THE IMPACT OF SERVICE QUALITY IN E-SUPPLY CHAIN TOWARDS CUSTOMER SATISFACTION THROUGH ONLINE SHOPPING
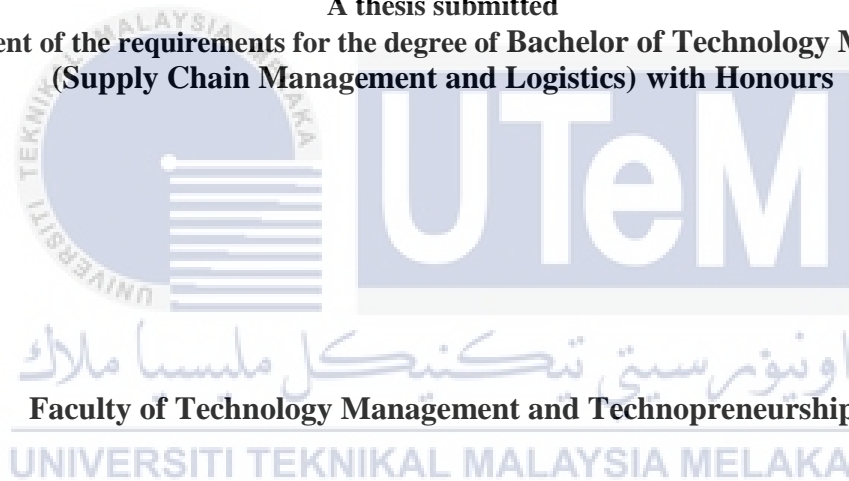
DIVYA A/P RAMASAMY

A thesis submitted
in fulfillment of the requirements for the degree of Bachelor of Technology Management
(Supply Chain Management and Logistics) with Honours

Faculty of Technology Management and Technopreneurship
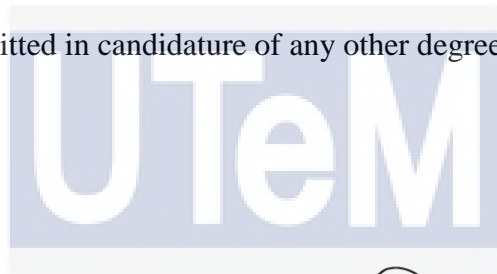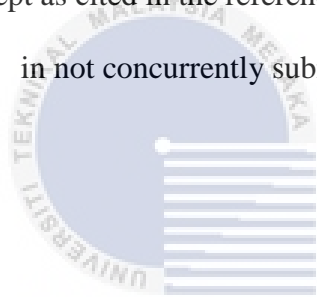
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2023

DECLARATION

I, Divya A/P Ramasamy, declare that this thesis entitled "the impact of service quality in e-supply chain towards customer satisfaction through online shopping" is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and in not concurrently submitted in candidature of any other degree.

Signature :

Name : Divya A/P Ramasamy

Date : ….9/2/2023……

DEDICATION

I dedicate my thesis work to my creator, educators, my family, and many friends. A special thanks to my loving parents, Mr.Ramasamy and Mrs.Sahunthala who guide me through the valley of darkness with hope and compassion. My sisters Lojahna and Sharanea have never left my side and are very precious to me. Throughout various obstacles, they have been a consistent source of encouragement and support. I also dedicate this thesis to my numerous friends who have assisted me throughout the process. I will always be grateful for everything they have done for me, especially Tsseran for helping me in enhancing my technology skills and motivating me to work hard for the things that I desire. Next is Vinnetha for the countless hours of proofreading and for being a pillar of strength for me throughout this programme. Essentially, I am grateful to my academic adviser for guiding me through this process and the committee for keeping me on course.

ACKNOWLEDGEMENTS

First and foremost, I would like to take this opportunity to express my sincere acknowledgement to my supervisor Dr. Nurhayati Binti Kamaruddin from the Faculty of Technology Management and Technopreneurship Universiti Teknikal Malaysia Melaka (UTeM) for her essential supervision, support and encouragement towards the completion of this thesis.

Special thanks to all my colleagues, my beloved mother, father and siblings for their moral support in completing this degree. Lastly, thank you to everyone who had been associated to the crucial parts of realization of this project.
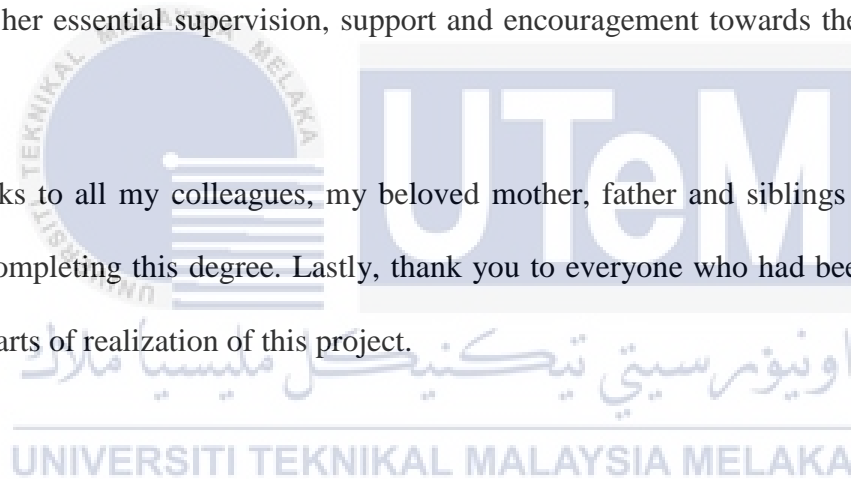
ABSTRACT

Covid-19 is a transmissible disease caused by coronavirus in Wuhan, China. Now it has expanded globally and resulting in an ongoing pandemic. The global outbreak of COVID-19 has caused substantial obstacles to supply chains. Since the Covid-19 pandemic, there is a visible trend worldwide in which an increasing number of individuals purchase goods and services via the Internet. Online shopping seems to be the most popular trend around the world as well as in Malaysia. The foundation of online shopping is a fast and efficient supply chain system. Therefore, this research project establishes a valid measure on customer satisfaction in the e-supply chain service quality dimensions. The major aim of this research project is to determine the role of service quality in e-supply chain and its impact on customer satisfaction through online shopping. In addition, it investigates the relationships between the independent variable (service quality in e-supply chain such as responsiveness, reliability and empathy) and dependent variable (customer satisfaction). The deductive approach was applied in this study, and the research design was quantitative. The targeted population for this study is the users of online shopping sites in Selangor, Malaysia. A survey questionnaire with 140 respondents was used to collect primary data. The software used to evaluate and analyze the data obtained from the questionnaire was the Statistical Package for Social Science (SPSS) version 26. A descriptive statistic was used to determine the frequency distribution of number, mean, standard deviation, and the role of service quality in the e-supply chain. The statistical test was used to investigate hypothesis and regression analysis to examine the relationship of service quality in e-supply chain and customer satisfaction through online shopping in Selangor. According to the survey findings of this study, responsiveness and empathy significantly influence Customer Satisfaction except for the reliability factor. To be able to sustain in the competitive online business platform, every online businesses in Malaysia should therefore focus on service quality in e-supply chain, which would result in higher overall customer satisfaction.

Keywords: Service quality, Supply chain, e-Supply chain, Customer satisfaction, Online shopping

ABSTRAK

Covid-19 adalah penyakit yang boleh diterima melalui pemindahan dari coronavirus di Wuhan, China. Kini ia telah meluas secara global dan menyebabkan pandemik yang berterusan. Kejadian global Covid-19 telah menyebabkan halangan besar kepada rantai bekalan. Sejak pandemik Covid-19, terdapat trend yang jelas di seluruh dunia di mana bilangan individu yang membeli barangan dan perkhidmatan melalui Internet semakin meningkat. Pembelian dalam talian kelihatan sebagai trend yang paling popular di seluruh dunia serta di Malaysia. Asas pembelian dalam talian adalah sistem rantai bekalan yang cepat dan efisyen. Oleh itu, projek penyelidikan ini menetapkan ukuran yang sah tentang kepuasan pelanggan dalam dimensi perkhidmatan kualiti e-rantai bekalan. Tujuan utama projek penyelidikan ini adalah untuk menentukan peranan kualiti perkhidmatan dalam e-rantai bekalan dan kesan terhadap kepuasan pelanggan. Selain itu, ia menyiasat hubungan antara pembolehubah bebas (kualiti perkhidmatan dalam e-rantai bekalan seperti responsif, kesetiaan dan empati) dan pembolehubah bergantung (kepuasan pelanggan). Pendekatan deduktif digunakan dalam kajian ini, dan reka bentuk penyelidikan adalah kuantitatif. Populasi sasarannya adalah pengguna laman web beli-belah dalam talian di Selangor, Malaysia. Kajian soal selidik dengan 140 responden digunakan untuk mengumpul data utama. Perisian yang digunakan untuk menilai dan menganalisis data yang diperoleh dari kajian soal selidik adalah Statistical Package for Social Science (SPSS) versi 26. Statistik deskriptif digunakan untuk menentukan taburan frekuensi bilangan, min, deviasi piawai, dan peranan kualiti perkhidmatan dalam e-rantai bekalan. Ujian statistik digunakan untuk menyiasat hipotesis dan analisis regresi untuk mengkaji hubungan kualiti perkhidmatan dalam e-rantai bekalan dan kepuasan pelanggan di Selangor. Menurut temuan kajian soal selidik ini, responsif dan empati mempengaruhi kepuasan pelanggan secara signifikan kecuali faktor kesetiaan. Untuk dapat bertahan dalam platform perniagaan dalam talian yang kompetitif, setiap perniagaan.

Kata kunci: *kualiti perkhidmatan, rantai bekalan, e-rantai bekalan, kepuasan pelanggan,*

Pembelian dalam talian

APPROVAL

I, DR. Nurhayati Binti Kamaruddin, hereby declare that I have read this thesis and in my opinion this thesis is sufficient in terms of scope and quality for the award of Bachelor of Technology Management (Supply Chain Management and Logistics) with Honours.
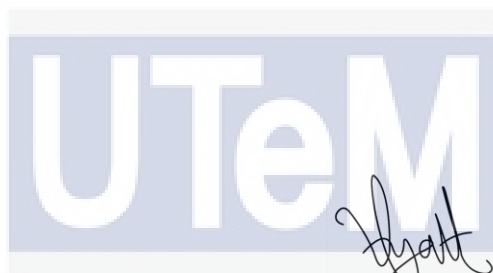
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APPROVAL

I, DATIN DR.Suraya Binti Ahmad, hereby declare that I have read this thesis and in my opinion this thesis is sufficient in terms of scope and quality for the award of Bachelor of Technology Management (Supply Chain Management and Logistics) with Honours.

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Panel Name   : DATIN DR.Suraya Binti Ahmad

Date   : ……9/2/2023………

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LIST OF ABBREVIATIONS

CS – Customer Satisfaction

DV - Dependent Variable

e-SC - e-Supply Chain

e-SCM - e-Supply Chain Management

IV - Independent Variable

MCO - Movement Control Order

SCM - Supply Chain Management

SPSS - Statistical Package for Social Science

SQ- Service Quality

CHAPTER 1

INTRODUCTION

1.1 Introduction

The study's background, problem statement, research objectives, and research questions will all be presented in this chapter. Then followed by the scope of the study, limitations of the study, and significance of the studies will be discussed as well. A brief description of this chapter will be provided at the end of this chapter. To complete a Bachelor's Degree Thesis in the Faculty of Technology Management and Technopreneurship [Bachelor of Technology Management (Supply Chain Management and Logistics) with Honour], the title 'the impact of service quality in e-supply chain towards customer satisfaction through online shopping' was chosen. Supply chain management has gained great benefits from using information technology in various elements of its tasks since it became a tool for enhancing company processes. E-supply chain management is a modern concept that distinguishes itself from traditional supply chain management by incorporating a company's business activities electronically through value-adding processes throughout the supply chain. Integrating e-supply chain management into a company or e-business proves to be a competitive technique for adding value and boosting process visibility, agility, speed, efficiency, and customer satisfaction. According to the Indeed Editorial Team (2021), service quality is a measure of how well a

company delivers its services in comparison to its consumers' expectations. Customers buy services to meet certain requirements. Customer satisfaction and service quality are inextricably linked. In today's competitive market, achieving customer satisfaction is highly dependent on the company's total service quality and is seen as a critical strategy.

1.2   Background of the study

Covid-19 was first discovered in December 2019 in the city of Wuhan, China. Now the coronavirus has expanded globally and resulted in an ongoing pandemic. As of 21st May 2022, COVID-19 had resulted in more than 526 million infections and more than 6.29 million deaths (Worldometers, 2020). Covid-19 has an impact on more than just public health. The pandemic has also impacted supply chain operations, long-term economic growth, and supply chain environmental performance [Chowdhury & Paul, (2020); Suhi et al (2019); Paul et al (2019); Khan et al, (2020); and Moktadir et al, (2020)]. The global outbreak of COVID-19 has caused substantial obstacles to supply chains based on Harapko, S (2021). Supply chain management has always been important, but COVID-19 highlighted how important it is. Online shopping appears to be the most well-liked trend during the Covid-19 pandemic, both globally and in Malaysia. Online purchasing is built on a quick and effective supply chain system. Investigating its significance is therefore crucial.

The control for the movement of goods and services from raw materials to the finished product that is delivered to the customer is known as supply chain management (SCM). The object of supply chain management is the supply chain and process. A supply chain consists of all stages involved, especially directly or indirectly in fulfilling a customer request. The supply chain not only includes the manufacturer and suppliers, but

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also transporters, warehouses, retailers, and customers themselves according to Chopra, Sunil, and Peter Meindl, (2001). According to Hugos, M. H. (2018), effective supply chain management (SCM) requires simultaneous improvements in both customer service levels and the internal operating efficiencies of the companies in the supply chain.

Facing internationalization, greater product complexity, and increase customer demands, businesses are using modern technologies to transform their supply chain from traditional supply chain to e-supply chain management (e-SCM). E-supply chain management is the outcome of combining supply chain management and e-commerce according to Hua and Cong (2011). In agreement with D.Li (2005), electronic supply chain management (e-SCM) is the collaborative use of technology to enhance business-to-business processes and improve speed, agility, real-time control, and customer satisfaction. The use of e-business technologies to support and optimize value-adding operations in supply networks is known also as e-supply chain management. E-procurement, supply chain monitoring and controlling using RFID, inventory management using wireless devices, collaborative planning, and e-logistics are some examples of e-supply chain management's (e-SCM) key activities. They manage the entire supply chain process as well as service quality and customer satisfaction.

Alibaba Group Holding Limited which is a Chinese multinational technology company specializing in e-commerce (online platform) is one example of e-supply chain management. Alibaba has announced a blockchain-based system to make sure product authenticity and supply chain integrity. Alibaba strengthens customer relationships by implementing blockchain technology in the process. The 'food trust framework' on Alibaba's Tmall Global platform aims to boost consumer confidence and create trust and transparency for cross-border business. The effort includes product labeling with unique

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QR codes and blockchain technology, among other standards and regulations. Alibaba customers can know the live update of their orders because it authenticates, verifies, record, and report on products as they move through the shipping process. Therefore, it is possible to safeguard the supply chain while also enhancing its effectiveness and achieving long-term customer satisfaction according to Valverde and Saadé; (2017) and Witkowski (2015).

The internet of things (IoT), blockchain, Artificial Intelligence (AI), machine learning, analytics, robots, and automation are vital technologies in e-supply chain management. In this regard, many companies are shifting from remote monitoring to control, optimization, and finally, advanced autonomous AI-based systems to improve their functionality in accordance with Kohtam¨aki (2019). Problem-solving with AI is more accurate, faster, and can handle a larger number of inputs. For example, Alibaba uses AI to optimize its supply chain, drive personalized, and build products. It also offers cloud-based AI, which makes artificial intelligence accessible to everyone with a computer, an internet connection, and a cloud-based AI chip. The Alibaba Group also provides cloud computing services to a wide range of its customers including merchants, systems integrators, mobile app developers, and digital entertainment companies all over the world.

Online selling and online shopping are increasing day by day and people may get anything from all over the world through social media and online shopping platforms. In order to satisfy customers' needs and wants when they buy in online, a company particularly utilizes an e-supply chain (e-SC) in their service quality. By implementing an e-supply chain in service quality, a company can fasten the shipping process, enhance the performance of the supply chain and increase customer satisfaction. Consumers shop

online for a variety of reasons, and they factor convenience into their evaluation of service quality. Studies have extensively begun to focus on online services and their various characteristics. To describe services provided over the Internet, the literature uses terminology like e-service quality, online service quality, and web service quality based on Zhang, X., & Prybutok, V. R. research (2005). Service quality has become a key marketing strategy because it's conceptual and empirically connected to customer satisfaction claimed Venetis and Ghauri in 2004. As a result, there is a lot of interest in measuring service quality; and many researchers have also committed to conducting research on service quality as stated in Abdullah (2006). Basically, service quality is measured by how well a company meets its certain requirements of customers in terms of service delivery.

After an excellent customer service experience, 52% of consumers agreed that they have made another purchase from the company as stated in Dimensional Research. Customer satisfaction is critical to the success of any corporate organization in proportion to Pritam Chattopadhyay (2019). Customer satisfaction is defined as an overall assessment of a product or service based on the whole purchase and consumption experience in accordance with Fornell, Johnson, Anderson, Cha & Bryant (1996). In this century, customer satisfaction is a necessity for a company to be successful.

E-supply chain performances can be a massive strategy for increasing customer satisfaction and profitability of an online business. An efficient e-supply chain has the greatest impact on reaching customers, cutting retail costs, and improving service levels. Hence, it enables meeting customer expectations on product delivery.

In addition, the service quality of the e-supply chain is one of the most essential criteria in this area. The great service quality in the e-supply chain improves customer

satisfaction and loyalty, optimizes the shipping process, increases profitability, and reduces costs. Meanwhile, the poor service quality in the e-supply chain can lead to dissatisfaction among customers, decreases customer loyalty, reputational damage, and loss of income. Therefore, this paper focuses on how several factors of service quality in e-supply chain will affect customer satisfaction through online shopping. The significance of this research is that it develops a model that considers the interaction of all three parameters and evaluates the effectiveness of the proposed model.

1.3   Problem statement

The global expansion of internet usage and supply chain networks has resulted in new consumer behavior phenomena, in which customers' emphasis has turned to online shopping. In recent years, consumers in Malaysia are picking up on online shopping because online shops offer more variety, save time and energy and it is the best way to avoid crowds after this Covid-19 pandemic. According to Simon and Sarah (2019), 80% of Malaysians shop online for goods and services. The advantages of online buying, such as convenience, have increased shoppers' willingness to make purchases online according to Ratih et al, (2020). However, it becomes more hazardous when online buyers are unaware of some possible problems that occur when they make online purchasing.

An online business with a poor and inefficient supply chain system is impossible to succeed and satisfy customers. According to G.R.C.B.C.I., & L.A. (2018), the BCI Supply Chain Resilience 2018 report's research revealed that 56% of respondents had experienced a supply chain disruption in the previous 12 months due to factors including bad weather, cyber-attacks, or issues with transportation networks. On the other hand, as stated in Cnet's

Road Trip, the sophisticated orchestra of cargo ships, trucks, trains, and airplanes that have long supported globalization and the consumer economy were not prepared for what the pandemic would throw at it. This is one of the reasons behind our country's insufficient supply chain system. Despite having faced numerous supply chain challenges, the supply chain industry was unable to discover a solution during the early stages of the epidemic. According to Kent German (2021), it was unexpected because the concept they relied on for years to move stuff around the world inexpensively and efficiently started moving significantly slower. Due to lockdowns and sick employees, factories and ports in Malaysia had to shut down early in the epidemic. This delayed production or caused backlogs at important points in the supply chain where commodities are exchanged between connections. Another key reason for supply chain failure is a lack of proper levels and types of executive assistance. One explanation for the lack of support is that many executives react as if their companies are working in a closed, rational, and predictable environment when faced with change and unpredictability (J. W. Upson, D. J. Ketchen Jr., and R. D. Ireland (2007). If a business has a poor and inefficient supply chain system, it is likely to result in delays in fulfilling orders and potentially not being able to fulfill orders at all. This can lead to frustrated and unhappy customers who may choose to shop elsewhere. Additionally, the business may incur higher costs due to inefficient processes, which could negatively impact their profitability. In the long run, a poor supply chain can damage the reputation of a company and make it hard to regain customer trust.

Inventory visibility is vital in online stores because it makes it easy for customers to shop online. Inventory visibility relates to a company's ability to know what inventory it has on hand, where it's kept, and how much of it it has. Customers rely on inventory

visibility to locate and purchase products at any of their locations. According to Commerce, Q. (2018), an analysis of the IHL report demonstrates that eCommerce enterprises lose a staggering $1.75 trillion in annual sales due to ineffective inventory management. In essence, a business's inaccurate levels of inventory resulted in a loss of profits and consumer disappointment. Not only that, it eventually impacts e-commerce customer satisfaction. When a company's product is unavailable, it gets into problems. This usually occurs while the goods are en route or when the warehouse is out of stock. In this instance, the consumer may immediately switch to another merchant, resulting in a revenue loss for the business. According to Jimmy Rodriguez, 2022, inventory management is particularly crucial for businesses that offer high-end and expensive goods to apply stock-keeping units (SKUs) in their firm in order to maintain inventory effectively, Today's retailers are battling to manage demand across different channels while keeping inventory levels under control. Problems with inventory visibility can result in disappointed customers in a number of ways. If a business is unable to accurately track its inventory levels, it may oversell products that it does not have in stock. Next, if a business is unable to track its inventory levels, it may experience stockouts - situations where products are out of stock but still available for purchase online. Moreover, poor inventory visibility can lead to longer lead times for products, as the company has to spend more time tracking down and gathering the products it needs to fulfill an order. Therefore, all these issues can lead to customer disappointment and frustration when orders are not fulfilled as expected and orders take longer to arrive than expected. Most significantly, poor inventory management can have a negative impact on the entire supply chain system, resulting in order delays, higher shipping costs, and longer delivery times, and consequently, it leads to customer dissatisfaction.

