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**THE RELATIONSHIP AND IMPACT OF SERVICES QUALITY
TOWARDS GREEN LOGISTICS**

By

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UUM
Universiti Utara Malaysia

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College of Business
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In Partial Fulfillment of the required for the Master of Sciences Operation
Management**



Kolej Perniagaan
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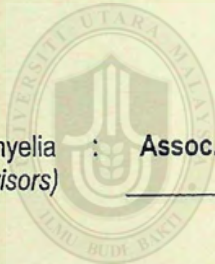
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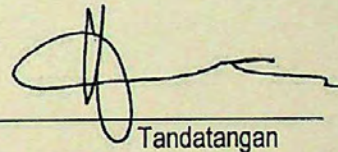
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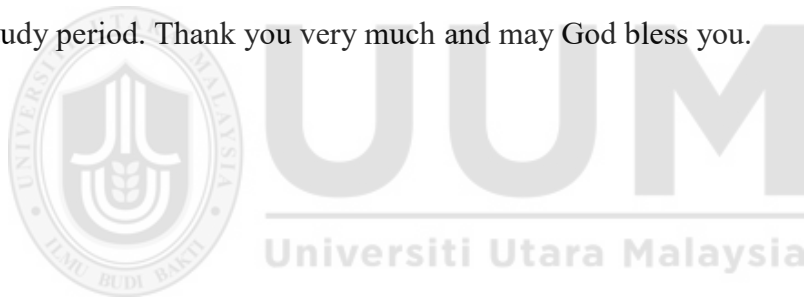


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ABSTRAK

Logistik Hijau dan kualiti perkhidmatan bertujuan untuk meningkatkan pemahaman pengetahuan, pendedahan dan kepuasan pelanggan di kalangan syarikat logistik. Baru-baru ini terdapat beberapa masalah yang berkaitan dengan ketidakpuasan hati pelanggan terhadap logistik hijau mewakili kebimbangan global utama. Tujuan kertas kerja ini adalah untuk menilai kepuasan pelanggan terhadap logistik hijau di Kedah dan Pulau Pinang. Dalam kajian ini terdapat beberapa faktor yang telah dikenalpasti menyumbang kepada ketidakpuasan hati terhadap perkhidmatan yang diberikan oleh syarikat logistik kepada pelanggan mereka. Oleh itu, dalam kajian ini tertumpu kepada pembolehubah dalam rangka kerja yang berkaitan dengan kepuasan pelanggan terhadap logistik hijau. Terdapat beberapa faktor yang menyumbang kepada masalah ini iaitu menghasilkan karbon monoksida yang besar, bahan buangan yang tidak digunakan untuk digunakan semula, kegagalan untuk menerima pakai dan melaksanakan pembungkusan hijau. Dalam kajian ini, kajian kaedah kuantitatif digunakan untuk mengumpul data. Populasi dalam kajian ini terdiri daripada syarikat logistik dan saiz sampel dalam kajian ini terdiri daripada 150 orang pengusaha syarikat logistik di Kedah dan Pulau Pinang. Bagi pengumpulan data dalam penyelidikan ini, borang soal selidik telah direka bentuk dengan menggunakan borang Google dalam talian dengan skala Likert lima mata. Pakej Statistik untuk Sains Sosial (SPSS) versi 25 digunakan untuk menjalankan data. Dapatan kajian menunjukkan terdapat hubungan yang signifikan antara perkhidmatan syarikat logistik dengan kepuasan pelanggan iaitu ketara, kebolehpercayaan, responsif, empati dan nilai tambah dan dapatan kajian ini akan membantu syarikat atau organisasi logistik untuk menambah baik perkhidmatan yang diberikan kepada pelanggan dalam mencapai kepuasan pelanggan. Selain itu, kajian ini juga mencadangkan beberapa cadangan yang dianggap dapat membantu mencapai matlamat dan meningkatkan tahap kepuasan pelanggan terhadap logistik hijau.

Kata kunci: SERVQUAL; kepuasan pelanggan; logistik hijau; Syarikat Logistik; Pulau Pinang dan Kedah

ABSTRACT

Green Logistics and services quality aim to increase the understanding of knowledge, exposure and customer satisfaction among the logistics company. Recently there are several problems related to customer dissatisfaction towards green logistics represent a major global concern. The purpose of this paper is to evaluate the customer satisfaction towards green logistics in Kedah and Penang. In this study there were several factor have identified that contribute the dissatisfaction of services that provided from the logistics company to their customer. Therefore, in this study focused on those variables in framework related to the customer satisfaction towards green logistics. There are several factors that contribute to this problem which is produce huge carbon monoxide, waste item which are not used to reuse, failure to adopt and implement the green packing. In this study, quantitative method study was used for collecting data. The population in this study consists of the logistics company and the sample size in this study consists 150 logistics company operators in Kedah and Penang. For data collection in this research was designed a questionnaire by using online Google form with five-point of Likert scale. The Statistical Package for The Social Sciences (SPSS) version 25 were used to run a data. Findings show there is a significant relationship between the logistics company service and customer satisfaction, which is tangible, reliability, responsiveness, empathy and value added and the findings of this study will help the logistics company or organization to improve their service provided to the customer in achieving the customer satisfaction. Besides that, the study also suggested some recommendations which considered would help achieve the goal and improve the level of customer satisfaction towards green logistics.

Keywords: SERVQUAL; customer satisfaction; green logistics; Logistics Company; Penang and Kedah

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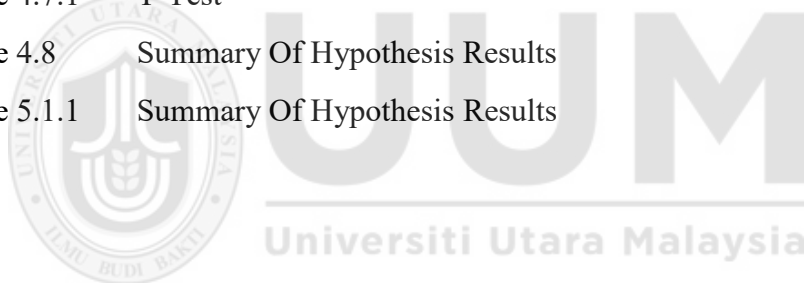
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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This research is to to examine the customer satisfaction towards green logistics in Malaysia. Section 1.2 discusses on background of study of customer satisfaction towards green logistics in Malaysia. In section 1.3 discusses on the problem statement of current issues in customer satisfaction towards green logistics. In section 1.4 discusses explain about the research question and follow with section 1.5 the research questions are developed based on the gap discussed. The scope of the study will be discussed in section 1.6 and followed by the significant of the study in section 1.7. Finally, section 1.8 discusses about the key terminologies used in the research.

1.2 BACKGROUND OF THE STUDY

There has been a growing discussion in recent years about the environmental impact on the planet because of human day to day actions, and this has proven that there has been an increasing volume of attention in the national news, politics, academic literatures and the general public. Stakeholders are increasingly urging businesses to take responsibility for any harmful effects that may result from their business activities.

As a result, businesses are seeing the incorporation of ecological thought into their daily business activities in Polish companies Romanowska (2004). Increasing consideration of greener arrangements does not leave the logistics sector aside as it plays a vital role, as it is one of the key causes of emissions and the consumer of the asset. One of the earth issues is an excessive amount of waste item which are not used to reuse

Limited of Logistics Company's that refuse of reuse their item container which it might happen condition issue. Waste Management of North America, Inc. had found that the organization got a normal of \$40 per ton for recyclables gathered in curbside programs, however spent a normal of \$175 per ton to get and sort the materials Grove (1994). Besides that, when expenses have been exceeding the estimation of the logistics company the endowments should be given by legislative substances to look after reusing and get and sort the materials (Grove 1994). Most of the manufacturing and logistics companies with a proper recycled method and materials can helps to reserve energy and water and produces less air and water pollution compare manufacturing with raw materials. With a proper method of recycling, it may help to reduce mining and drilling, which that produce air and water pollution.

Moreover, few of the logistics company failure to adopt and implement the green packing may also cause an environment pollution. Green packing is the most important and it can be defined as reuse or recycle the previous product packing to safe and make sure the product is an environment friendly. Few of the logistics companies have well maintain the green packing but unfortunate it still indicates a drastic problem to the environment because there are some of the logistics companies has fail to implement this process.

According to a previous study by Mark Dancy (2008) had stated that while fast-moving can help to improve green-friendly packaging, many businesses continue to make packaging mistakes. Moreover, there are a several main problems may occur, which it is when it comes to packaging, most of the company's focus only on two priorities: "how will this drive consumers

to my product and how much does this cost” Mark Dancy (2008). For some, environmental sustainability is a third, less important concern. “But realistically, most look at the first two”. This problem may occur a dissatisfaction for the customer towards green logistics.

