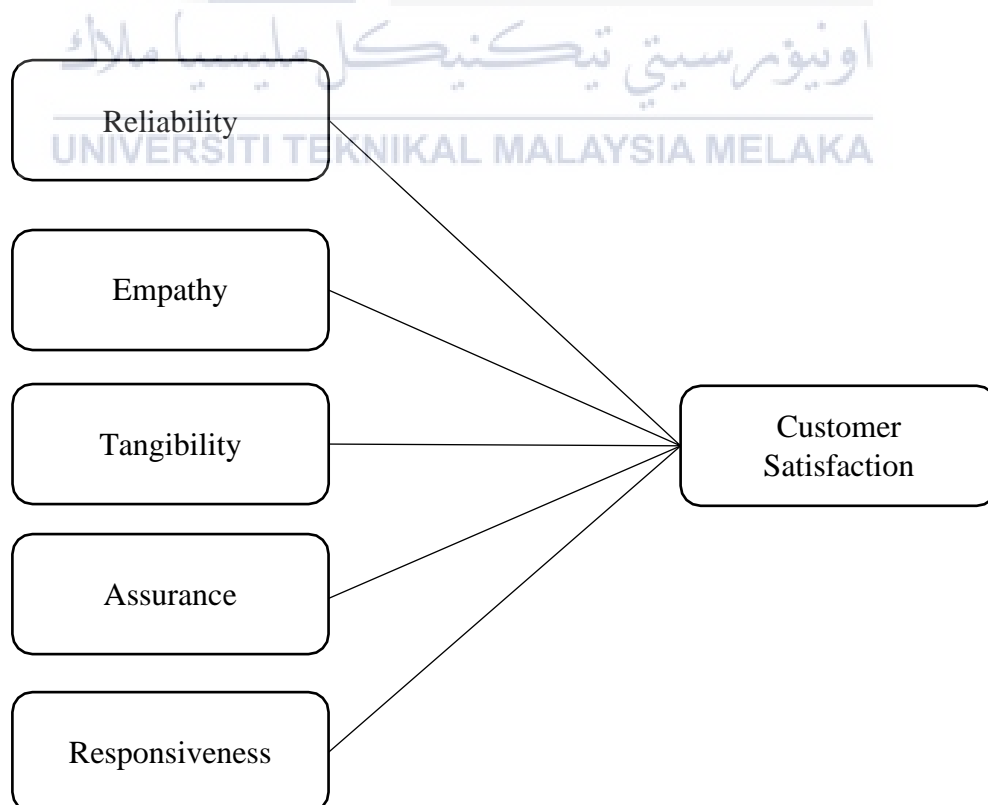
In e-logistic, responsiveness can be defined as the positive and quickly response to the customer when dealing or communicate with them. Responsiveness more depends on customer service since they provide more help to customer to solve the problem facing by customer before, during, and after the goods delivered. Sometimes customer will be checking the goods either good or not and if it meets their expectations or not. If they are not satisfied with the goods, they perhaps complaint or asking customer service for the unsatisfaction with the goods (Hong, 2019). Thus, the aims of responsiveness will giving the best solution for the unsatisfied customer by communicate properly. Customer service become the important factor for satisfaction of customer and encouraging retain customer (Grant, 2022). Furthermore, customer service also has made more companies to apply systems online and by phone for them to answer the questions or resolve various issues without the presence of human. As a result, it is one of the ways to gain competitive advantage.

### 2.3.3 Advertising

Advertising can assist to convey information from organization to customer due to it is a form of communication (Moriarty, 2014). Hence, advertising is crucial to economy, communication, sociocultural, and marketing. The purpose of advertising is to obtain people attention. The one example of platform that can refer and good for advertising is social media because it can helps improving global market (Okazaki & Taylor, 2013). Other than that, technology now also have more evolution of social media with provides various of features to promote and boost the business. Before the advancement of technology, people always refer to old media such as magazine and newspaper for advertising their goods but today people just use their own devices like smartphone, tablet, computer, or laptop to viewing advertising.

### 2.3.4 Accessibility

The scope to which information available on the website can be acquired and used without difficulty is referred to as accessibility (Ho & Lee, 2007). Online customers can reach information on the website or by contacting online retailers (Freedman M., 2022). Online shoppers are likely to have multiple ways to contact retailers, such as email and phone. Because of the fast advancement of information technology (IT) in latest years, online live chat has become the best option for online consumers to contact online retailers rapidly and easily because they are busy and do not want to waste too much time calling and mailing the online retailers (Anderson & Rainie, 2022). Furthermore, in e-commerce, online chat can assist online retailers enhance customer satisfaction because they can receive real-time responses from online retailers (Schiff J. L., 2015). Sohaib and Kang (2016), on the other hand, discovered that accessible websites are becoming increasingly important to online shoppers. Online shoppers frequently want to access online retailers' chat rooms and bulletin boards, among other places, to get up-to-date and helpful information for making online purchases. Customer satisfaction is significantly influenced by accessibility (Akıl & Ungan, 2021)



**Figure 2.3: Framework developed by Ali & Doski (2022)**

## 2.4 Technology infrastructure factor

Technology is related to e-logistic but the success factor for e-logistic is technology infrastructure (Miraz, & M. H., 2020). According to Longbottom & Bigelow (2022), the infrastructure of a system or organisation is its basis or framework. Information technology infrastructure in computing is made up of physical and virtual resources that help with data transmission, storage, processing, and analysis. Infrastructure can be centralised within a data centre or distributed among numerous data centres operated by the company or a third party, including a coworking facility or cloud provider. Today, the utilization of technology become growing since it is 21<sup>st</sup> century whereby technology have been using almost all country around the world (Graafland, 2018). E-logistic also include as a technology for supply chain due to before technology era was not invented yet, they use traditional logistic (Wang, Asian, Wood, & Wang, 2020). Besides that, technology can make the development of country in future ahead by which involving more technology (Rodrik, 2018).

### 2.4.1 Telecommunication infrastructure

To become the developed country, it requires more changing in terms of infrastructure. The one of example can be choose for technology infrastructure is telecommunication. By using this infrastructure, it can be more convenience involving the connections of many regions and parties across or within countries (Molla, 2005). This can be seen where every developed country such as China, United States, South Korea, and United Kingdom utilizing the 5G infrastructure for better networks in terms of speed, subscriber uptake and latency. Moreover, according to research provided by VIAVI Solutions in 2021, the number of cities with 5G access increased by more than 20% year over year to 1.662 (Steers, 2022). It examines which city's 5G is the quickest in terms of capacity expansion and deployment, as the network continues to develop dramatically in response to customer demand (Attaran, 2021).

### 2.4.2 Security

When the infrastructure became secure and reliable within outside or inside country, it become related to technology. By using the security technology, it can prevent from any consequences such as illegal dealing, hacking and money loss (Boerhanoeddin, 2000). Security is vital for e-logistic because it is involving about the privacy of customer and seller like personal information (Shevchuk, 2021). When using e-logistic, customer will provide their number phone, address, and account number for company to deliver the goods. When the company protect the customer privacy like firewall, encryption, minimum anti-virus, and other protection, it will make it protecting credit card and bank information of customer (Varghese, 2020).

### 2.5 Flexibility of e-logistic performances factor

In e-logistic, the success factor of e-logistic is flexibility. Flexibility is the ability to change, customize, persuade or to bend. In this factor, customization is the role for customer by requesting to when and where to collect goods (Luck, 2022). Moreover, to meet customer expectation while using customization in delivery flexibility, the one of instances is when a customer's demands and plans change between order placement and delivery (Schwager, Meyer, 2007). By providing this role, it can increase the satisfaction of customer besides ease the process of delivery by removing attempted deliveries and call to call centers. Customer also can change order requirements such as order date (Sharma G., 2018).

Furthermore, value added services had adding to become more flexibility. It is consistent with services such as product testing, take back of used product, and installation and this factor considered as competitive as well as locating at delivery stage. In flexibility, customer service also key role which means flexibility in customer service refers to the ability to adapt to changing circumstances (McCabe, 2018). Each customer has unique requirements, and flexibility skills imply the ability to properly address the dynamics of each customer experience (Martins, 2012). Customer can customize their need and refer customer services for assistance. In e-logistic, customer service become more or quick responsive instead of traditional logistic. Due to the

electronically customer service, usually they will provide frequently asked question but for traditional, it is not flexible because sometimes, they did not meet customer expectations.

## **2.6 Staff Service Quality**

The logistics depict the staff's external image, attitude and communication with the customer, and private service material can have an important influence on e-logistic perception (Miraz, Saleheen & Habib, 2017; Tanoos, 2017; Miraz, Kabir, Habib & Ahmed, 2019). The as a whole quality is influenced by the logistics staff's services to the customers, appearance, personality, and communication (Wang & Lu, 2016; Miraz, Hasan & Sharif, 2018). The ability of staff members to confirm the quality of services is referred to as ensuring logistics distribution (Benfang & Feng, 2014). Staff service quality frequently includes an attribute, according to (Paulraj, Chen & Blome, 2017). This attribute is associated with the company's automated logistics staff, which has an attitude and an external image of staff, as well as firm IT capabilities (Maldonado-Guzman, Marin-Aguilar, & Garcia-Vidales, 2018). The quality of staff service tends to reflect whether the staff tool and attitude toward service and communication capabilities efficiently meet the required quality needs (Miraz, Hassan, & Cherif, 2019); Marovi, Ardalan, & Tabaradhi, 2017).

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## **2.7 The Success of E-logistic**

E-logistic consisting of several tools using by most of the company facilities over the internet network (Gunarekaran, 2007). The tools comprising of electronic catalogue, transaction system, electronic platform, internet portal, data warehouse, supply chain, communication tools, software's planning, and e-learning system (Barcik & Jakubiec, 2012). Customer satisfaction is increased by the one-stop value added services. For instance, one-stop value added services in the government can be used to submit requests and applications, look up council services, and make payments all at once (Dudley, Lin, Mancini, & Ng, 2015). Information management refers to the sharing of information via electronic channels such the WWW, Internet, and EDI (Ngai and Wat, 2002). Automation will lessen the need for human intervention in



loading and unloading, updating consolidation, and other warehouse operations. Increased flexibility and lower transportation costs are benefits of a transportation network (Daniela & Parkhust, 2019).

The following are the differences between traditional and electronic logistic. Traditional logistics has a very low volume because it sends vast quantities of items to smaller locations, such retail stores. However, with e-logistics, fewer materials are delivered more quickly to many customers. While the goal of traditional logistics is efficiency and cost-effectiveness, e-logistics is more focused on speed and ability to match consumer expectations. As opposed to e-logistics, which uses the Internet, Electronic Data Interchange (EDI), Radio Frequency Identification (RFID), and Integrated IS to gather information, traditional logistics uses fax, paperwork, and Management Information System (MIS). E-logistic is quicker and more dependable than traditional logistics (Zailani & Fernando, 2010)

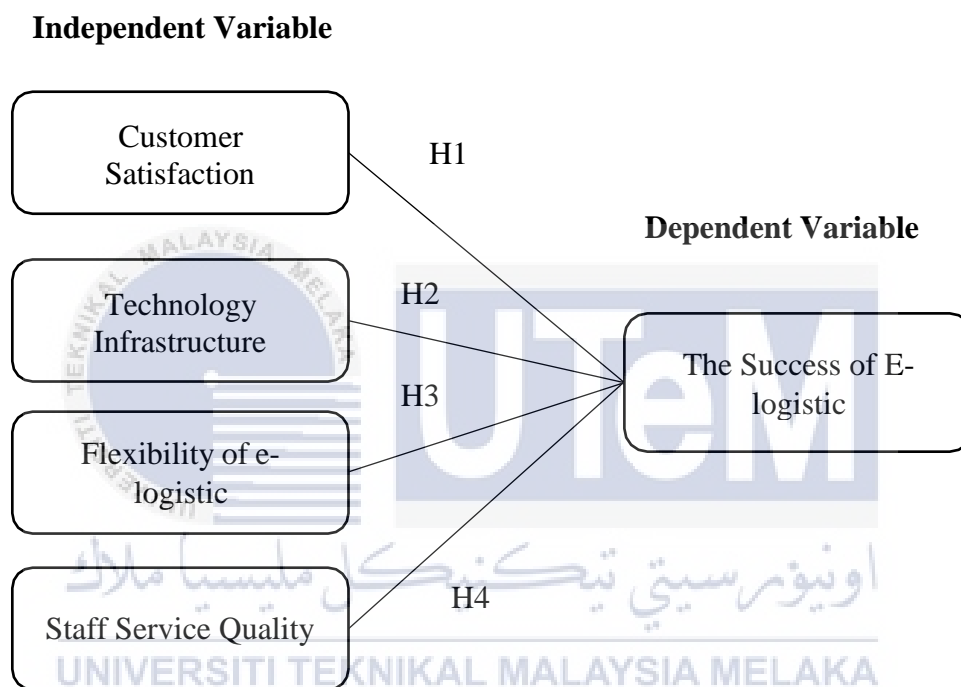
While e-logistics expands responsibility to include the entire supply chain, traditional logistics only links shipments to a small portion of the supply chain. Customers have high expectations for the quality of service and shipment delivery in e-logistics, however these expectations aren't realised in the case of traditional logistics, where customers now want their things delivered more quickly (Schwager & Meyer, 2007). When it comes to traditional logistics, satisfying international trade is less complicated than when it comes to e-logistics, which has a higher level of complexity.

Leung, Cheung, and Van Hui (2000), Gunasekaran and Ngai (2004b), and others claim that the advantages of e-logistics include improving customer service, cutting costs, and fulfilling deadlines for product delivery. It aids in the development of web-based inventory control as well as the development of relationships with major logistics providers like DHL, UPS, and FedEx. It makes it easier to focus and comprehend customers. It supports third party logistics (3PL) in B2B2C e-commerce, enables SME's form strategic alliances, and aids in meeting rising demand.