Customer service is critical to a company's growth and development, according to most firms. "83 percent of firms who believe it's crucial to keep consumers happy also see increased income," according to a HubSpot study. Therefore, failing in customer service will directly impact a company's reputation and its profitability. When a firm fails to meet a customer's expectations, it is considered poor customer service. According to a study by M. Nuruzzaman and O. K. Hussain (2018), approximately 75% of customers have received poor customer service, and coming up with thoughtful, detailed solutions is still difficult. Online shoppers face variety of customer service problems during their online shopping experience. Lack of response or slow response time makes the poor customer service. Customers may have questions or concerns that they need addressed, and if a business takes too long to respond or does not respond at all, it can lead to customer frustration and dissatisfaction. Next is inadequate product information which provided at online stores and websites. If a business does not provide enough information about a product, customers may have difficulty making informed purchasing decisions. The following issue that leads to poor customer service is difficulty reaching customer service. Some businesses make it difficult for customers to reach their customer service department. Not only that, limited or no self-service options are also lead to poor customer service. Some businesses do not provide self-service options like a FAQs page, return policy, and instructions on how to track an order. Overall, all these customer service problems can lead to decreased customer satisfaction, decreased customer loyalty, and ultimately lost sales for the business. Muthumani (2017) suggested that online shopping companies should give more attention to the delivery of the right product to the customers. Therefore, online websites must also ensure the quality and right of the information to their customers. Another issue that buyers have when shopping online is that their items

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are damaged in transit before they reach them. According to M.S. Mohanapriya and D.R. Sathya (2020), websites are becoming increasingly careless about product delivery quality. Frequently, the customer complains that their product is either lost or damaged while en route. This could result in the loss of a company's devoted customers, as well as a tarnished brand reputation.

1.4 Research question

Two research questions for the proposed study are as follows:

1.4.1 What is the role of service quality in E-Supply Chain Management in the online shopping context?

1.4.2 How does the service quality of E-Supply Chain Management influence customer satisfaction in the online shopping context?

1.5 Research objective

This study was aim to examine the relationship between service quality in e-supply chain management and customer satisfaction through online shopping in Selangor. More specifically, the proposed study is:

1.5.1   To determine the role of service quality in e-supply chain management in the online shopping context.

1.5.2   To examine the impact of service quality of e-supply chain management on customer satisfaction in the online shopping context.

1.6 Scope of the study

The research is constructed according to the mentioned research topic, which is the impact of service quality in the e-supply chain towards customer satisfaction through online shopping. The scope of the study will focus on the impact of service quality in the e-supply chain on customer satisfaction through online shopping in Selangor. This will likely include research on the specific factors that contribute to service quality in the e-supply chain, as well as how these factors affect customer satisfaction through online shopping.

1.7   Limitation of study

In conducting this research, there were several limitations such as time constraints, lack of skill and knowledge, and the cooperation from respondents. Due to the limited time allotted for implementing the study, there is only a limited amount of time to do research. The research has some difficulties finding as much information and details related to this study in a given time frame. Then, in order to do research, a researcher needs to have sufficient knowledge and skills; but, in this study, there was lacks both skill and knowledge because I have no prior research experience. Furthermore, the research is having difficulty obtaining cooperation from respondents. Cooperation from respondents included respondents' obligation to fulfill the questionnaires. Most of them are not answering it completely and another limitation of respondents is related to honesty. The research is not able to know the honesty of the answer given by respondents.

1.8   Significance of study

The main purpose of this study is to establish a valid measure of customer satisfaction in the e-supply chain service quality dimensions through online shopping. The major aim of this research project is to determine the role of service quality in e-supply chain management and its impact on customer satisfaction through online shopping. At the same time, to investigate the relationships between the independent variable (service quality in the e-supply chain) and the dependent variable (customer satisfaction).

This research will help to generate knowledge on the importance of service quality when a consumer shops online. Customers will be able to identify which company provides good quality service and which company provides poor service quality. When a customer gets confidence in a company and begins to trust, the company or e-commerce business will achieve as well. It can be beneficial for a company too because it enhances how people perceive the company, which enhances reputation and brand.

This research will reduce negative perceptions toward e-supply chain management. When the public start knowing the role of e-supply chain in online stores, they might start trusting online shopping and its' supply chain procedure. Trust swings both ways when it comes to maintaining the integrity of any supply chain. Customers expect their suppliers to provide their products on time and at the agreed-upon pricing. Buyers must also treat their suppliers with respect by doing all in their power to meet agreed-upon payment deadlines.

Furthermore, this research might serve as a useful resource for researchers. Researchers can utilize different types of methodology in the future, such as qualitative methods, to study service quality dimensions in the context of e-supply chain management. Besides that, researchers will have a better understanding and knowledge of customer satisfaction through online shopping in Selangor. Moreover, the study may also help to identify the gaps and areas of improvement in service quality in e-supply chain

management in Selangor and provide recommendations for future research. Therefore, researchers can replicate similar studies on service quality in the e-supply chains and find out the difference in different industries or areas.

1.9   Key Concepts

In this section, essential key concepts are defined and discussed for the present study. The study focuses on service quality in the e-supply chain in order to achieve customer satisfaction through online shopping, as stated in the introduction section. Thus, the key concepts of service quality and the e-supply chain will be introduced and key terms specified at the beginning. In addition, the research concentrates on the roles of the independent and dependent variables. As a result, the fundamental concepts of e-supply chain, service quality, customer satisfaction and online shopping are specified for the current study. Finally, prior important principles are used to define customer satisfaction.

1.9.1   Service Quality

According to the Indeed Editorial Team in 2021, service quality is a measure of how well a company's services meet or exceed customer expectations. It is a comparison between the customer's perception of the service they received and their expectations prior to receiving the service. Service quality can be influenced by a variety of factors, including the availability and competence of staff, the physical environment, and the process and procedures used to deliver the service. Ensuring high service quality is important for a company as it can lead to customer satisfaction. The term 'service quality' is not self-contained, which means that its definition is influenced by

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a number of criteria relating to service and service organizations in accordance with
Ramya, N., Kowsalya, A., & Dharanipriya, K. (2019)

1.9.2 E-Supply Chain

E-supply chains are the integration of e-business concepts and technologies into
the traditional supply chain management processes. This includes the use of digital tools
and platforms to support and optimize various value-adding activities such as procurement,
production, logistics, and distribution. E-supply chain management refers to the strategic
and operational decisions made to manage and optimize these processes using e-business
technologies. Electronic supply chain management is the collaborative application of
technology to improve the operations and administration of supply networks based on
Turban et al. study (2012). Electronic supply chain management, according to
Adsikalumbi in (2019), is the process of supplying goods and services via the Internet
from the manufacturer all the way to the consumer through wholesalers and retailers.

1.9.3 Service Quality in E-Supply Chain

E-supply chain management necessitates service quality in manufacturing
organizations to ensure that service quality is integrated into every product and step of the
manufacturing and distribution operations. A company's reputation can be greatly
enhanced if it incorporates service quality into its manufacturing procedures.
Organizations are creating good relationships with their suppliers with the help of service
quality in e-supply chain subcontractors. This is geared toward the long-term objectives of
marketers in general.

1.9.4 Responsiveness

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One of the dimensions of service quality is responsiveness. As per Vencataya, L. (2019), responsiveness is the staff's willingness to assist, direct, and offer consumers prompt and efficient services. According to Klokkenga, B. (2022), in today's fast-paced environment, it is critical to respond to customer questions and issues swiftly. Even when customers are delayed in responding, responsiveness is still necessary. This component is focused on the attitude and promptness in handling customer requests, inquiries, complaints, and difficulties, according to Ramya, N., Kowsalya (2019). By being responsive, business may demonstrate to their clients that they care about customer issues and are actively seeking solutions.

1.9.5 Reliability

Reliability is also one of the dimensions of service quality. Reliability, in the words of Vencataya, L. (2019), is the capacity to provide the services as promised with consistency and accuracy. They want to rely on the company to provide a functional good or efficient service, to get assistance when they require it, and for all of this to occur promptly. Customers prefer to work with companies who keep their commitments, claims Ramya, N. Kowsalya (2019). Therefore, it plays a significant role in how the consumer perceives the quality of the services and how loyal customer is. Reliability, in consonance with Klokkenga, B. (2022), is the capacity to deliver the promised service precisely and reliably. In a wide sense, reliability refers to service firms' claims regarding delivery, service provisioning, problem resolutions, and pricing, according to Ramya, N., Kowsalya (2019).

1.9.6 Empathy

The empathy dimension is another aspect of service quality. According to Klokkenga, B. (2022), empathy is the kind, attentive service the company offers its customers. Empathy has also been defined by other authors. Empathy, in the words of Vencataya, L. (2019), is the kind of consideration a business extends to its customers. In keeping with Klokkenga, B. (2022), customers want to establish a relationship with a company; they want to feel like they are more than just a transaction. Users can still fall short of their expectations even if the company offers the best product or services on the market. The focus of this dimension, according to Ramya, N., Kowsalya (2019), is on a diversity of services that meet various consumer needs, personalized or personalized services, etc. To demonstrate empathy for clients, make sure a business demonstrates care. Klokkenga, B. (2022) states that a company can go above and beyond expectations by teaching staff members to deliver great, sympathetic service marked by frequent smiles and lively discussion.

1.9.7 Customer Satisfaction

Customer satisfaction should be easy to define. It shows how a customer feels about the business by contrasting customer expectations with the experience they get. Customer satisfaction is inextricably linked to a positive customer experience. Customer satisfaction is an important aspect of establishing customer loyalty in agreement with Pham and Ahammad, (2017). Each customer that a firm acquires will be worth more during its lifetime if it focuses on customer satisfaction. The more repeat purchases customers make and the longer they stay loyal to the firm, the more profit the company will receive. Because of Malaysia's rapid rise in online shopping, it's more important than ever to focus on customer satisfaction while creating an online retail site. This study

includes product variety since young people in Malaysia like searching for different products and visiting shopping malls virtually every weekend in accordance with Alam, S. S., & Yasin, N. M. (2010). According to Google and Temasek, 2020, 3 e-Commerce consumers in Southeast Asia purchase online because it saves time and energy (47%) and reduces their exposure to COVID-19 (48%) and so gives them comfort.

1.10   Summary

This chapter is the overview of this research project and describes the background of the study, problem statements, research questions, research objectives, the scope of the study, limitations, the significance of the study, and key concepts. On next chapter discussion on the past researcher's studies and identified the hypotheses and presented the theoretical framework adopted for this research project.

CHAPTER 2

LITERATURE REVIEW

2.1   Introduction

The focus of a literature review is on previous researchers' discussions of earlier studies. In this chapter, all of the factors will be emphasized and discussed in detail. Meanwhile, the construction of a theoretical framework will be explored, with the relationship between independent and dependent variables being provided. In addition, the development of hypotheses will be covered in this chapter by examining the relationship between the dependent and independent variables. In this chapter, the role and impact of service quality in the e-supply chain towards customer satisfaction through online shopping by referring to the previous research will be explained.

2.2   Definition of Service Quality

According to Ramya, N., Kowsalya, A., & Dharanipriya, K. (2019), service quality is a measurement of how closely a service meets the expectations of the customer. Service quality is a measure of the overall excellence of a service in meeting or exceeding customer expectations. It is a comparison between the customer's perception of the service they

received and their expectations prior to receiving the service. Service quality can be measured through various methods, such as customer surveys, interviews, focus groups, and more. These methods can help to identify areas of strength and weakness in the service, and provide valuable insights into how to improve the service to better meet customer expectations. Philip Kotler and Gary Armstrong (2001) defined the term service quality as it is the ability of a service firm to hang on to its customer. That is, in their opinion customer retention is the best measure of service quality. A. Parasuraman, Valarie A.Zeitham1, and L. Berry (1985) defined service quality as 'the delivery of excellent or superior service relative to customer expectation'. According to Lewis and Booms (1991) and Adam, M., Kee, D. M. H (2020), service quality measures the extent to which the service provided matches customers' expectations. Grönroos (2001) stated that service quality is evaluated based on the extent to which customer's expectations are met by the service provided. In addition, the concept service quality is not an independent term, means, its formation depends upon several factors related to service and service firms.

Service quality includes a process, performance, and deeds in accordance with Zeithaml and Bitner (1996) and Zhubi, M. (2020). Reliability, tangibility, empathy, responsiveness, and assurance are the dimensions of service quality. Sanjay Dhingra and Shelly Gupta (2020) stated that numerous studies have been carried out using the scales of these models to measure service quality in various contexts, such as banking, tourism, shopping sites, and e-commerce, either by using the same factors or with some modification and rewording. Good service quality can encourage customers to make online purchases, claim Luh Putu Ariestari Pradnyadewi and IG. A. K. Giantari in their article published in April (2022). Additionally, service quality can affect customers' loyalty, trust,

and satisfaction that also can have a positive impact on business reputation and profitability. Moreover, in today's digital age, customers can easily share their feedback on the internet and hence service quality has become an important element for companies to compete and succeed in the market. Service quality is important because it boosts sales, saves marketing money, can attract quality employees and can lead to repeat business, and more. Companies can gain great benefits if service quality is secured properly congruent with Buzzel and Gale, (1987) and Yazdanpanah, A., & Ehsani, A. (2020).

2.3 Definition of E-Supply Chain Management

With the recent trends of globalization, competitiveness, stunning developments in information technology, and the use of the Internet, more and more transactions are performed on the Internet and it is becoming critical for firms to rely on 'web-based supply chains' or 'e-supply chains' according to Pant et al. (2003) and Singh, R. K., & Kumar, R. (2020). An e-supply chain, also known as an e-commerce supply chain, is the use of the internet and related technologies to connect different organizations and streamline the flow of information and goods throughout the entire supply chain. This can include everything from ordering and tracking inventory, to coordinating transportation and managing logistics, to processing payments and handling customer service. E-supply chains is the process that use e-business models and web technology which can be seen simply as processes necessary to transfer the goods sold over the Internet to the customers. On the other hand, the widely e-supply chain is defined as a wide-ranging topic related to the supply chain integration as stated in Poirier and Bauer article (2000). The goal of an e-

supply chain is to increase efficiency, reduce costs, and improve overall effectiveness by making it easier for all parties involved to share information and collaborate in real-time. This can be achieved through the use of various technologies such as enterprise resource planning (ERP) systems, electronic data interchange (EDI), and customer relationship management (CRM) software. One way of dealing with the diversity of supply chain management definition is to concentrate on the core processes and functions relating to the management of supply chains. The examples are fulfillment, operations planning, and procurement. Cooper, Lambert, et al. (1997) defined supply chain management as the integration of key business processes from end-user through original suppliers that provides products, services, and information that add value for customers and other stakeholders. It is apparent that supply chain management involves a firm's suppliers and customers, as well as the processes used to transfer a product or service from an order in inventory to delivery. An e- supply chain management also integrates technology, especially the internet, in an effort to speed communication and information flow throughout the supply chain. According to Lancaster, S., and Yen, (2006), e-supply chains often make use of the internet for communication and transactions, making it possible for businesses to reach a global market, and for customers to shop online.

2.4   Role of Service Quality in E- Supply Chain Management

Service quality is a measure of how an organization delivers its services compared to the expectations of its customers. Customers purchase services as a response to specific needs. High-quality service delivery increases customer satisfaction and loyalty, which

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boosts market share and profitability. According to Quang et al., (2016); Stanley and Wisner, (2001), there doesn't seem to be a common model for assessing service quality, and there isn't much information in the literature about how to combine service quality and supply chain management.

On the other hand, according to Das & Hassan (2021); Dragomirov, N. (2020); Haudi, et al. (2021) the measured aspect of e-service quality or known as online service quality is the degree to which a website or marketplace application can facilitate effectively and efficiently to make purchases, delivery, and sales of both products and services. Website design, security or privacy, and fulfillment are three e-service quality characteristics that Rita et al. (2019) identified as having an impact on total e-service quality. Webqual, a brand-new e-service quality measurement that emphasizes the value of user-friendly websites, was developed by Barnes and Vidgen in 2002. When an e-supply chain is customer-driven, it means that the entire process is focused on meeting the needs and expectations of the end customer. This includes providing high-quality products or services, timely delivery, and responsive customer service. By prioritizing the customer's satisfaction, e-supply chain management aims to create a seamless and efficient process that meets the needs of all parties involved.

To provide quality services to consumers, e-supply chain management must also ensure that the products or services being offered meet or exceed industry standards and regulations. This includes ensuring that the products are safe, of good quality and meet the needs of the customer, and that the company is operating ethically and sustainably. Additionally, e-supply chain management should have a process in place for receiving and

addressing customer feedback and complaints, in order to continuously improve the customer experience.

2.5   Role of Service Quality in Customer Satisfaction

Although services and products share many attributes, services have more diverse quality attributes than products. This often results from wide variation created by high customer involvement. According to Dhanalakshmi et al. (2020); Das, & Hassan (2021); and Dragomirov, N. (2020) customer or consumer satisfaction is a level of a person's feelings which states the results of the comparison of the services or products receives with what the customer expects. Therefore, to meet consumer satisfaction, there are several important factors. One of them is Service Quality.

One of the most crucial and vital challenges, as well as one of the best strategies for developing competitive advantages and enhancing organizational performance, is service quality in consonance with Stanley and Wisner, (2001). The initial findings of Parasuraman, Zeithamel, and Berry's study comprise 10 service quality dimensions or knwn as SERVQUAL model. Numerous businesses have employed the SERVQUAL survey, which is an open-source method that may be applied in a variety of service contexts. According to Zygiaris, S., Hameed, Z., Alsubaie, A., & Rehman, U. (2022), some results show that customer satisfaction is significantly positively correlated with empathy, reliability, assurance, responsiveness, and tangibles.

Customer satisfaction and service quality are considered crucial aspects in business, for the development of a company highly depends on how well they maintain their

customer through service. Indeed good service quality is expected to result in customer satisfaction, therefore will increase customer retention and loyalty. According to Meidute-Kavaliauskien et al., 2014; Rahman et al, certain studies (2012), customers are one of the most important aspects of the service. These studies also claim that customer satisfaction is strongly related to service quality. In accordance with Agyapong (2011) asserts that there is a correlation between customer satisfaction and service quality.

Other studies in this area make an effort to improve knowledge of the key e-service quality factors that influence customer satisfaction. Hong et al. (2019) highlighted that convenience; communication, integrity, responsiveness, and reliability are the logistics service characteristics that are concerned with customer satisfaction. Customer satisfaction is one of the key factors influencing both customer satisfaction and loyalty, according to Kumar et al. (2011) the majority of studies on the subject. Customer satisfaction grows when service quality rises, which in turn boosts customer loyalty.

As a result, Pasha and Waleed's (2016) study found that brand, perceived value, and service quality all significantly affect customer quality. Customer satisfaction serves as a mediator in the relationship between e-service quality and behavioral and attitudinal loyalty, according to research by Al-dweeri et al (2017). Many other studies have been developed to determine the antecedents of customer loyalty considering that customer loyalty may vary based on many predictors. According to Yee et al. (2011) the study revealed that service quality, customer satisfaction, and employee loyalty have a positive influence on customer loyalty, especially in the high-contract service industry. The relationship between service quality and customer satisfaction has been demonstrated in a

significant quantity of service marketing literature in accordance with Ahrholdt et al. (2017); Priporas et al. (2017); and Famiyeh et al. (2018).

In agreement with Zehira and Narckara (2016), the research investigated how e-service quality, perceived value, recovery service experiences, and loyalty intentions relate to one another. According to the study's findings, there is a significant correlation between loyalty intentions and perceived value, which serves as a mediator between the two. In 2019, Khan et al. reported that all the first latent constructs are important when it comes to the influence of e-service quality on electronic customer satisfaction and e-customer loyalty. According to the data, there is a high correlation between the quality of an online service and both customer satisfaction and loyalty (Khan et al., 2019).

Quality of services is produced as a result of efforts to better understand service quality. According to Luh Putu Ariestari Pradnyadewi and IG. A. K. Giantari. (2022), in summary, service quality is seen as a key factor in understanding and improving customer satisfaction. According to Khatab, Esmaeel, and Othman (2019) good customer service is expected to lead to satisfied customers and increased loyalty to a company's products or services. Logistics service quality can also play a role in this. Focusing on service quality and customer satisfaction can improve a company's bottom line. According to Khatab, Esmaeel and Othman (2019), while the relationship between service quality and customer satisfaction is debatable, it is generally believed that improving service quality can raise the standard for customer satisfaction.

2.5.1   Responsiveness

In addition to the role that service quality plays in customer satisfaction, the dimension of service quality that will have an impact on customers' satisfaction is referred to as priorities, which are the most crucial criteria for measuring customer satisfaction as per Nuradli (2014). From ancient times to the present, these dimensions such as tangibility, reliability, responsiveness, assurance, and empathy have made up the SERVQAL component. There are five aspects under the heading of service quality, and responsiveness is one of those dimensions stated O. Ogiemwonyi (2020).

Kobiruzzaman, M. M. (2022) defines responsiveness as the desire to treat consumers with respect and offer prompt service. Atikah Saadaha, Tay Yah Yingb (2012) stated responsiveness is how quickly a service provider responds to a customer's request while also being willing and prepared to assist. Responsiveness, according to Ramya, N., Kowsalya, and Dharanipriya (2019), is the ability to help consumers and provide prompt service. The author has introduced a dimension that emphasizes the attitude and promptness with which requests, queries, complaints, and difficulties from customers are handled. The amount of time that customers must wait for an answer or solution will be used to measure responsiveness. Basically, being responsive entails resolving customer issues as quickly as possible through the delivery of anticipated information or product replacements.

Additionally, according to Ramya, N., Kowsalya, & Dharanipriya (2019) responsiveness emphasizes the staff members' professionalism, presence, and punctuality. It can be calculated based on how long consumers must wait for assistance, clarification, etc. In accordance with Fida, B. A., Ahmed, U, (2020) the study stated that this dimension

addresses the idea of how quickly employees should respond to consumer demands and concerns. By regularly observing the service delivery process and staff's responses to client demands, the circumstances of responsiveness can be enhanced. According to F. (2021), responsiveness is the speed at which customers are assisted online or over the phone. Therefore, it's crucial to make sure the customer receives their service immediately and without delay and to convey your genuine interest in supporting them.

2.5.2   Reliability

Reliability is a crucial component of the SERVQUAL model that verifies the ability to deliver services precisely, on time, and authentically, according to Kobiruzzaman, M. M. (2022). Reliability is defined as the capacity to deliver the promised service consistently and accurately, according to Ramya, N., Kowsalya, & Dharanipriya (2019). Providing consumers with support or a product on schedule and in error-free conditions requires consistency. Reliability, in the opinion of Ehigie C. Johnson and Jesse S. Karlay (2018), ensures that a service provider can consistently deliver a perceived level of service. The company must honor its promise to its clients to provide the service promptly and accurately. In a wide sense, reliability refers to service businesses' claims on delivery, service provisions, problem resolutions, and pricing, according to Ramya, N., Kowsalya, & Dharanipriya (2019). The reliability dimension in the context of online business entails regularity, attitude toward complaints, communication with consumers, consistency, protocols, etc. Because every customer wants to know whether providers are dependable in their service delivery, reliability is as good as the first impression, claims Ogiemwonyi (2020). Customers like to do business with companies that fulfill their commitments.