Logistic company the main source of their income is the transportation. Transportation is the heart and very important for every logistic company to delivery their goods to their customer at designated location. Besides that, the main fundamental of a logistic company is the transportation in the current globalized economy which helps the movement of humans, animals, and goods from origin location to another is the main element that causes of suburbanization (Olivares, Sole, & Osychenko, 2018). The huge volume of carbon monoxide discharge had become the most concerning issue nearly in each nation in view of expanding request in the vehicle area because of high development of economy. Besides that, the interest for the vehicle is evaluated to have a high increment and it is causing the CO releases level to become higher (Mustapa and Bekhet, 2015). This transportation is one of the causes which customer dissatisfaction towards the green logistic, it is because some of the transposition produce carbon monoxide.

The environment has been polluted with the carbon monoxide gas produce from the logistic company transportation. The total of carbon monoxide emanations in Malaysia signified around 2.04 million metric tons, a development from the previous year (Statistic, 2018). This issue in transportation impacts the earth, for example, the issue of environmental change because of expanding levels of carbon monoxide emanations. It likewise turns into the most testing ecological issue as of late.

1.3 PROBLEM STATEMENT

The main objective of this paper is to examine the relationship of service quality and customer satisfaction towards green logistic at logistic company Malaysia. It is important to identify which service quality dimensions (Tangibility, Reliability, Responsiveness, Empathy, and value added) are important to customer of the logistics company in Kedah and Penang. Under an overall observation, common problems that root for logistic company at Malaysia customer's dissatisfaction.

Customer complaint is a customer disappointment to the product or service delivered by organization. Services Quality (SERVQUAL) dimension claim of the tangibles dimension applies to presence of physical structures, machinery, staff, and contact materials. Logistics should complete a thorough safety risk management framework to evaluate the exposure of staff, equipment, processes, and facilities of their programs. A risk-based approach to risk, vulnerability and consequences considerations can be used for the evaluation of transit systems. Transport is central to the modern globalized economy, enabling the flow of individuals, animals and goods from one place to another is the key force that triggers suburbanization (Olivares, Sole, & Osychenko, 2018).

Transportation is the fastest-growing major contributor to global environmental change, accounting for 23 per cent of energy-related carbon dioxide (CO₂) emissions (Singru, 2010). According to the previous study (Olivares, et all 2018), a sustainable transport is a field of development that has not been implemented and has become a priority for transport and sustainability. As many countries have displayed no full dedication. The use of clean energies and greener vehicles is very limited in most countries.

The transport produces the largest share of greenhouse gas emissions, especially carbon monoxide. Transport-related activities add significantly to air pollution (Ghadimzadeh 2015). Carbon monoxide is a poisonous gas produced by burning carbon, especially in the type of vehicle fuel. Carbon monoxide from transport originates mainly from the combustion of fossil fuels such as gasoline and diesel from vehicles, trucks, ships, trains, and aircraft. Poor sustainable transport raises the issues surrounding travel, such as environmental warming, urban air emissions, decreased energy reserves, security concerns and traffic jams.

Besides that, according to Parasuraman, et al (1988) argue of that reliability is defined as being able to deliver the service promised in a reliable and accurate manner. Environmental protection is a recurring theme in much of the emerging market cases. According to previous research, environmental risk is present in a few countries, and this knowledge of agents (companies and individuals) is very high in Germany and the Netherlands. In other countries, such as the United States, the largest effect associated with reverse logistics is associated with the future profit that can be improved by the reuse of products, parts, or recycled materials (Kokkinaki et al. 2001). Waste and the effects of its existence in the atmosphere in recent years have been a significant environmental issue. As a result, there is a growing concern in the issue of waste management on a larger scale.

Major progress has been made in the earlier study towards advanced technologies that allow not only the minimization of pollutants generated, but also the redevelopment or disposal of waste and municipal waste production, and there are only a few instances in Europe of the decoupling of municipal waste generation from economic growth, while recent attempts towards waste product have also been made. Moreover, past research reveals that it is estimated that about 1.3

billion tons of municipal solid waste per year have been generated worldwide and trends suggest that this number will increase significantly in the future due to population growth, urbanization and socio-economic development of low-income communities (Hoornweg and Bhada-Tata, 2012 and Bakas, I, et al., 2018).

In services Quality (SERVQUAL), it is stated that responsiveness is the speed and timeliness of service delivery, such as prompt service, such as quick appointments (Parasuraman, et al 1985). Companies require happier workers to work effectively because the happiness of workers will contribute to the dedication, conscientiousness, and integrity of employees, which, in turn, are linked to their job results (Gruban 2010).

Most of the logistic company delay their time delivery towards waiting for the delivery order and purchase order to delivery their goods to the customer. Waiting time is one of the customer complaints in service quality performance. Waiting time is a difference between understanding and expectation of waiting experience that decides consumer satisfaction with waiting and waiting time knowledge that affects the affective component and acceptability of waiting when the delay is normal or lengthy (Bielen and Demoulin, 2007).

Customer will longer wait for the services to postpone their next preparations and postpone their next timetable. For example, it takes a long time for the customer to wait for the delivery time to arrive at their place. This may be because most of the logistic industry does not implement reverse logistics which, by using reverse logistics, may allow the logistic company to use digital technologies that helps to increase paperless reduction.

In addition, the previous study by Sandino Miguel G. et al 2015) stated that the lack of trained workers is responsible for inspecting the goods to be delivered. The shortage of skilled staff results in stretched positions that may lead workers to perform poorly due to fatigue and operate for 6 days a week, and the rate of distribution of packages may be low because they do not know how to perform and improve their work with confidence. This may lead to the possibility that the cargo will not be properly inspected and may be misplaced or damaged, which will lead to a failure to meet the requirements and a failure to deliver the shipment.

In SERVQUAL dimension, Parasuraman had clarified that empathy is a loving and individual attention that the company offers to its customers. It involves offering personalized care to staff who appreciate the needs of their clients and customer services during working hours (Al Azzam, 2015). As a logistic firm, workers must play a good role during working hours in order to gain customer loyalty. Most logistic companies who do not adopt and retain the principle of green packaging and green packaging can be described as environmentally sustainable packaging, organic packaging or ecological packaging (Qi, J.2008).

However, there is currently no specific standard description for green packaging which is still in the conceptual process of 4R1D which is stand for Reuse, Recycle, Reclaim and Degradable (Liu, L, et al 2016). According to the previous report, the reason why the design of green goods and the packaging of green logistics have little impact on logistics costs is that the delivery of green logistics and warehousing is too much of the overall cost of logistics in real life (Xu Wang 2018).

Value added can be characterized as the amount of money that something is worth and the price or expense of something that can be obtained at a low or equal price and utility or value (Webster, 2016). In addition, value added can be described as putting something with another element or group of things to be combined or mixing an ingredient with other ingredients to provide something with something else (Webster, 2017).

The service quality model gained little consideration in the context of value-added services, and no study has yet transformed the idea of value-added service into a service quality model tailored to the design of the service sector. The crucial dimension that needs to be explored is the customer's view of service efficiency. Recently, some scholars have proposed that SERVQUAL estimation is more based on service delivery processing and does not rely on service performance (Kang, 2006; Kang & James, 2004; Lim et al., 2006; Seth, Deshmukh & Vrat, 2005). In addition, Selth et al. (2005) found that many service quality models vary based on the essence of the service market, existing competitiveness, time and requirements.

1.4 RESEARCH QUESTION

The key explanation behind this analysis is whether the green logistic effect is the happiness of the consumer. The following issue was created as a reference when the review was performed later.

- i. Which service quality dimension had the strongest impact towards the logistics customer satisfaction?
- ii. How does value added help to improve customer satisfaction towards green logistics?
- iii. How to propose theoretical frame of services quality and customer satisfaction?

1.5 RESEARCH OBJECTIVE

Research objective is the critical main part in an exploration as it is a fundamental direction for the researcher to clear about the motivation behind the studies being lead. There are three main objective of this research which it is:

- i. To identify the contribution factors that may give significant impact on service quality and customer satisfaction.
- ii. To investigate the relationship between services quality and customer satisfaction towards green logistics.
- iii. To develop a theoretical framework of services quality and customer satisfaction



1.6 SCOPE OF THE STUDY

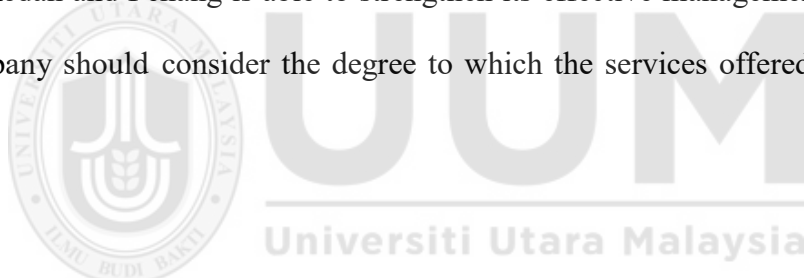
This research mainly focusses on examining the real approaches of customer satisfaction towards green logistic based with the services quality. The population of this research is the logistics company at the state of Kedah and Penang it is because and the sample of this research is the operator and material handler of the logistic company. Besides that Kedah state is near too our neighbor country which is Thailand and there are more trade activities is happening and Penang state are most important port and have lots of logistics company it is the place of trade in Malaysia for example HTS logistics, YCH logistics and PEN EXPRESS logistics and many more.