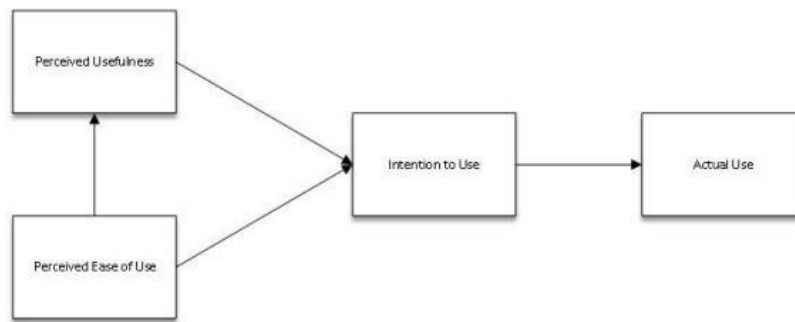
## 2.8 Proposed Conceptual Framework

In this study, the proposed conceptual framework is to demonstrate a diagram of the constructs and variables, as well as the interrelationships between variables. The independent variable is made up of customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality factors. The relationship between independent and dependent variables is depicted in the framework below.



**Figure 2.8: Proposed Conceptual Framework**

### 2.8.1 Theory



**Figure 2.8.1: Theoretical Acceptance Model (TAM)**

In this study, the underpinning theory was chosen is The Technology Acceptance Model (TAM). This theory is conducted to measure the adoption of the success of e-logistic based on customer perception (Allen, 2020). TAM's main objective was to remove light on the processes that underpinning information system acceptance. It also tried to provide such a theoretical explanation for such systems' successful execution. Perceived ease of use resembled the complexity factor proposed in the literature on innovation diffusion as a barrier to innovation adoption (Mahajan, 2010). The model is tested further by clarifying significant relationships between perceived usefulness, perceived ease of use, intention, and usage behaviour (Davis, 1989). According to the model, if an application is expected to be simple to use, it is more likely to be considered useful by the user. The growth of constructs that had a strong and significant correlation with use behaviour allowed researchers to better understand the impact of system characteristics on technology acceptance.

### 2.9 Summary

This chapter provides an overview of the related theory on the research topics. This chapter focuses on customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality. A literature review is important in research because it serves as a reference for gaining insights and better understanding by reviewing previous studies examined by previous researchers. The literature reviews explain the dependent and independent variables as well as their relationship.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 Introduction

Referring to Jansen and Warren (2020), research methodology is a systematic and scientific method to solve research problem and to study the technique on how research is complete. Research methodology can lead researcher to a correct way of finding solution to the research questions.

In the chapter, researcher highlights the research method uses and the techniques in solving research question whereby comprises research design and research strategy. Next, the methods of data collection on the critical factors affecting the success of e-logistic will be described. This chapter as well comprises pilot test, reliability by which depends to questionnaire construction. Analysis is used to test the hypothesis of the study also identified.

### 3.2 Hypothesis Development

Based on the conceptual framework proposed, the hypotheses that are developed for this research are shown as below.

#### **Hypothesis 1:**

H1: There is significant relationship between customer satisfaction against the success of e-logistic

H<sub>0</sub>: There is no significant relationship between customer satisfaction against the success of e-logistic

#### **Hypothesis 2:**

H2: There is significant relationship between technology infrastructure against the success of e-logistic

H<sub>0</sub>: There is no significant relationship between technology infrastructure against the success of e-logistic.

#### **Hypothesis 3:**

H3: There is significant relationship between flexibility of e-logistic against the success of e-logistic.

H<sub>0</sub>: There is no significant relationship between flexibility of e-logistic against the success of e-logistic.

#### **Hypothesis 4:**

H4: There is significant relationship between staff service quality against the success of e-logistic.

H<sub>0</sub>: There is no significant relationship between staff service quality against the success of e-logistic.

### 3.3 Research Design

The research design is the designing of the situations under which the research is conducted, and it establishes the foundation for data collection, measurement, and analysis (Kothari, 2004). The research design involves a plan for what the researcher will accomplish. There are three basic types of research designs comprises of exploratory studies, descriptive studies, and explanatory studies. According to Saunders et al. (2016), the purpose of exploratory studies is to learn about what is going on and to gather an understanding of relevant themes. Following that, descriptive studies seek to obtain an accurate profile of contemporary phenomena. An explanatory study determines the causal links between variables.

The research design in this study is explanatory research. Explanatory research is performed to obtain data on the factors affecting the success of e-logistic. For example, explanatory research questions such as "Why" or "How" might be used to gather explanatory responses.

### 3.4 Methodological Choices

The methodological options for research include qualitative research, quantitative research, and mixed approaches. Qualitative research is used to observe and analyse real-life situations in order to develop theories to explain what happened (Newman & Benz, 1998). Quantitative research is used to establish a theory and test the hypothesis's confirmation or rejection.

The quantitative method will be utilised to collect data from respondents in this research. The quantitative method focuses on numerical data that can be generalised across a population or used to define a phenomenon (Mujis, 2010). Statistical analysis is used to analyse the relationship between variables using quantitative approaches.

### 3.5 Data Collection

Data collection is a methodical approach to collecting information from primary and secondary sources in order to obtain a conceptualized picture of an interest topic. The study gathered information and data using both primary and secondary sources. Primary data are information accumulated for a specific research problem in a study using proper procedures (Hox & Boeije, 2005). Questionnaires, interviews, and observation methods can be used to collect primary data. Primary data for the study is gathered through a survey distributed to people who experienced using e-logistic. The information is original without any adjustment.

Furthermore, secondary data are data that has been accumulated and is readily available from other sources. Secondary data can be used to identify problems, develop appropriate solutions, and conduct additional research for the study. Secondary data for this study are acquired from books, papers, academic publications, journal papers, academic articles, and websites that are relevant to the study.

### 3.6 Questionnaire Development

In this study, the self-administered questionnaire survey method is used to distribute questionnaires to respondents. The questionnaire is divided into three sections. Section A was designed to collect demographic information such as gender, age, income level, education and employment status. Section B then asks questions about the factors that affecting the success of e-logistic. The variables are customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality. The respondents were required to respond to the questions using a Likert scale, which demonstrates the level of agreement of the respondents from 1 to 5. Section C of the questionnaire is about the success of e-logistic.

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
1	2	3	4	5

**Figure 3.6: Five Point Likert Scale**  
(Source: M. Bounthavong, 2019)

### 3.7 Sampling Techniques

Probability sampling and nonprobability sampling are the two main types of sampling techniques. In probability sampling, each sample has an equal chance of being chosen (Kumar, 2011). Non-probability sampling implies that each sample does not have an equal chance of being chosen. The sampling technique's goal is to select populations to serve as sampling units in the survey.

Probability sampling is used in this study, and simple probability sampling is used to select random samples. This is a method of selecting sample size from a sampling population where each sample has an equal and independent chance of being chosen. The survey's target respondents are public who experienced using e-logistic in Kedah which has a population of 2,190,000 according to the researcher. When the population is exceeds 1,000,000 people, the sample size is 384, according to Krejcie and Morgan (1970). As a result, 384 respondents were chosen as the source of data and evaluation to complete questionnaires.

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
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	100000	384

Note.—*N* is population size.  
*S* is sample size.

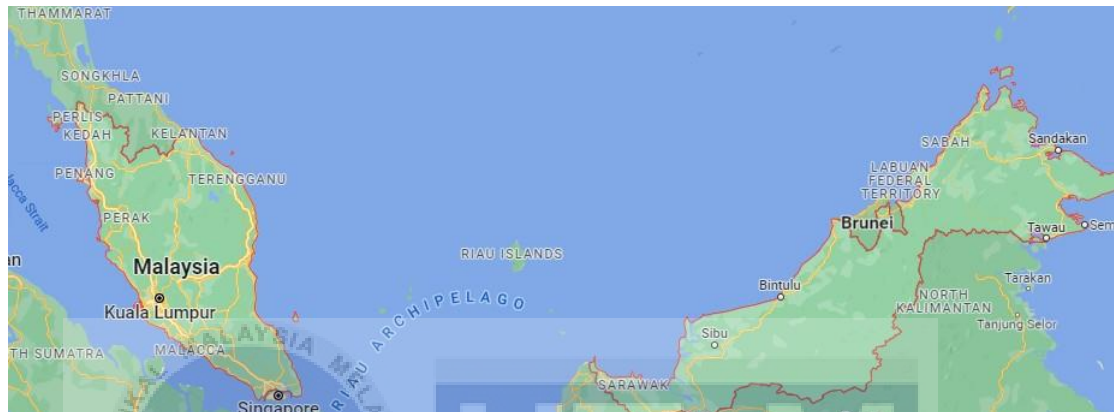
**Table 3.7: Table for Determining Sample Size from a  
Given Population**

(Source: Krejcie & Morgan, 1970)



### 3.8 Location of Research

The primary location for the research is people living in Malaysia. According to Department of Statistics Malaysia official portal, the population of people in Malaysia around 32,780,000 million in 2021



**Figure 3.8: Map of Malaysia**

*Source: (Google Map, 2022)*

### 3.9 Data Analysis

The systematic process of analysing data using statistical or logical techniques is known as data analysis. Various data analysis tools, such as the pilot test, Cronbach's alpha, and descriptive statistics for respondents' demographic data, are used in this study to depict and explain the data obtained. The data is then analysed using Pearson's correlation coefficient and multiple regression analysis.

### 3.9.1 Pilot Test

A pilot test is a prior study used to ensure the reliability and validity of the questions constructed by the researcher. The goal of the pilot test is to ensure that the questionnaire is feasible and that respondents can understand and answer the questions. Furthermore, the pilot test is used to determine whether the researcher can obtain the expected data. The pilot test sample is 10% of the total sample size, 25 questionnaires to be distributed to potential respondents. Respondents to the pilot test will provide feedback on the questionnaires' complexity or suitability. Based on the findings of the pilot study, researchers can make changes to clarify any unclear items or correct any errors, allowing study respondent to share questions more effectively. As a result, the researcher can obtain an accurate result and contribute to the significance of the study.

### 3.9.2 Reliability

The consistency of measure in the results is defined as reliability. Cronbach's alpha evaluates the study's internal consistency in this study (Tavakol & Dennick, 2011). Cronbach's alpha ranges between 0 and 1. Cronbach's alpha values in the 0.7 range are considered acceptable reliability coefficients. The greater the value of Cronbach's alpha, the greater the reliability. The researcher will assess the dependability of each independent and dependent variable.

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

**Table 3.9.2: Cronbach's Alpha Coefficient Range**  
(Source: Sounders, M, Lewis, P, & Thornhill, A, 2016)

### 3.9.3 Validity

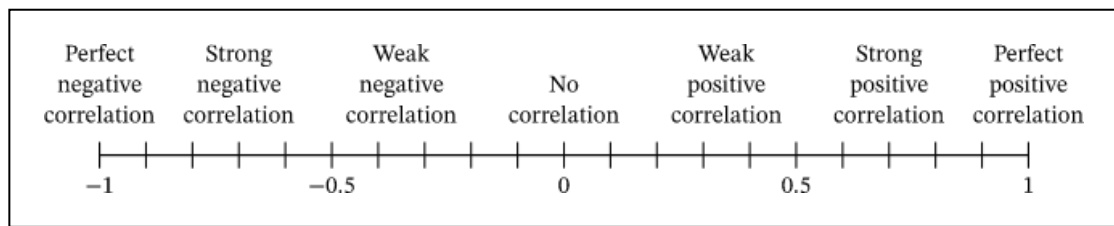
Validity means the extent of accuracy in measuring what it is intended to measure. High validity value specifies high extent of trustworthiness in the research result. In this research, the independent variables include customer satisfaction, technology infrastructure, flexibility of e-logistic, and staff service quality factors and the dependent variable is the success of e-logistic. Exploratory Factor Analysis (EFA) is conducted to test the validity of questionnaire.

### 3.9.4 Descriptive Statistics.

Descriptive statistics is the analysis of data to thoughtfully explain variables. The variables are classified into two categories: measures of tendency (mean, mode, and median) and measures of dispersion (range, standard deviation, variance). Descriptive statistics make large amounts of data more manageable. Descriptive statistics are used in this study to analyse demographic data from respondents as well as independent variables such as customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality factors.

### 3.9.5 Pearson's Correlation Coefficient

In this study, Pearson's correlation coefficient is used to determine the strength of the linear relationship between two numerical variables. Utilizing coefficient requires several assumptions, including that the variables have a linear relationship, that two variables are related (independent variable and dependent variable), and that both variables have independent causes to produce a normal distribution. Pearson's correlation coefficient has a value between +1 and -1. The value shows that there is a positive correlation between two variables, while the value shows that there is a negative correlation between two variables. The nearer the coefficient value is to zero, the greater the variation in the data from the best fit line. A coefficient value of zero indicates that there is no relationship between two variables.



**Figure 3.9.4: Pearson's Correlation Coefficient**  
(Source: Sounders et al, 2016)

### 3.9.6 Multiple Regression Analysis

Multiple regression is a statistical technique that uses ANOVA to anticipate the relationship between a single dependent variable and a set of independent variables. The strength of the relationship between one continuous dependent variable and two or more independent variables is explained by multiple regression analysis. The regression was examined on four independent variables in this study, which included customer satisfaction, technology infrastructures, flexibility of e-logistic and staff service quality factors. The regression equation is created to demonstrate how the independent variables fit together and to investigate the relative contribution of each predictor of total variance. The multiple regression equation is as follows:

$$\text{Equation: } Y = a + bX_1 + cX_2 + dX_3$$

Y	Dependent variable (The success of e-logistic)
A	Constant or other influence
B	Influence of $X_1$ (Customer satisfaction)
C	Influence of $X_2$ (Technology infrastructure)
D	Influence of $X_3$ (Flexibility of e-logistic)
E	Influence of $X_4$ (Staff service quality)
$X_1, X_2, X_3, X_4$	Independent variables

**Table 3.9.5: Equation of Multiple Regression Analysis**  
(Source: Sounders et al, 2016)

### 3.9.7 Statistical Package for Social Sciences (SPSS)

The Statistical Package for Social Sciences (SPSS) is used to analyse the data. It is commonly used by researchers to analyse complex statistical data. SPSS is a software package that allows you to create tabulated reports, charts, and other complex statistical analyses. SPSS is used because it can precisely complete highly complex data operations and analyses.