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Therefore, it plays a significant role in how the consumer perceives the quality of the services and how loyal he is. In recent years, service quality and e-service quality have emerged as one of the most crucial research fields in marketing due to their enormous influence on a company's financial performance, according to Luh Putu Ariestari Pradnyadewi and IG. A. K. Giantari (2022). The five factors of privacy, responsiveness, accessibility, reliability, and efficiency all contribute to the overall quality of electronic services. Therefore, service providers must be aware of what customers demand in terms of dependability. According to F. (2021), reliability includes meeting delivery deadlines that are listed on a website. According to Syed Shah Alam, Norjaya Mohd. Yasin (2010), the survey, homepage presentation, and reliability are the crucial elements with the most impact on online shopping. One may make the case that online customers desire to acquire the proper amount and quality of the things they have requested within the time frame provided by the e-tailers.

2.5.3 Empathy

The empathy dimension is another aspect of service quality. Empathy, according to Ramya, N., Kowsalya, & Dharanipriya (2019), is the considerate, personalized care that consumers receive from service providers. Through personalized or tailored services, this dimension tries to express the idea that each consumer is special and unique to the business. According to Kobiruzzaman, M. M. (2022), empathy entails paying close attention to the needs of the consumers in order to provide thoughtful and exceptional service. Serving each customer individually is a fundamental mentality in certain nations around the world.

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Additionally, it is a terrific way to boost customer confidence, trust, and loyalty while also psychologically satisfying them.

The attention that retailers give to their consumers to make them feel especially special and valued, according to Ogiemwonyi, O. (2020) therefore it is referred to as the empathy dimension. Even if the preceding four dimensions each have their own inclination and significance, the author said, this dimension is occasionally merged with them for a high-level service in satisfying customers. The focus of this dimension, according to Ramya, N., Kowsalya, & Dharanipriya (2019), is on a diversity of services that meet various client needs, personalized or personalized services, and more. In this situation, the service providers must be aware of the preferences and individual demands of the customers.

Because of the risk of customer loss brought on by a lack of compassion among the staff, the corporation must ensure compassion. According to F. (2021) claimed that in order to increase customer satisfaction, personnel should place a high priority on their requests. Additionally, empathy is a combination of several characteristics, according to Kobiruzzaman, M. M. (2022). First, is access which can be both physical and social, such as being approachable and simple to get in touch with. The next step is communication, including informing clients in a language they can understand and paying attention to them. Lastly, comprehends the customer for instance, taking the time to learn about consumers' individual needs.

2.6 Role of Customer Satisfaction in E-Supply Chain Management

Customer satisfaction is a key factor in the formation of customers' desires for future purchases in proportion to Mittal & Kamakura (2001). Pursuant to Abd-El-Salam, et al (2013) and Chen (2010) the study suggest that customer satisfaction is the result of a customer's comparison of perceived quality and actual service performance. Customer satisfaction is based upon the common judgment of products or services that provide the maximum rate of satisfaction for the customers in agreement with Oliver (1997). As a result, several researchers have used equity theory to comprehend how customers and businesses interact congruent with Chen et al (2019); Lim (2020); Pai et al., and (2018).

Online commerce, especially in e-supply chain management, depends on customer satisfaction. Higher loyalty is a result of greater customer satisfaction as reported by Anderson and Swaminathan (2011). Therefore, a deeper grasp of the crucial components of customer satisfaction is required. According to Shamout and Emeagwali, (2016) previous research has not thoroughly examined the impact of e-supply chain management methods on customer satisfaction. According to Le-Tan and Thi Dai Trang, (2017), the study looks at the potential benefits of e-supply chain management, such as increased customer satisfaction, efficiency, and effectiveness, as well as opportunities for market expansion. The study also focuses on the specific effects of the internet on two aspects of the order fulfillment process which are increased productivity through online order processing and improved effectiveness through access to and manipulation of large amounts of data related to customer orders and inventory levels in consonance with Le-Tan and Thi Dai Trang, (2017).

Online supply chains are favorably connected with a number of aspects, such as quality, flexibility, and affordability, according to Chavez et al (2017) which results in an increase in customer satisfaction. The importance of e-supply chain management has been discovered by Pulevska-Ivanovska and Kaleshovska for a number of reasons. As an illustration, consider how operations can be improved, outsourcing can be improved, customer satisfaction can be increased, quality results can be produced, globalization is rising, e-commerce is becoming more important, and supply chains are becoming more complex in accordance with Pulevska-Ivanovska and Kaleshovska, (2013).

According to Anderson and Swaminathan, six factors which are adaptation, commitment, network, assortment, transaction convenience, and engagement have a substantial impact on customer satisfaction when purchasing online. Additionally, they found that customer trust and inertia attenuate the positive impact of satisfaction on loyalty in accordance with Angelova and Zekiri (2011).

2.6.1 Quality

One of the most essential aspects of any business is customer satisfaction. Customers demand nothing less than great quality. High-quality guarantees increased customer satisfaction and a higher likelihood of ongoing collaboration. Giving customers value is one of the most crucial aspects of a company, and this value can come in the form of both tangible and intangible goods, such as packaging, brand recognition, service qualities, and performance standards, in addition to tangible goods. Thus, a product's

quality, which has a substantial impact on service performance or the product, is linked to customer satisfaction and value as stated in Kotler & Armstrong study (2012).

According to Winder (1996) and Chavan (2003), customers' perceptions of a product's quality are influenced by extrinsic factors such as warranty, brand, country of origin, or price. These are known as extrinsic cues. According to Teas and Agarwal (2000), quality is defined as all the attributes of a product that have the potential to meet consumer expectations. When a product meets a customer's expectations, they will be highly satisfied and perceive the product as having high quality. The customer will then believe the product is acceptable. Performance, feature, reliability, conformance, durability, service ability, aesthetics, and perceived quality are some of these qualities, according to Garvin (1984).

Because of customer expectations, corporate reputation, and customer loyalty, it is crucial to establish a standard of quality for goods and services. Customers who value a product's quality are more likely to stick with a single retailer and develop higher standards for the business. The company may establish a standard of customer satisfaction in the retail sector by offering the appropriate product of the right quality and at the right time when it sells quality products consistently. Business reputation comes next. The reputation of the company and quality are more closely related. The finest example is Nike because they have established their business through effective marketing and long-lasting items. Nike's products deliver the quality that consumers have grown to expect, so they can trust them and are willing to pay more for them. Additionally, maintaining consumer loyalty requires quality. Even though a product is expensive, customers always return when it is good. A high-quality product fosters everlasting consumer loyalty, which increases leads.

2.6.2   Efficiency

Successful businesses must be efficient if they want to cut costs in competitive markets. Customers view efficiency in their own ways. Customer satisfaction and experience are intimately tied to efficiency inside a business. As a result, if a consumer is happier with the customer assistance they receive, they are more likely to stick around. Customer efficiency must be taken into account because it directly correlates with satisfaction and advocacy and is the most reliable predictor of future behavior. For instance, Mason et al. (2021) came to the conclusion that the pandemic had changed consumer needs, shopping and purchasing patterns, and levels of post-purchase satisfaction.

There are various strategies to raise a business's productivity, which will ultimately boost revenue and customer satisfaction. Determining performance measures, communicating openly with employees, automating firm technologies, and many other things are several examples as stated in the manufacturer article (2020). First and foremost, building employee abilities and confidence through appropriate and thorough training can result in notable benefits in a variety of ways. Employee productivity will inevitably result in high-quality output and satisfied customers.

According to Ryan Miller (2019), utilizing AI chatbots in e-business can also boost productivity and cut costs. A Gartner estimate predicts that by 2020, 85 percent of customer contacts will be managed without the assistance of a human person. Another study found that businesses spend $1.3 trillion annually to fulfill the 265 billion client requests they receive. AI chatbots can reduce this cost by up to 30%. Utilizing this technology in e-business helps to save costs and develop strong customer relationships.

2.6.3 Delightful Service

Good service is typically described as being friendly, courteous, and warm. Businesses can readily meet these criteria, but true customer pleasure demands more than simply attentive employees. When clients receive first-rate customer service, their demands are also met. Most clients require rapid, straightforward customer service that offers them precisely what they desire. Customer satisfaction is the result of good service, which increases the firm's marketability. N. L. P. Suciptawati, N. L. P. S. Paramita, & I. P. Aristayasa (2019) stated that by recognizing service issues and developing metrics for service performances, outcomes, and customer satisfaction, high service quality can be attained.

Customers clearly demand speed, efficiency, and quality in customer service because doing so would improve their experiences, create value, and give them the attention they deserve, according to Newman, E. (2017). Businesses that are unable to provide this service lose customers and their good name in the marketplace. The truth is that efficient and high-quality customer service is both essential since, without one, clients would receive poor service.

When assistance staff and customers communicate in a polite, respectful, and open manner, customers are more likely to stay loyal to the business. The company's reputation will live on forever and help it attract new clients and keep hold of current ones. Moreover, excellent customer service fosters loyalty and trust. According to Perez, M (2022) providing customers with excellent service results in a positive experience that may lead to repeat business and referrals. Additionally, it raises a brand's and business's value. Positive

experiences from customers result in a positive company reputation, which in turn results in a positive workforce. Customer satisfaction is anticipated to come through effective service delivery, which will enhance customer involvement and interpersonal relationships, according to Chang et al. (2017).

2.7   Customer Satisfaction with online shopping

Among ASEAN countries, Malaysia is known as a digital market that attracts e-commerce businesses. Most Malaysian people are 'techno-savvy' and depend intensively on social media for different reasons comprising including online shopping. As of 2018, the number of Internet users was 25.08 million from 31.83 million of the Malaysian population. The average age of Malaysians using social platforms such as Facebook, and Twitter is 25-30 years as reported by the star (2020). Online shopping is also growing at a rapid pace in Malaysia due to the usage of Malaysian youth who are active spenders. Online shopping is the process of purchasing goods and services from merchants who sell over the internet as defined by Master Card Worldwide Insights (2008).

In Malaysia, the e-commerce trend is attracting digital consumers to purchase goods online. Logistics becomes the primary source for online shopping platform providers in order to provide personalized services in accordance with Xiao, Wang, Liu (2018). To meet customers ever-rising expectations, online stores created an effective customer experience strategy in agreement with Pandey & Chawla (2018). The most famous e-commerce website in Malaysia is Lazada and Shopee. Due to COVID-19, Malaysia's government enforced a Movement Control Order (MCO) on March 18, 2020, which significantly reduced shopping activity. However, as Malaysian consumers' purchasing habits expanded

during MCO, so has the need for online shopping. Despite the fact that Malaysians desire to spend less money, many who are working from home during the MCO time make internet purchases. This is a result of their little options when going shopping for necessities. Hence, during the MCO time, consumers choose to shop online for their purchases.

Malaysians are known as big spenders on purchasing products and services. According to Paynter John, Lim, and Jackie (2001), online shopping eliminates traditional methods of purchasing which are time consuming such as issuing purchase orders, getting approval, and tracing invoices which could lead to high transaction costs. Online shopping will automate this process which helps companies to increase speed and reduce the cost of purchasing transactions. Customers also could reach a company within 24 hours. This will create new markets and segments which increase business competitive advantage.

According to Wei L.H, Osman, M.A Zakaria, N &Bo, T (2010), confidence is an important factor for people to purchase products online. The reliability of the website and service quality in online shopping platform is important factors for people to purchase products online. This makes people continue to pursue online shopping. With the rapid growth of online shopping in Malaysia, it is important to focus on customer satisfaction when developing online retail stores. Malaysian customers are different than those in developed countries in terms of trust in buying online, as they tend to be more cautious in their buying decisions. According to Syed Shah Alam, Norjaya Mohd, Yasin (2010), customer satisfaction is a key concept in the study of consumer behavior in both traditional and online business environments. This highlights the need to understand the characteristics of the local market and tailor strategies to meet the specific needs of Malaysian customers in order to improve their satisfaction and build trust in online shopping. Customers who are

satisfied with the goods they purchase are more likely to remain loyal in proportion to Mohd Suki (2017). Customer satisfaction with the sales staff has a considerable beneficial impact on customers' willingness to pay more, according to research by Agnihotri et al. (2019). This demonstrates how satisfied customers will spend more money and make more repeat purchases when their demands are successfully met, pursuant to Khoo, K. L. (2020).

In a 2013 study by Al Karim, R., it was found that 90% of people thought online buying was convenient. Participants in the study appeared to concur that online shopping allows customers access to a wide variety of shops and products from around the globe and provides them with the best prices. Additionally, respondents said that 'internet purchasing is good for aged and disabled persons.' Only 7.5% of participants expressed a neutral opinion, whereas over 92.5% of respondents agreed with this assertion as reported by Al Karim, R. (2013).

E-service has attributes such as responsiveness to customer inquiries, security, fulfillment processes, customization and personalization, and interactivity in accordance with Ba and Johansson, (2008). E-service quality can be assessed as the overall consumer judgment and assessment of e-service delivery in the online marketplace pursuant to Santos, (2003). Researchers have claimed that, in comparison to offline service, e-service has the capability of serving consumers' needs more efficiently. Therefore, e-service quality is also an important element in online shopping in order to satisfy customers.

Most customers are satisfied shopping online because online shopping is very convenient. According to Luh Putu, Ariestari Pradnyadewi, and IG A. K. Giantari (2022), customer satisfaction is a crucial concept in contemporary marketing theory and practice

because it describes the feelings of happiness or dissatisfaction that result from comparing a person's perceived performance to their expectations. Customers are able to make orders anytime from their homes without traveling to supermarkets or any malls. In addition, the consumers are provided with proper, adequate as well as more information about the products and services of the companies in the online stores. Hence, customers feel fulfilled when they search for products online. Consumers are happy with shipping and door-to-door delivery service when they order online. In this situation, online shopping provides them with the facility of shipping charging a little amount of money pursuant to Chin and Goh, (2017). Customer satisfaction is based on the general assessment of the goods or services that provide the highest prevalence of satisfaction for the customers, according to Ehigie C. Johnson and Jesse S. Karlay (2018). According to Ogiemwonyi, O.,(2020), in numerous earlier studies across a range of study distributions, emphasis has been placed on service quality and customer satisfaction. Positive relationships have been noticed as a result of the positive attention this research has received in agreement with Zameer, Wang, Yasmeen and Ahmed, (2019).

2.8   Theoretical framework

Based on the theory that supports the thesis, a theoretical framework is constructed that may be used for inquiry and investigation. The framework explains how the variables and relationships in the theory are validated. This study can evaluate the relationship between the theory's variables and determine the type of relationship that exists by utilizing a theoretical framework. Independent variables and dependent variables are the two sorts of

variables. An independent variable is one that a researcher may manipulate or control, whereas a dependent variable is one that a researcher is concerned about within a study.

INDEPENDENT VARIABLE   **DEPENDENT VARIABLE**

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┌─────────────────────────┐                ┌─────────────────────────┐
│                         │                │                         │
│   Service Quality in    │                │                         │
│   E-Supply Chain        │                │                         │
│                         │───────────────>│   Customer Satisfaction │
│   1.  Responsiveness    │                │                         │
│   2.  Reliability       │                │                         │
│   3.  Empathy           │                │                         │
│                         │                │                         │
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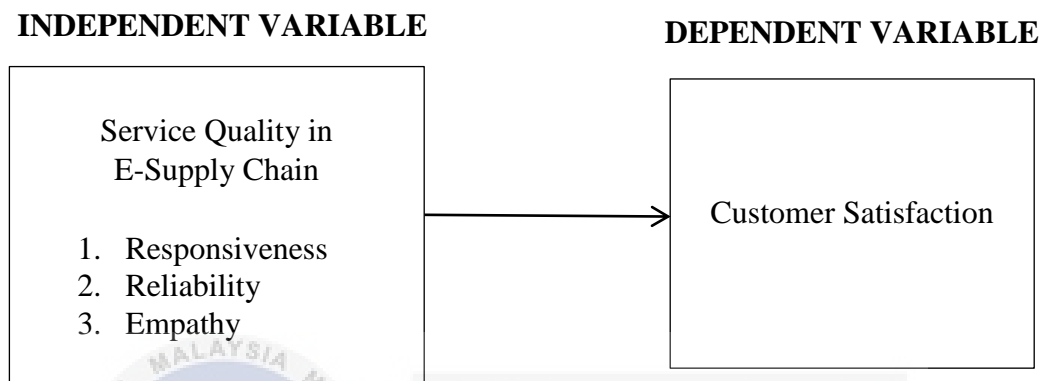
Figure 2.1 Theoretical Framework of this study.

2.9   Hypothesis

The goal of the hypothesis is to test the relationship between variables. Hypotheses are formed from theoretical frameworks. The following hypotheses have been made to observe the link between the variables based on the discussion and justification from the literature review.

H1. Responsiveness will significantly influence CustomerSatisfaction.

H2. Reliability will significantly influence CustomerSatisfaction.

H3. Empathy will significantly influence Customer Satisfaction.

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2.10   Summary
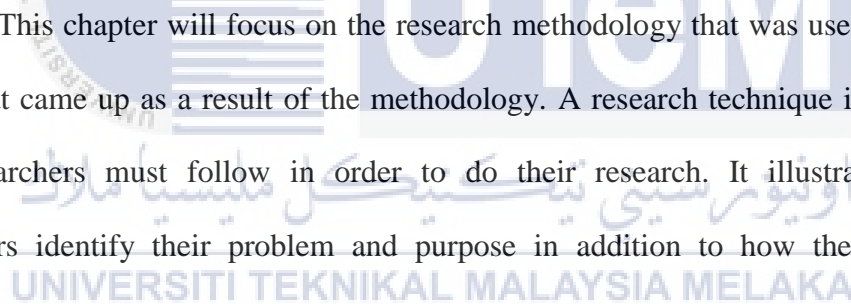
This section has gathered all data and information from secondary sources such as articles, newspapers, journals, books, and websites. This chapter can assist you in understanding what this study is about to discuss. The definitions of service quality, e-supply chain, customer satisfaction were included in this chapter. The roles of service quality and customer satisfaction in e-supply chain management, as well as the roles of service quality in customer satisfaction, are explored in this chapter. It also focuses on online shopping in Selangor and customer satisfaction through online shopping. The theoretical framework aids in the reader's comprehension of the entire chapter. This study will explain in detail on the research methodology in the following chapter.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter will focus on the research methodology that was used as well as the issues that came up as a result of the methodology. A research technique is the procedure that researchers must follow in order to do their research. It illustrates how these researchers identify their problem and purpose in addition to how they present their outcomes based on the data acquired during the study period, according to Sileyew, K. J. (2019). This chapter will include examples of the steps used to address the research design, data collection, and analysis techniques utilized to carry out the research project. These challenges are addressed using the fundamental research goals, pertinent research questions, and research framework covered in chapter 1 and 2 of the report.

3.2 Research framework and research hypothesis

Research framework and research hypothesis are guidelines and principles that define the overall approach and structure of a research project.

3.2.1 Research Framework

A research framework is a set of guidelines and principles that define the overall approach and structure of a research project. It serves as a roadmap for researchers, outlining the key elements and steps involved in the research process. The methodological framework is comparable to the research framework. According to McMeekin, N (2020), a framework is a set of guidelines or concepts, while methodology is a collection of techniques employed in a certain profession. Figure 3.0 shows a research framework that will be followed in this study.
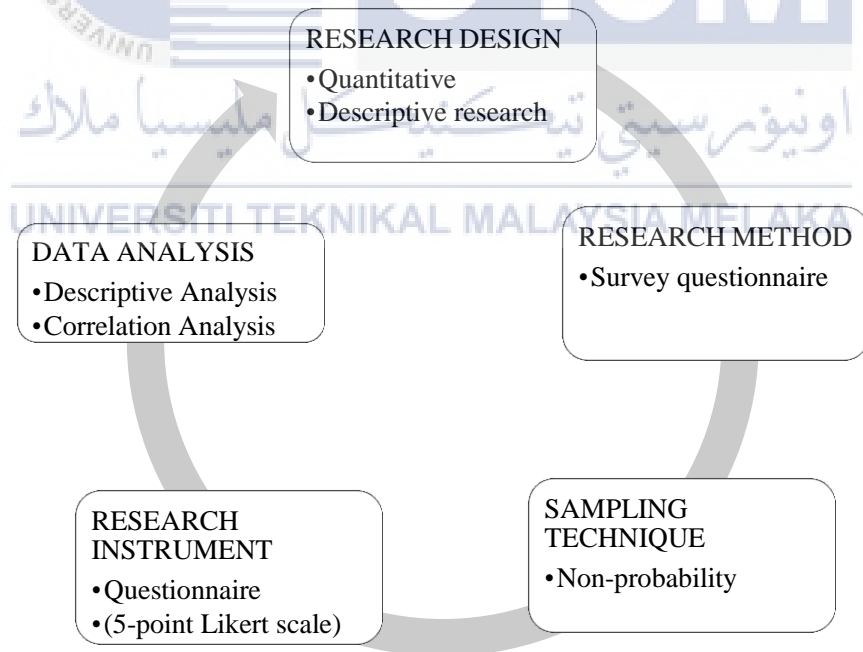
Figure 3.1 Framework for research methodology as per Ogedi Alakwe, K., & Okpara, N.

(2017)

3.2.2 Research Hypothesis

According to Anupama, K. (2018), a research hypothesis is a precise, unambiguous forecast of the potential results of a scientific research investigation based on particular population-specific elements. A research hypothesis is a precise, understandable, and testable proposition or forecasting regarding the potential results of a study that is based on a certain characteristic of a population, such as presumptive disparities in groups with regard to a certain variable or relationships between variables. One of the most crucial tasks in organizing a solid quantitative research study is defining the research hypotheses.

H1. Responsiveness will significantly influence CustomerSatisfaction.

H2. Reliability will significantly influence CustomerSatisfaction.

H3. Empathy will significantly influence Customer Satisfaction.