1.7 SIGNIFICANCE OF THE STUDY

The significance of this study is essential to be featured in an exploration. This is because inside it only the significance or value of the specific investigation to other parties can be recognized. Essentially, research is considered vital when can add to hypothetical and practical data. Along these lines, as a first importance, the primary significance of this examination is it will add to the general assortment of information about the topic of green logistic, and its customer's satisfaction.

The thesis is also important for the logistics company in Kedah and Penang because research results would also play an important part in making this level of service possible, and the logistic company of Kedah and Penang is able to strengthen its effective management. In addition, the logistics company should consider the degree to which the services offered should please its clients.



1.8 OPERATINAL DEFINITION

- Definition of customer satisfaction:

Customers gain value from a product or service depending on whether their desires are fulfilled effortlessly, in a simple manner that keeps them faithful to the brand. Customer loyalty is a crucial factor in the creation of consumers who wish to shop in the future (Mittal & Kamakura, 2001). Consumer retention is also an essential step towards customer loyalty. It is a good way to assess how the product and service offered by the business matches or affects the needs of the consumer. It also indicates the number of customers or proportion of overall customers whose contact with the business has been registered.

- **Definition of service quality:**

It emphasizes the accessibility of high-quality services to end users and is a combination of the terms service and quality. The concept of quality focuses on the standard or specification that a service-producing company has pledged. According to Parasuraman (1988) have describes about the service quality as the degree and direction of the difference between the opinions and expectations of the user or the extent to which the service meets or exceeds the expectations of the customer.

The efficiency of the service quality depends on the service, consistent with the needs of the consumers (Mevvis and Janiszewski, 2002). Besides that, Parasuraman, Zeithaml and Berry (1988, 1990) have designed a service quality model that defines perceived service quality in five dimensions as the main key of service quality which are Reliability, Efficiency, Tangibles, Empathy and Responsiveness.

1. Tangibles:

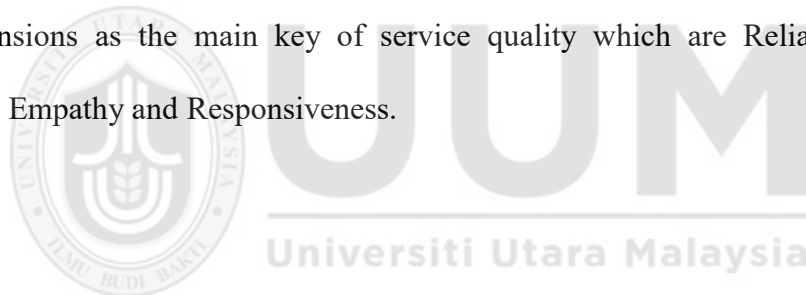
The meaning of tangible is involving the appearance of physical buildings, including equipment, personnel, and communications materials (Parasuraman (1988).

2. Reliability:

The meaning of reliability it requires the ability to deliver the promised service in a reliable and accurate manner (Parasuraman (1988).

3. Responsiveness:

The meaning of responsiveness It requires a desire to support clients (Parasuraman (1988).



4. Empathy:

The meaning of empathy Interested in the provision of care, individualized consideration to clients. Empathy requires entry, contact and consumer awareness (Parasuraman(1988).

5. Value Added:

Value added is very important to an organization and business industry. For example, of value added is kaizen. Kaizen is one of the best methods which help a company to continue improvement. (1988).



CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter discusses on the literature of the green logistics. In section 2.2 it will discuss about the logistics and in section 2.3 it will discuss about the green logistics. In section 2.3 it will discuss about the customer satisfaction and followed with section 2.4 It will discuss about services quality. In section 2.5 it will discuss about the relationship between green logistics and customer satisfaction. In section 2.6 it will discuss about the variable definition. At the end of this chapter, it will discuss how to develop a concept which framework help to improve customer satisfaction in section 2.7 and followed with 2.8 the conclusion of this chapter.

2.2 LOGISTICS

Logistics is the organization and execution of efficient storage and movement of goods from the point of origin to the point of consumption. The provision of prompt and reasonable customer service is the objective of logistics. In the beginning, logistics was responsible for a crucial task: moving military personnel, supplies, and equipment. Logistics is still used to refer to the transfer of commercial goods along the supply chain, despite its continued importance in the military. There are many organizations work in operations, offering the support to producers, retailers and different enterprises with an enormous need to ship products Lee and Klassen (2008). Transformation concerning sustainability have been widely discussed in extant literature (e.g. Biggemann et al.2014) as it is considered a primary future concern for many industries (Zhu et al.2008). These require companies to reshape their business strategies and integrate sustainable practices at the operational level while developing new product and services designs (Yuen et al.2017).

There are a few of the function of logistics and the most two function of the logistics company is transportation and warehousing. The function of transportation is using vehicles to transport goods between warehouses, retail establishments, and clients is the emphasis of transportation management. The mode of transportation is multimodal such as by train, road, air, or sea. To help satisfy the demands of transportation-related logistics, logistics organizations frequently use Transportation Management System (TMS) software. Additionally, there are specialized applications, such yard management programs.

Two examples of the tasks that are included in warehousing, also known as warehouse management, are inventory control and order fulfillment. In addition, it necessitates controlling warehouse infrastructure and operations, such as those found in fulfillment centers, where orders for products are collected, processed, and delivered (to the customer). The majority of businesses control inventory movement, storage, and tracking with warehouse management system (WMS) software, according to Rodrigue (2012). In addition to more specialized parts for logistics tasks like inventory management, the majority of ERP software providers offer TMS and WMS modules.

Customs management, also known as global commerce management, is frequently thought of as a component of logistics because the documentation required to demonstrate compliance with governmental rules must frequently be completed where goods cross international borders or enter shipping ports. Artificial intelligence (AI) and autonomous vehicle technology will have a significant impact on future logistics operations. To more accurately track parcels and anticipate Transport related issues in the supply chain, some logistics firms already employ. In the

meanwhile, it's conceivable that driverless forklifts, delivery trucks, and drones will become increasingly prevalent in warehouses, warehouse yards, and on highways.

2.3 GREEN LOGISTICS

Green Logistics refers to a series of ecological strategies and practices directed at reducing the environmental effects of the business sector's operations. The arrangement of procedures, facilities and systems or machinery in the transport, delivery and storage of goods has inspired this logistics concept. During decision-making, the conventional approach to logistics frequently leaves environmental responsibility on the margins. Facilitating efficient and effective transportation and storage of goods, information, and services are increasingly recognized as key factors to foster sustainable economic development and competitiveness in emerging countries Jia (2018). Transformations concerning sustainability have been widely discussed in extant literature Biggemann (2014), as it is considered a primary future concern for many industries (Zhu et al., 2008). These require companies to reshape their business strategies and integrate sustainable practices at the operational level while developing new product and service designs (Yuen et al., 2017). This definition combines environmental and economic sustainability with logistics by reducing the environmental effect of the industry. To this end, organizations aim to be eco-conscious when carrying out their operations at the lowest possible expense. In addition, in order to curb emissions, foreign regulation has also been adopted to some degree. Nevertheless, to minimize their environmental footprint, there are also many things a corporation should do. According to Rodrigue et al., "green logistics" can also be defined as "management practices and strategies that contribute to reducing the environmental and energy footprint of cargo forwarding." According to Mesjasz-Lech (2011), "Green Logistics" encompasses all operations that aim to meet or exceed market demand by forward and reverse delivery of goods and information between the point of production and the point of consumption.

According to Lee & Klassen (2008), green logistics has also been identified as green supply chain management and can be identified as an activity by environmental issues-considering organizations and incorporating them into supplies chain management to change suppliers and customers' environmental efficiencies. Green logistics activities can be focused on environmental evaluation of various procurement systems, resource utilization in logistics, disposal, and control of waste management (Sibihi & Eglese, 2009).

Reverse logistics, part of green logistics, is worth exploring. According to Rogers and Tibben Lembke (1999), the variations between reverse logistics and green logistics are briefly considered. In the reverse logistics, no transport of goods or services from the customer to the earlier step of the supply chain can take place. Avoiding waste, as this suggests, means that green logistics might need logistics to reverse. Currently, the term 'green logistics' is widely used interchangeably with 'reverse logistics,' but green logistics helps to synthesize logistical operations mostly driven by environmental issues" Scott, Lundgren & Thompson, (2011).

Nevertheless, Green Logistics seeks to reduce logistic costs and increase sales in order to retain efficient logistic capability. According to Bin & Chaoyuan, (2005), green logistics is a measure of business operation through the incorporation of supply chain management elements that contribute to the added value of environmental efficiency.