### 3.10 Summary

The researchers explained the methods used in collecting data in this chapter. The quantitative method is used to conduct the research. The study collected data from both primary and secondary sources. The survey is chosen as the research strategy, and a structured questionnaire is used to conduct the survey. Pilot tests, Cronbach's alpha, reliability analysis, descriptive statistics, Pearson's correlation coefficient, multiple regression analysis, and SPSS are used in data analysis to achieve research goals and evaluate study.

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## CHAPTER 4

### DATA ANALYSIS AND RESULTS

#### 4.1 Introduction

In Chapter 4, the results and findings of data analysis which conducted in the research project is presented. The data is collected 351 from 384 respondents over two months period. The data will be analysed using Statistical Package for Social Sciences (SPSS) to get result of research objectives and to examine whether research hypotheses are valid. The results will be presented in charts and table forms.

Besides, this chapter present the result of pilot test and continued the findings in the form descriptive statistics which includes respondents' demographic and their responses as per questions. Then, Pearson Correlation Coefficient analysis describe the degree of relationship between independent variables and dependent variable followed by regression analysis to test the hypothesis and chapter summary.

## 4.2 Pilot Test

The purpose of pilot study is to test the feasibility of the questionnaire whether respondents can understand the questions. In this study, the researcher selects 38 respondents which are 10% of total respondents. Cronbach's alpha is used to measure the consistency of data where the value not less than 0.7 represent that the questionnaire has consistent reliability.

### 4.2.1 Reliability

Referring to Tavakol & Dennick (2011), the internal consistency ought to be tested prior the questionnaire used for study purpose. The internal consistency outlines degree to which every component in the test refers to the same construct thus associated to inter-relatedness of components within the test. The value of Cronbach's Alpha is ranged from 0 to 1. When the value of coefficients of reliability is closer to 1, the internal consistency is higher.

There is total 25 items of questions are measured using Likert scale ranging from 1 to 5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree. The value of Cronbach's Alpha coefficient indicates the strength of association of each item in independent variable on dependent variable.

#### 4.2.1.1 Customer Satisfaction Factor

**Table 4.2.1.1.1: Case Processing Summary of Customer Satisfaction**

*Source: (Develop from Research)*

		N	%
Cases	Valid	38	100.0
	Excluded <sup>a</sup>	0	0.0
	Total	38	100.0

**Table 4.2.1.1.2: Reliability Statistics of Customer Satisfaction***Source: (Develop from Research)*

Cronbach's Alpha	Cronbach's Alpha Based on standardized Items	N of Items
0.749	0.751	5

Table 4.2.1.1.2 illustrates Cronbach's Alpha for five questions for customer satisfaction factors. The reliability statistics has value of 0.749 which is greater than 0.7. Hence, the question for this independent variable is reliable and can be used for the actual questionnaire.

#### 4.2.1.2 Technology Infrastructure Factor

**Table 4.2.1.2.1: Case Processing Summary of Technology Infrastructure***Source: (Develop from Research)*

		N	%
Cases	Valid	38	100.0
	Excluded <sup>a</sup>	0	0.0
	Total	38	100.0

**Table 4.2.1.2.2: Reliability Statistics of Technology Infrastructure***Source: (Develop from Research)*

Cronbach's Alpha	Cronbach's Alpha Based on standardized Items	N of Items
0.843	0.846	5

Table 4.2.1.2.2 shows Cronbach's Alpha for five questions for technology infrastructure factors. The reliability statistics has value of 0.843 which is greater than 0.7. Therefore, the question for this independent variable is reliable and can be used for the actual questionnaire.



#### 4.2.1.3 Flexibility of E-logistic Factor

**Table 4.2.1.3.1: Case Processing Summary of Flexibility of E-Logistic**

*Source: (Develop from Research)*

		N	%
Cases	Valid	38	100.0
	Excluded <sup>a</sup>	0	0.0
	Total	38	100.0

**Table 4.2.1.3.2: Reliability Statistics of Flexibility of E-logistic**

*Source: (Develop from Research)*

Cronbach's Alpha	Cronbach's Alpha Based on standardized Items	N of Items
0.781	0.786	5

Table 4.2.1.3.2 illustrate Cronbach's Alpha for five questions for flexibility of e-logistic factor. The reliability statistics has value of 0.781 which is greater than 0.7. Therefore, the question for this independent variable is reliable and can be used for the actual questionnaire.

#### 4.2.1.4 Staff Service Quality Factor

**Table 4.2.1.4.1: Case Processing Summary of Staff Service Quality**

*Source: (Develop from Research)*

		N	%
Cases	Valid	38	100.0
	Excluded <sup>a</sup>	0	0.0
	Total	38	100.0

**Table 4.2.1.4.2: Reliability Statistics of Staff Service Quality***Source: (Develop from Research)*

Cronbach's Alpha	Cronbach's Alpha Based on standardized Items	N of Items
0.784	0.791	5

Table 4.2.1.4.2 illustrate Cronbach's Alpha for five questions for staff service quality factor. The reliability statistics has value of 0.784 which is greater than 0.7. Hence, the question for this independent variable is reliable and can be used for the actual questionnaire.

#### 4.2.1.5 The Success of E-logistic

**Table 4.2.1.5.1: Case Processing Summary of E-logistic***Source: (Develop from Research)*

		N	%
Cases	Valid	38	100.0
	Excluded <sup>a</sup>	0	0.0
	Total	38	100.0

**Table 4.2.1.5.2: Reliability Statistics of E-logistic***Source: (Develop from Research)*

Cronbach's Alpha	Cronbach's Alpha Based on standardized Items	N of Items
0.650	0.651	5

Table 4.2.1.5.2 illustrate the Cronbach's Alpha for five questions for dependent variable which the value is 0.650. Although the value is 0.650 where lower than 0.7 but it is still moderate and acceptable can be used.

#### 4.2.1.6 Reliability Analysis

**Table 4.2.1.6.1: Case Processing Summary**

*Source: (Develop from Research)*

		N	%
Cases	Valid	38	100.0
	Excluded <sup>a</sup>	0	0.0
	Total	38	100.0

**Table 4.2.1.6.2: Reliability Statistics**

*Source: (Develop from Research)*

Cronbach's Alpha	Cronbach's Alpha based on Standardized Items	N of Items
0.913	0.916	25

Table 4.2.1.6.2 illustrate Cronbach's Alpha result for total number of independent variables and dependent variables. The all value of Cronbach's Alpha is 0.913 which is greater than 0.7 and is considered as good reliability.

#### 4.2.2 Validity

Validity refers as the degree of accuracy in measuring what it is planned to measure. High validity value specifies high extent of trustworthiness in the research result. According to Chan & Idris (2017), Exploratory Factor Analysis is conducted to identify a structure of dormant dimensions of the variables in the objects of instrument. Hence, EFA is used to determine validity of the questionnaire.

##### 4.2.2.1 Validity for Independent Variables

**Table 4.2.2.1.1: Table for KMO and Bartlett's Test for Independent Variables**

*Source: (Develop from Research)*

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.938
Bartlett's Test of Sphericity	Approx. Chi-Square	2606.234
	Df	190
	Sig.	0.000

From the table 4.1.2.1.1, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is excellent, 0.938 because the value is higher than 0.6 (Yong & Pearce, 2013). When the value closer to 1, the more suitable the method to analyse the data and the factors are reliable to each other. Next, Bartlett's test of sphericity is significant  $\chi^2$  (df = 190) because p-value is less than 0.000 thus the items listed in independent variables have pattern relationships among the variables because the p-value is less than 0.05 with approximate Chi-Square value 2606.234

#### 4.2.2.2 Validity for Dependent Variable

**Table 4.2.2.1.2: Table for KMO and Bartlett's Test for Dependent Variables**

*Source: (Develop from Research)*

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.813
Bartlett's Test of Sphericity	Approx. Chi-Square	363.131
	Df	10
	Sig.	0.000

From the table 4.2.2.2.1, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is excellent, 0.813 because the value is higher than 0.6 (Yong & Pearce, 2013). When the value closer than 1, the more suitable the method to analyse the data and the factors are reliable to each other. Then, Barlett's test of sphericity is significant  $\chi^2$  (df =10) because p-value is less than 0.000 hence the items listed in independent variables have pattern relationships among the variables because the p-value is less than 0.05 with approximate Chi-Square value 363.131.

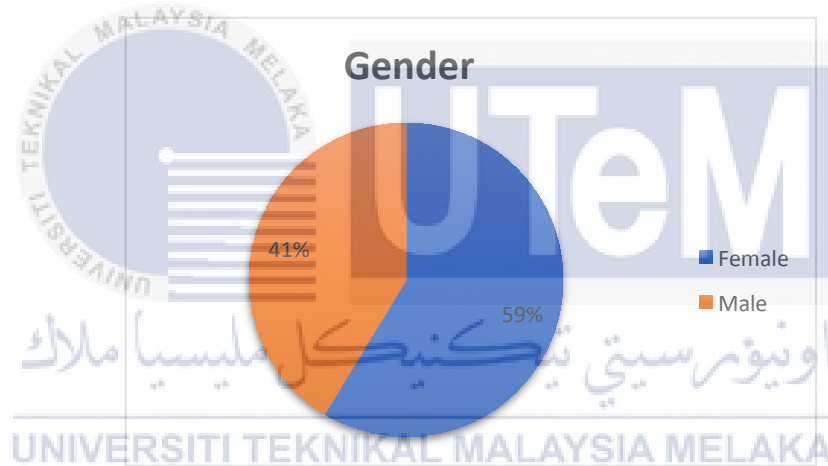
### 4.3 Respondents' Profile

#### 4.3.1 Respondents' Gender

**Table 4.3.1: Respondents' Gender**

*Source: (Develop from Research)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	145	41.3	41.3	41.3
	Female	206	58.7	58.7	100.0
	Total	351	100.0	100.0	



**Figure 4.3.1: Respondent's demographic of gender**

*Source: (Develop from Research)*

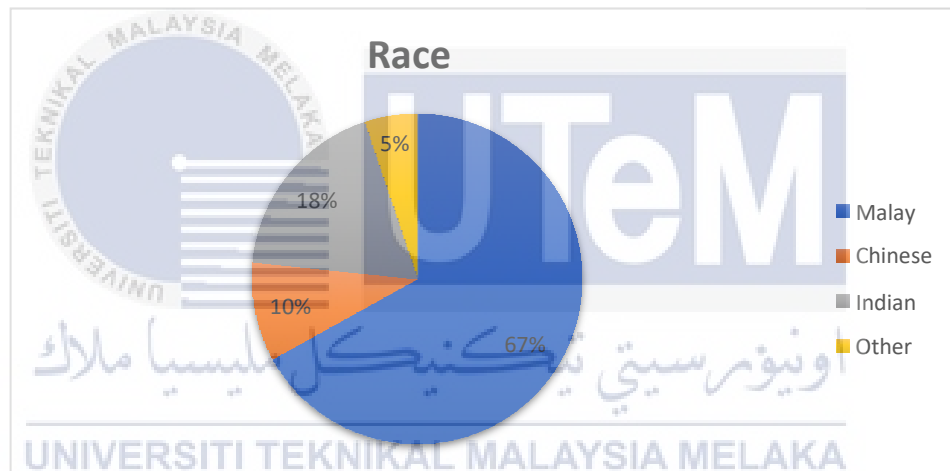
Table shows the frequency and percentage of respondents' demographic of gender. There are total 351 respondents and among the respondents, female respondents consist of 206 which are 58.7% while male respondents consist of 145 which are 41.3% as shown in the figure.

### 4.3.2 Respondents' Race

**Table 4.3.2: Respondents' Race**

*Source: (Develop from Research)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	235	67.0	67.0	67.0
	Chinese	34	9.7	9.7	76.6
	Indian	64	18.2	18.2	94.9
	Other	18	5.1	5.1	100.0
	Total	351	100.0	100.0	



**Figure 4.3.1: Respondents' Race**

*Source: (Develop from Research)*

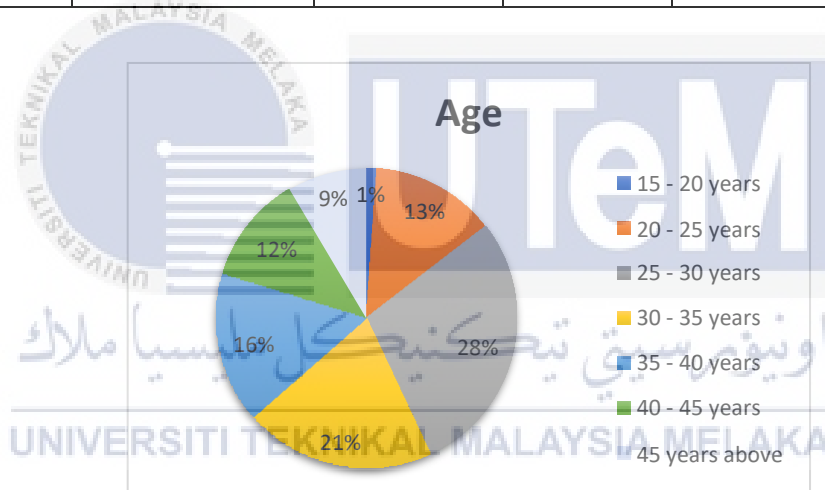
Table illustrates the frequency and percentage of respondents' demographic of race. There are total 351 respondents and among the respondents, Malay respondents consist of 235 which are 67.0% while Chinese respondents consist of 34 which are 9.7% as shown in the figure. The other race that researcher put in the questionnaire is Indian and other race have in Malaysia. Indian respondents consist of 64 with the percentage 18.2% while the other race consist of 18 respondents with 5.1%

### 4.3.3 Respondents' Age Group

**Table 4.3.3: Respondents' Age Group**

*Source: (Develop from Research)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15 – 20 years	4	1.1	1.1	1.1
	20 – 25 years	47	13.4	13.4	14.5
	25 – 30 years	100	28.5	28.5	43.0
	30 – 35 years	72	20.5	20.5	63.5
	35 – 40 years	57	16.2	16.2	79.8
	40 – 45 years	41	11.7	11.7	91.5
	45 years above	30	8.5	8.5	100.0
	Total	351	100.0	100.0	



**Figure 4.3.3: Respondents' Age Group**

*Source: (Develop from Research)*

Table 4.3.3 shows the data of the range on the age of respondents. Among 351 respondents, there are 4 respondents (1.1%) at the range 15 – 20 years old. The respondents who are aged between 20 – 25 years old consist of 47 respondents (13.4%). Besides, the range from 25 – 30 years old has 100 respondents (28.5%) which is the highest age group among the respondents. There are 72 respondents (20.5%) who aged between 30 – 35, 57 respondents (16.2%) aged 35 – 40 years and 40 – 45 years old with 41 respondent (11.7%) while aged that 45 years old above have 30 respondents with 8.5% above. Figure shows the percentage of respondents' demographic of age group.