3.3   General construction of research design

This research examines the impact of service quality in the e-supply chain towards customer satisfaction through online shopping. Research design refers to the plan or blueprint for a research study, outlining the strategies and methods that will be used to collect and analyze data. It is a critical component of any research project, as it determines the overall structure and organization of the study, as well as the methods and techniques that will be used to collect and analyze data. The research design is meant to offer a suitable framework for a study, according to Sileyew, K. J. (2019). Research design is the plan or road map for gathering, measuring, and analyzing data. The research design, which is a strategy for conducting an investigation to answer a research question, is the foundation of any study,

according to Kothari (2004). Other authors have also described research design in their own unique way. Research design is defined by Creswell and Plano Clark as the techniques for collecting, analyzing, interpreting, and reporting data in research studies.

One of the most important factors in determining the quality, relevance, and accuracy of a result is the research design. There are four main types of research designs which are descriptive, exploratory, experimental and explanatory. Within the realm of quantitative research, researchers can use experimental and quasi-experimental designs to evaluate cause-and-effect relationships, while descriptive and correlational designs are used to measure variables and understand relationships between them. The study aims to determine the role service quality in e-supply and impact of service quality in e-supply chain on customer satisfaction through online shopping. Descriptive analysis is a method used to summarize and describe the characteristics of a population or phenomenon by using descriptive statistics such as measures of central tendency and measures of dispersion. Descriptive statistics help identify patterns, trends, and relationships within the data and present it in a meaningful way. This method is suitable for exploring the data and providing a general idea about it. It is not used to establish causality; it's more about describing the data. This type of research is useful for describing the characteristics of a population and for identifying potential areas for further investigation.

This study has chosen to conduct a descriptive research design. The descriptive research design was used by this study to accurately and methodically explain a population, situation, or phenomenon. It's a theory-based design process that involves collecting, interpreting, and presenting data. This enables a researcher to convey information about the why and how of research. Descriptive design assists others in comprehending the research's

requirements. For example, the goal of a descriptive study is to create an image of a circumstance, person, or event, or to demonstrate how objects are related to one another as it appears in nature in proportion to Blumberg, Cooper, and Schindler, (2005).

3.3.1   Justification of the study

According to Akanle, O. and Shittu, O.S. (2020), the logical examination of the intellectual, scholarly, and practical advantages or benefits of a research endeavor constitutes justification in social research. According to Lisa M. (2008), given the term 'research justification' refers to the justification for conducting the research, which includes a description of the research's design and methodology. This research has highlighted specific research issues in chapter 1 that we want to look into. There are poor and inefficient supply chains, overlooked inventories in a company, and also a failure in customer service. The research has stated what it plans to address in this issue. This study aims to examine the relationship between service quality in e-supply chain and customer satisfaction through online shopping in Selangor. More specifically, the proposed study is to determine the role of service quality in e-supply chain management and to examine the impact of service quality of e-supply chain management on customer satisfaction through online shopping in Selangor. To be able to sustain in the competitive online business platform, every online business in Selangor should therefore focus on service quality in the e-supply chain, which would result in higher overall customer satisfaction. The study may also help to identify the gaps and areas of improvement in service quality in e-supply chain management in Selangor.

3.3.2   Deductive study

Inductive and deductive approaches are two different categories used in research. An inductive approach is a type of research method that involves moving from specific observations or data to more general conclusions or theories. It is also known as 'bottom-up' approach, as it begins with specific observations and uses them to develop general concepts. This is the basic distinction between inductive and deductive reasoning. People often identify scientific inquiry with a deductive approach to study. This study analyses existing theories of the topic being studied investigates what others have done, and then tests hypotheses that result from those theories. In this study, this study chooses a deductive approach.
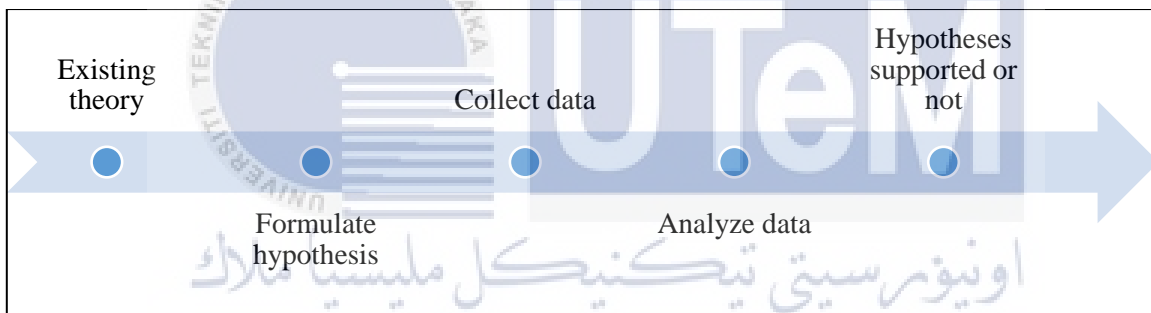
Figure 3.2 Deductive Approach outlines the steps involved with a deductive approach to research.

3.3.3   Quantitative study

A study's design can be divided into two categories which are quantitative and qualitative. This study is based on a quantitative approach that was constructed using existing literature's theoretical framework and tested data analysis in agreement with Zikmund (2003). Quantitative research is described as a systematic analysis of phenomena through the

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collection of measurable data and the application of statistical, mathematical, or computational methods. Quantitative research gathers data from current and potential consumers by adopting sampling methods and sending out online surveys, polls, questionnaires, and other forms of data collection, the results of which can be represented numerically. According to O.B.A. (April), quantitative research objectives are quantifiable and cannot be distinguished from variables and hypotheses. Variables are ideas that can take many different forms and have a wide range of possible values, whereas hypotheses are unproven assumptions or propositions about how variables relate to one another.

3.3.4 Time frame of the study

The time frame of a study refers to the period of time during which data is collected and analyzed. The time frame of a study should be clearly defined and specified in the study's methodology or introduction section.The research is carried out during the academic year 2022-2023. The Final Year Project 1 began in March 2022 and is set to run until June 2022, incorporating the second phase of Final Year Project 2 in the fourth-year first semester which is from September 2022 to January 2023.

3.4 Research Method

Research method refers to the systematic and theoretical approach used in a field of study to conduct research and gather data. It includes the procedures and techniques used to collect, analyze, and interpret information in order to answer a research question or solve a

problem. The exact steps or methods used to find, pick, process, and analyze information on a subject are known as a research methodology. It is defined by Robson (2002) as the theoretical, political, and philosophical backgrounds of social research, as well as their consequences for research practice and the use of certain research methods.

The impact of service quality in e-supply chain on customer satisfaction through online shopping in Selangor is investigated in this study. Research methods can be divided into two main categories which are quantitative and qualitative. Quantitative research methods involve the use of numerical data and statistical analysis to test hypotheses and draw conclusions. Meanwhile qualitative research methods involve the use of non-numerical data, such as interviews and observation, to gain an in-depth understanding of a phenomenon or group of individuals. This study employs quantitative research methods.

One of the most effective methods for conducting social research is the quantitative approach. This methodology focuses on numerical data measurement and testing. Research methods can include a variety of different techniques, such as surveys, experiments, case studies, literature reviews, and content analysis. The choice of research method will depend on the research question being asked and the type of data being collected. The quantitative technique is a useful tool for determining the relationship between an independent variable (IV) and a dependent variable (DV). A descriptive design might use a variety of research methods to investigate one or more variables.

3.4.1   Survey method and Research instrument

Furthermore, a survey questionnaire is utilized as an instrument in this study because it allows collecting data quickly. It also features a wide sample size and the ability to collect various types of data congruent with Jambulingam et al., (2016). The survey questionnaire can be administered in various ways, such as in-person, by phone, by mail, or online. A survey questionnaire typically includes a mix of both closed-ended and open-ended questions. Closed-ended questions are those that have a fixed set of response options, such as multiple-choice, true-false, or Likert scale. The main advantage of using survey questionnaire is that it allows for the collection of data quickly and efficiently from a large sample size. It also allows for the collection of various types of data, such as demographic information, attitudes, beliefs, and behaviors. Additionally, survey questionnaires are relatively inexpensive and easy to administer.

3.4.2   Research Strategy

A research strategy is a methodical method of conducting research to solve an issue. It's important to understand the difference between a research methodology and a research method. The best research strategy should be chosen based on the research objectives and research questions, the number of resources and time available, the researcher's philosophical foundations, and the extent of current knowledge in the examined subject in consonance with Wedawatta G., Ingirige B., Amaratunga D (2011). As a result, the survey collects quantitative data from respondents, which is then analyzed, evaluated, and finally summarized. This study used a questionnaire design and a pilot test to collect data and build variables in this study.

3.4.3 Questionnaire

This study produced a questionnaire that consists of different questions regarding service quality in e-supply chain management and customer satisfaction through online shopping in Selangor. The questions were divided into groups based on the research objective. There are three parts to the questionnaire in this study there are section A, section B, and section C. Section A included questions about demographic, and social factors. This section, for example, will inquire about gender, age, educational level, occupation, and two more questions. After that, in section B, a questionnaire that includes the research's independent variables, which include service quality in e-supply chain such as responsiveness, reliability and empathy will be created. Section C examines the relationship between customer satisfaction and the independent variables in online shopping.

3.4.4 Scaling

Scaling is the process of measuring and allocating numbers to items in accordance with predetermined guidelines. In other terms, scaling is the process of placing the measured things on a continuous sequence of numbers, or scale, to which the objects are assigned. Comparative scales and non-comparative scales are two different categories of scaling techniques. Non-comparative scales are chosen by this research. Customers are requested to evaluate just one object in non-comparative scaling. The other objects under investigation have no bearing on this evaluation at all. Non-comparative scales can be further broken down into continuous and categorized rating scales, which are also known as monadic or metric

scales. Itemized rating scales are the choice of this research. An example of an ordinal scale is itemized rating scale, which allocates numbers to each attribute. Typically, respondents are asked to choose an attribute that best captures how they feel about a specified criterion. The Likert scale, Stapel scale, and semantic scale are further divisions of the itemized rating scale.

Therefore, the questionnaire does include a Likert scale. A Likert scale is a type of measurement scale that is used to assess attitudes, opinions, or beliefs. It is named after its developer, Rensis Likert, who first introduced it in a study at 1932. A Likert scale typically consists of a series of statements or questions, and respondents are asked to indicate their level of agreement or disagreement with each statement or question on a numerical scale. The responses on a Likert scale are usually numerical, such as 1-5 or 1-7, where 1 represents the lowest level of agreement or feeling and the highest number represents the highest level of agreement or feeling. It is considered a reliable and valid method of measurement in social sciences research because it allows for the collection of quantitative data that can be easily analyzed and compared.

LIKERT SCALE					
STAGE	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
SCALE	1	2	3	4	5

Table 3.1 Likert Scale - McLeod, S. (2008). Likert scale definition, examples, and analysis.

3.4.5   Data Analysis

Data analysis is the process of examining, cleaning, transforming, and modeling data with the goal of discovering useful information, drawing conclusions, and supporting decision-making. The process of data analysis typically includes several steps such as data cleaning, data transformation, data exploration, data visualization, statistical analysis, and machine learning. The specific methods and techniques used in data analysis will depend on the type of data and the research question being addressed. Descriptive analysis, Pearson correlation analysis, and Multiple regression analysis will all be shown in the results.

3.4.5.1   The Statistical Package for Social Sciences (SPSS)

The Statistical Package for Social Sciences (SPSS) was used to analyze the data for this research. The quantitative analysis of data collecting and tabulation processes can be evaluated using the SPSS because it can manage a huge volume of data. The present study's data were acquired, and the reliability, accuracy, and validity of those data can be achieved with the use of the SPSS norm multiple regression. The Statistical Package for Social Science (SPSS) is a windows-based programme that may be used to look for and analyze knowledge sections, as Howell, D. C. (2014) notes. A standard multiple regression analysis will be utilized to confirm the reliability of the study's variables. The questionnaires that have been gathered will be evaluated using SPSS version 26. With the use of this technique, the researcher was able to examine two variables, the first of which was crucial for the descriptive statistics. The findings will be explained and interpreted using these statistics.

3.4.5.2   Descriptive Analysis

The three methods of detecting central tendency are mode, median, and mean, according to Sohil Sharma (2019). In contrast, dispersion is a measurement of how evenly dispersed the data values are within a normal distribution. To provide descriptive information, the data has been sorted, organized, and altered. The compilation of data on demographic characteristics was explained using the frequency percentage.

3.4.5.3   Pearson Correlation Analysis

The analysis of Pearson's correlation was used. The variables are independent variables (IV) and dependent variables (DV). The strength of the relationship between service quality in e-supply chain (IV) and customer satisfaction (DV) was evaluated by this study using Pearson's Correlation analysis. The correlation coefficient value of +1 denotes a strong positive association, whereas -1 denotes a weak negative correlation. The higher disparity in findings from the mounted side determines how closely the correlation is related. The difference in the outcomes of the best-fit rows is smaller when the correlation coefficient, r, is zero whereas it increases with a value of +1 or -1.

The Correlation Coefficient, r	Interpretation
± 0.80 *to* ± 1.00	Very Strong
± 0.60 *to* ± 0.80	Strong
± 0.40 *to* ± 0.60	Moderate
± 0.20 *to* ± 0.40	Low

± 0.00 to ± 0.20	Very Low

Table 3.2 The Rules of Thumbs Interpretation Correlation

3.4.6 Data Collection

One of the most crucial steps of any research project is data collection. The systematic process of gathering and analyzing data on variables of interest is known as data collection. It enables this research to address open-ended issues, test theories, and evaluate results. In accordance with Douglas, (2015) there are two categories of data. They are primary data and secondary data. This research study will use both primary and secondary data collection methods. The goal of collecting primary and secondary data is to conduct statistical analysis. The relationship between service quality in e-supply chain and customer satisfaction through online shopping in Selangor is investigated in this research study using primary and secondary data collection methods.
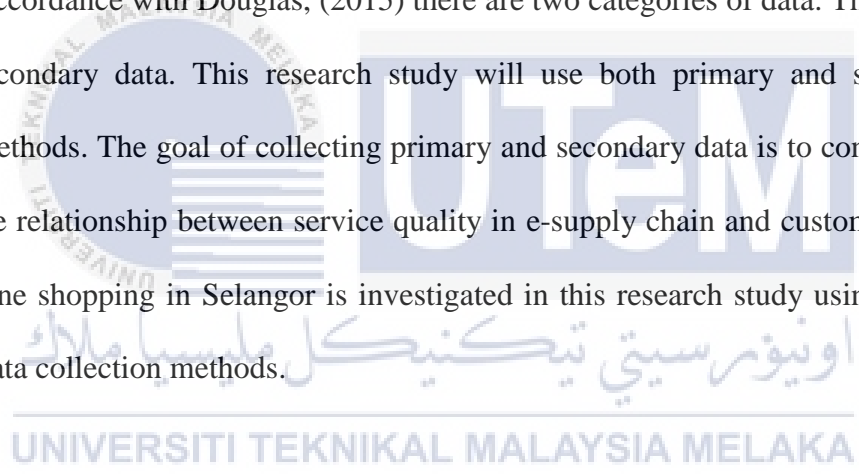
3.4.6.1 Primary Data

Primary data are facts discovered by first-hand observation. Primary data refers to information gathered directly for the purpose of the study in accordance with Saunders et al., (2009). Primary data is more trustworthy, authentic, and unbiased and has not yet been made public. Primary data can be collected through various methods such as surveys, interviews, observation, and experiments. It is considered to be original and unbiased as it is collected specifically for the research being conducted. Primary data can be collected through a variety of methods including surveys, interviews, observations, and experiments. Surveys involve

collecting data from a sample of individuals through questionnaires or interviews. Interviews involve conducting one-on-one conversations with individuals to gather information. Observations involve watching and noting behavior or events in a natural setting. Experiments involve manipulating one or more variables to observe their effect on a particular outcome.

This research employs a questionnaire to gather data for this study, which is then, will deliver to online shoppers through the Internet. In order to support the research objectives, a questionnaire administered electronically via the internet was chosen as the primary data collection strategy in this study. Due to the small sample size of this research study, the major purpose of using an electronic survey is to reach out to online shoppers who have done some shopping and purchased products or services from an online store. Overall, primary data is considered to be the most reliable and valuable type of data for research studies as it is collected specifically for the research question at hand and has not been affected by any external factors.

3.4.6.2 Secondary Data

Information obtained from a source that has already been published in some way is known as secondary data. Any review of the literature that has been done has used secondary data. Someone else collects secondary data for a different purpose. Secondary data are required because it is impossible to perform a brand-new survey that can accurately capture earlier modifications and improvements. Numerous techniques can be used to gather secondary data. For instance, books, papers, biographies, databases, online articles, published research articles in journals, published surveys or other statistical data, and so forth.

For the literature review, this study used journal articles, online articles, and books to find information from previous studies. In many aspects of this study, the researcher relied on secondary data such as publications, journals, and websites. Using secondary data, this research was able to develop a theoretical framework and hypotheses.

3.5 Data collecting methods

Data is a compilation of information obtained from various sources, including facts, statistics, things, symbols, and events. Organizations gather information to aid in decision-making. Organizations collect data from a variety of audiences at different times in time because doing so would make it difficult for them to make the right decisions. There are six ways to gather data. There are through interviews, surveys, questionnaires, observations, records and documents, focus groups, and oral histories.

3.5.1 Introduction research instrument

Interviews, focus groups, observations, and oral histories are generally qualitative while questionnaires, surveys, and documents and records are quantitative. According to J. (2021), this study uses a quantitative approach to data collection. Analyzing a numerical result is a function of quantitative analysis. A survey is a well-known illustration, which involves asking questions and gathering answers that reveal patterns, preferences, behaviors, attitudes, and any other aspect that can be counted.

3.6   Reliability and validity

Researchers must take validity and reliability into account in order to produce a reliable product. The validity and reliability of the data collection will determine how much of a chance there is of developing an arbitrary questionnaire and obtaining false results in accordance with Saunders et.al, (2019). This research will look for other strategies to get over these limitations in order to improve the study's quality and measurement reliability and dependability. The foundation of excellent research, according to Mohajan, H. K. (2017), is the trustworthiness (reliability and validity) of the data utilized to draw conclusions; without this, no meaningful conclusion can be drawn.

3.6.1   Validity

The degree to which a concept is precisely quantified in a quantitative investigation is known as validity. The three types of validity are a construct, internal, and external. According to Lutfi Surucu (2020), internal validity is the presence of a causal connection between two variables that are dependent on but independent of one another.

3.6.2   Reliability

The ability of an instrument to produce comparable results when utilized at various times is referred to as reliability. Cronbach's alpha coefficient testing was used by this research to assess reliability. It is a method for figuring out how reliable and consistent a variable is. Two risks that could endanger the dependability of research are participant error and analytical

error. Researchers should find some qualified respondents to increase the validity of the questionnaires. Factor loading, mean, and standard deviation are all taken into account during the reliability assessment. The accuracy of reliability is assessed using Cronbach's Alpha or the Alpha coefficient. The coefficient lies between 0 and 1. The link between the independent and dependent variables is met if the result is more than 0.6 or almost equivalent to 1.0.

3.6.3   Internal consistency

Internal consistency dependability evaluates how well a test covers various structures and generates trustworthy results. The test-retest procedure is giving the same test again after some time has passed, and then comparing the outcomes.

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

Table 3.3 Cronbach's Alpha Coefficient

3.7 Pilot test

Pilot testing is a type of research study that allows researchers to evaluate their research approach with a small group of test subjects before launching the main study. Despite the fact that this is an extra step for this research, it may be the best time spent on any research project. The questionnaire should be distributed to a small group of experts or people with knowledge relating to the topic to see if it is appropriate to use in this survey. The primary goal of the pilot test is to ensure that everyone understands the questionnaire created by this research in the same way. After the suggested research project has been thoroughly designed, the pilot test should be conducted before investing in a final launch. In this approach, this research may determine if their questionnaire has any flaws and address them before distributing it to further respondents.

This study chose to disseminate the questionnaire to 20 online shoppers to see if the questions were reliable. This test will provide researchers with a better indication of whether the questionnaires have any problems, and respondents will be able to answer them without being confused. The research must also ensure that the respondents not only understand the questions but that they comprehend them in the same way.

3.8 Population and Sampling

In the vast majority of research activities, participation of an entire population of interest is not possible; hence data gathering is reliant on a smaller group in accordance with Turner, D. P. (2020). Sampling design also refers to the method or strategy used by this research to choose things for the sample. When it is impossible to acquire all of the data from

the total population owing to time, money, or open access constraints, sampling is used. According to Saunders et al. (2009), sampling provides a variety of strategies for reducing the amount of data that has to be collected, and the sample obtained is considered a sub-group of a larger population.

3.8.1   Key respondent

The entire population or group that a researcher is interested in examining and analyzing are referred to as the target population. The target population is then used to create a sampling frame. The goal of this study is to look into the relationship between service quality in e-supply chain, and customer satisfaction through online shopping in Selangor. Therefore, the respondents of this study are customers who have gone shopping and purchased products and services via the internet.

3.8.2   Sample selection

The respondents to this study were online shoppers who had purchased and shopped from online store and could provide an assessment of service quality in e-supply chain dimensions on customer satisfaction in Selangor. Sampling is the process of choosing the group from which will actually collect data for the study. A survey will be conducted among a sample of 140 online customers who purchased items and services through an online shopping platform.

3.8.3 Sample Frame and Location

A sampling frame is a list of all individuals or elements in a population from which a sample can be selected for a research study. It is a representation of the population that is being studied and is used to select a sample that is representative of the population. The sampling frame is an important component of a study because it ensures that the sample is selected in a random and unbiased manner, which improves the representativeness of the sample and the validity of the research findings. The location of a sampling frame refers to the geographical area where the population is located. A total of 140 online shoppers make up the target. The online questionnaires are dispersed at random throughout Selangor.

3.8.4 Sample Size

The number of respondents in this research study is referred to as the sample size. The research location which will be conducted is Selangor. Department of Statistics Malaysia Official Website (2022) reported that the population size of Selangor is 6.56 million. There is a model by Krejcie & Morgan (1970) was also taken into consideration when determining the suitable sample size for this research where the formula is as shown below:

$$S = \frac{X^2 N\, P(1-P)}{e^2(N-1) + X^2 P(1-P)}$$

Figure 3.3: Sample Size Formula

S = required sample size

X^2 = the table value of chi-square for one degree of freedom at the desired confidence level (3.841)

N = the population size

P = the population proportion (assumed to be .50 since this would provide the maximum   sample size)

e = the degree of accuracy expressed as a proportion (.05)

This research has decided to distribute a total of 140 questionnaires in total to Selangor. As a result, a survey will be conducted among 140 online customers who purchased items and services through an online shopping platform in Selangor.