Figure 1: Green logistics and reverse logistics relationship

2.4 CUSTOMER SATISFACTION

Consumer satisfaction can be defined as the most accurate input, delivering customer needs and experience in an efficient, objective, straightforward and substantive manner. According to Sasimath and Mallikarjun (2016), the historic emergence of 'customer satisfaction as a term, it has been prevalent in marketing studies since the 1950s, and it continues to be the most critical and topical subject and has raised an endless curiosity among marketing practitioners and academics. From the point of view, thus, it can be claimed that customer loyalty is the primary domain of marketing. From the point of view, thus, it can be claimed that customer loyalty is the primary domain of marketing. Customer retention mechanisms include purchasing and consumption. It also connects the customer's post-purchase behavior, such as attitudinal shift, repeat sales and brand loyalty.

The researcher's primary argument that the notion of buyer loyalty is part of the main marketing activity seems to be accurate in considering that customer retention results in revenue and profits. Customer happiness provides a correlation between overall purchase and post-purchase behavior change, re-purchase and brand loyalty. Customer satisfaction is

defined as the attitude that results from what customers believe could happen as opposed to what they believe has happened, such as the impression of performance (Revathi and Saranya, 2016).

According to Zaim, Bayyurt and Zaim (2010) claimed that tangibility, responsiveness, reliability, and empathy are essential metrics for consumer satisfaction, but that the response and assurance variables have not been defined as simple service quality determinants, but are much more essential (Revathi and Saranya, 2016).

Customer satisfaction is defined as an estimation of the perceived difference between the previous requirements and the real performance of the commodity. Customer satisfaction with the company's products and services is viewed as the most important factor leading to success and growth. Customer loyalty is how consumer activity continues to deliver outcomes. Customer loyalty is very critical in today's business world, and the capacity of a service provider to generate a high level of satisfaction is crucial for product differentiation and good customer relationships to be formed (Hanif, Hafeez, and Riaz, 2010).

Good customer loyalty affects the sustainability of virtually any company. Customer loyalty is very important to a company in order to meet the business goal and increase profitability. Customer loyalty is perceived to be the basis of standardization and service excellence for many companies. It also helps identify future business openings.

The value of consumer loyalty from a company viewpoint in a magazine 'Customers are the purpose of what we do, and we are very much dependent on them, rather than on us. The consumer is not the root of the problem that might not allow consumers to 'go out' otherwise our future and our jobs will be put at risk' (Wadud, 2013).

2.5 SERVICE QUALITY

It is the opportunity to address the needs of customers, but also of beneficiaries, by the standard of a service. Providing a high-quality service has the effect of attracting new customers, increasing the volume of activity with current customers and losing only a few customers. Quality achievement in facilities is a goal that is especially difficult to accomplish, requiring ability, wisdom, dedication and energy. In the service area, quality can be defined as a contrast between the service requested by the customer and the service obtained or, in other words, if the service delivered correlates to the expectations of the consumer (Teboul, 1999).

In services, consistency is defined from the point of view of the customer and the context in which it is valued and measured on the basis of its own subjective elements plays a crucial role. In this way, the customer's perspective is, first and foremost, that the level of services is evaluated by the subjective criteria that it defines (Brakhohn, Vogh, 1998). The assumption that perceived product consistency is now the most important strategic factor in the business world has been the reason for naming the recent business cycle a "Consistency Cycle" (Peeler, 1996). As a result, the marketing services of academics and scholars have provided a number of metaphors for this problem. For example, Berry (quoted in Kandampully, 1998, p 423) calls it the most effective competitive tool, and Clow (1993) calls it the life-giving blood of the organization.

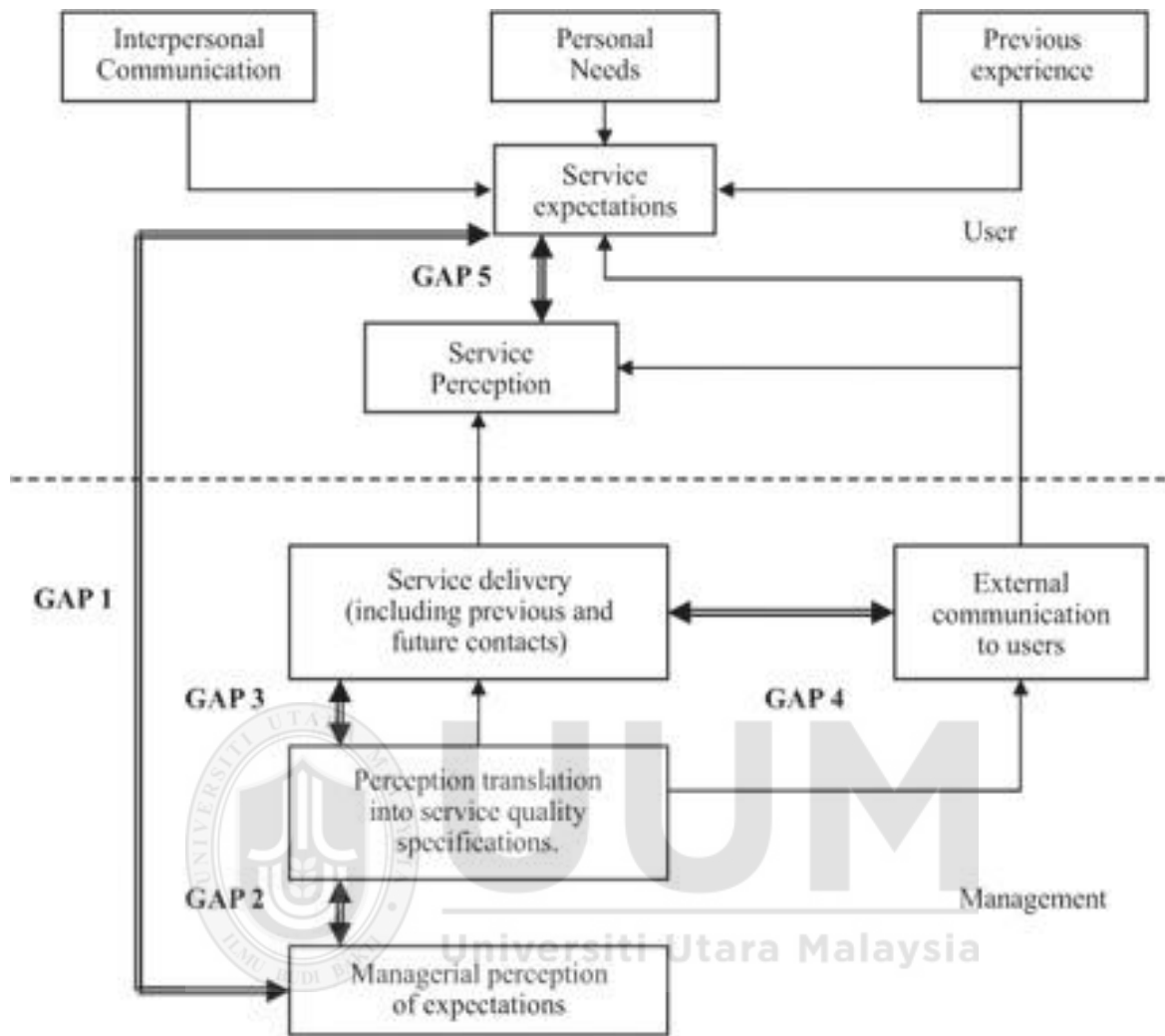
Quality is a multidimensional phenomenon. It is also difficult to achieve quality of service without defining the qualitative aspects necessary. In its debate on quality of service, Gronroos (2000) discusses the three dimensions of the technological quality of production, the quality-of-service performance and the mental picture of the company. Lehtinen and Lehtinen (cited in Harrison, 2000) also referred to physical quality, digital quality published by the Canadian Centre for Research and Education, and operational quality as three dimensions of service quality. Although these interventions have played a key role in separating service quality into process quality and production quality, they still lack adequate detail. On this basis, Zeithaml et al. (1996) referred in their primary review to ten dimensions of service efficiency. Avkiran (1994) introduced a four-dimensional model (contact, usability, functionality, and access to staff services) and a 17-dimensional component.

The assessment of a service is more complicated than the assessment of a commodity. The product is tangible, and consumers can identify faults, check its working, compare its reliability and validate its consistency according to the manufacturer's requirements, when the service is first compared and then manufactured and used at the same time. This inseparability strengthens the value of the relationship between service providers and consumers, as well as the consistency of the service delivered. Another advantage of the service is its limited length, which ensures that it cannot be preserved or kept in warehouse or intangible. They are judged by their results, the impressions of the people who use them. Around the same time, they are heterogeneous and can be judged and performed differently by service providers and consumers.

Thus, the relationship between consumer expectations and perceptions is as follows: when expectations are smaller than perceptions, good quality is perceived; when expectations are equal to perceptions, the perceived quality is acceptable; when expectations are higher than perceptions, bad quality is perceived (Parasuraman, Zeithaml, and Berry 1988, 1990).