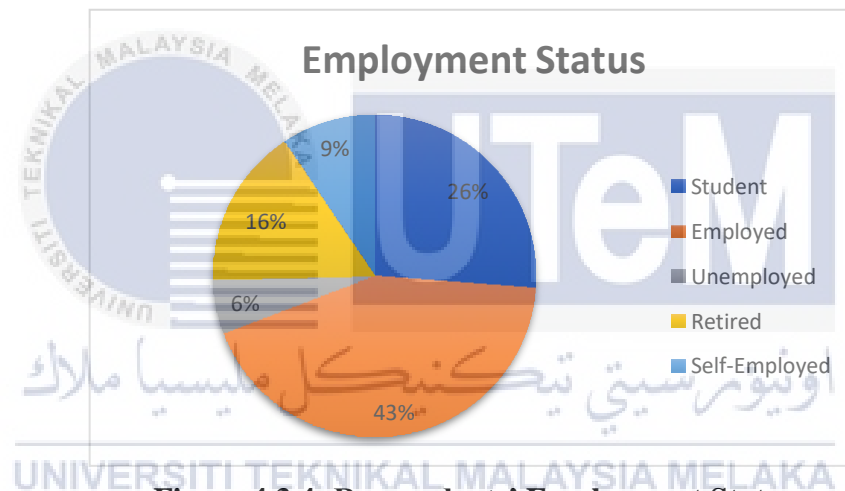


#### 4.3.4 Respondents' Employment Status

**Table 4.3.4: Respondents' Employment Status**

*Source: (Develop from Research)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	92	26.2	26.2	26.2
	Employed	151	43.0	43.0	69.2
	Unemployed	19	5.4	5.4	74.6
	Retired	56	16.0	16.0	90.6
	Self-Employed	33	9.4	9.4	100.0
	Total	351	100.0	100.0	



**Figure 4.3.4: Respondents' Employment Status**

*Source: (Develop from Research)*

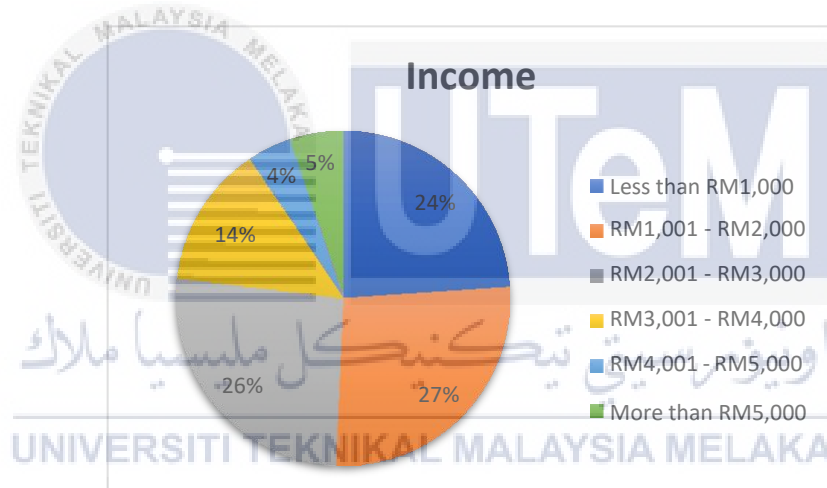
Table demonstrates employment status of respondents. Among the respondents, 92 students with (26.2%) question the researcher's answer while 151 respondents (43.0%) are employed, the highest group of employment status of respondents. There is total 19 respondents (5.4%) are unemployed while it also has 56 respondents (16.0%) are retired. Besides they have 33 respondents which are self-employed with 9.4%. Figures illustrate the percentage of respondents' demographic of employment status.

### 4.3.5 Respondents' Income Level

**Table 4.3.5: Respondents' Income Level**

*Source: (Develop from Research)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than RM1,000	84	23.9	23.9	23.9
	RM1,001 – RM2,000	94	26.8	26.8	50.7
	RM2,001 – RM3,000	92	26.2	26.2	76.9
	RM3,001 – RM4,000	48	13.7	13.7	90.6
	RM4,001 – RM5,000	15	4.3	4.3	94.9
	More than RM5,000	18	5.1	5.1	100.0
	Total	351	100.0	100.0	



**Figure 4.3.5: Respondents' Income Level**

*Source: (Develop from Research)*

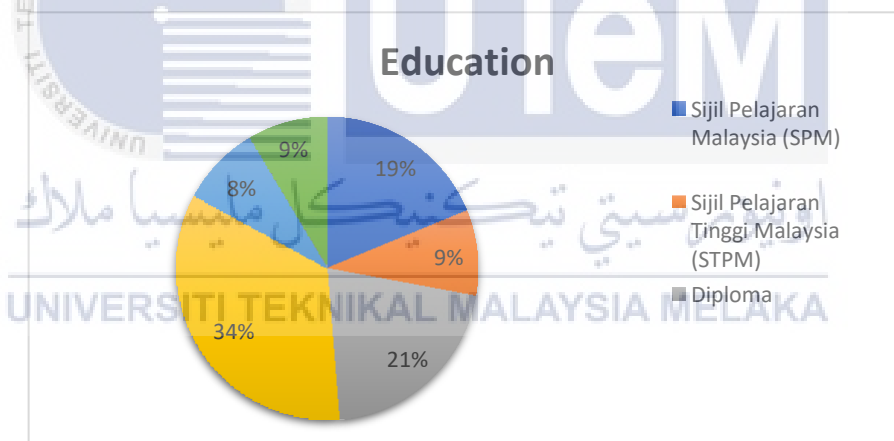
Table 4.3.5 shows the current income level of total 351 respondents. There are 84 respondents (23.9%) current income level are less than RM 1,000. Besides, 94 respondents (26.8%) have current income level from RM 1,001 – RM 2,000 while 92 respondents (26.2%) have current income level from RM 2,001 – RM 3,000. 48 respondents (13.7%) have RM 3,001 – RM 4,000 income per month whereas 15 respondents (4.3%) have income level ranged between RM 4,001 – RM 5,000. There are 18 respondents (5.1%) has more than RM 5,000 per month. Figure 4.3.5 display respondents' demographic of income level.

#### 4.3.6 Respondents' Education Level

**Table 4.3.6: Respondents' Education Level**

*Source: (Develop from Research)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sijil Pelajaran Malaysia	66	18.8	18.8	18.8
	Sijil Pelajaran Tinggi Malaysia	32	9.1	9.1	27.9
	Diploma	73	20.8	20.8	48.7
	Bachelor's Degree	120	34.2	34.2	82.9
	Master	30	8.5	8.5	91.5
	PhD	30	8.5	8.5	100.0
	Total	351	100.0	100.0	



**Figure 4.3.6: Respondents' Education Level**

*Source: (Develop from Research)*

Table 4.3.6 illustrate education level of total 351 respondents. There are 66 respondents (18.8%) with Sijil Pelajaran Malaysia (SPM). 32 respondents (9.1%) have education level Sijil Pelajaran Tinggi Malaysia (STPM) while 73 respondents (20.8%) have Diploma. Besides, 120 respondents (34.2%) have bachelor's degree which highest of respondents. While the total respondent for master is 30 respondents (8.5%) whereas respondents with PhD has also 30 respondents with 8.5%.

#### 4.4 Descriptive Analysis

##### 4.4.1 Descriptive Analysis for Independent Variable (Customer Satisfaction Factor)

**Table 4.4.1: Summary of Customer Satisfaction Factor**

*Source: (Develop from Research)*

<i>Frequency</i>						
Item	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
CS1	I'm satisfied with the shipping and delivery	247 (70.4%)	88 (25.1%)	13 (3.7%)	2 (0.6%)	1 (0.3%)
CS2	The response time of customer service is excellent	250 (71.2%)	82 (23.4%)	15 (4.3%)	4 (1.1%)	0 (0%)
CS3	Website accessibility is excellent	247 (70.4%)	86 (24.5%)	15 (4.3%)	2 (0.6%)	1 (0.3%)
CS4	Advertisement in e-logistic website or online platform is excellent	251 (71.5%)	88 (25.1%)	12 (3.4%)	0 (0%)	0 (0%)
CS5	The e-logistic website was reliable and helpful	239 (68.1%)	100 (28.5%)	12 (3.4%)	0 (0%)	0 (0%)

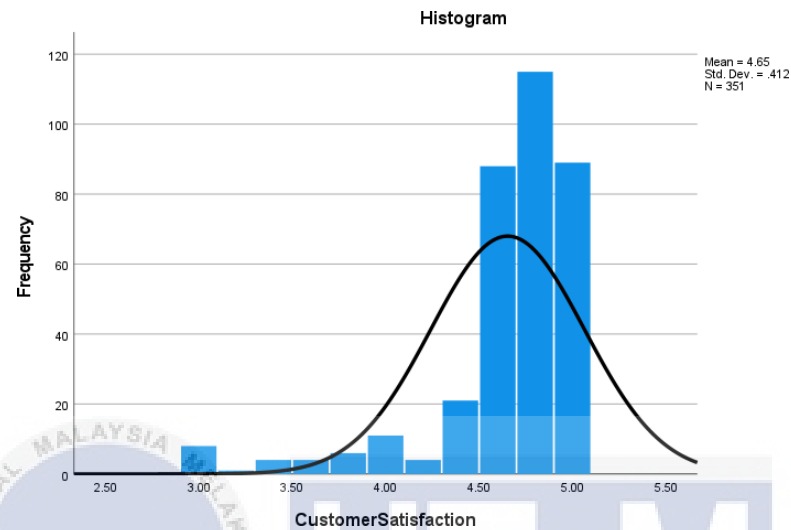
Table 4.4.1 displays response of 351 respondents on independent variable, customer satisfaction factors that affect the success of e-logistic from each statement. The item CS1 states that customer satisfied with the delivery and shipping provide by e-logistic. Refer to the result, there are 70.4% respondents strongly agree on the statement, 25.1% of respondents agree on the statement and 3.7% expressed neutral. Although, there are 0.6% of respondents disagree on the statement and 0.3% strongly disagree on the statement.

The item CS2 shows the response time of customer service is excellent. Based on the result obtained, more of respondents (71.2%) strongly agree on the statement and 23.4% of respondents agree on the statement. There are 4.3% of respondents said that they are neutral but 1.1% of respondents disagree and no respondents claims on the strongly disagree.

Besides, item CS3 describe that website accessibility is excellent while using e-logistic. In the table, there are 70.4% strongly agree and 24.5% agree on the statement followed by 4.3% of respondents are neutral on the statement but there are 0.6% respondents disagree and 0.3% respondents strongly disagree on the statement.

Next, item CS4 states that advertisement in e-logistic website or online platform is excellent. It consists 71.5% of respondents strongly agree and 25.1% of respondents agree on the statement while 3.4% of respondents claim that they feel neutral on the statement. Furthermore, there are zero of respondents disagree and strongly disagree on the statement.

Lastly, item CS5 shows the e-logistic website was reliable and helpful. There are 68.1% of respondents strongly agree and 28.5% of respondents agree followed by 3.4% of respondents are neutral on the statement. On the other side, there are 0% of respondent disagree and strongly disagree on the statement.



**Figure 4.4.1: Independent Variable (Customer Satisfaction Factor)**

*Source: (Develop from Research)*

The figure 4.4.1 shows the shape of frequency distribution of customer satisfaction factor affecting the success of e-logistic. The respondents must rate based on self-consciousness on the Likert scale provided on the statement. Majority of the respondents said agree with customer satisfaction factor influencing the success of e-logistic by which the mean value is equal to 4.65 followed by the standard deviation value is 0.412.

#### 4.4.2 Descriptive Analysis for Independent Variable (Technology Infrastructure Factor)

**Table 4.4.2: Summary of Technology Infrastructure Factor**

*Source: (Develop from Research)*

<i>Frequency</i>						
Item	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
TI1	Data secure properly while using a website	227 (64.7%)	111 (31.6%)	11 (3.1%)	1 (0.3%)	1 (0.3%)
TI2	Providing the good technology in e-logistic	231 (65.8%)	103 (29.3%)	14 (4.0%)	2 (0.6%)	1 (0.3%)
TI3	Technology infrastructure was completed	237 (67.5%)	99 (28.2%)	12 (3.4%)	3 (0.9%)	0 (0%)
TI4	Not facing any problem regarding to technology infrastructure	177 (50.4%)	157 (44.7%)	10 (3.4%)	5 (1.4%)	2 (0.6%)
TI5	Providing the great safety and security	231 (65.8%)	105 (29.9%)	11 (3.1%)	3 (0.9%)	1 (0.3%)

Refer on the table above, it presents the responses of 351 respondents on technology infrastructure factor. Item TI1 states that data secure properly while using website and there are 64.7% respondents strongly agree while 31.6% respondents agree with the question. 3.1% of respondents claims that they feel neutral on the statement. Moreover, there are 0.3% of respondents disagree and strongly disagree with the statement.