3.8.5   Sampling Technique

Probability sampling design and non-probability sampling design are the two types of sample designs. This study uses non-probability sampling, which is any sampling procedure in which certain members of the population have no chance of being selected or in which the probability of selection cannot be reliably established. As examples of non-probability sampling, there are five sorts of samples which are convenience sampling, voluntary sampling, snowball sampling, quota sampling, and purposive sampling in accordance with Prakhar Mishra, (2021).

Purposive sampling is used by this study to collect the sample. Purposive sampling, according to Arikunto (2010), is the method of picking a sample by taking a subject that is not based on the level or region, but rather on the specific objective. A sample of people who use online shopping platforms to buy things is chosen by this research. This method of

sampling allows to rapidly and easily reaching out to online shoppers. Purposive sampling will be used to obtain the opinions of online shoppers in proportion to Matthew De Carlo (2020).

3.9   Data collection process

Data collection is the act of gathering and measuring information on variables of interest in an organized, methodical way in order to respond to specific research questions, test hypotheses, and evaluate results. Regardless of the topic being studied or the selected method for defining data, accurate data collection is essential to maintaining the integrity of research. Using the proper data collection tools, whether they are currently in existence, newer versions of them, or brand-new ones, reduces the likelihood of errors.

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┌─────────────────────┐
│  Defining the aim of│
│      research       │
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│   Choosing data     │
│  collection method  │
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│   Planning data     │
│ collection procedures│
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│  Collecting the data│
└─────────────────────┘
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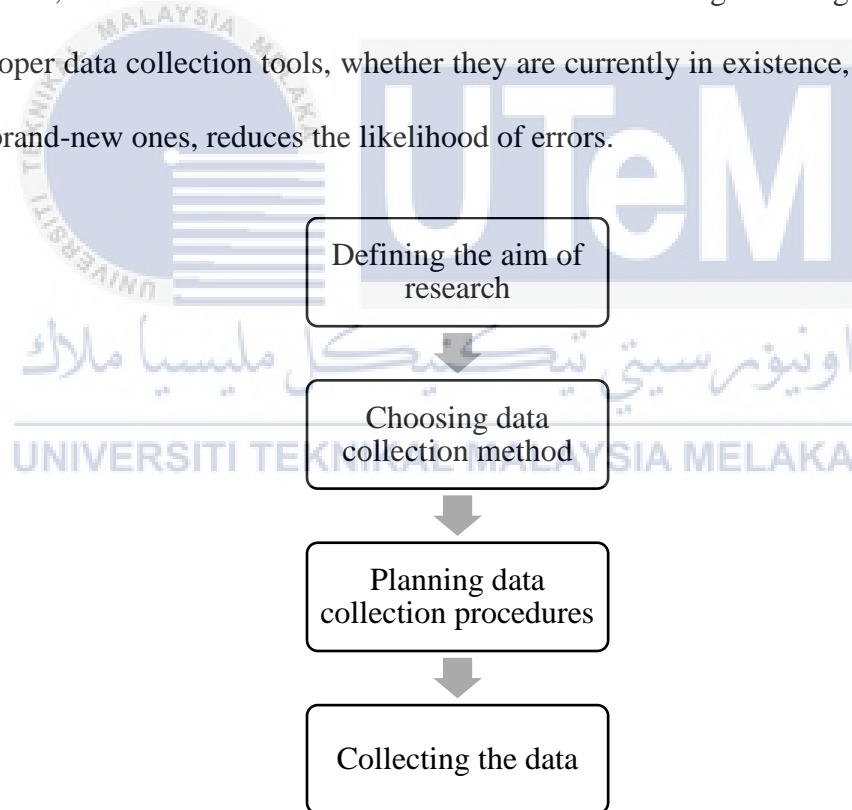
Figure 3.4 Data collecting process step by step.

3.10   Approach and structure of data analysis

Cleaning, analyzing, interpreting, and visualizing data are all steps in the data analysis process, which reveal valuable insights to direct business decision-making.
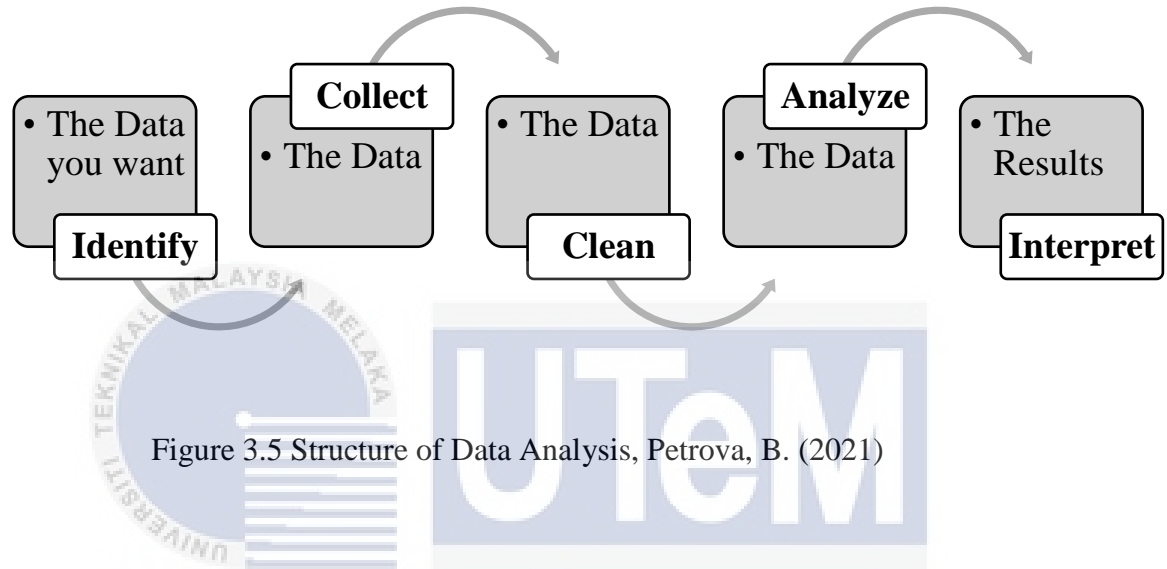
Figure 3.5 Structure of Data Analysis, Petrova, B. (2021)

3.11   Summary

This study presented the research methodology approach used to conduct this investigation throughout this chapter. It will serve as a guide for this research in selecting the most appropriate technique for carrying out the study's research objectives, research questions, discussion, data analysis, and finding. A questionnaire was distributed among internet shoppers to gather information from the organization.

CHAPTER 4

RESULT AND FINDINGS

4.0 Introduction

In this chapter, the findings of the questionnaires used to collect information on the target respondent's data were evaluated. This study had given the participants a pilot test before delivering the final results to the final respondents. The decision was made to collect data from a total of 140 respondents because they would make up the majority, cover the study's objectives, and be used for the study's analysis.

This research examines the impact of service quality in the e-supply chain towards customer satisfaction through online shopping in Selangor. There are three sections in the questionnaires which consist of Section A, Section B, and Section C. Section A is used to determine the respondent's demographic profile, Section B is the independent variables, which includes five questions for each independent variable, and Section C is the dependent variable, which likewise includes five questions. A five-point Likert scale is used in Sections B and Section C to collect data from the respondents. Online shoppers in Selangor who have used

online shopping platforms to make purchases received the surveys. The Statistical Package for Social Science (SPSS) version 26 was the software used to generate and analyze the data from the descriptive analysis, the Pearson correlation coefficient, and the multiple regression analysis.

4.1 Pilot Test

This study conducted a pilot test to make sure the respondents would understand the surveys. The pilot test's objective was to show that this research's question design was reliable. Consequently, there may be less chance for error and misinterpretation during this pilot, which could affect the quality and dependability of the data gathered. This pre-objective test was to remove any confusion among respondents about how to answer to the survey because that confusion could lead to unreliable study findings. A number of adjustments were made as a result of the pre-test being finished. From 140 responders, the study randomly chose 20 to complete the survey questionnaire as part of the pilot test. All of the information in the table below has been confirmed to be valid and reliable.

Case Processing Summary

		N	%
	Valid	20	100.0
Cases	Excluded[a]	0	.0
	Total	20	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.908	20

Table 4.1: Reliability Test for 20 Respondents

[Source: Data Analysis of SPSS]

Table 4.1 displays the Cronbach's alpha for the 20 respondents that took part in the data gathering. The table indicates that all of the independent and dependent variables were related to online shoppers in Selangor, Malaysia and that the validity of the questionnaires was established since Cronbach's Alpha values exceeded 0.7, which is equal to 0.908.

4.2 DESCRIPTIVE ANALYSIS

Data sets derived through descriptive analysis that reflects the entire population or a sample. A summary of the data and outcomes was provided. In addition, each data sample had a sample graphic analysis.

Descriptive analysis is a type of preliminary analysis that entails the collection of data through the use of a questionnaire. In this study, a description of what data is exhibited and how sample data functions are given. In the descriptive analysis technique, a set of data was displayed, described, and explained using tables, diagrams, and summaries.

The first section, Section A, enquires about 'Gender', 'Age', 'Education Level', 'Occupation', 'Did you ever use online shopping during this endemic? If yes, would you say

that the level of service quality you have experienced with e-supply chain business/company meets your expectations?', and 'On average, how often will you visit an online shopping store due to its delivery quality and outcome quality?', Section B was the next section, which was an independent variable that consists of 'factors of service quality in e-supply chains such as responsiveness, reliability, and empathy affect the customer satisfaction through online shopping platform' have been explored. In addition, the dependent variable in Section C, which is the final section, was focused on 'consumer satisfaction through online shopping in Selangor'.

4.2.1 Respondent Demographic Analysis

This study conducted a demographic analysis in order to determine the statistical characteristics of online shoppers who use online shopping platforms. The questionnaires were completed by 140 respondents, and their fundamental demographic data was examined. Obtaining participants for this research took one month. By sharing the survey form on social media, the survey was made available to the public. Additionally, a card containing a QR code with the survey URL was distributed to the general public at end of this questionnaire distributing period. In this section, several profile of target respondents who experienced online shopping to purchase product or services are presented such as demographic information of target respondents which included gender, age, education level, occupation, online shopping experience, and frequency of shopping online to know the role of service quality.

DEMOGRAPHIC	DROPDOWN	FREQUENCY	PERCENT (%)
Gender	Male	52	37.1
	Female	88	62.9
Age	15-20 years old	30	21.4
	21-25 years old	100	71.4
	26-30 years old	6	4.3
	30 years old above	4	2.9
Education level	Sijil Pelajaran Malaysia (SPM)	6	4.3
	Sijil Tinggi Persekolahan Malaysia (STPM)	14	10.0
	Diploma	25	17.9
	Bachelor's Degree	94	67.1
	Master	1	0.7
Occupation	Student	122	87.1
	Employer/Employee	18	12.9
Did you ever use online shopping during this endemic? If yes, would you say that the level of service quality you have experienced with the e-supply chain business/company meets your expectations?	Yes, Yes	136	97.1
	Yes, No	4	2.9
On average, how often will you visit an online shopping store due to its delivery quality and outcome quality?	Everyday	23	16.4
	2 to 3 times a week	39	27.9
	Once a week	21	15.0
	2 weeks once	15	10.7
	Once a month	42	30.0

Table 4.2: Summary of Total Demographic Information

4.2.1.1   Gender

1. Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	52	37.1	37.1	37.1
	Female	88	62.9	62.9	100.0
	Total	140	37.1	100.0	

Table 4.3: Gender of Respondents

[Source: Data Analysis of SPSS]
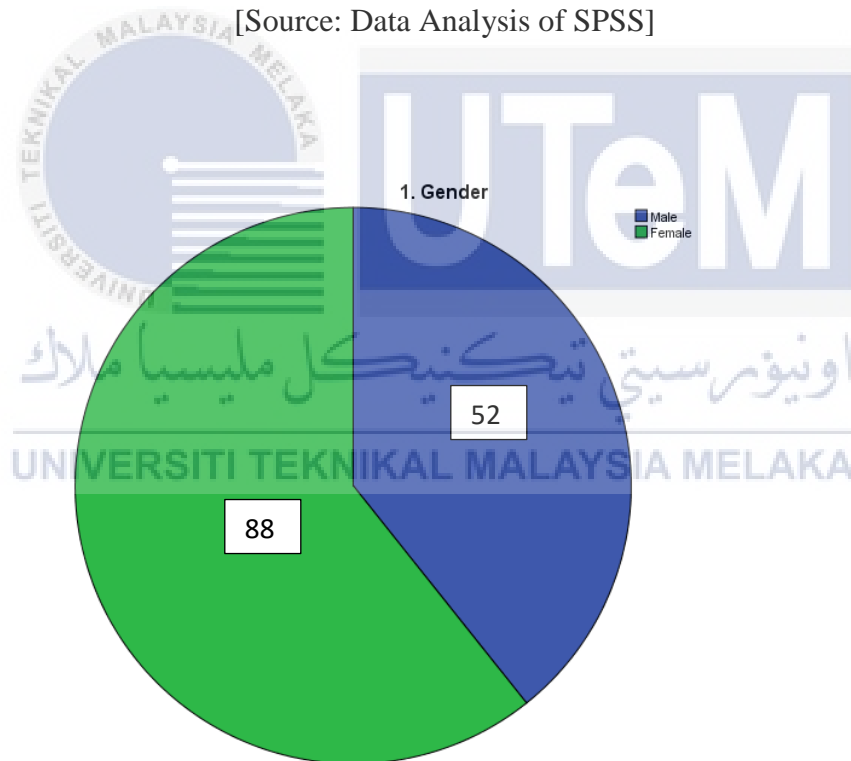
Figure 4.1: Gender of Respondents

[Source: Developed from the research]

Table 4.3 figure 4.1 shows the genders of respondent's in the demographic data of respondents. In an online shopping platform, there are two distinct categories of customers which are male and female. The survey data was gathered from 140 respondents. The findings indicate that females made up 88 (62.9%) of the total respondents for this study, compared to male, who made up 52 (37.1%) of the respondents. This research assumes that the majority of customers in this survey are female rather than male. This is due to the fact that female are more likely than male to use online shopping platforms to purchase goods or services.

4.2.1.2 Age

2. Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-20 years old	30	21.4	21.4	21.4
	21-25 years old	100	71.4	71.4	92.9
	26-30 years old	6	4.3	4.3	97.1
	30 years old above	4	2.9	2.9	100.0
	Total	140	100.0	100.0	

Table 4.4: Age of Respondents

[Source: Data Analysis of SPSS]
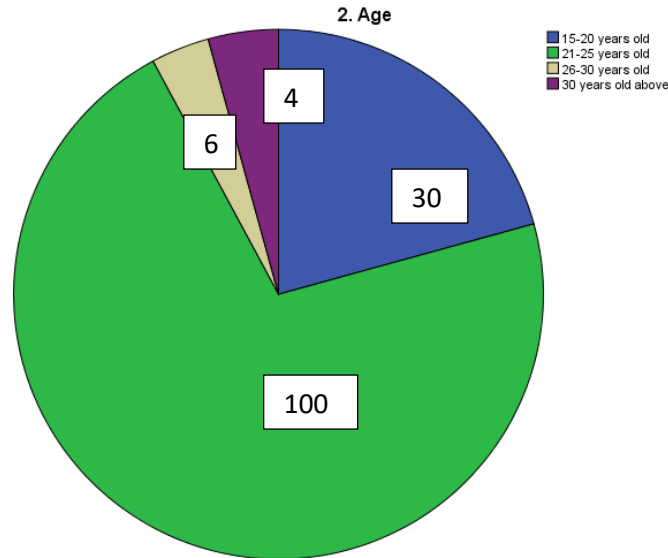
Figure 4.2: Age of Respondent

[Source: Developed from the research]

There are four age categories: 15-20 years old, 21-26 years old, 26-30 years old, and 30 years and above, as shown in table 4.4 and figure 4.2. The results show that 30 responders, or 21.4% of the total, are in the age range of 15 to 20 years. Following that, there are typically 100 responders, with 71.4% of them falling between the 21–25 age range. Third, 6 respondents aged 26-30 years old represent 4.3%, while the remaining 4 respondents or 2.9% are 30 years old and above. Research may infer from the findings that respondents between the ages of 21 to 25 are the most engaged in this study.

4.2.1.3 Education Level

3. Education level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sijil Pelajaran Malaysia (SPM)	6	4.3	4.3	4.3
	Sijil Tinggi Persekolahan Malaysia (STPM)	14	10.0	10.0	14.3
	Diploma	25	17.9	17.9	32.1
	Bachelor's Degree	94	67.1	67.1	99.3
	Masters	1	.7	.7	100.0
	Total	140	100.0	100.0	

Table 4.5: Education Level of Respondents

[Source: Data Analysis of SPSS]
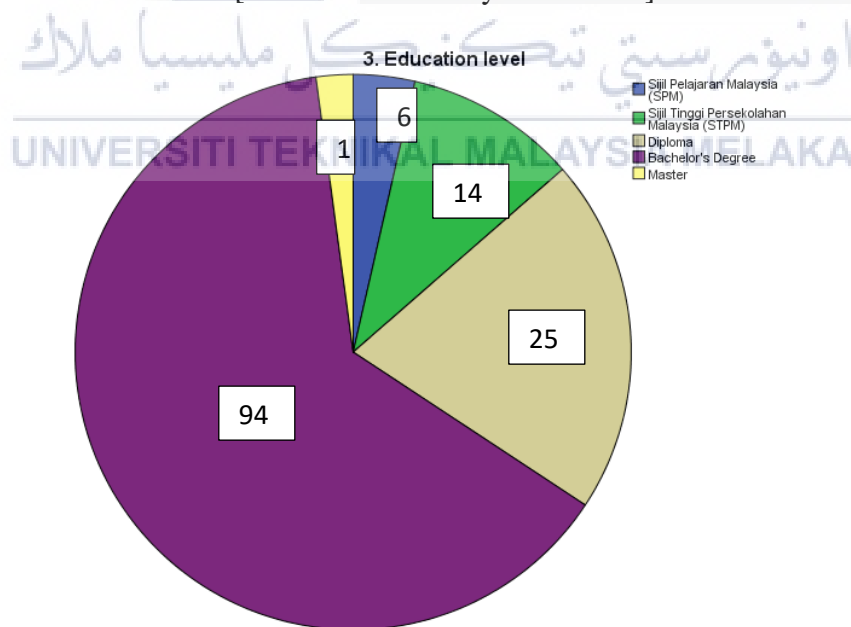
Figure 4.3: Education Level of Respondents

[Source: Developed from the research]

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Table 4.5 and figure 4.3 show that there are five age categories such as Sijil Pelajaran Malaysia (SPM), Sijil Tinggi Persekolahan Malaysia (STPM), Diploma, Bachelor's Degree, and Master. Statistics show that 6 respondents, or 4.3%, have a Sijil Pelajaran Malaysia (SPM) background. The next group is made up of 14 respondents, or 10.0%, who completed Sijil Tinggi Persekolahan Malaysia (STPM). Additionally, there are generally 94 respondents, 67.1% of whom hold bachelor's degrees. Then there are 25 Diploma respondents, accounting for 17.9%, and 1 Masters respondent, accounting for 0.7%. Research may conclude that respondents with Bachelor's Degree background are the most engaged in this study based on the findings.

4.2.1.4 Occupation

4. Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
	Student	122	87.1	87.1	87.1
Valid	Employer/Employee	18	12.9	12.9	100.0
	Total	140	100.0	100.0	

Table 4.6: Occupation of Respondents

[Source: Data Analysis of SPSS]

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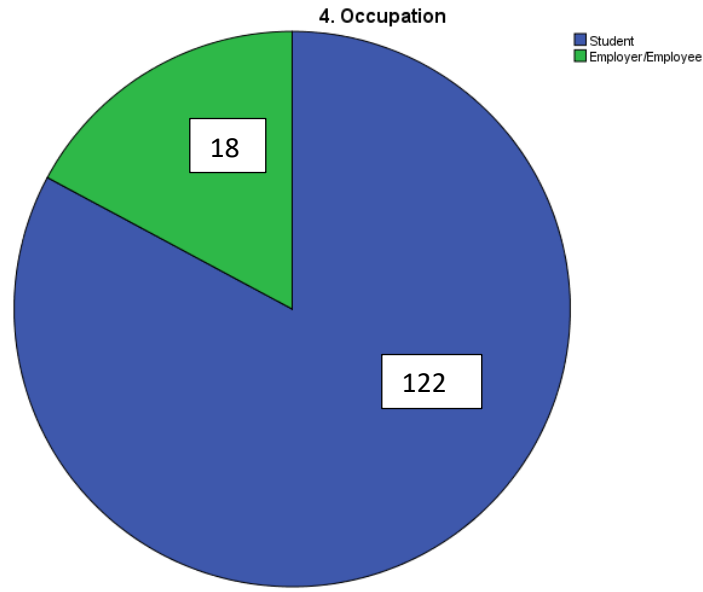
4. Occupation

Figure 4.4: Occupation of Respondents

[Source: Developed from the research]

The figures in table 4.6 and figure 4.4 indicate that there are two different types of occupations which are student and employer or employee. According to the mentioned data, students provided the most responses, with 122 (87.1%). The next group of respondents is the employers or employees, who made up 18 out of the total 140 responses, or 12.9% of the total.

4.2.1.5 Did you ever use online shopping during this endemic? If yes, would you say that the level of service quality you have experienced with the e-supply chain business/company meets your expectations?

5. Did you ever use online shopping during this endemic? If yes, would you say that the level of service quality you have experienced with the e-supply chain business/company meets your expectations?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, Yes	136	97.1	97.1	97.1
	Yes, No	4	2.9	2.9	100.0
	Total	140	100.0	100.0	

Table 4.7: Did you ever use online shopping during this endemic? If yes, would you say that the level of service quality you have experienced with the e-supply chain business/company meets your expectations?