Figure 2: Service quality measured by SERVQUAL Dimensions



Source: Parasuraman, Zeithaml, and Berry 1990

Figure 2 shows the key five of the service discrepancies that are widely reported between customer preferences and experiences. They are the following 1st gap do not understand what consumers intend to get.

The 2nd gap discrepancy applies to the degree to which organization does not have the correct service designs and specifications. This discrepancy represents the failure of an organization to convert management's understanding of customer's requirement into service quality requirements or expectations.

Factors such as resource constraints, market demands and management incompetence which result in a discrepancy between the perceptions of customer demand management and the actual requirements for a service. This difference is supposed to affect the preferences of the consumer.

This 3rd gap would not provide a standard program that would reflect a disparity between customer-driven service demands or specifications and the actual performance of the services provided by the employees of the company. This group of inequality encompasses employees of the business provider, such as managers, front-line staff and support personnel who are unable to succeed and deliver customer-driven business. The disparity persists since the work of the staff cannot always be identical.

The 4th gap which does not balance results and commitments, shows the incompatibility between the performance of the employee to provide services and the pledge of service provided by the business. In other words, those gaps occur when a business struggles to deliver on the service commitments announced by external media (advertising). Promising more than can be delivered increases hopes but decreases perceptions of quality when commitments are not met.

The 5th gap established based on the four preceding gaps Parasuraman (1990). The level of service as perceived by the customer depends on the degree and direction of the discrepancy, which ultimately depends on the existence of four differences in the architecture, promotion, and distribution of services. The new (conceptual) model indicates that the fifth difference is central to the concept of quality of service. Management should also carefully control the four shortcomings of the supplier in order to increase the performance of the customer.

The results gathered with these focus groups confirm that customers are influenced by the aspects of the process and not just by the results of the quality assessment of the service. The aggregated sum of the difference between five-dimensional interactions and expectations is the global understanding of continuity. (2004: Laroche et al., p. 363). In this sense, customer expectations have been met through the outcome dimension (reliability) and have been exceeded through the process dimension (tangibility, responsiveness, and empathy). The response pattern defined ten general assessment criteria applied by customers, except for the type of service being evaluated (Parasuraman et al., 1990). The following assumptions are then proposed to clarify the relationship between green logistics and consumer loyalty.

Table 2.2.1: SERVQUAL Dimension Definition

SERVQUAL Dimension	Definition	Author
Tangibility	In servqual the meaning of tangibles dimension are refers to the appearance of physical facilities, equipment, personnel, and communication materials.	Parasuraman, Zeithaml and Berry (1988)
	Physical presence of the surrounding equipment, staff, services, and contact materials. They are visible proof of the care and attention to detail displayed by the service provider. This concrete dimension can also apply to the behavior of other guests in the operation, such as a disruptive visitor in the hotel's next room.	Awoke (2015)
	Tangibility should have up-to - date appliances, staff should be well-dressed and be tidy, physical facilities should be physically friendly and the appearance of physical facilities should be compatible with the form of facility rendered.	Yarimoglu (2014)

Reliability	Reliability refers to the ability to deliver the promised service in a timely and effective way. Service is performed with high accuracy and thoroughness at all times. Reliability is the most critical factor of the SERVQUAL scale. In the corporate world, it is important to have the consumer believe that the company can do what it promises to do. Reliability ensures that the organization makes guarantees on delivery, service delivery, problem solving and price. Customers prefer to do business with businesses who keep their commitments, in particular with respect to the services and functionality of the core service. There is a reliability factor that will allow consumers to understand the quality and integrity of accurate delivery service, full order service and a guarantee of service.	Parasuraman, Zeithaml and Berry (1988) Azani, Bakar, Rahman, Jesceedza and Radzuan (2017). Omar, Saadan and Seman (2015)
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Responsiveness	Responsiveness is the willingness to help customers, provide prompt service and provide prompt service. Responsiveness is the speed and timeliness of service delivery, such as delivering a purchase slip directly, calling the client back quickly and offering timely support, such as making fast appointments. Willingness to assist consumers by delivering timely and prompt service. Holding consumers waiting for the service to be delivered, in particular for no obvious reason, would generate unnecessarily negative expectations of quality. If a service breakdown happens, the opportunity to rebound rapidly and professionally may generate very favorable expectations of efficiency.	Parasuraman, Zeithaml and Berry (1985) Awoke (2015)
Empathy	Empathy as a caring and individual attention that the firm provides to its clients. It contains giving individual attention to	Parasuraman, Zeithaml and Berry (1985)

	Employees who understand the needs of their customers and customer facilities during business hours. Providing customized services to its clients. Empathy is the offering of individualized, compassionate consideration to clients. Empathy requires characteristics such as usability, empathy and an ability to consider the needs of the consumer.	Awoke (2015)
Value Added	Gummesson (1994), consumers were not purchasing products or services, but rather purchasing a service product that offers value-creating services.	Gummesson (1994),

Thus, Parasuraman, Zeithaml and Berry have developed a psychometric scale of quality dimensions called Service Quality (SERVQUAL), the first attempt to replicate the technique to create consumer loyalty. The SERVQUAL measure consisted of two sets of 22 affirmations of consumer desires and 22 of expectations. In their further study, they observed a clear picture between these dimensions.

As a result, these factors were combined and the five-fold factor Assurance, Responsiveness, Reliability, Empathy and Tangibles was introduced as the basis for the availability of a service quality assessment system known as SERVQUAL. They stressed that SERVQUAL is a robust and efficient service quality measure (Parasuraman et al., 1994).

Services are increasingly developing a greater portion of the numerous entities regionally, domestically and internationally and are being used as a revenue stream tool. Knowledge-intensive service companies today require accurate estimation, analysis, and performance methods (Spohrer & Maglio, 2008). Service quality is determined by calculating the gap between two ratings where higher level of service leads to a narrower gap Landrum (2008). Johnston, et al. (1997) conducted systematic empiric research on the standard of service evaluation conducted by Parasuraman, et al. (1985 & 1988) in ten service organizations in England. A list of 12 factors was identified and a list of 18 factors was identified after the additional study was done. In addition, a number of researchers have suggested different approaches for calculating the productivity of retail establishments on the basis of the SERVQUAL principle.

Parasuraman (1988) describes the quality of the service as the degree and length of the discrepancy between the user's views and needs or the extent to which the service meets or satisfies the customer's standards. The efficiency of the service depends on its operation in compliance with the needs of its customers (Mevvis and Janiszewski, 2002). Besides that, Parasuraman, Zeithaml and Berry (1988, 1990) have also designed a service quality model that describes the service quality in five dimensions as the core and main aspects of service quality in reliability, assurance, empathy, Tangibles, Empathy and responsiveness.

2.6 RELATIONSHIP BETWEEN GREEN LOGISTICS AND CUSTOMER SATISFACTION

The relationship between green logistics and consumer satisfaction has a strong relationship. The theory of green logistics is how a logistics company will interact with each other in the environment to produce products at the lowest possible cost and in the shortest possible time, while at the same time reducing the rate of product loss and malfunction and relying on recycled waste in order to achieve optimum use (Kumar, 2015). According to Rosenzweig et al. (2003), only distribution and flexibility have a beneficial relationship to consumer satisfaction. Tsai and Tiwasing, 2021; Yuen et al., 2018) explored consumer loyalty by recognizing and measuring the value of green collaboration. In other words, past research looked at how customers' perceived benefits from green cooperation, such as utility, dependability, stability, and convenience, led to company loyalty. Customers, for example, considered that they may get comparable benefits over earlier deliveries or services from other companies through green collaboration with a company (Wang et al., 2018, Wang et al., 2018).

Kumar et al. (2011) found that continuity and durability have a positive impact on customer loyalty. Swink et al. (2007) observed that delivery and quality were positively linked to customer satisfaction but not to cost efficiency and new product flexibility, and that process flexibility was very negatively associated with customer satisfaction.

Increased standard of service will contribute to and build up attitudinal loyalty, which basically retains trusted customers. Increased customer loyalty benefits from a higher degree of perceived service performance. If the perceived quality of the service is lower than expected, the quality of the service will not be met (Omar, Saadan and Seman, 2015).

Bowersox et al. (2002) have concluded that all supply chain systems that may have an effect on logistics and customer interaction, and concluded that logistic value proposition and logistics had a significant impact on customer loyalty by maximizing customer satisfaction in order management, inventory tracking, transport, handling, manufacturing and production, as well as net facilities.



Agbor (2011) concluded that the relationship between customer loyalty and quality of service is a quality of service that must precede customer satisfaction, regardless of whether the two buildings are constant or transaction specific. Customer satisfaction was also due to the performance of the service. In addition, variables such as price and product quality can influence customer satisfaction, perceived service quality is a component of customer satisfaction.

2.7 VARIABLES DEFINITION

2.7.1 Tangibles

In services, the observable product dimension is one of the key variables that affect the satisfaction of the consumer. Tangibles refers to the presence of physical structures, machinery, staff and contact materials. Include all physical goods that are tested in the distribution of utilities, as well as other clients. This ensures that consumers can evaluate physical amenities such as green logistics in warehouse management. Not just that, the warehouse is well run, which gives the logistic client the desire to establish a strong trading relationship. As a commodity, it is both a real and a medium where it can be evaluated by the user where the user can sense and contact the services. Tangible includes the presence of physical buildings, including appliances, staff and communications.