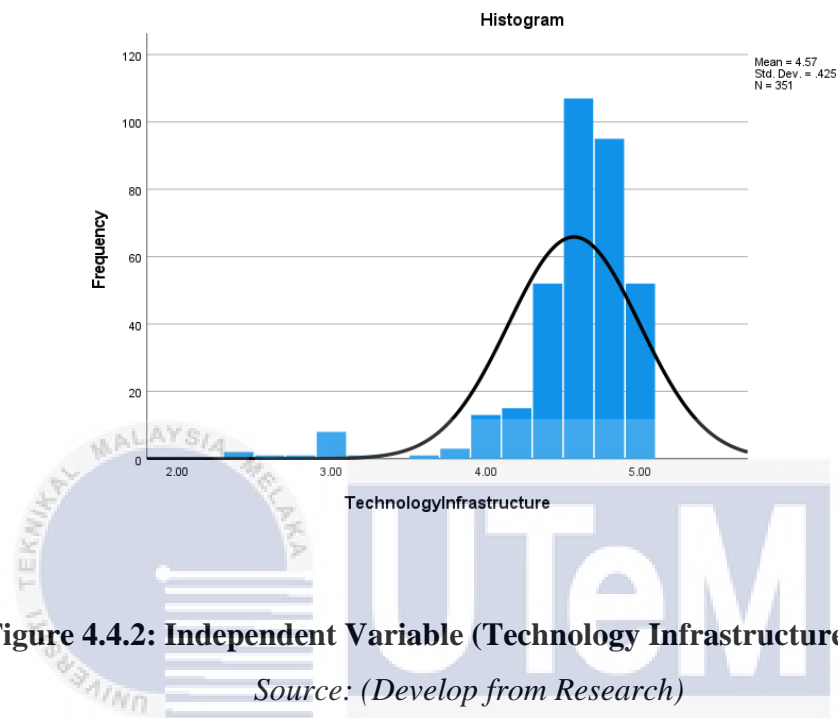
The item TI2 shows respondents by providing the good technology in e-logistic. There are 65.8% respondents strongly agree, and 29.3% respondents agree on the statement. The table also illustrate that there are 4.0% respondents are neutral on the statement. Furthermore, there are 0.6% respondents disagree and 0.3% strongly disagree on TI2 statement.

Next, the item TI3 state that technology infrastructure was completed while using e-logistic. As shown in table, majority of the respondents strongly agree with 67.5% and 28.2% of the respondents agree with the statement. However, there are 3.4% respondents feel neutral on TI3 while 0.9% respondents disagree and there are no respondents answer for strongly disagree on the statement TI3.

The fourth statement, TI4 describe respondent not facing any problem regarding to technology infrastructure. There are 50.4% respondents strongly agree and 44.7% respondents agree on the statement. However, there are respondents who have different opinions by which 3.4% respondents are neutral followed by 1.4% respondents disagree with the statement and 0.6% respondents are strongly disagree with statement TI4.

Finally, item TI5 express that by providing the great safety and security. It come out that 65.8% respondents are strongly agreed that great safety and security affecting the success of e-logistic and 29.9% respondents agree with the statement. Nonetheless, 3.1% respondents are neutral while 0.9% respondents disagree with the statement and 0.3% respondents are strongly disagree with the statement.





**Figure 4.4.2: Independent Variable (Technology Infrastructure Factor)**

*Source: (Develop from Research)*

The figure 4.4.2 illustrates the shape of frequency distribution of technology infrastructure factor affecting the success of e-logistic. It shows the feedback of respondents by Likert Scale where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly disagree referring to respondents' self-conscious in answer. More of the respondents agree that technology infrastructure affecting the success of e-logistic. Hence, the mean value is 4.57 while the standard deviation is 0.425.

#### 4.4.3 Descriptive Analysis for Independent Variable (Flexibility of e-logistic Factor)

**Table 4.4.3: Summary of Flexibility of e-logistic Factor**

*Source: (Develop from Research)*

<i>Frequency</i>						
Item	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
FE1	Customer giving the good responsiveness	235 (67%)	99 (28.2%)	11 (3.1%)	5 (1.4%)	1 (0.3%)
FE2	E-logistic is flexible to use	245 (69.8%)	93 (26.5%)	11 (3.1%)	2 (0.6%)	0 (0%)
FE3	Faster order fulfilment	266 (75.8%)	73 (20.8%)	9 (2.6%)	3 (0.9%)	0 (0%)
FE4	Available to customize such as product or address	262 (74.6%)	76 (21.7%)	11 (3.1%)	1 (0.3%)	1 (0.3%)
FE5	Website to track the product or services is excellent	265 (75.5%)	66 (18.8%)	16 (4.6%)	2 (0.6%)	2 (0.6%)

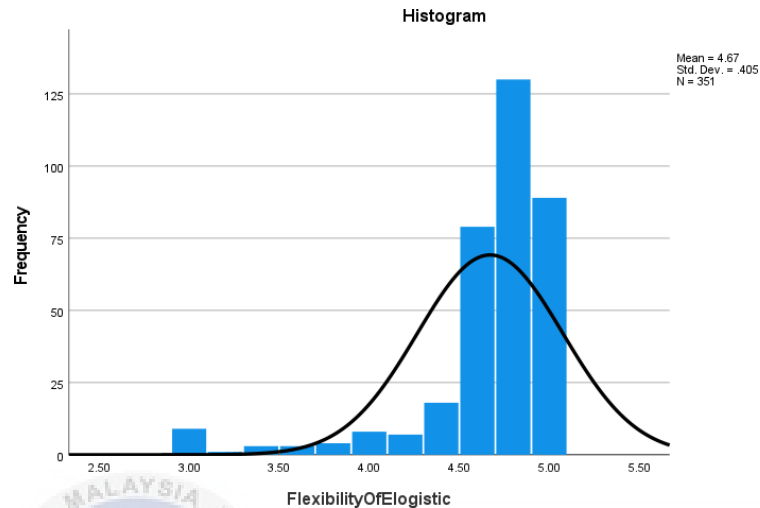
Table 4.4.3 shows the outcome of flexibility of e-logistic factor affecting the success of e-logistic. The item FE1 state that customer giving the good responsiveness while using e-logistic. Around 67% of respondents strongly agree and 28.2% respondents agree with the statement. Additionally, 3.1% respondents are neutral with the statement. Yet, there are 1.4% respondents disagree and 0.3% respondents strongly disagree that customer giving the good responsiveness while using e-logistic.

Item FE2 highlight that e-logistic is flexible to use. Majority of the respondents which is 69.8% are strongly agree on the statement and 26.5% agree that e-logistic is flexible to use. Furthermore, there are 3.1% respondents neutral with the statement but there are 0.6% respondents disagree with the statement and no respondents claim for strongly disagree.

Item FE3 states that while using e-logistic it received faster order fulfilment. There are 75.8% respondents strongly agree that they received faster order fulfilment and 20.8% respondents agree with item FE3. Other than that, 2.6% respondents feel neutral on the statement. Contrary, there are 0.9% disagree on the statement and 0% respondents strongly disagree with item FE3.

Next, item FE4 mention that using e-logistic make it available to customize such as product or address. Among the respondents 74.6% are strongly agree with the statement and 20.8% respondents agree on the statement. In addition, there are 3.1% respondents are neutral on the statement. Around 3.1% respondents disagree and strongly disagree that customer cannot customize while using e-logistic.

Eventually, item FE5 highlight website to track the product or services is excellent. There are 75.5% respondents strongly agree that website they use to track the product or services is excellent and 18.8% agree on the statement. Then, around 4.6% respondents are neutral followed by 0.6% respondents disagree and strongly disagree with the statement.



**Figure 4.4.3: Independent Variable (Flexibility of e-logistic)**

*Source: (Develop from Research)*

The figure 4.4.3 indicate the shape of frequency distribution of flexibility of e-logistic factor affecting the success of e-logistic. It mention the response of respondents by Likert Scale whereby 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly disagree referring to respondents' self-conscious in grading. More of the respondents agree that flexibility of e-logistic affecting the success of e-logistic. Therefore, the mean value is 4.67 while the standard deviation is 0.405.

#### 4.4.4 Descriptive Analysis for Independent Variable (Staff Service Quality)

**Table 4.4.4: Summary of Staff Service Quality Factor**

*Source: (Develop from Research)*

<i>Frequency</i>						
Item	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
SS1	I'm satisfied with the staff's service for assist	245 (69.8%)	88 (25.1%)	12 (3.4%)	4 (1.1%)	2 (0.6%)
SS2	Staff provide the service on time	253 (72.1%)	81 (23.1%)	15 (4.3%)	1 (0.3%)	1 (0.3%)
SS3	The logistics industry provides high level of service quality	255 (72.6%)	81 (23.1%)	11 (3.1%)	3 (0.9%)	1 (0.3%)
SS4	Provide service as promised	263 (74.9%)	73 (20.8%)	15 (4.3%)	0 (0%)	0 (0%)
SS5	Staff service quality is very much efficient in logistic supply chain	250 (71.2%)	85 (24.2%)	15 (4.3%)	1 (0.3%)	0 (0%)

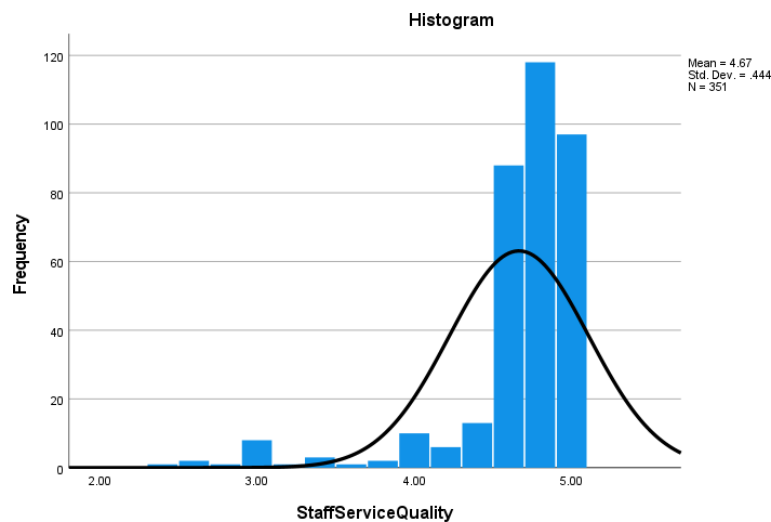
Table 4.4.4 illustrates the result of staff service quality affecting the success of e-logistic. Firstly, the item SS1 shows the respondents satisfied with the staff's service for assist. There are 69.8% respondents with the strongly agree and 25.1% respondents agree with the statement. Besides, 3.4% respondents are neutral with the statement. However, there are 1.1% respondents disagree and 0.6% respondents strongly disagree that they are satisfied with the staff's service for assist.

Next, item SS2 indicates whether staff provide the service on time affecting the success of e-logistic. Majority of the respondent strongly agree with 72.1% on the statement and 23.1% agree that staff provide the service on time. In addition, there are 4.3% respondents neutral with the statement. Although, there are 0.3% respondents disagree on the statement and 0.3% respondents strongly disagree.

Item SS3 mention that the logistics industry provides high level of service quality. There are 72.6% respondents strongly agree that the logistics provides high level of service quality, and 23.1% respondents agree with item SS3. Yet, 4.3% respondents feel neutral on the statement. Additionally, there are 0.9% disagree on the statement and 0.3% respondents strongly disagree with item SS3.

Next, item SS4 mention that staff service quality provide service as promised. Among the respondents ,74.9% strongly agree on the statement and 20.8% respondents agree with the statement. There are 4.3% respondents are neutral on the question. However, there are zero respondents disagree and strongly disagree on the statement that staff did not provide service as promised.

Finally, SS5 highlight that staff service quality is very much efficient in logistic supply chain. There are 71.2% respondents strongly agree that staff service quality provide much efficient in logistic supply chain and 24.2% agree on the statement. Besides, there are 4.3% respondents are neutral followed by 0.3% respondents disagree with the statement and no respondents answer for strongly disagree.



**Figure 4.4.4: Independent Variable (Staff Service Quality Factor)**

*Source: (Develop from Research)*

The figure 4.4.4 illustrates the shape of frequency distribution of staff service quality affecting the success of e-logistic. It shows the feedback of respondents by Likert Scale by which 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly disagree referring to respondents' self-conscious in grading. Majority of the respondents agree that staff service quality affecting the success of e-logistic. The mean value is 4.67 while the standard deviation is 0.444.