[Source: Data Analysis of SPSS]
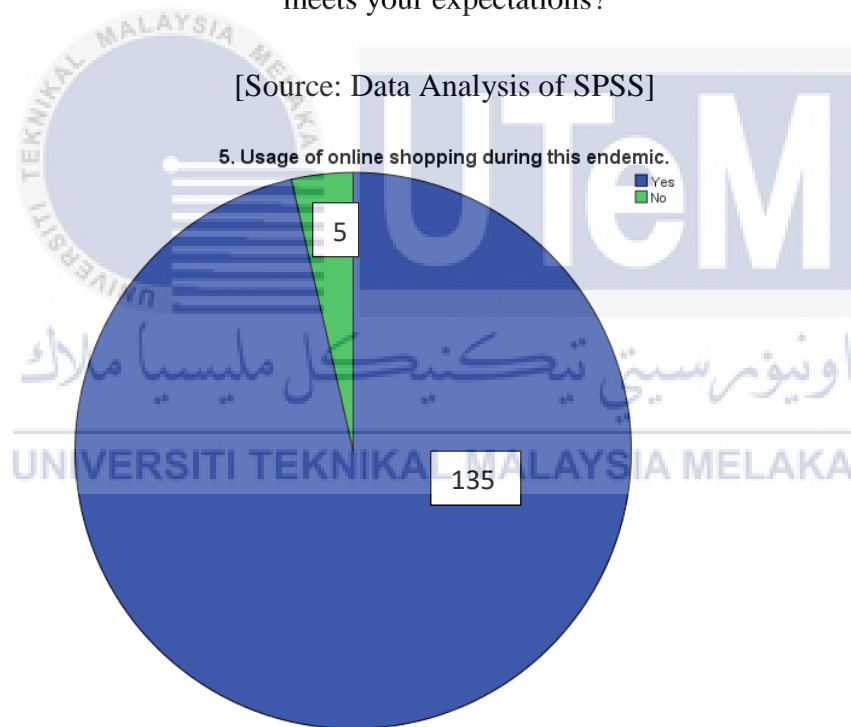
Figure 4.5: Did you ever use online shopping during this endemic? If yes, would you say that the level of service quality you have experienced with the e-supply chain business/company meets your expectations?

[Source: Developed from the research]

Table 4.7 and figure 4.5 above showed the results of the question 'Did you ever use online shopping during this endemic? If yes, would you say that the level of service quality you have experienced with the e-supply chain business/company meets your expectations?'. According to the findings, 136 respondents, or 97.1% the majority of respondents answered "yes, yes" to the question, while the remaining four respondents, answered "yes, no" and believed they had used online shopping during the period but they are satisfied with the service quality they have experienced with e-supply chain business/company. This study makes the assumption that the majority of respondents are familiar with service quality in the e-supply chain and regularly use online shopping platforms to make purchases of goods and services.
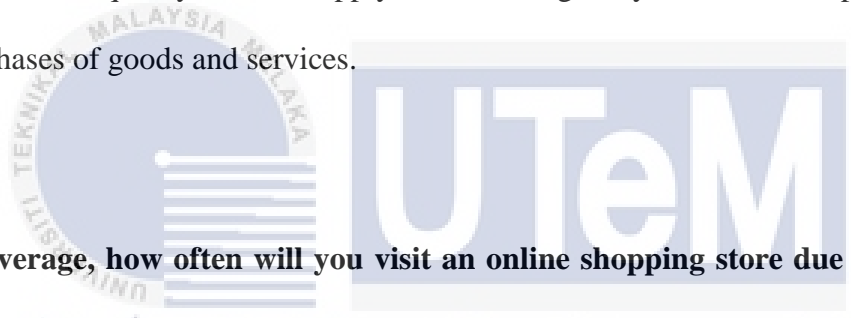
4.2.1.6 On average, how often will you visit an online shopping store due to its delivery quality and outcome quality?

6. On average, how often will you visit an online shopping store due to its delivery quality and outcome quality?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Everyday	23	16.4	16.4	16.4
	2 to 3 times a week	39	27.9	27.9	44.3
	Once a week	21	15.0	15.0	59.3
	2 weeks once	15	10.7	10.7	70.0
	Once a month	42	30.0	30.0	100.0
	Total	140	100.0	100.0	

Table 4.8: On average, how often will you visit an online shopping store due to its delivery quality and outcome quality?

[Source: Data Analysis of SPSS]
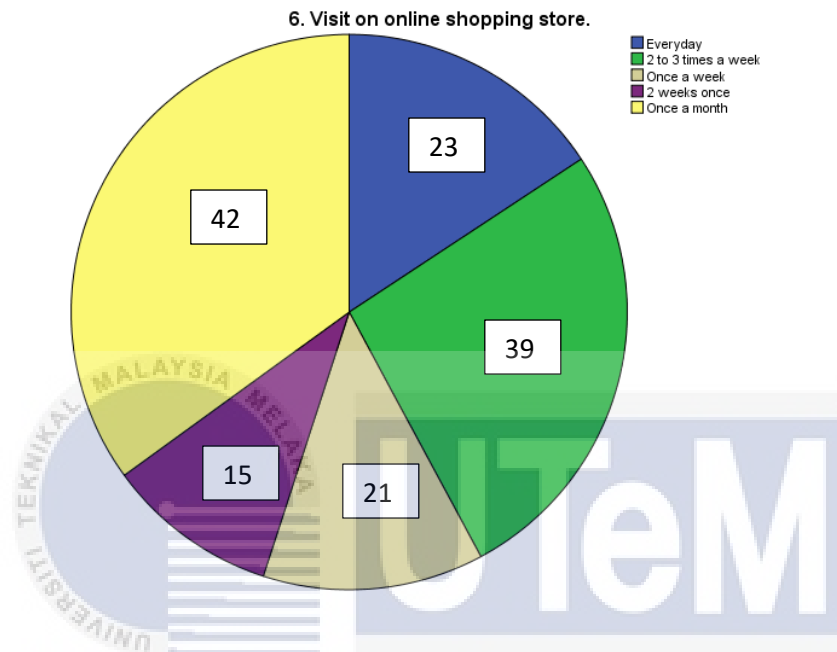
Figure 4.6: On average, how often will you visit an online shopping store due to its delivery quality and outcome quality?

[Source: Developed from the research]

According to the statistics in table 4.8 and figure 4.6, there were five various types of visits to online shopping stores due to their delivery quality and outcome quality, which are every day, 2 to 3 times a week, once a week, 2 weeks once and once a month. 42 responses (30%), or the majority of respondents, indicated that they visit an online store once a month due to its delivery quality and outcome quality. Following that are those who visit 2 to 3 times a week, who made up 39 out of 140 respondents, or 27.9% of the whole. Every day and once a week were the next two categories. 23 respondents or 16.4% of respondents visit every day,

meanwhile, 21 respondents, or 15% of respondents visit online shopping stores once a week. Last but not least, only 15 respondents or 10.7% of all respondents visited an online retailer for 2 weeks once due to its delivery quality and outcome quality.

4.2.2 Mean Score Analysis

The Mean Score Analysis is carried out in order to recognize and discover more about the distinctive features of the issue. As a result, each variable's data will be shown as a dependent variable, such as customer satisfaction among online shoppers. The independent variable for the study is service quality in e-supply chains such as responsiveness, reliability, and empathy. For this variable set of data, the values for the maximum, minimum, mean, and standard deviation will be shown. The research evaluated 20 questions from the questionnaire using a five-point Likert scale.

Mean Score	Interpretation
1.00-1.80	Very low
1.81-2.60	Low
2.61-3.20	Medium
3.21-4.20	High
4.21-5.00	Very high

Table 4.9: Interpretation of mean score analysis

Source: [Azlin Norhaini Mansor et al, 2021]

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4.2.2.1   Independent Variable: Responsiveness

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IV1.1 Information is updated for customers from time to time.	140	1	5	4.18	.875
IV1.2 Alert or remind customers about their service.	140	1	5	4.16	.918
IV1.3 Willingness to assist customers.	140	2	5	4.09	.925
IV1.4 Readiness to respond to customers' inquiries.	140	1	5	4.15	.889
IV1.5 The online seller shows a sincere interest in solving customers' problems quickly.	140	1	5	4.14	.961
Valid N (listwise)	140				

Table 4.10: Responsiveness

[Source: Data Analysis of SPSS]

Statistics for all items of responsiveness among 140 respondents were shown in Table 4.10. According to the table, respondents believe that 'alert or remind customers about their service' has a mean value of 4.16 and a standard deviation of 0.918. Besides this, 'readiness to respond to customers' inquiries' comes with a mean of 4.15 and a standard deviation of 0.889. Furthermore, 'the online seller shows a sincere interest in solving customers' problems quickly' comes with a mean of 4.14 and a standard deviation of 0.961. Next is 'information is updated for customers from time to time' come with a standard

deviation of 0.875 and a mean is 4.18 which is the highest mean value. Finally, the third item 'willingness to assist customers' comes with the lowest mean of 4.09 and a standard deviation of 0.925.

4.2.2.2   Independent Variable: Reliability

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IV2.1 Provide service as promised.	140	2	5	4.15	.830
IV2.2 Dependability in handling customer issues and service problems.	140	1	5	4.09	.944
IV2.3 Providing services on time.	140	1	5	4.09	.909
IV2.4 Delivering service at the promised time.	140	1	5	4.14	.946
IV2.5 Maintaining the service process smoothly.	140	2	5	4.18	.900
Valid N (listwise)	140				

Table 4.11: Reliability

[Source: Data Analysis of SPSS]

Statistics of reliability data from 140 people was shown in table 4.11. In the table, 'dependability in handling customer issues and service problems' and 'providing services on time' came out with a mean of 4.09 and a standard deviation of 0.944 and 0.909 respectively. In addition, respondents agreed that 'provide service as promised', with a mean of 4.15 and a

standard deviation of 0.830. Aside from that respondents also agreed that 'delivering service at the promised time', with a mean of 4.14 and a standard deviation of 0.946. The responder also concurred that "maintaining the service process smoothly" is important because it has a mean of 4.18 and a standard deviation of 0.900. So, item fifth has the highest mean value of 4.18 and the second and third items had the lowest mean value which is 4.09.

4.2.2.3 Independent Variable: Empathy

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IV3.1 Provide customers immediate responses to any inquiries.	140	1	5	4.05	.977
IV3.2 Respond to customers in a kind manner.	140	2	5	4.19	.872
IV3.3 Providing only the best service for customers.	140	1	5	4.07	.919
IV3.4 Online sellers are aware of their customer's needs.	140	2	5	4.19	.862
IV3.5 Convenient business hours.	140	1	5	4.23	.892
Valid N (listwise)	140				

Table 4.12: Empathy

[Source: Data Analysis of SPSS]

Table 4.12 displays the descriptive statistics for the empathy variable, which was gathered from 140 respondents. The very first item which is, 'provide customers immediate responses to any inquiries ' has the smallest mean which is 4.05 and the standard deviation is 0.977. 'Respond to customers in a kind manner' which demonstrates a mean value of 4.19 and standard deviation of 0.872. Simply following, with a mean of 4.07 and a standard deviation of 0.919, respondents felt that 'providing only the best service for customers'. Next comes the fourth item 'online sellers are aware of their customer's needs' which proves the mean value of 4.19 and standard deviation of 0.862. As a result, respondents believed that 'convenient business hours' with the highest mean value which is 4.23 and the standard deviation is 0.892.

4.2.2.4   Dependent Variable: Customer Satisfaction

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
DV1.1 I feel convenient shopping at home.	140	1	5	4.31	.849
DV1.2 I get the product delivered on time.	140	1	5	4.04	.988
DV1.3 It is easy to get in touch with the customer support team.	140	1	5	4.04	.925
DV1.4 I am satisfied with the shipping and delivery experience.	140	1	5	4.12	.917
DV1.5 Overall, I am satisfied with online shopping.	140	2	5	4.29	.809
Valid N (listwise)	140				

Table 4.13: Customer Satisfaction

[Source: Data Analysis of SPSS]

Based on the responses of 140 online shoppers, the dependent variable of customer satisfaction was shown in Table 4.13 above. With a mean of 4.31 and a standard deviation of 0.849, online shoppers agree that 'they feel convenient shopping at home'. With a mean of 4.04 and standard deviation of 0.988, 'they get the product delivered on time'. As a result, online shoppers believe 'it is easy to get in touch with the customer support team', have the same mean as the second item of 4.04 and a standard deviation of 0.925. With a mean of 4.12 and a standard deviation of 0.917, 'they feel satisfied with the shipping and delivery experience'. Finally, online shoppers believe 'overall, they are satisfied with online shopping', with a mean of 4.29 and a standard deviation of 0.809. Thus " they feel convenient shopping at home" has the greatest mean value of 4.31, the lowest mean value of 4.04 is for the statements 'I get the product delivered on time' and ' it is easy to get in touch with the customer support team'.

4.3 Reliability Analysis and Validity Test

In order to distribute the questionnaires to the respondents, the reliability study aims to analyze the question's features, such as accuracy, precision, and consistency according to Cooper and Schindler, (2011). Cronbach's alpha reliability test is used to estimate any combination of the coefficient resulting from divided halves in accordance with Malthora, (2004). A score of 0.7 or higher on Cronbach's Alpha reliability test indicates good reliability,

whereas a score of 0.6 or lower indicates weak or poor reliability. The Cronbach's alpha is shown in Table 4.14 below along with a definition of its value:

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

Table 4.14: Reliability Analysis for All Variables

Case Processing Summary

		N	%
Cases	Valid	140	100.0
	Excluded[a]	0	.0
	Total	140	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.962	20

Table 4.15: Reliability Statistics

[Source: Data Analysis of SPSS]

According to the data in the preceding table, the test's alpha value is 0.962. Alpha values greater than 0.70 are regarded as acceptable. Reliability is demonstrated using data that fulfill Sanjay Dhingra, Shelly Gupta (2020), definition of an alpha value larger than 0.7. Since Cronbach's Alpha was higher than 0.70, it is acceptable to assume that all of the questionnaire's items had excellent reliability. By establishing the validity and reliability of the survey's results, the information in the questionnaire is also shown to be accurate and dependable.

4.4   Pearson Correlation Analysis

The Pearson correlation coefficient is widely employed in statistical analysis to assess the strength of the association between two variables, according to Weihan Liu in (2021). This research used Pearson's Correlation analysis to assess the strength of the association between customer satisfaction (DV) and service quality in e-supply chain (IV). A correlation coefficient of +1 indicates a strong positive relationship, whereas -1 indicates a weak negative relationship. The intensity of the correlation coefficient is displayed in Table 4.16 below.

The Correlation Coefficient, r	Interpretation
$\pm 0.80 \ to \pm 1.00$	Very Strong
$\pm 0.60 \ to \pm 0.80$	Strong
$\pm 0.40 \ to \ \pm 0.60$	Moderate
$\pm 0.20 \ to \ \pm 0.40$	Low
$\pm 0.00 \ to \ \pm 0.20$	Very Low

Table 4.16: Strength of the Correlation Coefficient

4.4.1   Correlation between Independent and Dependent Variable

Correlations

		meanIV1	meanIV2	meanIV3	meanDV
meanIV1	Pearson Correlation	1	.798**	.781**	.692**
	Sig. (2-tailed)		.000	.000	.000
	N	140	140	140	140
meanIV2	Pearson Correlation	.798**	1	.863**	.668**
	Sig. (2-tailed)	.000		.000	.000
	N	140	140	140	140
meanIV3	Pearson Correlation	.781**	.863**	1	.677**
	Sig. (2-tailed)	.000	.000		.000
	N	140	140	140	140
meanDV	Pearson Correlation	.692**	.668**	.677**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	140	140	140	140

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

[meanIV1: Responsiveness, meanIV2: Reliability, meanIV3: Empathy, meanDV: Customer Satisfaction]

Table 4.17: Pearson Correlation Coefficient Analysis

[Source: Data Analysis of SPSS]

First and foremost, Table 4.17 displayed the results of the correlation between independent variables such as responsiveness, reliability, and empathy, and the dependent variable, which was the customer satisfaction. In accordance with the results, it can be concluded that all of the independent variables are positively correlated with the dependent variable. Furthermore, findings from the research revealed that the correlation between responsiveness and customer satisfaction had a strong positive correlation with an R-value of 0.692, n=140, p<0.01. Next, the relationship between reliability and customer satisfaction was a strongly positive relationship with an R-value of 0.668, n=140, p<0.01. Lastly, the results show that the relationship between empathy and customer satisfaction has a strong positive relationship with the r-value of 0.677, n=140, p<0.01

In a nutshell, the independent variables had a statistically significant level of significance, while the dependent variables are in the strong positive range. All of the correlation coefficients at the level of 0.01 (2-tailed) allowed this research to determine the correlation between the independent and dependent variables.

4.5   Multilinear Regression

A method for estimating a value based on two or more independent and dependent variables is multiple regression analysis. The relationship between the independent variables of service quality in e-supply chain (responsiveness, reliability, and empathy) and the dependent variable of customer satisfaction was examined using multiple regression analysis. The results of the multiple regression analysis are thus displayed in the table below.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.729a	.532	.521	.53061	.532	51.456	3	136	.000

a. Predictors: (Constant), meanIV3, meanIV, meanIV2

Table 4.18: Model Summary

[Source: Data Analysis of SPSS]

The SPSS software's model summary for multiple regression analysis is displayed in Table 4.18. Table 4.18 shows that there was a correlation between the independent and dependent variables in the study, with a multiple correlation coefficient (R) value of 0.729. The R square value was 0.532, indicating that only 53.2% of responsiveness, reliability, and empathy could be described by the variance in customer satisfaction. Furthermore, the adjusted R square values of perfect positive 0.521 could explain around 52.1% of the variation in customer satisfaction using regression prediction variables.

ANOVAa

	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	43.462	3	14.487	51.456	.000b
1	Residual	38.290	136	.282		
	Total	81.752	139			

a. Dependent Variable: meanDV

b. Predictors: (Constant), meanIV3, meanIV1, meanIV2

Table 4.19: ANOVA

According to Table 4.19, the F-test result from this multiple regression analysis is 51.456, and the level of significance is 0.000 for this analysis. The p-value of 0.000 was less than the maximum of 0.05 ($p<0.05$), indicating a significant variance. Because of this, a variety of regression models was used to know customer satisfaction among online shoppers. As a result, variables like responsiveness, reliability, and empathy had a significant effect on customer satisfaction among online shoppers in Selangor.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.934	.264		3.542	.001
	meanIV1	.374	.103	.372	3.641	.000
	meanIV2	.144	.124	.147	1.160	.248
	meanIV3	.261	.123	.260	2.127	.035

a. Dependent Variable: meanDV

Table 4.20: Coefficients

According to Table 4.20, the beta value for responsiveness is 0.374, the beta value for reliability is 0.144, and the beta value for empathy is 0.261. Responsiveness had the highest beta, whereas reliability had the lowest beta, according to this statistic. This research

finds in the table that there is no independent variable with a negative sign, indicating the absence of a variable having a negative relation with customer satisfaction. The constant is equal to 0.934. As a result, this study developed the equation shown below: $Y = A + Bx1 + Bx2$

Where:

Y = Dependent Variable

A = Constant form coefficients table

x = Beta,

B value

$Bx1$ = Responsiveness

$Bx2$ = Reliability

$Bx3$ = Empathy

Customer Satisfaction = 0.934 (Constant) + 0.374 (Responsiveness) + 0.144 (Reliability) + 0.261 (Empathy)

According to the linear equation above, there is a positive relationship between all the factors which are the responsiveness, reliability, empathy and the customer satisfaction. Based on the output above, both factors which are responsiveness and empathy have significant value 0.000 and 0.035 which is $p<0.05$. That means responsiveness and empathy have a significant relationship with customer satisfaction. This research noticed in the table that there was one independent variable which is the reliability with 0.248 which is not equal to $p<0.05$, which suggests the presence of a variable that has an inverse relation with customer satisfaction, according to the researcher.

4.6 Hypothesis Testing

Hypothesis 1 (Responsiveness)

H0: Responsiveness will not significantly influence Customer Satisfaction.

H1: Responsiveness will significantly influence Customer Satisfaction.

Reject H0, if the p-value is lower than 0.05

According to Table 4.20, the relevant value of responsiveness was 0.000, which was below the p-value of 0.05. **H1 is thus accepted**, responsiveness has a major impact on customer satisfaction in the online shopping platform.

Hypothesis 2 (Reliability)

H0: Reliability will not significantly influence Customer Satisfaction.

H1: Reliability will significantly influence Customer Satisfaction.

Accept H0, if the p-value is lower than 0.05

According to Table 4.20, the relevant value of reliability was 0.248, which was above the p-value of 0.05. **H1 is thus rejected**; reliability has no impact on customer satisfaction in the online shopping platform.
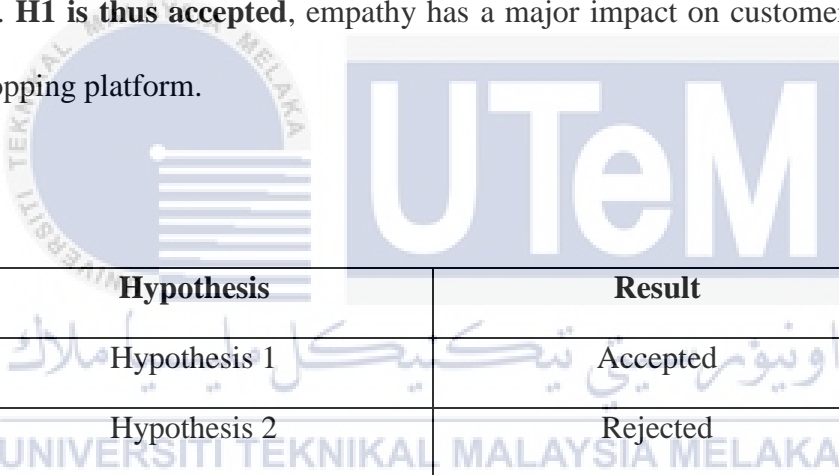
Hypothesis 3 (Empathy)

H0: Empathy will not significantly influence Customer Satisfaction.

H1: Empathy will significantly influence Customer Satisfaction.

Reject H0, if the p-value is lower than 0.05

According to Table 4.20, the relevant value of empathy was 0.035, which was below the p-value of 0.05. **H1 is thus accepted**, empathy has a major impact on customer satisfaction in the online shopping platform.