According to (Parasuraman, Zeithaml, and Berry 1994) the key thing that it can protect is time-conscious workers, accurate resources, and less queue. Moreover, according to (Zeithaml & Bitner, 1996:111), the tangible evidence relates to the atmosphere in which the services are provided and in which the business and the consumers communicate, and to any tangible products that promote the performance or contact of the service. Tangibles that reflect the service visually.

All companies should provide physical images or images of their offerings that customers can use to determine consistency, enhance image quality, ensure reliability, and provide signal quality. However, some organizations can combine this with another consideration in order to develop a service quality strategy (Wilson et al., 2008:86). Tangibility should have up-to - date appliances, staff should be well-dressed and be tidy, physical facilities should be physically friendly and the appearance of physical facilities should be compatible with the form of facility rendered. (Yarimoglu 2014). Physical appearance of surrounding facilities, employees, resources, and communication materials. They are visible evidence of the care and attention to detail shown by the service provider. The actions of other visitors in the service, such as a noisy visitor in the hotel's next room, may also be influenced by this concrete dimension. (To wake up in 2015).

2.7.2 Reliability



Reliability refers to the ability to deliver the promised service in a timely and effective way. Service is always conducted with high precision and thoroughness. Reliability ensures that the organization makes guarantees on delivery, service delivery, problem solving and price. Customers want to do business with businesses who keep their commitments, especially about the facilities and functionality of the core service (Azani, Bakar, Rahman, Jesceedza & Radzuan, 2017).

Reliability indicates that an agency that assured its clients the provision of company assistance, service time and speed reaction to grievances (Parasuraman, Zeithaml, and Berry 1994). Latest experiments and studies have shown that reliability is the primary and most important dimension

of the SERVQUAL scale. It is crucial that clients have faith in what the company is going to do as it promises to do. Parasuraman argued, it can be inferred that, as a logistics firm, they can act and respond very quickly to their customers with what they have promised, and this will ensure that the customer is pleased. Reliability refers to the ability to provide the desired standards at all times, how the company addresses customer care complaints, how it provides the best services for the first time, and how it delivers the services in the promised time, and how it holds error-free records.

According to Yang and Fang (2004), reliability consists of proper order of action, accurate recording, accurate quotation, accurate billing and accurate commission estimation to keep the service appealing to the customer. On the relationship of reliability between e-commerce, he described the reliability of the website's ability to produce orders correctly, to conduct them efficiently and to keep personal details secure (Hamed. F. Hamed Omar 2015).

Reliability ensures that the organization makes guarantees on delivery, service delivery, problem solving and price. Customers prefer to do business with businesses who keep their commitments, with respect to the services and functionality of the core service. (Azani, et al 2017).

For example, commerce customers in Libya argued that the reliability dimension had a direct positive impact on perceived service quality and on their satisfaction with e-commerce business in the region. Customers prefer to do business with businesses who keep their commitments, with respect to the services and functionality of the core service. (Azani, et al 2017). E-Commerce customers in Libya argued that the reliability dimension had a direct positive impact on perceived service quality and on their satisfaction with e-commerce business in the region.

From now on, e-commerce company promoters need to have safe online purchases to make consumers more relaxed.

2.7.3 RESPONSIVENESS

Responsiveness is the desire to support clients, provide timely service and provide prompt service. Responsiveness is the speed and timeliness of service delivery, such as submitting a purchase slip instantly, calling the client back quickly and delivering timely service, such as making fast appointments (Parasuraman, Zeithaml & Berry, 1985). Any logistic business should engage in responsiveness in its operation to ensure customer loyalty in service, quality efficiency and green logistics. This is important to retain strong customer relations and to acquire good service experience in order to understand the complex relationship process.

This factor underscores the determination and promptness to respond to customer demands, demands, concerns and challenges. This could include the amount of time a person has to wait for help, responses to questions, or attention to concerns. Perception of versatility and willingness to adjust services to consumer requirements. It represents the opinion of the consumer, not the business (Wilson et al., 2008:85). Barclay and Dann (1996) defined responsiveness as a capacity to respond intentionally and in a timely manner to significant events, openings or obstacles in order to obtain or maintain a competitive advantage. They often describe responsiveness potential as the degree of responsiveness that a organization possesses or requires, i.e. its ability to respond to and/or anticipate events in order to monitor, regulate and take advantage of them. Importantly, however, these scholars use the terms responsiveness and agility interchangeably in their reports. Holding consumers waiting for the service to be delivered, in particular for no obvious reason, would generate unnecessarily negative

expectations of quality. If a service failure occurs, the ability to recover quickly and with professionalism can create very positive perceptions of quality. (Awoke 2015).

2.7.4 EMPATHY

Empathy requires the provision of treatment and individualised consideration to clients. Empathy requires entry, contact and consumer awareness. Parasuraman, Zeithaml & Berry (1985) described Empathy as the care and individual consideration that the firm gives to its clients. Besides that, it also contains giving individual attention to employees who understand the needs of their customers and customer facilities during business hours (Al-Azzam, 2015). It involves offering personalised care to staff who appreciate the needs of their clients and customer services during working hours (Al-Azzam, 2015). The purpose of this dimension is to provide sufficient and suitable services for both existing and future customers.

Empathy treats others as human beings. Customers are unique and unusual, and it is important to understand their needs. Any customer needs to feel respected and to understand the undertakings providing a specific service.

It would be a good idea for businesses to know their clients on their behalf and to develop partnerships that reflect their personal knowledge of their desires and wishes. In situations where a small business needs to compete with larger companies, the opportunity to be empathetic to its clients will give the small business a definite advantage.

Consumers want companies to understand their markets and challenges on the market (Wilson et al., 2008). This is especially important for small business tenants in shopping centers. Owing to the fact that landlords prefer larger well-established anchor tenants, small business tenants will also feel overlooked and left out. It would mean a lot to the small occupant if the inhabitants paid attention to this dimension. Customized services to its clients. Empathy is the offering of individualized, compassionate consideration to clients. Empathy requires characteristics such as usability, empathy and an ability to consider the needs of the consumer. (Wake up in 2015).

2.7.5 VALUE ADDED

Value added is very important to an organization and business industry. For example, of value added is kaizen. Kaizen is one of the best methods which help a company to continue improvement. Every logistic company have implemented this kaizen method it is because by implement kaizen it helps to improve the work quality. Kaizen is a way to deal with making continuous development based on the likelihood that little, progressing meaningful change will result in substantial improvement. Typically, it focuses on teamwork and responsibility and stands in opposition to policies that employ radical reforms or top-down declarations to bring about change. Value added it was created in the assembling division to bring down imperfections, wipe out waste, help profitability, energize specialist reason and responsibility, and advance development. Besides that, value added can help to reduce the cost. As a company main target is to reduce cost and increase their revenue. For example, at PKT logistic company one of their big customers is Mazda. For daily delivery, the PKT logistic will deliver their goods to Inokom kulim. All the transportation cost will be pay by the Mazda department. By using a value added the Mazda Company can reduce their cost by use the maximum capacity of the

Container truck by using the truck layout. By doing this way it will help the Mazda Company to reduce their cost because they have reduced the transportation.

Moreover, according to previous studies by Gummesson (1994), consumers were not purchasing products or services, but rather purchasing a service product that offers value-creating services. The offering and the benefit consist of several elements, some of which are operations (services), some of which are commodities (commodities). He stressed offerings from the point of view of the client. "Detailed explanation of what needs to be accomplished for the customer (what needs and desires to be satisfied) and how this is to be accomplished" is how Edvardsson and Olsson (1996) refer to the definition of service as a prototype for service. This includes aligning the organization's policy and strategic goals with the needs of customers in the target market, which they refer to as "service logic."



2.8 RESEARCH CONCEPTUAL FRAMEWORK

The literature had been used as the foundation to develop a conceptual framework for this study as shown in Figure 3.