#### 4.4.5 Descriptive Analysis for Dependent Variable (The Success of E-logistic)

**Table 4.4.5: Summary of The Success of E-logistic**

*Source: (Develop from Research)*

<i>Frequency</i>						
Item	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
DV1	I have resource necessary to use e-logistic in the logistic supply chain	252 (71.8%)	81 (23.1%)	16 (4.6%)	2 (0.6%)	0 (0%)
DV2	E-logistic is easy to practice	260 (74.1%)	76 (21.7%)	12 (3.4%)	2 (0.6%)	1 (0.3%)
DV3	I can get help from others when I have difficulties using change e-logistic	254 (72.4%)	83 (23.6%)	13 (3.7%)	1 (0.3%)	0 (0%)
DV4	I'm convenient while using e-logistic	259 (73.8%)	75 (21.4%)	14 (4.0%)	2 (0.6%)	1 (0.3%)
DV5	I know the purpose of e-logistic	262 (74.6%)	73 (20.8%)	14 (4.0%)	1 (0.3%)	1 (0.3%)



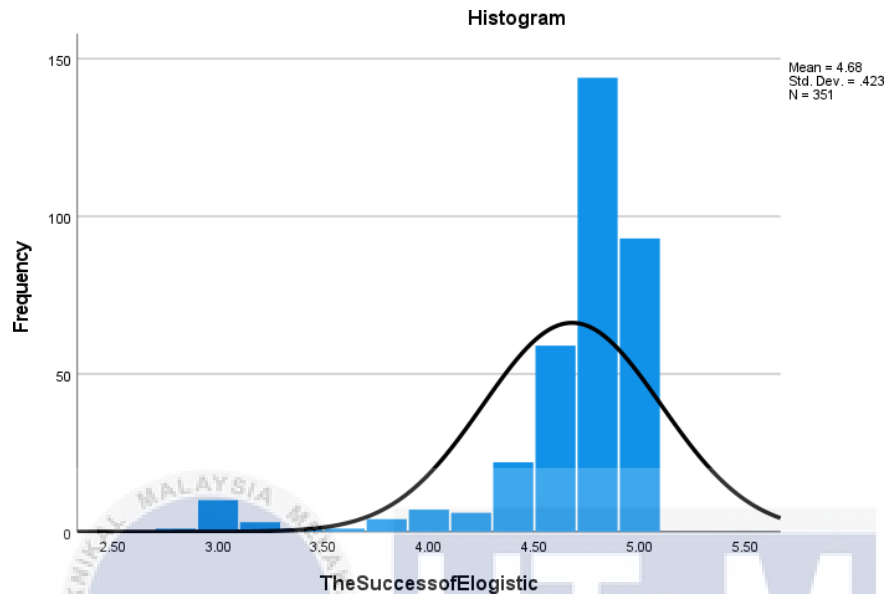
The table 4.4.5 shows descriptive statistics result of the dependent variable, the success of e-logistic. Item DV1 mention that customer have resource necessary to use e-logistic in the logistic supply chain. There are 71.8% of respondents strongly agree with the statement and 23.1% of respondents agree. Furthermore, there are 4.6% feel neutral with statement DV1 but 0.6% respondents disagree as well as no respondents strongly disagree that they do not have necessary to use e-logistic in the logistic supply chain.

Next, item DV2 describe that e-logistic is easy to practice. More of the respondent strongly agree with 74.1% on the statement. While there are 21.7% agree with the statement and 3.4% of respondents are neutral with DV2. However, there are 0.3% respondents are disagree and no respondents for strongly disagree.

Item DV3 highlight that respondents can get help from others when they have difficulties using change e-logistic. Around 72.4% respondents strongly agree with the statement while 23.6% respondents agree. Additionally, 3.7% respondents are neutral on the statement. There are a few of respondents with 0.3% who disagree with the statement and no one answer strongly disagree on the statement.

Subsequently, item DV4 refer those respondents convenient while using e-logistic. There are 73.8% respondents strongly agree and 21.4% agree with the statement. 4.0% respondents are neutral with the statement. Otherwise, 0.6% respondents disagree that they did not convenient while using e-logistic followed by 0.3% respondents strongly disagree with the statement.

Lastly, DV5 shows that customer know the purpose of e-logistic. Around 74.6% respondents strongly agree with the statement and 20.8% respondents agree that they know the purpose of e-logistic. Furthermore, 4.0% respondents feel neutral on the statement followed by 0.3% respondents disagree and strongly disagree with the statement.



**Figure 4.4.5: Dependent Variable (The Success of E-logistic)**

*Source: (Develop from Research)*

The figure 4.4.5 illustrates shape of frequency distribution of the success of e-logistic. The respondents must rate based on self-consciousness on the Likert scale giving on the statement. Majority of the respondents rated agree with statements in the success of e-logistic where the mean value is equal to 4.68 while the standard deviation value is 0.423.

#### 4.5 Descriptive Analysis

**Table 4.5: Descriptive Statistics for Each Independent Variable**

*Source: (Develop from Research)*

Independent Variable	N	Minimum	Maximum	Mean	Standard Deviation
Customer Satisfaction	351	3.00	5.00	4.65	0.41
Technology Infrastructure	351	2.40	5.00	4.57	0.43
Flexibility of E-logistic	351	3.00	5.00	4.67	0.40
Staff Service Quality	351	2.40	5.00	4.66	0.44

The table shows the descriptive statistics of each independent variable which are customer satisfaction, technology infrastructure, flexibility of e-logistic, and staff service quality. As shown on the table, all of the independent variables have nearly similar value of mean whereby flexibility of e-logistic factor has the highest mean at 4.67 besides followed by staff service quality factors at 4.66 and technology infrastructure factor has lowest mean at 4.57. Based on the table acquired, it is obviously that more of the respondents rated agree on the questionnaire that the independent variables affecting the success of e-logistic.

However, for standard deviation describe to identify how the data spread from the mean. Based on study, staff service quality factor has the highest standard deviation at 0.44 followed by technology infrastructure factor at 0.43 while the lowest standard deviation is flexibility of e-logistic factor at 0.40. The standard deviation value determine that the data are not deviate from the mean.

#### 4.6 Pearson's Correlation Analysis

**Table 4.6: Correlations of Independent Variables and Dependent Variable**

*Source: (Develop from Research)*

		Customer Satisfaction	Technology	Flexibility	Staff Service	Elogistic
Customer Satisfaction	Pearson Correlation	1	.670**	.771**	.779**	.759**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	351	351	351	351	351
Technology	Pearson Correlation	.670**	1	.637**	.696**	.671**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	351	351	351	351	351
Flexibility	Pearson Correlation	.771**	.637**	1	.726**	.778**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	351	351	351	351	351
Staff Service	Pearson Correlation	.779**	.696**	.726**	1	.721**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	351	351	351	351	351
Elogistic	Pearson Correlation	.759**	.671**	.778**	.721**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	351	351	351	351	351
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 4.6 show the relationship between customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality factors with the success of e-logistic by using credit cards through Pearson's Correlation Analysis.

Pearson's Correlation Analysis measures the strength of linear relationship between the independent variables and dependent variables. Moreover, Pearson's

Correlation Coefficient value ranges from +1 to -1 whereby the positive value consider as positive correlation between the variables while negative value considers as negative correlation between the variables. The zero value of coefficient referred that there is no relationship between the variables. The value of Pearson's Correlation Coefficient is denoted by  $r$ .

The table illustrate significant correlations ranged from 0.671 to 0.778. Between the four independent variables, flexibility of e-logistic factor has the highest value of coefficient by which value of  $r$  is 0.778. The value considers as strong positive relationship between flexibility of e-logistic factor and the success of e-logistic. In addition, the p-value for all the variables are below 0.01 significance level with two asterisks at two-tailed test indicate that there is statistically significant relationship.

Other than that, customer satisfaction factor has the second highest correlation coefficient value,  $r$  at 0.759. It states that customer satisfaction factor has strong positive correlation with the success of e-logistic. Moreover, the  $r$ -value of staff service also has strong positive correlation with the success of e-logistic with  $r$ -value is 0.721 meanwhile technology infrastructure factor is 0.671 which clearly shows strong moderate positive relationship between technology infrastructure factor and the success of e-logistic.

Thus, there is significant relationship between independent variables which comprising of customer satisfaction factor, technology infrastructure factor, flexibility of e-logistic and staff service quality factors with dependent variable which is the success of e-logistic. Hence, the researcher conducts further analysis on the independent variables with multiple linear regression analysis.

#### **4.7 Simple Linear Regression Analysis**

The researcher decided to use linear regression analysis to determine the influence of each independent variable on dependent variable. Through linear regression analysis, the hypothesis testing result will be obtained to test the relationship between independent variables and dependent variable.

#### 4.7.1 Simple Linear Regression for Customer Satisfaction Factor

**Table 4.7.1.1: Model Summary of Customer Satisfaction Factor**

*Source: (Develop from Research)*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.759 <sup>a</sup>	0.577	0.576	0.27543
a. Predictors: (Constant), CustomerSatisfaction				

The table 4.7.1.1 illustrate the result of linear regression model summary of customer satisfaction factor. The value of R represents the correlation between customer satisfaction factor and the success of e-logistic. As shown on the table, R-value is at 0.759 which means high correlation between customer satisfaction factor and the success of e-logistic. The value of R square is the square of R-value which describe as the proportion of variance in dependent variable that can be clarified by the independent variables. In the table, R-square value is 0.577 which means that about 57.7% of the variation in the success of e-logistic is explained by customer satisfaction.

**Table 4.7.1.2: ANOVA<sup>a</sup> of Customer Satisfaction Factor**

*Source: (Develop from Research)*

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	36.074	1	36.074	475.532	0.000 <sup>b</sup>
	Residual	26.475	349	0.076		
	Total	62.550	350			
a. Dependent Variable: Elogistic						
b. Predictors: (Constant), CustomerSatisfaction						

Analysis of Variance (ANOVA) is used for hypotheses testing to see whether how well the model fits into the data. The significant of p-value is 0.000 which is lesser than 0.05 states that customer satisfaction factor well explained the success of e-logistic. Hence, alternative hypothesis is accepted at  $\alpha = 0.05$

**Table 4.7.1.3: Coefficients<sup>a</sup> of Customer Satisfaction Factor***Source: (Develop from Research)*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.052	0.167		6.298	0.000
	CustomerSatisfaction	0.780	0.036	0.759	21.807	0.000
a. Dependent Variable: Elogistic						

From the table, beta values are used to predict dependent variable from independent variable. The coefficient of customer satisfaction factor indicate there is significant relationship with the success of e-logistic. The result shows p-value is 0.000 while  $\beta$  is 0.759 which represents customer satisfaction factor does affect the success of e-logistic. Thus, alternative hypothesis (H1) is accepted, and null hypothesis (H<sub>0</sub>) rejected.

#### 4.7.2 Simple Linear Regression for Technology Infrastructure Factor

**Table 4.7.2.1: Model Summary of Technology Infrastructure Factor***Source: (Develop from Research)*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.671 <sup>a</sup>	0.450	0.449	0.31394
a. Predictors: (Constant), TechnologyInfrastructure				

Based on the table, the value of R equals to 0.671 which indicate strong correlation between technology infrastructure factor and the success of e-logistic. The coefficient determination, R square has value at 0.450 which indicates that there is 45.0% of variation in the success of e-logistic in interpreted by technology infrastructure factor.

**Table 4.7.2.2: ANOVAa of Technology Infrastructure Factor***Source: (Develop from Research)*

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	28.152	1	28.152	285.635	0.000 <sup>b</sup>
	Residual	34.397	349	0.099		
	Total	62.550	350			
a. Dependent Variable: Elogistic						
b. Predictors: (Constant), TechnologyInfrastructure						

The table 4.7.2.2, the p-value is equal to 0.000 is less than 0.05 represents there is significant relationship between technology infrastructure factor and the success of e-logistic. Thus, alternative hypothesis (H<sub>2</sub>) is accepted at alpha equal to 0.05.

**Table 4.7.2.3: Coefficientsa of Technology Infrastructure Factor***Source: (Develop from Research)*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.629	0.181		8.993	0.000
	TechnologyInfrastructure	0.667	0.039	0.671	16.901	0.000
a. Dependent Variable: Elogistic						

From the table 4.7.2.3, the coefficient of independent variable has significant relationship with the success of e-logistic toward technology infrastructure factors because the p-value is less than 0.05. The result shows p-value is 0.000 while  $\beta$  is 0.671 which represents technology infrastructure factor does affect the success of e-logistic. Therefore, alternative hypothesis (H<sub>2</sub>) is accepted, and null hypothesis (H<sub>0</sub>) rejected.



### 4.7.3 Simple Linear Regression for Flexibility of E-logistic

**Table 4.7.3.1: Model Summary of Flexibility of E-logistic Factor**

*Source: (Develop from Research)*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.778 <sup>a</sup>	0.605	0.604	0.26599
a. Predictors: (Constant), Flexibility				

By referring the table above, the R-value is at 0.778 which states strong relationship between flexibility of e-logistic factor and the success of e-logistic. The coefficient determinant, R square valued at 0.605. There are 60.5% of variation in flexibility of e-logistic factor that influence the success of e-logistic.

**Table 4.7.3.2: ANOVA<sup>a</sup> of Flexibility of E-logistic Factor**

*Source: (Develop from Research)*

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	37.857	1	37.857	535.069	0.000 <sup>b</sup>
	Residual	24.692	349	0.071		
	Total	62.550	350			
a. Dependent Variable: Elogistic						
b. Predictors: (Constant), Flexibility						

From the table 4.7.3.2, ANOVA shows that flexibility of e-logistic factor is significant as the p-value is 0.000 (less than 0.05). It represents that there is significance relationship between flexibility of e-logistic factor and the success of e-logistic. Therefore, alternative hypothesis (H3) is accepted at alpha equal to 0.05.

**Table 4.7.3.3: Coefficients<sup>a</sup> of Flexibility of E-logistic Factor***Source: (Develop from Research)*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.882	0.165		5.352	0.000
	Flexibility	0.813	0.035	0.778	23.132	0.000
a. Dependent Variable: Elogistic						

As shown on the table 4.7.3.3, the coefficient of independent variable states that there is significant relationship between flexibility of e-logistic factor and the success of e-logistic because the p-value is less than 0.05. The result shows that  $\beta$  value at 0.778 which represents that flexibility of e-logistic factor does affect the success of e-logistic. Therefore, the null hypothesis ( $H_0$ ) has been rejected while alternative hypothesis ( $H_3$ ) is accepted.

#### 4.7.4 Simple Linear Regression for Staff Service Quality

**Table 4.7.4.1: Model Summary of Staff Service Quality Factor***Source: (Develop from Research)*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.721 <sup>a</sup>	0.520	0.519	0.29330
a. Predictors: (Constant), StaffServiceQuality				

Based on the table, the value of R equals to 0.721 which indicate strong correlation between staff service quality factor and the success of e-logistic. The coefficient determination, R square has value at 0.520 which indicates that there is 52.0% of variation in the success of e-logistic in explained by staff service quality factor.

**Table 4.7.4.2: ANOVA<sub>a</sub> of Staff Service Quality Factor***Source: (Develop from Research)*

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	32.527	1	32.527	378.104	0.000 <sup>b</sup>
	Residual	30.023	349	0.086		
	Total	62.550	350			
a. Dependent Variable: Elogistic						
b. Predictors: (Constant), StaffServiceQuality						

From the table 4.7.4.2, ANOVA indicates that staff service quality factor is significant as the p-value is 0.000 (less than 0.05). It represents that there is significance relationship between staff service quality factor and the success of e-logistic. Therefore, alternative hypothesis (H<sub>4</sub>) is accepted at alpha equal to 0.05.