Hypothesis	Result
Hypothesis 1	Accepted
Hypothesis 2	Rejected
Hypothesis 3	Accepted

Table 4.21: Hypothesis Results

4.7 Summary of Research Question, Research Objective, Research Hypothesis, and Data Analysis.

Research Question	Research Objective	Research Hypothesis	Data Analysis
What is the role of service quality in E-Supply Chain Management?	To determine the role of service quality in E-Supply Chain Management.		Descriptive Analysis
How does the service quality of E-Supply Chain Management influence customer satisfaction?	To examine the impact of service quality of E-Supply Chain Management on customer satisfaction.	H1. Responsiveness will significantly influence Customer Satisfaction. (**Support**) H2. Reliability will significantly influence Customer Satisfaction. (**Reject**) H3. Empathy will significantly influence Customer Satisfaction. (**Support**)	Mean, Standard Deviation, Cronbach's alpha, Pearson Correlation Analysis, Linear Regression Analysis

Table 4.22: Summary of the research question, research objective, research hypothesis, and data analysis

4.8   Summary

This chapter covered the results of the study. Descriptive analysis, mean score analysis, reliability analysis and validity test, Pearson correlation, and multiple regression tests are the four five of tests that have been examined in this section. The entire dataset was analyzed utilizing SPSS version 26. This research correlated the independent and dependent variables using SPSS data to assess the viability of the hypothesis proposed in Chapter 2. Additionally, Chapter 5 will provide suggestions and a conclusion.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.0 INTRODUCTION

The results of this study were compiled in Chapter 5 based on the data analysis in Chapter 4 on the impact of service quality in the e-supply chain towards customer satisfaction through online shopping in Selangor. In this chapter, this research assessed how well the research questions matched the research objectives. Accepting or rejecting the research's hypotheses was another topic covered in this chapter. Before describing the study's limitations and including them in the paper, this study first highlighted significant implications and offered suggestions based on the findings.

5.1 Summary of Descriptive Analysis

DEMOGRAPHIC	DROPDOWN	FREQUENCY	PERCENT (%)
Gender	Female	88	62.9
Age	21-25 years old	100	71.4
Education level	Bachelor's Degree	94	67.1
Occupation	Student	122	87.1
Did you ever use online shopping during this endemic? If yes, would you say that the level of service quality you have experienced with e-supply chain business/company meets your expectations?	Yes, Yes	136	97.1
On average, how often will you visit an online shopping store due to its delivery quality and outcome quality?	Once a month	42	30.0

Table 5.1: Summary of descriptive analysis of respondent's demographic

According to this study, females made up the majority of online shoppers. In general, according to Dasha M (2019) a lot more females than males chose to shop online, with 62.9% of females and 37.1% of males doing so. The final sample consisted of 117 participants (26 men and 91 women), according to earlier research by Zygiaris, S., Hameed,

Z., Alsubaie, & Rehman, U. (2022). This shows that, on average, females buy more frequently than males and the ease of online shopping makes this possible. Female consumers may also be more inclined to conduct product research and pricing comparisons online prior to making a purchase, which might be more practical than visiting several establishments in person. In addition to providing a broader selection of goods, online shopping may be seen by some females as being safer and more secure.

As shown in the following table 5.1, the highest customer shop online was aged between 21-25 years old. According to Ogiemwonyi, O., Harun, A., Rahman, A., Alam, M. N., & Hamawandy, N. M. (2020), online shopping is performed by people between the ages of 15 and 24 at a higher rate than by people in previous generations. One explanation is that people in this age group are more likely to be digital natives and at ease utilizing technology and the internet. Additionally, this age group may be more likely to be on a tight budget and looking for ways to save money, and online shopping can often offer lower prices and more discounts than in-store shopping. Finally, people in this age group may have more flexible schedules and be more able to take advantage of the convenience of online shopping.

Most of the online shoppers were Bachelor of Degree respondents based on this research. A new opportunity for online shops is opening up with the younger generation's increased Internet usage. According to Ogiemwonyi, O., Harun, A., Rahman, A., Alam, M. N., & Hamawandy, N. M. (2020), about 58.75% of online customers have received their Bachelor's Degree. One reason could be that they have a higher level of education and therefore may be more comfortable using the internet and technology. People with a Bachelor's Degree may be more aware of the various options and services available online, which could make them more likely to shop online. People with a higher level of education

may be more likely to have the knowledge and skills to research and compare different e-commerce sites and evaluate their service quality. They may also be more likely to have the critical thinking skills to assess the credibility of an online seller and the quality of the products or services being offered. On the other hand, people with a lower level of education may be less familiar with the online shopping process and may be more vulnerable to scams or poor quality products or services.

Additionally, out of all occupation statuses, students had the highest frequency (122 out of 140). Heri Kuswanto states that in 2019, data from the Association of Internet Service Providers (APJII) revealed that 87.1% of students engaged in online shopping, making them the most frequent users of the internet in terms of percentage of the overall population. This was because a student's desire to shop online was greatly impacted by his or her social network and immediate environment. They are most likely to be influenced by outside factors, such as friends and people in their social circle. A new opportunity for online retailers is being presented by the younger generation.

As shown in the following table 5.1, 136 respondents (97.1%), have used online shopping and there are satisfied with the level of service quality they have experienced with e-supply chain businesses or companies during this endemic. UNCTAD (2020) reports that a survey named 'COVID-19 and E-commerce' investigated at how the pandemic has affected how consumers use digital services and e-commerce. In the wake of the epidemic, more than half of the survey's participants now conduct more online shopping and rely more on the web for news, health-related information, and digital entertainment. According to the poll, consumers in developing nations have shifted most heavily toward online purchasing. There are several factors that contribute to the service quality in the e-supply chain and can influence

people's decisions to make purchases online. For instance, many e-supply chain businesses offer fast shipping, which means that people can receive their purchases quickly. Moreover, good customer service can be a deciding factor for many people when making a purchase online.

On average, 42 out of 14 respondents visited an online shopping store once a month due to its delivery quality and outcome quality. The convenience that online shopping offers individuals is the main factor in why so many people enjoy it. Fassnacht M. and Koese I. (2006) developed a hierarchical model for the measuring of online service quality using the three primary dimensions of environment quality, process quality, and outcome quality. The terms 'delivery quality' and 'outcome quality' refer to the customer's interaction with a website during the service process such as product selection and information search. The delivery quality refers to the customer's interaction with the website throughout the service process. Both delivery quality and outcome quality are important factors that can influence a customer's decision to buy online. If a customer has a positive experience with the website and is able to easily find and purchase the product they are looking for, they are more likely to make a purchase. Similarly, if a customer receives a high-quality product or service that meets or exceeds their expectations, they are more likely to be satisfied with their purchase and be more likely to make future purchases.

5.2　　　Summary of the Study

The purpose of this study was to examine the relationship between service quality in e-supply chain and customer satisfaction through online shopping in Selangor. Customer

satisfaction was used to determine the independent variables of service quality in the e-supply chain, which were derived from earlier research, in order to discover a solution to the research problem that was outlined in this study. More specifically, the proposed study is:

RO1: To determine the role of service quality in E-Supply Chain Management in the online shopping context.

RO2: To examine the impact of service quality in E-Supply Chain Management on customer satisfaction in the online shopping context.

A hypothesis was also established to investigate the relationship between the independent and dependent variables. On the basis of the hypothesis, researchers were able to examine the impact of service quality in E-Supply Chain Management on customer satisfaction through online shopping and the relationship between responsiveness, reliability, and empathy which are the factors of service quality in e-supply chain and customer satisfaction through online shopping.

5.3 Discussion of Objectives and Hypothesis Testing

In order to assess the relationship between the independent and dependent variables and to accomplish the objectives of the study, this research's hypothesis was put to the test in this section. In order to ascertain whether the study was successful in accomplishing its objective, the results were examined.

5.3.1 Objective 1: To determine the role of service quality in E-Supply Chain Management in the online shopping context.

5. Did you ever use online shopping during this endemic? If yes, would you say that the level of service quality you have experienced with e-supply chain business/company meets your expectations?

		Frequency	Percent	Valid Percent	Cumulative Percent
	Yes, Yes	136	97.1	97.1	97.1
Valid	Yes, No	4	2.9	2.9	100.0
	Total	140	100.0	100.0	

Table 5.2: Descriptive Statistics

[Source: Data Analysis of SPSS]

The first goal was established using the questionnaire data, and it was accomplished using descriptive statistics. Averaging data is frequently used to identify central tendency according to NCSS Statistic, (2016); and Manikandan, (2015). Therefore, this research applied a Nominal scale to the 'Did you ever use online shopping during this endemic? If yes, would you say that the level of service quality you have experienced with e-supply chain business/company meets your expectations?', question with answers of 'Yes, Yes' or 'Yes, No' as the options to the question.

The result of the descriptive statistics that showed on table 5.2 above was the description of role of service quality in e-supply chain. By answering 'Yes, Yes', 136 respondents (97.1%) respondents agreed that they had used online shopping during this endemic and they are satisfied with the service quality they have experienced with e-supply chain business/company. Service quality plays an important role in e-supply chain that lets the

online shoppers purchase product and services over an online shopping platform. Based on this research, most of the respondents understand the role of service quality in ordering and receiving a product through online which has the integration of e-supply chain in the online business or company. They also satisfied with the online shopping experience due the high level of service quality provided by online stores and retailers.

In the prior study, Hong et al. (2019) found that e-supply chain and logistics are crucial components of consumer satisfaction for new e-commerce businesses. Service quality is a critical factor in e-supply chain management because it can directly impact customer satisfaction. In an e-supply chain, service quality refers to the overall level of performance and reliability of the various services that are provided to customers, such as order fulfillment, delivery, returns and exchanges, and customer support. If these services are performed efficiently and effectively, it can lead to higher levels of customer satisfaction. On the other hand, if the service quality is poor, it can lead to customer dissatisfaction and potentially even lead to lost customers. Therefore, it is important for businesses to have knowledge on role of service quality in e-supply chain and carefully manage the service quality of their e-supply chain in order to ensure customer satisfaction.

6. On average, how often will you visit an online shopping store due to its delivery quality and outcome quality?

		Frequency	Percent	Valid Percent	Cumulative Percent
	Everyday	23	16.4	16.4	16.4
Valid	2 to 3 times a week	39	27.9	27.9	44.3
	Once a week	21	15.0	15.0	59.3

2 weeks once	15	10.7	10.7	70.0
Once a month	42	30.0	30.0	100.0
Total	140	100.0	100.0	

Table 5.3: Descriptive Statistics

[Source: Data Analysis of SPSS]

The questionnaire data was utilized to determine the first objective, which was achieved by using the descriptive statistics. Data are often averaged to determine central tendency according to NCSS Statistic, (2016); and Manikandan, (2015). Therefore, the researchers applied a Nominal scale which was 'On average, how often will you visit an online shopping store due to its delivery quality and outcome quality?', question with options of everyday, 2 to 3 times a week, once a week, 2 weeks once, or once a month.

The result of the descriptive statistics that showed on table 5.3 above was the description of the frequency of consumer visits to an online store and the role of service quality in e-supply chain. By answering 'once a month', 42 respondents (30%) agreed that role of service quality plays an important role in e-supply chain that lets the online shoppers purchase product and services over an online shopping platform due to its delivery quality and outcome quality. Attractiveness of the choices, information quality, usability, and technical quality are a few examples of delivery quality. Reliability, functional benefit, and emotional benefit are a few examples of outcome quality.

In addition, according to Yi Y, Gong T (2008), the study changed the variables to test the impact of the three components on the overall quality of the online service with consumers' self-efficacy, which would subsequently affect the customer's level of satisfaction

and loyalty. According to the findings, the outcome quality has the greatest influence on overall online service quality, followed by delivery quality and environmental quality. Delivery quality plays an important role in e-supply chain, and it can have several advantages for e-supply chain businesses or companies. Efficient and effective delivery processes can help to reduce costs for businesses, as it can minimize the need for returns and exchanges, which can be costly to process. High delivery quality can give a business a competitive advantage over its rivals, as it can differentiate the business from other e-supply chains that may have lower delivery quality.

The findings of this study are consistent with those of Luh Putu Ariestari Pradnyadewi and IG. A. K. Giantari's research from (2022), which found that efficiency, is a component of service quality that raises customer satisfaction. Improving delivery quality and outcome quality can therefore be an effective way to encourage customers to buy online and increase customer loyalty. By focusing on providing a seamless and enjoyable online shopping experience and delivering high-quality products and services, businesses can improve customer satisfaction and increase the likelihood of repeat business.

5.3.2 Objective 2: To examine the impact of service quality in E-Supply Chain Management on customer satisfaction in the online shopping context.

Correlations

		meanIV1	meanIV2	meanIV3	meanDV
meanIV1	Pearson Correlation	1	.798[**]	.781[**]	.692[**]
	Sig. (2-tailed)		.000	.000	.000
	N	140	140	140	140
meanIV2	Pearson Correlation	.798[**]	1	.863[**]	.668[**]
	Sig. (2-tailed)	.000		.000	.000
	N	140	140	140	140
meanIV3	Pearson Correlation	.781[**]	.863[**]	1	.677[**]
	Sig. (2-tailed)	.000	.000		.000
	N	140	140	140	140
meanDV	Pearson Correlation	.692[**]	.668[**]	.677[**]	1
	Sig. (2-tailed)	.000	.000	.000	
	N	140	140	140	140

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

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.934	.264		3.542	.001
	meanIV1	.374	.103	.372	3.641	**.000**
	meanIV2	.144	.124	.147	1.160	**.248**
	meanIV3	.261	.123	.260	2.127	**.035**

a. Dependent Variable: meanDV

Table 5.4: Coefficients of dependent and independent variables

[Source: Data Analysis of SPSS]

Hypothesis 1: Responsiveness will significantly influence Customer Satisfaction.
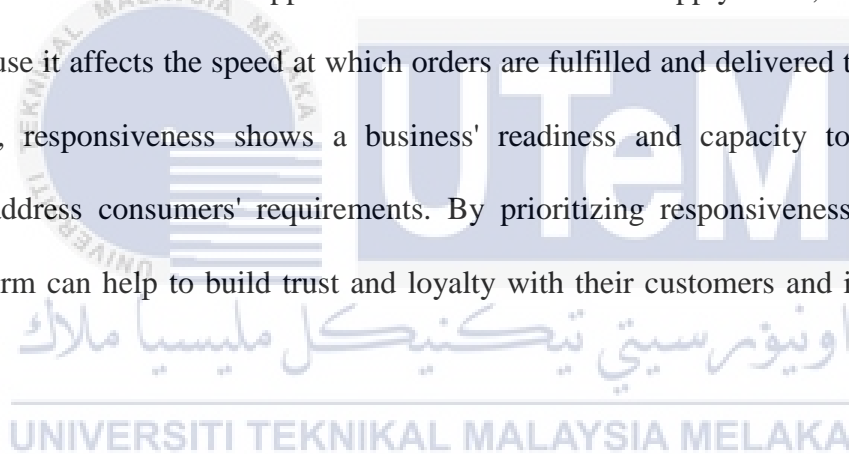
According to the result attained in chapter 4, shows that there is correlation value between the independent variables responsiveness and the dependent variable customer satisfaction through online shopping in Selangor. The correlation coefficient value is 0.692. Therefore, it shows a high relationship between responsiveness towards customer satisfaction through online shopping in Selangor. Besides the hypothetical relation between responsiveness and customer satisfaction in the last set of hypotheses indicate that responsiveness has a significant influence and relationship towards customer satisfaction through online shopping in Selangor. Hence, the H1 was accepted.

The results showed there is statistically have a significant positive direct relationship between responsiveness and customer satisfaction through online shopping in Selangor (β = .374, p = 0.00), which means that the responsiveness significantly gives impact on the customer satisfaction through online shopping in Selangor. Hence, it shows that most of the respondents believe that responsiveness has a strong influence on customer satisfaction through online shopping in Selangor.

The results of this investigation were similarly consistent with and supported by a number of other studies. The outcomes of this research are in line with those of Vencataya, L., Pudaruth, S., Juwaheer, R., Dirpal, G., and Sumodhee (2019), who claim that responsiveness influences customer satisfaction favorably. Customer satisfaction is influenced by factors related to service quality, and these factors include responsiveness, assurance, direct evidence, reliability, and empathy in accordance with Slack et al., (2020). According to Luh Putu Ariestari Pradnyadewi, and IG. A. K. Giantari (2022), the results of the study on how e-service

quality affects customer satisfaction and loyalty reveal that responsiveness has a positive and significant impact on customer satisfaction. According to Zygiaris, S., Hameed, Z., Alsubaie, & Rehman (2022), in particular, the results provide high scores for reliability, empathy, tangibles, and responsiveness. These are obvious signs that these organizations' ability to grow has been made possible by the enormous funding allocation.

The findings demonstrated that responsiveness is a crucial element in the e-supply chain because it affects the overall efficiency and effectiveness of the supply chain process. The e-supply chain refers to the use of digital technologies to manage the flow of goods, information, and services from suppliers to customers. In an e-supply chain, responsiveness is critical because it affects the speed at which orders are fulfilled and delivered to customers. In other words, responsiveness shows a business' readiness and capacity to promptly and effectively address consumers' requirements. By prioritizing responsiveness, businesses in online platform can help to build trust and loyalty with their customers and improve overall satisfaction.

Hypothesis 2: Reliability will significantly influence Customer Satisfaction.

According to the result attained in chapter 4, it shows that there is correlation value between the independent variables reliability and the dependent variable customer satisfaction through online shopping in Selangor. The correlation coefficient value is 0.677. Therefore, it shows high relationship between reliability towards customer satisfaction through online shopping in Selangor. Besides, the hypothetical relationship between reliability with customer satisfaction through online shopping in Selangor in the three set of hypotheses indicates that

the reliability factor has a significant relationship of customer satisfaction through online shopping in Selangor. Thus, H2 was accepted.

However, the coefficient analysis in chapter 4 shows that the relationship between reliability is (β = .144, p = .248) the p-value is more than 0.05. It means that reliability has not significantly affected customer satisfaction through online shopping in Selangor. Therefore, it shows that most of the respondents in this study believe that reliability concern has a low influence on the customer satisfaction through online shopping in Selangor.

The findings of this study are aligned with research by Dehghanpouri et al. (2020), which claims that other factors, such as trust in online services, are more likely to have an impact on consumer satisfaction compared to reliability. According to Ong AKS, Prasetyo YT (2022) study discovered that factors such as cost, culture or social influence, tangibles, empathy, COVID-19 protocols, and overall service quality were important factors in determining customer satisfaction. However, outcomes for responsiveness, reliability, and assurance were insignificant. Additionally, these results were in similar with Satria Fadil Persada's study, A. K. S. O. T. P. (2022), which found that the reliability had an insignificantly low path coefficient. Some pathways, such reliability to service quality, customer expectation to confirmation, and perceived performance to customer, are regarded as being unimportant. Furthermore, Thanatorn Chuenyindee (2022) noted that it was surprising to discover that responsiveness, reliability, and empathy were insignificant in terms of service quality and customer satisfaction. People began to rely more on the system's provision of health-related services as a result of the new normal. The commuters' discontent with aspects of the system, such as reliability, is a reflection of its shortcomings in terms of customer service.

It is possible that reliability may not have been a significant factor in customer satisfaction for a variety of reasons. First of all, factors that influence customer satisfaction can vary depending on the specific product or service being offered, the industry, and the customer base. One possible explanation for why reliability may not have been a significant factor in this research could be that the product or service being offered was not considered critical or essential to the customer. In this case, the reliability of the product or service may not have been a primary concern for the customer and may not have had a significant impact on their satisfaction. Another possible explanation could be that the product or service was reliable and performed as expected, but the reliability of the product was not a key factor in the customer's satisfaction. It is also possible that other factors, such as the responsiveness, empathy, price, quality, or convenience of the product or service, were more important to the customers in this research and had a greater influence on their satisfaction. In general, the COVID-19 pandemic has led to an increase in online shopping, and many companies have had to make changes to their operations in order to meet the increased demand. This may have had negative impact on the reliability of their services.

Furthermore, according to the demographic information from the survey, there were 100 respondents aged between 21 and 25 years old and 122 students which made the majority. Therefore, this research believed that young adults feel that reliability is not important and reliability does not influence customer satisfaction through online shopping. One reason may be that young adults are more focused on convenience and immediacy when shopping online, rather than the long-term reliability of a particular website or store. Secondly, they may be more interested in the wide selection of products available online, rather than the reliability of the retailer. Moreover, young adults may rely on customer reviews and ratings to

gauge the reliability of a retailer, rather than taking the retailer's reputation into account. Not only that, they may believe that if the product is not reliable they will return it with the easy return policy provided by the online shops. Therefore, there could be a variety of reasons why reliability may not have been a significant factor in customer satisfaction in the research.

On the other hand, according to Travis Vu (2021), asserts that reliability is the factor that has the most impact on how customers perceive quality. Delivery will become more reliable over time, allowing the service provider to fully match customer expectations even at the most basic level. Furthermore, according to Vencataya, L., Pudaruth, S., Juwaheer, R., Dirpal, G., & Sumodhee, N.(2019), the empirical data have shown that among the five SQ dimensions, "empathy" (r =0.329, p 0.01), followed by "reliability" (r=0.199, p 0.05), have the most positive and significant impact on customer satisfaction. Based on the results of the multiple regression analysis, these two characteristics are more effective predictors of customer satisfaction. The study also stated that issues with a high priority and high potential for satisfaction should receive special attention. However, they discovered that customer satisfaction and reliability had a weak but significant relationship.

Thus, reliability is an important factor in the e-supply chain because it affects the overall efficiency and effectiveness of the supply chain process. The e-supply chain refers to the use of digital technologies to manage the flow of goods, information, and services from suppliers to customers. In an e-supply chain, reliability is critical because it ensures that orders are fulfilled and delivered as expected, without unexpected delays or issues. Moreover, reliability refers to the consistency and dependability of a product or service. When an online customer relies on a product or service to meet their needs, they expect it to perform as expected every time they use it. On the other hand, if a business is unreliable and consistently

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fails to meet customer expectations, it can lead to dissatisfaction and damage the company's reputation.

Hypothesis 3: Empathy will significantly influence Customer Satisfaction.

According to the result attained in chapter 4, shows that there is correlation value between the independent variables empathy and the dependent variable customer satisfaction through online shopping in Selangor. The correlation coefficient value is 0.668. Therefore, it shows a high relationship between empathy towards customer satisfaction through online shopping in Selangor. Besides the hypothetical relation between empathy and customer satisfaction in the last set of hypotheses indicate that empathy has a significant relationship towards customer satisfaction through online shopping in Selangor. Hence, the H3 was accepted.

The results showed there is statistically have a significant positive direct relationship between empathy and customer satisfaction through online shopping in Selangor (β = .261, p = 0.035), which means that the empathy significantly gives impact on the customer satisfaction among online shoppers in Selangor. Hence, it shows that most of the respondents believe that empathy has a strong influence on customer satisfaction through online shopping in Selangor.