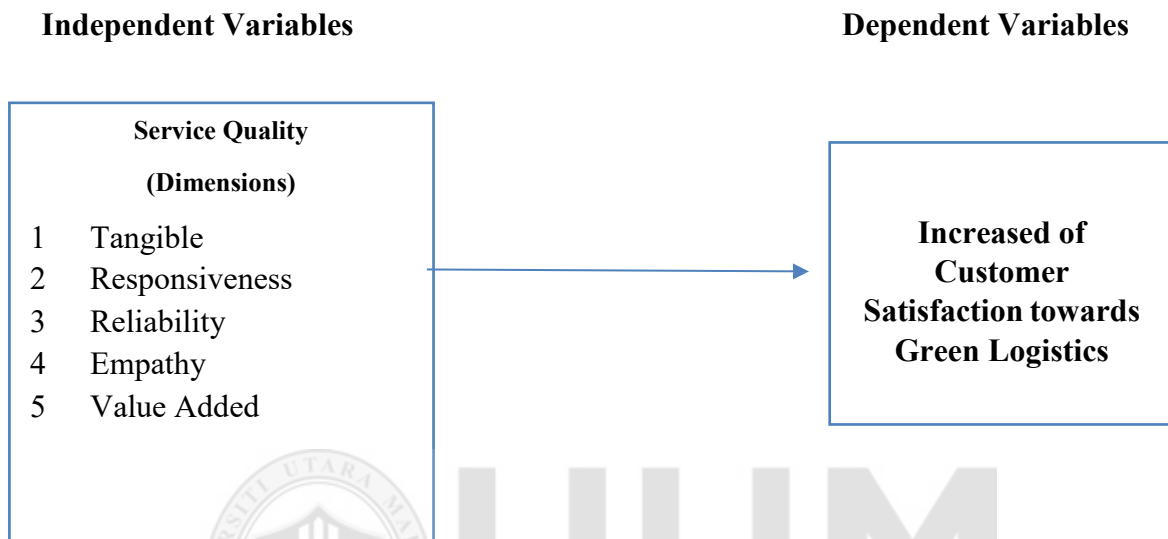


Figure 3: Conceptual Model on Relationship between Service Quality and Customer Satisfaction in Green Logistics Zeithaml & Berry, (1985).

Figure 3, above shows the services quality independent variables and dependent variable which stated by Parasuraman, Zeithaml & Berry, (1985). There are 5 independent variables which is tangible, responsiveness, reliability, empathy. Besides that, in this study value added was add to investigate how does value added helps to improve the services quality and increase the level of customer satisfaction towards green logistics.

2.9 Chapter Summary

This study decides to use the servqual component to calculate the degree of customer satisfaction against green logistics at all the logistic company in Malaysia, which is concrete, efficiency, responsiveness, assurance and awareness of the servqual dimension. This study focuses on the degree of customer loyalty with green logistics at a logistic business in Malaysia. Green Logistics concept is strives to transport and produce raw materials and goods at the lowest practicable cost while upholding the best quality and minimizing the environmental effect of the operation. It requires creativity in all levels of the supply chain, product production and, in certain cases , the final use of products.



CHAPTER 3

RESEARCH METHODOLOGY

3.0 Introduction

Research method are instruments and techniques for conducting research. Research is a term used in any kind of research to undercover interesting new truths. In section 3.1 it will discusses about the research design that will be used for this thesis. In section 3.2 it will discusses about the population and research sample and followed by section 3.3 it will discusses about the source off data collection. In the section 3.4 it will discusses about how data were be collected and followed up with section 3.5 it will discusses about the design of questionnaire. The data analysis with be discusses in section 3.6 and followed up the reliability statistics and end with up summary in section 3.8.



3.1 Research Design

Research design aims to provide a suitable framework for the study. The most important decision in the research design is the choice that should be made in the research approach as it determines how information relevant to the study will be obtained however, the research design involve many interrelated decisions (Sileyew, 2019).

The objective of this study is to test the level of customer satisfaction towards green logistics .This study is a quantitative study. Quantitative study is formal, objective and systematic process in which numerical data is used to obtain information about related subject. Quantitative descriptive research emphasizes what it is and utilizes it quantitative method to describe, record, analyze and interpret the current situation. It is based on quantification or quality and applied only to that process can be expressed in terms of quality (Kapur, 2018).

Moreover, quantitative method has been selected for this study to enable generalization the result of the selected population. This study has been conducting in a cross-sectional study, which indicates that this study has data collected at one time. In addition, this research method has the number of advantages is inexpensive and taking less amount of time to collected data which all the data can be collected at the same time (Kapur, 2018).



3.1.1 QUALITATIVE

The qualitative is a process of gathering, examining, and interpreting non-numerical data, such as language, is known as qualitative research. Qualitative research may be conducted to better understand how people interpret and give meaning to their social experiences.

This type of material can be gathered through in-depth of interviews or diary entries, which can then be examined using grounded theory or thematic analysis. The qualitative research also focuses on a variety of methodologies and takes an interpretive, naturalistic approach to its subject. This implies that qualitative researchers investigate phenomena in their natural environments while attempting to explain phenomena in terms of the meanings that individuals assign to them (Denzin and Lincoln 1994).

3.1.2 QUANTITATIVE

The quantitative research allows for infinite interpretation and creativity. The researcher does not simply collect reams of empirical data during the study and then quickly write up his or her findings. There is a variety of methods which is including content analysis, grounded theory, thematic analysis and discourse analysis, can be used to interpret the data qualitatively (Braun & Clarke, 2006). Besides that, theme analysis is one qualitative strategy that involves locating latent or explicit ideas in data. Once the data has been coded, themes frequently start to show up. Quantitative method are suitable to use or be perform for this research due to the world pandemic covid -19 which the researcher have limitation and this method is more suitable by preparing Google form .



3.2 Population and Research Sample

The population of this research is mainly focus of the operator in Logistics Company in Malaysia which focuses on Kedah and Penang it is because most of the Kedah state have many logistics company as a best services provider benefit from Penang as an international trade logistics. This research mainly focuses on the logistics company operator it is because they know their daily working task and more have knowledge in the logistics floor. The population of the study it refers to all participants that qualify for a study (Japheth A. Yaya, 2014). A sample is a subset of the population being studied. The researcher had distributed the questionnaire for 290 people and get return back answer from 200 people. From the 200 respondents only 150 people data were collected, it is because around 50 people had incomplete answer their questionnaire. It presented the larger population and is used to draw inferences about that population. The total 150 worker is from Logistics Company at Kedah regardless gender, race, religion, and nationality. As per Krejcie and Morgan in (1970) "A recipe for deciding example size, which initially showed up in 1960, has come up short on table for simple reference. This study provides a function graph and a table of values that make it simple to determine the size of the sample required to be representative of a given population. As a result, research will be conducted on 150 respondents who are operators of logistic companies and will serve as a sample because they are familiar with their day-to-day operations as service providers.

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION									
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
"S" is sample size]

Krejcie, Robert V., Morgan, Daryle W., "Determining Sample Size for Research Activities", Educational and Psychological Measurement, 1970.

Table 3.1 Sample Size Of Population

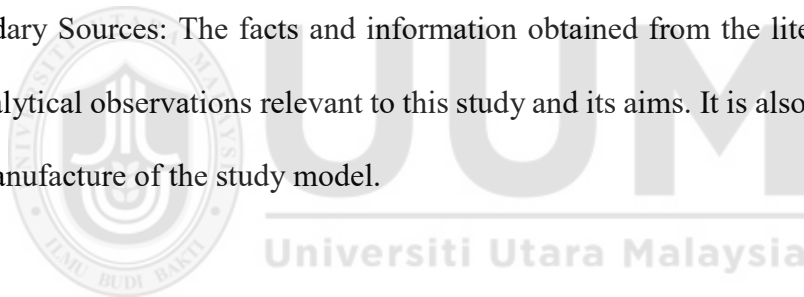
3.2.1 Unit of Analysis

Unit of analysis refers to the level of aggregation of the data collected during the subsequent data analysis stage. This research considered the logistics operator in Kedah and Penang is the unit of analysis. Hence, the unit analysis of the research is individual.

3.3 Data Source: Primary and Secondary Data

The current research methodology is mainly focused on two types of data sources required to carry out this study:

- I. Primary Source: The details needed for the final questionnaire of the study to be circulated to the logistic business operator in Kedah and Penang. In order to determine the appropriateness of the instrument and the limitation and the identity of the most relevant elements to be included in the final questionnaire, the final version includes (29) communicated questions.
- II. Secondary Sources: The facts and information obtained from the literature review and the analytical observations relevant to this study and its aims. It is also used in the design and manufacture of the study model.



3.4 Data Collection

The approach of this study is using the survey method which based on the questionnaire and the research hypothesis construct based on research question. In this research used the quantitative analytical approach, which is a primary data method to analyze data. According to the Hox and Boeije (2005), explained that the primary data is a first-hand data gathering by researcher for specific research purposes. The data were gathered through survey questionnaires at logistics company operator from Kedah and Penang state because questionnaire is an applicable and preferable approach to collect such a huge quantitative data. The researchers collect the primary data from customer through the Google form. The questionnaire 290 will be distributed through Google form and 150 respondents will be choose as the sample. After the data are collect, it will run in the SPSS Statistical Analysis Software version 25.

3.5 DESIGN OF QUESTIONNAIRE

The data for the research were gathered through a structured questionnaire. The survey questionnaire was adapted from the journal “Dimension of Service Quality and Customer Satisfaction: Banking Sector” by Revathi and Saranya (2016). In this research, the questionnaire was separated into seven sections. The first section is concerning demographic information of respondents such as gender, age, education background, position, and race. The second section is the tangibility of green logistics. For example, the transport condition of the logistics company.