**Table 4.7.4.3: Coefficients<sub>a</sub> of Staff Service Quality Factor***Source: (Develop from Research)*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.474	0.166		8.902	0.000
	StaffServiceQuality	0.687	0.035	0.721	19.445	0.000
a. Dependent Variable: Elogistic						

As shown on the table 4.7.4.3, the coefficient of independent variable states that there is significant relationship between staff service quality factor and the success of e-logistic because the p-value is less than 0.05. The result shows that  $\beta$  value at 0.721 which represents that staff service quality factor does affect the success of e-logistic. Thus, the null hypothesis (H<sub>0</sub>) has been rejected while alternative hypothesis (H<sub>4</sub>) is accepted.



By referring on the table, the significance value, p-value is 0.000 which is less than the alpha value, 0.05 is statistically significant. The F-value is 197.117 is significant because when the F-value is higher, alternative hypotheses are well fit in the model and accepted. Hence, the significance of overall model is  $F(4,346) = 197.117$ ,  $p < 0.05$ . It indicates that overall multiple regression model is significant at 5% level of significant.

**Table 4.8.3: Coefficients<sup>a</sup> of Multiple Linear Regression**

*Source: (Develop from Research)*

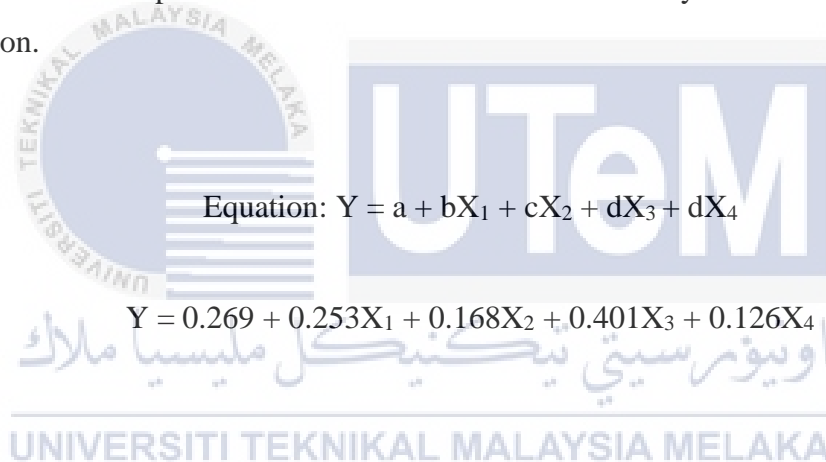
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.269	0.158		1.701	0.090
	CustomerSatisfaction	0.253	0.056	0.247	4.502	0.000
	Technology	0.168	0.043	0.169	3.869	0.000
	Flexibility	0.401	0.052	0.384	7.715	0.000
	StaffService	0.126	0.050	0.133	2.523	0.012
a. Dependent Variable: Elogistic						

According to the table, each independent variable in the research has contribution in affecting the success of e-logistic. The flexibility of e-logistic factor is the strongest predictor variable where  $\beta = 0.401$ ,  $t(351) = 7.715$ ,  $p < 0.05$ . The unstandardized beta,  $\beta$  also has the highest value compared to other independent variables. It can be clearly seen that flexibility of e-logistic factor has the highest influence of positive relationship with the success of e-logistic.

Besides that, customer satisfaction factor has subsequent stronger predictor where  $\beta = 0.253$ ,  $t(351) = 4.502$ ,  $p < 0.05$ . The unstandardized beta,  $\beta$  of customer satisfaction factor is the second highest positive value among the variables. From the result, customer satisfaction factor is the second highest factor affecting the success of e-logistic.

Next, technology infrastructure factor is the middle predictor variable where  $\beta = 0.168$ ,  $t(351) = 3.869$ ,  $p < 0.05$ . The unstandardized beta,  $\beta$  of technology infrastructure is the third positive among the variables. From the result, technology infrastructure factor is the third highest factor affecting the success of e-logistic.

Then, staff service quality factor is the lower predictor variable where  $\beta = 0.126$ ,  $t(351) = 2.523$ ,  $p < 0.05$ . The unstandardized beta,  $\beta$  of staff service quality is the lowest positive among the variables. From the result, staff service quality factor is the lowest positive value of all independent variables and is the fourth factor affecting the success of e-logistic. Based on the result, each of the independent variable has different level of contribution towards dependent variable and provide significant prediction towards the success of e-logistic. The relationship between dependent variable and independent variables can be determined by the multiple regression equation.



Equation:  $Y = a + bX_1 + cX_2 + dX_3 + dX_4$

$$Y = 0.269 + 0.253X_1 + 0.168X_2 + 0.401X_3 + 0.126X_4$$

**Table 4.8.4: Equation of Multiple Regression Analysis**

*Source: (Saunders et al., 2016)*

Y	Dependent variable (The success of e-logistic)
A	Constant or other influence
B	Influence of $X_1$ (Customer satisfaction)
C	Influence of $X_2$ (Technology infrastructure)
D	Influence of $X_3$ (Flexibility of e-logistic)
E	Influence of $X_4$ (Staff service quality)
$X_1, X_2, X_3, X_4$	Independent variables

From the multiple regression equation, there is positive relationship between all independent variables and dependent variable. The regression equation formed to predict the value of the success of e-logistic, multiply independent variables score and add values to the constant. For every increase in unit in independent variable, the researcher expects value increase in dependent variable holding all the variables in constant. Flexibility of e-logistic factor is the strongest predictor from the result obtained as  $\beta = 0.401$ ,  $t(351) = 7.715$ ,  $p < 0.05$ . Therefore, the most significant factor affecting the success of e-logistic is flexibility of e-logistic factor.

In conclusion, the regression equation is:

The success of e-logistic =  $0.269 + 0.247$  (Customer Satisfaction) +  $0.169$  (Technology Infrastructure) +  $0.384$  (Flexibility) +  $0.133$  (Staff Service Quality). Hence, the regression equation is established to show how the variables are associated to each other.

#### 4.9 Hypothesis Testing

Hypothesis testing enable researcher to come into conclusion about population by examining samples from the population (Applegate et al., 2003). The hypothesis is chosen between alternative hypothesis and null hypothesis.

Where:

$H_0$  is null hypothesis

$H_1$  is alternative hypothesis

If the significance value is less than 0.05, the null hypothesis will be rejected, and alternative hypothesis will be accepted. If such, the researcher can conclude that there is no homogeneity between the independent variables and dependent variable.

#### 4.9.1 Hypothesis Testing 1

H1: There is significant relationship between customer satisfaction factors and the success of e-logistic

H<sub>0</sub>: There is no significant relationship between customer satisfaction factors and the success of e-logistic

From the table 4.7.1.3, the significance value is less than 0.05 which indicate the alternative hypothesis, H1 is accepted and null hypothesis, H<sub>0</sub> is rejected. Thus, there is significant relationship between customer satisfaction factors and the success of e-logistic. In customer satisfaction, it will be customer service since it related to each other. Customer service become the important factor for satisfaction of customer and encouraging retain customer (Grant, 2022). Furthermore, in e-commerce, online chat can assist online retailers enhance customer satisfaction because they can receive real-time responses from online retailers (Schiff J. L., 2015). The studies show customer satisfaction factors has effect on the success of e-logistic.

#### 4.9.2 Hypothesis Testing 2

H1: There is significant relationship between technology infrastructure factors and the success of e-logistic

H<sub>0</sub>: There is no significant relationship between technology infrastructure factors and the success of e-logistic

Based on the table 4.7.2.3, the significance value is less than 0.05 which shows the alternative hypothesis, H2 is accepted and null hypothesis, H<sub>0</sub> is rejected. Therefore, there is significant relationship between technology infrastructure factors and the success of e-logistic. E-logistic also include as a technology for supply chain due to before technology era was not invented yet, they use traditional logistic. By using the security technology, it can prevent from any consequences such as illegal



dealing, hacking and money loss (Boerhanoeddin, 2000). The studies highlight that technology infrastructure has effect on the success of e-logistic.

#### 4.9.3 Hypothesis 3

H1: There is significant relationship between flexibility of e-logistic factors and the success of e-logistic

H<sub>0</sub>: There is no significant relationship between flexibility of e-logistic factors and the success of e-logistic

Based on the table 4.7.3.3, the significance value is less than 0.05 which indicate the alternative hypothesis, H3 is accepted and null hypothesis, H<sub>0</sub> is rejected. Therefore, there is significant relationship between flexibility of e-logistic factors and the success of e-logistic. To meet customer expectation while using customization in delivery flexibility, the one of instances is when a customer's demands and plans change between order placement and delivery (Schwager, Meyer, 2007). By providing this role, it can increase the satisfaction of customer besides ease the process of delivery by removing attempted deliveries and call to call centers. Customer also can change order requirements such as order date (Sharma G., 2018). The studies indicates that flexibility of e-logistic has effect on the success of e-logistic.

#### 4.9.4 Hypothesis 4

H1: There is significant relationship between staff service quality factors and the success of e-logistic

H<sub>0</sub>: There is no significant relationship between staff service quality factors and the success of e-logistic

Based on the table 4.7.4.3, the significance value is less than 0.05 which indicate the alternative hypothesis, H3 is accepted and null hypothesis, H<sub>0</sub> is rejected. Thus, there is significant relationship between staff service quality factors and the success of e-logistic. The logistics depict the staff's external image, attitude and communication with the customer, and private service material can have an important influence on e-logistic perception (Miraz, Saleheen & Habib, 2017; Tanoos, 2017; Miraz, Kabir, Habib & Ahmed, 2019). Furthermore, the ability of staff members to confirm the quality of services is referred to as ensuring logistics distribution (Benfang & Feng, 2014). From all previous studies, staff service quality affecting the success of e-logistic.

#### 4.9.5 Hypothesis Testing Result

**Table 4.9.5: Hypothesis Testing Result**

*Source: (Developed for research)*

Independent Variables	P Value	Result
Customer Satisfaction	0.000	Accepted H1
Technology Infrastructure	0.000	Accepted H2
Flexibility of E-logistic	0.000	Accepted H3
Staff Service Quality	0.012	Accepted H4

From table 4.9.5, the hypothesis result shows that there are significant relationships between all of the independent variables with the dependent variable. The result indicates that all the significant value is below 0.05 where  $p < 0.05$ . As a result, null hypothesis (H<sub>0</sub>) of each independent variable is rejected while the alternative hypothesis of each independent variable is accepted.

#### 4.10 Summary

As summary, this chapter discussed data analysis and result of the research. SPSS Version 27.0 was used to collect data and result from 351 respondents to study the factors affecting the success of e-logistic on customer perception. There are several different statistical tools used for the data analysis.

In pilot test, reliability analysis was conducted to test internal consistency of the questionnaire with Cronbach's Alpha. For respondents' profile, the data and variables projected in pie charts, tabulated in table and shown in the figures. With linear regression analysis, researcher determined that all of the alternative hypotheses are accepted while null hypotheses rejected as there are significant relationship between the independent variables (customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality factors) with the success of e-logistic. Meanwhile, Pearson's Correlation Coefficient analysis indicates that there is strong positive relationship between independent variables and dependent variables in the research. Eventually, multiple regression analysis conclude that technological factor is the most significant factor affecting the success of e-logistic on customer perceptions.

## CHAPTER 5

### CONCLUSION AND RECOMMENDATION

#### 5.1 Introduction

In this chapter, the researcher will discuss on the overall discussion for the findings of this study. The summary of research findings, literature review, conclusion and recommendations are made based the research objectives. The recommendations are derived from research findings and meant for future research. The result and findings of this study can be used by other researchers in future to conduct e-logistic study.

#### 5.2 Summary of Findings

In previous chapter, the study had achieved the research objectives which are to identify factors affecting the success of e-logistic on customer perception to study the relationship between customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality factors with the success of e-logistic on customer perception and to examine the most significant factor affecting the success of e-logistic on customer perception.

### 5.2.1 Research Objectives 1

**RO1: To identify the factors affecting the success of e-logistic on customer perception.**

The first objective of this study is to identify the factors affecting the success of e-logistic on customer perception. In previous chapter, the researcher had suggested four factors affecting the success of e-logistic on customer perception which are customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality factors. The first objective had been achieved through Literature Review in Chapter 2. The factors had been proved by previous researchers. Hence, the researcher comes out with the independent variables (customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality factors) affecting the success of e-logistic on customer perception.

In customer satisfaction factor, according to Oliver (2014), if the product or service meets the customer's requirements and expectations, it is supposed that the customer will be satisfied with it. Moreover, Customer satisfaction is vital for the success of e-logistic since it engages interaction between the customer and seller. According to Boerhanoeddin (2012), whereby by using the security in technology infrastructure, it can prevent from any consequences such as illegal dealing, hacking and money loss. Security in technology infrastructure is vital for the success of e-logistic because it is involving about the privacy of customer and seller like personal information. Also, to meet customer expectation on flexibility of e-logistic while using customization in delivery flexibility, the one of instances is when a customer's demands and plans change between order placement and delivery (Schwager, Meyer, 2007). In staff quality service, the logistics depict the staff's external image, attitude and communication with the customer, and private service material can have an important influence on e-logistic perception (Miraz, Saleheen & Habib, 2017; Tanoos, 2017; Miraz, Kabir, Habib & Ahmed, 2019).