The results of this investigation were similarly consistent with and supported by a number of other studies. According to Travis Vu (2021), empathy is giving each consumer individualized attention and care while making every effort to understand and respect their point of view. Similar regression results showed that the responsiveness and empathy

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dimensions have a significant beneficial impact on customer satisfaction, according to Fida, B. A., Ahmed, U., Al-Balushi, & Singh (2020). According to Satria Fadil Persada, A. K. S. O. T. P. (2022), the strongest relationship between empathy and service quality was found. Indicators showed that thoughtfulness, care, attention to questions, and clear payment instructions were important aspects of service quality. According to Atikah (2015), the empirical findings have demonstrated that among the five SQ dimensions, 'empathy' ($r = 0.329$, $p < 0.01$), followed by 'reliability' ($r = 0.199$, $p < 0.05$), have the most positive and significant impact on customer satisfaction and, these two factors are better predictors of customer satisfaction based on the multiple regression analysis. The factors in the high importance and high potential to deliver satisfaction therefore require special attention.

The e-supply chain refers to the use of digital technologies to manage the flow of goods, information, and services from suppliers to customers. Empathy, while important in customer interactions, is not directly related to the logistics and fulfillment of orders in the e-supply chain. However, empathy can indirectly impact the e-supply chain by influencing customer satisfaction. If a business demonstrates empathy towards its customers and is able to effectively understand and address their needs and concerns, it can lead to increased customer satisfaction and loyalty. As satisfied customers are more inclined to make repeat purchases and refer the company to others, this could have a favorable effect on the e-supply chain. In addition, empathy is the ability to understand and share the feelings of another person. In the context of customer service, empathy is an important quality for businesses to possess because it allows them to effectively understand and address the needs and concerns of their customers. By demonstrating empathy and a genuine desire to help, businesses can build trust and loyalty with their customers and improve overall satisfaction.

5.4 Implication of Study

According to the previous researchers, the effects of service quality on customer satisfaction were discussed in this research. As a result, this study was able to determine the impact of service quality in e-supply chain towards customer satisfaction through online shopping in Selangor. All data collection was done by online shoppers in Selangor, Malaysia who purchases products and services in online shopping platforms. Consequently, the study's goal is to determine the role of service quality in e-supply chain management among online shoppers. Furthermore, by examining the impact of service quality in the e-supply chain, it will help to improve the usage of online shopping among customer and also help online retailer with more sales after pandemic Covid-19. The research relies on surveys and other questionnaires sources. These results may help researchers learn about the role and impact of service quality in e-supply chain management towards customer satisfaction through online shopping in Selangor. Hence, it is important for all online stores and businesses to provide great service quality when they are receiving and delivering an order to respective customer. Moreover, it also important to provide differentiated and memorable experiences that can increase customers' loyalty through the use of this new digital world with many online shopping platform.

5.4.1 Theoretical Implication

Using the SERVQUAL model, researchers were able to better comprehend the relationship between service quality in the e-supply chain and customer satisfaction in Selangor using an online shopping platform. The SERVQUAL model, as proposed by

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Parasuraman et al.(1988), conceptualizes service quality as the discrepancy between the perceived performance and the expected performance of the consumer. It contributed to the research model which customer satisfaction through online shopping in Selangor is the dependent variable for the SERVQUAL model, which is built on responsiveness, reliability, and empathy as the independent variables.

Based on the previous studies, Ehigie C. Johnson Jesse S. Karlay. (2018), Luh Putu Ariestari Pradnyadewi and IG. A. K. Giantari. (2022), and Syed Shah Alam. (2010), the independent variables which are responsiveness, reliability, and empathy are the influence of service quality towards dependent variable. So, this shows the relationship on factor that impacts the service quality in the e-supply chain towards customer satisfaction through online shopping in Selangor.

5.4.2   Managerial Implication

The managerial implications of this thesis on the impact of service quality in the e-supply chain on customer satisfaction through online shopping in Selangor can inform business practices in several ways. One implication is that businesses should strive to improve the quality of their e-supply chain services, particularly in the areas of responsiveness, reliability, and empathy, as these factors can significantly impact customer satisfaction. This could involve investing in better systems and processes to ensure timely and accurate order fulfillment, as well as training employees to be more responsive and empathetic towards customer needs and concerns. For instance, businesses can conduct customer research to understand the specific needs and expectations of their customers and tailor their e-supply

chain services accordingly. Then businesses can build strong partnerships with suppliers and other partners in the e-supply chain to ensure that they are able to provide high-quality services. Furthermore, businesses can invest in technology such as automation and data analytics to improve the efficiency and effectiveness of their e-supply chain services.

Another implication is that businesses can regularly assess the level of service quality they are providing in the e-supply chain, and use this information to identify areas for improvement. This could involve surveying customers to gather feedback on their experiences with the e-supply chain, as well as analyzing internal data on order fulfillment times and accuracy. For instance, businesses can monitor social media platforms to see what customers are saying about their service quality. Next businesses can analyze customer data, such as purchase history and customer interactions, to identify patterns and trends in customer satisfaction. Moreover, businesses can compare their service quality to that of their competitors to identify areas where they can improve. Lastly, businesses can establish a set of key performance indicators to measure their service quality and track progress over time.

Moreover, businesses may want to consider implementing customer relationship management (CRM) systems to help them track and manage interactions with customers and identify trends in customer satisfaction. This can help businesses identify and address any issues that may be negatively impacting customer satisfaction, and allow them to more effectively target their efforts to improve service quality in the e-supply chain. For instance, a CRM system can store all customer data in one central location, making it easy for businesses to access and analyze customer information. Next a CRM system can segment customers based on different criteria, such as demographics, purchase history, and level of satisfaction, allowing businesses to identify trends and patterns within specific customer groups.

Additionally, A CRM system can generate reports and analytics on customer data, such as average satisfaction levels, most common complaints, and most frequent purchases, to help businesses identify areas of improvement.

Finally, one of the significance of this research was to encourage more pupils to shop online by generating knowledge on the service quality of e-supply chain. Therefore, customers who experience high levels of service quality in the e-supply chain are likely to be more satisfied with their online shopping experiences, which can lead to increased customer loyalty and positive word-of-mouth recommendations. Customers who have positive experiences with the e-supply chain are more likely to return to the same retailer for future purchases. This can help businesses build long-term customer relationships and drive repeat business.

5.5   Limitation of Study

The sample size is one of the few restrictions on the current investigation. This study's sample size is small, which could mean that the results are less reliable. Additionally, this study can be context-dependent. The majority of the respondents in this study came from the state of Selangor, where it is recommended that the sample size be increased in subsequent studies.

This study avoided gathering data from individuals who might not have had experience with the recommended variable, such as service qualities. Therefore, those who have never utilized or faced online service quality during their online shopping experience may only provide their best guesses as an answer to the question in this part. In general, when

reporting on service quality in the e supply chain, the outcomes of this study will be influenced.

Another limitation is that the questionnaires for this study are only available in English. The questionnaire survey questions may not be fully understood by respondents who are not fluent in the language, which could result in misunderstandings of the questions and a less accurate data set. It is important to avoid using only one language in a survey to ensure that all respondents can understand the questions and provide accurate and valid responses. Using multiple languages in a survey allows for the inclusion of individuals who may not speak the primary language used, and can help to increase the diversity and representativeness of the survey sample.

This research also mentioned that the respondent is aware of a study result. Some survey participants might only complete the entire form, while others might answer a question without fully comprehending it. This might also occur if participants are under time pressure or otherwise unable to finish the surveys on schedule. Inadvertently, this results in the entry of inaccurate data into SPSS. Redistributing the survey will be necessary in order to gather enough accurate data for SPPS processing.

In addition, it was trouble in getting respondents to be truthful. This is because there was no control over the procedure and was unable to make sure that respondents were being honest while responding to all of the questions. Some of them even hesitate from providing genuine responses out of concern for the online store's reputation, customers' privacy, or confidentiality. This research must therefore filter the responses from the

respondents and exclude any that do not assist the original purpose of the study. This is done to guarantee that the study yields the finest outcomes feasible.

5.6   Recommendation for Future Research

Based on the limitations of the study, some potential recommendations for future research could include. Future researcher are recommended to expand the scope of the study to include respondents from a wider geographic area to conduct this research to entire Malaysia as this research only covered the Selangor area due to time constraint. This could also help provide a more comprehensive understanding of the impact of service quality in the e-supply chain on customer satisfaction among online shoppers, and help determine if the findings of the study are generalizable to other regions or cultures.

Next, the future researcher can give more education or information to respondents about the concept of service quality in the e-supply chain before administering the survey. Giving more education or information to respondents about a concept in a survey can improve the accuracy and reliability of the survey results. Respondents who have a better understanding of the concept being surveyed are more likely to provide accurate and informative responses. Additionally, providing education or information can help ensure that all respondents have a common understanding of the concept, which can help reduce confusion and bias in the survey results.

Furthermore, the future researcher will be able to conduct the survey in different languages in order to reach a larger audience and ensure that all respondents completely comprehend the questions being asked. This could assist ensure that the study's findings are

not affected due to linguistic limitations. As a result, future research should incorporate other languages in the questionnaire design, such as Malay, Mandrin, and Tamil, to accommodate multiracial respondents in the study area.

Moreover, the future researcher can examine the impact of other variables, such as the price, convenience, website design, product variety, or assurance, on customer satisfaction in addition to service quality in the e-supply chain. This could provide a more comprehensive understanding of the factors that influence customer satisfaction among online shoppers. Besides that it helps to identify the relative importance of different variables in driving customer satisfaction.

Last but not least, future researcher also could include interviews in the survey. Including more in-depth questions or using qualitative research methods, such as interviews or focus groups, to gain a deeper understanding of the factors that influence customer satisfaction with the e-supply chain. This could provide a more detailed understanding of the complexities of the relationship between service quality and customer satisfaction.

5.7 Conclusion

In a nutshell, this study focused on impact of service quality in the e-supply chain towards customer satisfaction through online shopping in Selangor. This research investigates the impact of responsiveness, reliability and empathy towards customer satisfaction through online shopping in this study. For this research, a sample size from the general population was determined using the Krejcie and Morgan sampling method. Respondents were chosen based on non-probability sampling. Data was gathered from Selangor's online shoppers.

Consequently, in order to gather enough reliable data from the respondents, the researcher questionnaire was distributed to 140 respondents. Then the demographic information was analyzed using descriptive analysis. The software used to evaluate and analyze the data obtained from the questionnaire was the Statistical Package for Social Science (SPSS) version 26. A descriptive statistic was used to determine the frequency distribution of number, mean, standard deviation, and the role of service quality in the e-supply chain in online shopping context. The statistical test was used to investigate hypothesis and regression analysis to examine the relationship of service quality in e-supply chain and customer satisfaction through online shopping in Selangor. The descriptive analysis, Pearson correlation, coefficient, and multiple regression analysis data were created and analyzed using SPSS software. According to the findings, SPSS analysis successfully accomplished all of the research goals.

Based on the results, all independent variables with a high correlation and alpha value have a significant relationship with the dependent variable, customer satisfaction through online shopping in Selangor. The results showed there is statistically have a significant positive direct relationship between responsiveness and customer satisfaction through online shopping in Selangor (β = .374, p = 0.00) and there is statistically have a significant positive direct relationship between empathy and customer satisfaction through online shopping in Selangor (β = .261, p = 0.035). Hence, it means that the responsiveness and empathy significantly gives impact on the customer satisfaction through online shopping in Selangor. As a result, responsiveness and empathy are the primary factors those influencers of service quality in e-supply chain for customer satisfaction through online shopping in Selangor. On the other hand the research revealed that reliability has no significant impact on customer satisfaction through online shopping in Selangor. The findings of this study are

aligned with research by Dehghanpouri et al. (2020) and Ong AKS, Prasetyo YT (2022) which claims that other factors, factors such as cost, culture or social influence, tangibles, empathy, COVID-19 protocols, and overall service quality, are more likely to have an impact on consumer satisfaction compare to reliability. First of all, factors that influence customer satisfaction can vary depending on the specific product or service being offered, the industry, and the customer base. Another possible reason could be that the product or service was reliable and performed as expected, but the reliability of the product was not a key factor in the customer's satisfaction. In general, the COVID-19 pandemic has led to an increase in online shopping, and many companies have had to make changes to their operations in order to meet the increased demand. This may have had negative impact on the reliability of their services.

Moreover, the completed research fulfilled the study objectives and provided an answer to the research question. Lastly, it also come out with limitation of study and recommendation to make the reference for the future researcher that want to make research study that similar with this topic. This study hopes it will guide many parties to strive to improve the quality of their e-supply chain services, particularly in the areas of responsiveness, reliability, and empathy, as these factors can significantly impact customer satisfaction through online shopping. Moreover, this study hopes any responsible parties can consider implementing customer relationship management (CRM) systems to help them track and manage interactions with customers and identify trends in customer satisfaction. Lastly, the rising expectation by customers shows how important it is for business retailers to understand the business environment, to target customers in order to strive better and above the customer expectations, as well as to sustain their business in a longer run.

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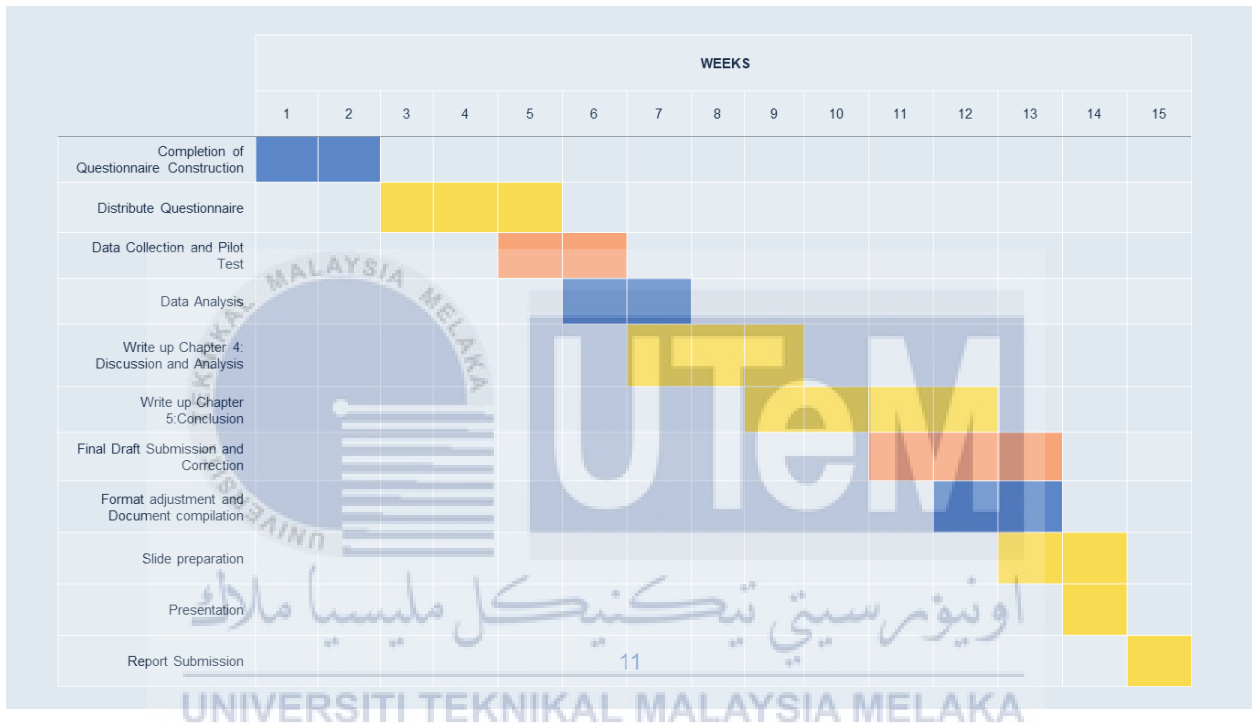
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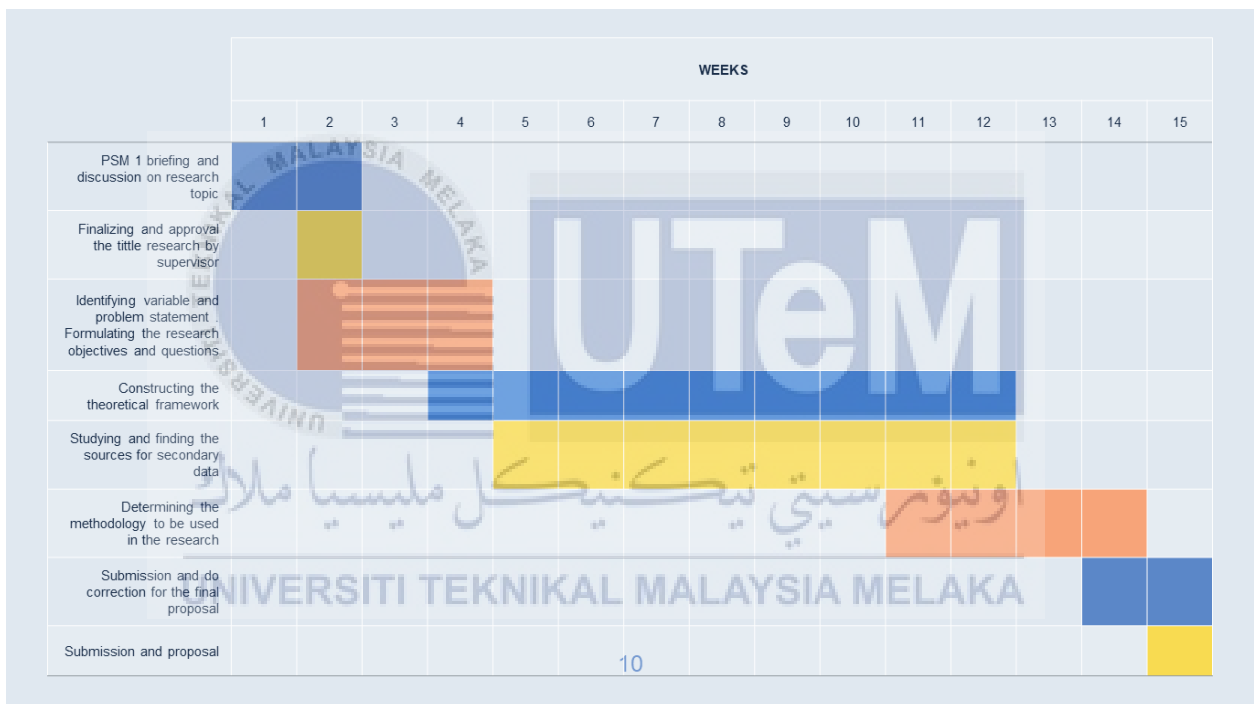
GANTT CHART OF PSM 1

GANTT CHART OF PSM 2

Bachelor of Technology Management (Supply Chain Management and Logistics)

with Honours

Faculty of Technology Management and Technopreneurship

Universiti Teknikal Malaysia Melaka (UTeM)

Research Project Survey Questionnaire:

THE IMPACT OF SERVICE QUALITY IN E-SUPPLY CHAIN TOWARDS CUSTOMER SATISFACTION IN SELANGOR

The purpose of this study is to establish a valid measure of customer satisfaction in service quality in e-supply chain dimensions. Results from this study will be used to build and improve customer satisfaction in online stores. This questionnaire is consisted of 3 sections: Section A, Section B and Section C. Please be aware that the goal of this research is purely academic, and it is thus completely confidential. Before choosing your response, carefully read each question. I appreciate your time and wish you a wonderful day.

Statement of Confidentiality:

All of the information is confidential and only will be using for research purposes.

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SECTION A: GENERAL INFORMATION

This section lists some questions about your personal information. Please click on the space provided.

General Information	
1. Gender	☐ Male ☐ Female
2. Age	☐ 15 - 20 years old ☐ 21 - 25 years old ☐ 26 - 30 years old ☐ 30 years old and above
3. Education level	☐ Sijil Pelajaran Malaysia (SPM) ☐ Sijil Tinggi Persekolahan Malaysia （STPM） ☐ Sijil Kemahiran Malaysia (SKM) ☐ Diploma ☐ Bachelor's Degree ☐ Master ☐ Ph.D.
4. Occupation	☐ Student ☐ Employer/Employee
5. Did you ever use online shopping during this endemic? If yes, would you say that the level of service quality you have experienced with the e-supply chain business/company meets your expectations?	☐ Yes, Yes ☐ Yes, No
6. On average, how often will you visit an online shopping store due to its delivery quality and outcome quality?	☐ Everyday ☐ 2 to 3 times a week ☐ Once a week ☐ 2 weeks once ☐ Once a month

. Although supply chain management has always been vital, its importance was emphasized during COVID-19 and online shopping seems to be the most popular trend around the world. The foundation of online shopping is a fast and efficient supply chain system. Hence, it is essential to investigate its importance. The purpose of this study is to establish a valid measure of customer satisfaction in service quality in e-supply chain dimensions. Results from this study will be used to build and improve customer satisfaction in online stores.

Here are the statements that reflect your experience when using Online shopping. Please tick (✔) your answer in the appropriate blank to demonstrate your agreement with the statement using the following 5-point interval scale:

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

Responsiveness

Responsiveness is related to the firm and its ability and willingness to aid customers and provide apt service as promised. Please tick (✔) your answer in the appropriate blank that reflects your experience.

	Strongly Disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
1. Information is updated for customers from time to time.					
2. Alert or remind customers about their service.					
3. Willingness to assist customers.					
4. Readiness to respond to customers' inquiries.					
5. The online seller shows a sincere interest in solving					

customers' problems quickly.					

Reliability

Reliability is the ability of the firm to perform the service effectively and accurately. It measures whether the firm lived up to its promises or not. Please tick (✔) your answer in the appropriate blank that reflects your experience.

	Strongly Disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
1. Provide service as promised.					
2. Dependability in handling customer issues and service problems.					
3. Providing services on time.					
4. Delivering service at the promised time.					
5. Maintaining the service process smoothly.					

Empathy

The empathy dimension refers to the attention and priority the organization gives to the customers' needs and requests. Please tick (✔) your answer in the appropriate blank that reflects your experience.

	Strongly Disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
1. Provide customers immediate responses to any inquiries.					
2. Respond to customers in a					

kind manner.					
3. Providing only the best service for customers.					
4. Online shoppers are aware of their customer's needs.					
5. Convenient business hours.					

Here are the statements that reflect your experience when using the Online store. Please tick (✔) your answer in the appropriate blank to demonstrate your agreement with each statement using the following 5-point interval scale:

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

Customer satisfaction Customer satisfaction through service quality in e-supply chain. In my opinion,	Strongly Disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
1. I feel convenient shopping at home.					
2. I get the product delivered on time.					
3. It is easy to get in touch with the customer support team.					
4. I am satisfied with the shipping and delivery experience.					
5. Overall, I am satisfied with online shopping.					