Based on the KMO and Bartlett's Test result in table 4.2.2.1.1 by which all the four factors affecting the success of e-logistic on customer perception reliable each other since the result is 0.938 which the value higher than 0.6 (Yong & Pearce, 2013) and Bartlett Test sphericity is significant because the p-value is less than 0.05

### 5.2.2 Research Objective 2

**RO2: To evaluate the relationship between the factor to the success of e-logistic on customer perception.**

The second research objective achieved through Pearson's Correlation Coefficient Analysis by Statistical Package for Social Sciences (SPSS) software. The findings display that all the independent variables which are customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality factors are positively associated to the dependent variable which is the success of e-logistic on customer perception. Additionally, the results of the analysis show that all of the independent variables have significant relationship and positively associated with the success of e-logistic. The independent variables (customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality factors) has moderate strong to strong positive relationship with the success of e-logistic as refer to the Pearson's Correlation Analysis in table 4.5 have respective value between 0.671, 0.721, 0.759 and 0.778

In e-commerce, online chat can assist online retailers enhance customer satisfaction factor because they can receive real-time responses from online retailers (Schiff J. L., 2015) whereby it can lead to the success of e-logistic. Next, the utilization of technology infrastructure become growing since it is 21st century whereby technology have been using almost all country around the world (Graafland, 2018). The success of e-logistic also include as a technology for supply chain due to before technology era was not invented yet, they use traditional logistic (Wang, Asian, Wood, & Wang ,2020) while flexibility of e-logistic factors focusing in more to customization and customer service for the success of e-logistic by which customer can change order requirements such as order date (Sharma G., 2018) and each customer has unique requirements, and flexibility skills imply the ability to properly address the dynamics of each customer experience (Martins, 2012). In addition, staff service quality refers to the staff's external image, attitude and communication with the customer, and private service material can have an important influence on e-logistic perception (Miraz, et al 2019). For the result in table 4.5 flexibility of e-logistic factor has highest relationship followed by customer satisfaction, staff service quality and technology infrastructure.

### 5.2.3 Research Objective 3

**RO3: To examine the most significant factors to the success of e-logistic on customer perception.**

The third research objective is to examine the most significant factors to the success of e-logistic on customer perception. This objective can be achieved through Multiple Linear Regression analysis from SPSS. Based on table 4.8.3, flexibility of e-logistic factor is the most significant factor affecting the success of e-logistic on customer perception. It can be shown in the table 4.8.3 which the beta value is greater than other factor which is 0.384 and p-value is less than 0.05 means that it is significant towards the success of e-logistic.

Flexibility of e-logistic factor has the most significant factor affecting the success of e-logistic on customer perception, whereby flexibility is the ability to change, customize, persuade or to bend. In this factor, customization is the role for customer by requesting to when and where to collect goods (Luck, 2022). Moreover, to meet customer expectation while using customization in delivery flexibility, the one of instances is when a customer's demands and plans change between order placement and delivery (Schwager, Meyer, 2007). In addition, customer service also key role which means flexibility in customer service refers to the ability to adapt to changing circumstances and customer can make a request for their order (McCabe, 2018). Furthermore, to meet customer expectation while using customization in delivery flexibility, the one of instances is when a customer's demands and plans change between order placement and delivery (Schwager, Meyer, 2007). According to Martins (2012), each customer has unique requirements, and flexibility skills imply the ability to properly address the dynamics of each customer experience. The study found that flexibility of e-logistic had the greatest impact on the success of e-logistic.

### 5.3 Research Implication

The finding of this research is to have deeper understanding about factors affecting the success of e-logistic on customer perception. From the research, there are only four factors are being studied but the researcher believed that there are still other factors that can affects the success of e-logistic on customer perception. Thus, the researcher suggested a new framework that can be used by future researchers.

In this study, the researcher is able to achieve the research objectives through literature review, Pearson's Correlation Coefficient's analysis and Multiple Linear Regression analysis and test the hypothesis on the relationships on independent variables (customer satisfaction, technology infrastructure, flexibility of e-logistic, and staff service quality) affecting the success of e-logistic on customer perception. In summary, customer satisfaction, technology infrastructure, flexibility of e-logistic, and staff service quality affecting the success of e-logistic on customer perception and flexibility of e-logistic factor is the most significant factor that can affects the success of e-logistic on customer perception.

The factors affecting the success of e-logistic on customer perception is vital to have in depth understanding on the acceptance of customer while using e-logistic. From there it can be measure the satisfaction level about the e-logistic and how its work.



#### 5.4 Research Limitation

There are several limitations that have been met by researcher during the study. The limitation could be improved for future study. The first limitation is time constraint by which the researcher only able to collect around 351 respondents from 384. However, the researcher knows that there will be affect the result for the success of e-logistic on customer perception. For future research, the e-logistic study can focus on collect the exact data which is 384 to obtain better and precise result.

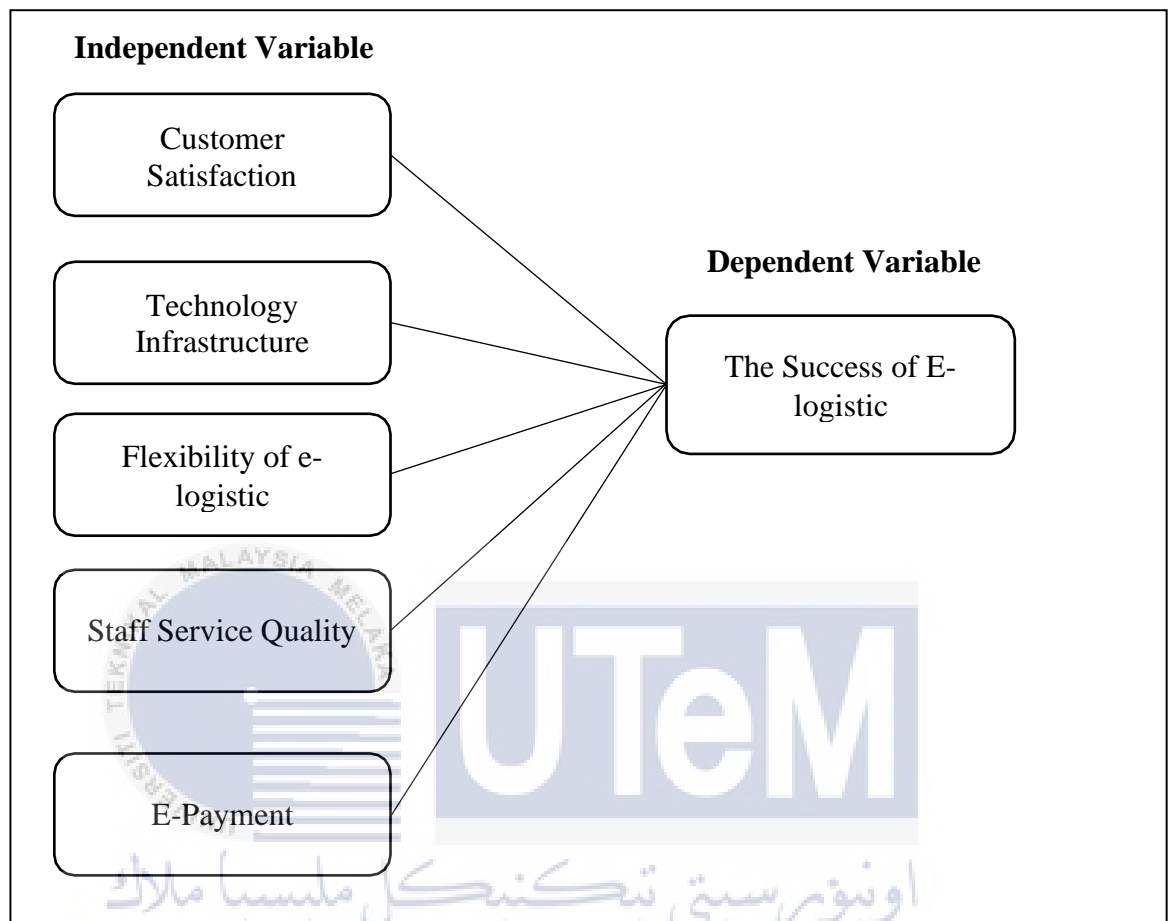
Next, the limitation is the responses from consumers. The potential respondents may refuse to answer the questionnaire due to personal reasons. Some of the respondents may not answer the questionnaire based on their own experiences and may not understand the questions well before they answer. This can cause the data may not be able to provide enough evidence on the success of e-logistic on customer perception. The researcher designed the questionnaire based on problem statement to obtain precise and accurate data to make significant study. Therefore, the data may not be supportive enough to represent customer using e-logistic in Malaysia.

Lastly, the other limitation faced by researcher is limited of previous study of journal and article. The article and journal found by researcher more to the IoT, ICT, AI and blockchain and that article also provide more to mediator factor as well as there are less article regarding to the success of e-logistic.

### 5.5 Recommendation for Future Research

For future research, the researcher proposed new conceptual framework as this study only consists of four independent variables (customer satisfaction, technology infrastructure, flexibility of e-logistic and staff service quality). Although, the researcher believed that there are other factors that can affecting the success of e-logistic on customer perception. The future researchers may do qualitative research on e-logistic studies to gain deeper insights on e-logistic consumers. Future researchers can increase the sample size of study to have generalization on customer using e-logistic.

Based on the study of Kim, C., Tao, W., Shin, N., & Kim, K. S. (2010), Electronic commerce (EC) is built upon e-payment systems (EPS) and e-logistic on e-commerce. E-payment has emerged as one of the most important issues for effective business and financial services as EC has become a key element of many companies' company operations (Hsieh 2001, Peha and Khamitov 2004, Stroborn et al. 2004, Linck et al. 2006, Cotteleer et al. 2007, Kousaridas et al. 2008). To function efficiently and effectively, it is required customer perception. Moreover, e-payment is one of the key components of the success of e-logistic on customer perception. Besides that, e-payment is critical to the success of e-logistic. For e-logistic goods payment, it can be measured by allocating the customer perception towards the e-payment and how they satisfied on e-payment. Next, E-payment has a few advantages, including security, convenience, acceptability, and privacy (Cotteleer et al., 2007; Linck et al., 2006; Tsiakis & Sthephanides, 2005). All of these characteristics have a significant positive effect on the success of e-logistic. These attributes boost e-logistic customers' satisfaction. That is why it has a positive impact on the success of e-logistic. Thus, e-payment factor can be used in future research on e-logistic studies. The researcher constructs new research framework for future research as below.



**Figure 5.5: New Conceptual Framework**

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## APPENDICES

### APPENDICE A



#### THE FACTORS AFFECTING THE SUCCESS OF E-LOGISTIC ON CUSTOMER PERCEPTION

Good day, I am Aina Nadirah Binti Baharin and currently studying in my final year at Universiti Teknikal Malaysia Melaka from Faculty of Technology Management and Technopreneurship (FPTT) in bachelor technology management (supply chain management and logistics). I am conducting a final year research study entitled with " THE FACTORS AFFECTING THE SUCCESS OF E LOGISTIC ON CUSTOMER PERCEPTION IN MALAYSIA. This survey is the part of a study conducted to complete the Final Year Project (FYP).

This questionnaire contains three sections, and it may take approximately 5-10 minutes of your time to complete. Please be aware that this research is purely academic purposes only. Please read the instructions and questions carefully before answering the questions. Thank you for your willingness. If you need further clarification or any inquiries regarding to the questionnaire, please do not hesitate to contact:

**Aina Nadirah Binti Baharin**

**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

**Supervisor: Dr Siti Norbaya Binti Yahaya**

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**SECTION A: GENERAL INFORMATION**

*Instruction: This section seeks for respondents' personal profiling. Please tick (✓) on the space given.*

**1. Gender:**

☐ Male ☐ Female

**2. Race:**

- Malay
- India
- Chinese
- Others

**3. Age:**

- 15 – 20 years
- 20 – 25 years
- 25 – 30 years
- 30 – 35 years
- 40 – 45 years
- 45 years above

**4. Employment Status:**

- Student
- Employed
- Unemployed
- Retired
- Self-employed

5. Income:

- Less than RM1,000
- RM1,001 – RM2,000
- RM2,001 – RM 3,000
- RM3,001 – RM4,000
- RM4,001 – RM5,000
- More than RM5,000

6. Education:

- Sijil Pelajaran Malaysia (SPM)
- Sijil Tinggi Pelajaran Malaysia (STPM)
- Sijil Kemahiran Malaysia (SKM)
- Diploma
- Bachelor's Degree
- Master
- PhD





**SECTION B: THE FACTORS AFFECTING THE SUCCESS OF E-LOGISTIC ON CUSTOMER PERCEPTION**

*Instructions: This section is seeking respondents' opinion on the factors affecting the success of e-logistic. In order to what extent your agreement with each of the following statement by using a Likert scale, please tick (✓) your answer to scale it as follows:*

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**Independent Variable**

<b>Customer satisfaction</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. I'm satisfied with the shipping and delivery					
2. The response time of customer service is excellent.					
3. Website accessibility is excellent					
4. Advertisement in e-logistic website or online platform is excellent					
5. The e-logistic website was reliable and helpful					

<b>Technology infrastructure</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Data secure properly while using a website					
2. Providing the good technology in e-logistic					
3. Technology infrastructure was completed					
4. Not facing any problem regarding to technology infrastructure					
5. Providing the great safety and security					

<b>Flexibility of e-logistic</b>	1	2	3	4	5
1. Customer service giving the good responsiveness.					
2. E-logistic is flexible to use					
3. Faster order fulfilment					
4. Available to customize such as product or address					
5. Website to track the product or services is excellent					

<b>Staff service quality</b>	1	2	3	4	5
1. I'm satisfied with the staff's service for assist					
2. Staff provide the service on time					
3. The logistics industry provides a high level of service quality					
4. Provide service as promised					
5. Staff service quality is very much efficient in logistic supply chain					

### SECTION C: E-LOGISTIC ON CUSTOMER PERCEPTIONS

*Instructions: This section intends to understand respondents' spending by using credit cards. In order to what extent your agreement with each of the following statement by using a Likert scale, please tick (✓) your answer to scale it as follows:*

#### Dependent Variable

<b>E-logistic</b>	1	2	3	4	5
1. I have the knowledge necessary to e-logistic in the logistic supply chain					
2. E-logistic is easy to practice.					
3. I can get help from others when I have difficulties using change e-logistic					
4. I'm convenient while using e-logistic					
5. I know the purpose of e-logistic					