The third section is the reliability of green logistics. For example, whether the logistics company implement reverse logistics. The fourth section is the responsiveness green logistic. For instantly, whether the customers receive immediate service from Logistics Company without waiting for long time and the product of the logistic company. The fifth section is the empathy of green logistics. For example, the logistics company play an important role on environment problem. The table 3.5.1 below has shown the breakdown of the questionnaire.

Table 3.5.1: Distribution of Questionnaire Item.

Section	Variable	Number of Question
1	Demographic.	1. Gender 2. Age 3. Race 4. Position 5. Education background
2	The Tangibility of Green Logistics	1. The Logistics Company has upgraded their transportation equipment and system. 2. The logistics company have a well maintained on their transportation. 3. Does the logistics company implement renew energy? 4. Does the logistic company transportation produce a huge volume of carbon monoxide

3	The Reliability of Green Logistics	1. Most of the logistics company wastes were well managed. 2. Does the logistic company implement reverse logistic? 3. The Logistics Company aware and implement kaizen for improve green environment? 4. Does the logistic company implement 5's?
4	The Responsiveness of Green Logistics	1. I receive immediate service from Logistic Company without waiting for long time. 2. I must wait to get the logistics company transportation service for long time 3. Does the logistic company implement green technology rather than using paper for their document? 4. The product produces from the logistics company can be reuse and recycle.
5	The Empathy of Green Logistics	1. The logistics company always care about environment. 2. The logistics company implement recycle system. 3. Does the logistic company implement green packaging?

		4. The logistic company design green product.
6	The value added	1. Does value added help to improve the quality at Logistics Company? 2. Does value added help to reduce cost? 3. Value added help to reduce environment issues. 4. By implement value added it helps to create a green environment.
7	The customer Satisfaction Towards Green Logistics	5. I feel so much efforts taken by Logistics Company to satisfy the demand of customers. 6. I satisfied with the well implementation of the logistic company towards green logistic. 7. My feeling towards the logistic company service can be best described. 8. Overall, I satisfied with the logistic company

Data measurement technique used in this research is to ensure Likert Scale appropriate to the objective to be achieved. Data measuring technique used is five-point Likert Scale measure with the anchors ranging from ‘strongly disagree’ to ‘strongly agree’. Table 3.5.2 below show the five-point Likert Scale McLeod (2008) used in the study. The reason why

likert scale measure were used in this research it is because the likert scale method is easy for the researcher to collect data according to the respondent how do they measure it.

Table 3.5.2: Likert Scale

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

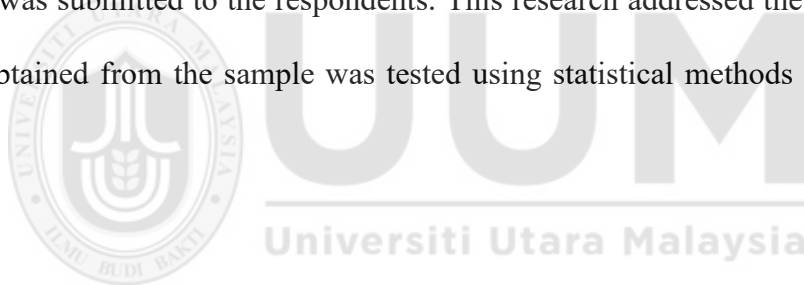
(McLeod (2008))



3.6 Data Analysis

Statistical Kit for Social Sciences (SPSS) version 25 has been used for statistical analysis. SPSS Statistics is a software package that is used for statistical analysis. The SPSS functionalities used in this research to analyse data such as the Cronbach Alpha test, the normality test, the descriptive statistical reports and the correlation analysis.

The SPSS can conduct incredibly complex knowledge management and interpretation with simple instructions. SPSS may record details and use the analysis to produce structured data, outlines and graphs of appropriations and patterns, expressive calculations, and contribute to complex statistical assessments. Both elements and variables were coded before the questionnaire was submitted to the respondents. This research addressed the responses and the information obtained from the sample was tested using statistical methods such as frequency distribution.



3.7 Reliability Statistics

The Cronbach's alpha coefficient-based measures' dependability. As per Sharma (2016), Cronbach's alpha decides the interior consistency or normal relationship of things in a review instrument to check its unwavering quality. While reliability does not depend on an instrument's validity, reliability is concerned with the instrument's ability to measure consistently. The alpha value is influenced by the number of test items, their interrelationship, and dimensionality. Cronbach's alpha is used to determine the question's reliability in this study.

Following the reliability test, the face validity should be conducted using confirmatory factor analysis. Hence, the assessment for validity was conducted on a drafted questionnaire. Face validity involves the respondents looked at the arrangement and items in the questionnaire and agreed that the test is a valid measure.

Table 3.7:1 Selection of coefficient of alpha to observe the extent of reliability of instrument.

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 3.7.1

Table 3.7.2 show the ranges of coefficient of alpha to observe the extent of reliability of instrument. Also, as the value of coefficient of alpha increase the instrument tends to be more reliable. There is the lower acceptance limit of Cronbach's alpha is 0.7 to 0.9 (Sharma, 2016).

Table 3.7.2 Reliability statistics test.

Variable	Cronbach's Alpha	N of Items
Tangibility	0.670	4
Reliability	0.801	4
Responsiveness	0.734	4
Empathy	0.873	4
Value Added	0.801	4
Customer Satisfaction	0.871	4

The constructs' reliability ranges from 0.670 to 0.873; all fall within the acceptable range outlined in the literature, except for the tangibility variable, which exhibits poor internal consistency. This is because of the respondent's inconsistent responses. "Several of the values calculated for Cronbach's alpha are below the acceptable values of 0.7 or 0.6," according to Taber (2017), a cross-national study looking at student interests in science. For instance, the "interest in domestic activities" factor was based on a subset of three items with an alpha of 0.446 and the "interest in school science" factor was based on a subset of five questionnaire items with a Cronbach's alpha of 0.502. The authors argued that "slightly increasing the number of items would lead to acceptable values for Cronbach's alpha" to justify continuing their analysis with the data collected during these administrations.

3.8 CHAPTER SUMMARY

To conclude chapter three, methodology have plays important role instruments and techniques for conducting research. This methodology studies help researcher to conduct the right method to gain the data is accurate and valid to be used. The researcher chooses logistics company as a population and logistics operator as a sample to conduct the study on the level of customer satisfaction toward green logistics. The researcher will used SPSS version 25 to analyze the data and in chapter 4 it will discuss about the result of the respondent.



CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter presents the empirical findings of this study. In section 4.1 it will discuss about the data preparation that will be used for this thesis. In section 4.2 it will discuss about the normality test and followed by section 4.3 it will discuss about the descriptive analysis. In the section 4.4 it will discuss about descriptive analysis of variables followed up with section 4.5 it will discuss about correlation analysis. The hypothesis testing will be discussed in section 4.6 and followed up with the independent sample T-test in section 4.7. In section 4.8 it will discuss about the summary of hypothesis results.

4.1 Data Preparation

Data preparation has been keying in into SPSS Statistical Analysis Software Version 25 to analyses. There are 150 respondents who replied from overall 290 respondents to the questionnaire which is a 60. % of response rate. After that, SPSS Statistical Analysis Software version 25 runs the data for the analyses:

- i. Generating descriptive statistical reports.
- ii. Generating correlation analysis.
- iii. T-Test

4.2 Normality Test

The normality test is used to see if a data set fits the normal distribution model. The statistical tests for normality are skewness and kurtosis. The degree of asymmetry in a variable's distribution is measured by its skewness. The skewness of typical dispersion is even equivalent to zero for ordinary information. The data are unquestionably non-normal if the test used to determine the value differs significantly from zero (Johann Karl Gauss, 1777). A measure of a distribution's peak is kurtosis. For a perfectly normal distribution, the excess kurtosis should be zero. This indicates that the response pattern is considered normal when kurtosis and skewness are close to zero. According to NCSS Statistical Software (2018), non-normal data exist when both the skewness and kurtosis values are greater than or equal to +1.

Table 4.2: Skewness and Kurtosis.

Variable	Skewness	Kurtosis
Tangibility	-1.123	2.416
Reliability	-0.532	-0.056
Responsiveness	-0.678	0.410
Empathy	-0.605	0.682
Value Added	0.028	0.362
Customer Satisfaction	-0.359	-0.078

Table 4.2. shows the skewness and kurtosis of tangibility variables are -1.123 and 2.416, it is normal data because the value is not far from acceptable value. The reliability, responsiveness, value-added, empathy, and customer satisfaction data are normal. This is because the skewness and kurtosis value is near zero it is considered normal. The value of tangibility is the highest compared with other variable and this shows customer's

dissatisfaction with green logistics. This problem may occur due to the transportation services and the condition of the transport is in middle of the customer satisfaction it is because more of the customer care about environment issues and the logistics transportation may cause the increase of carbon monoxide and cause customer dissatisfaction. For the other variable, it shows that the customer is very satisfied because the data shows that the value is acceptable.



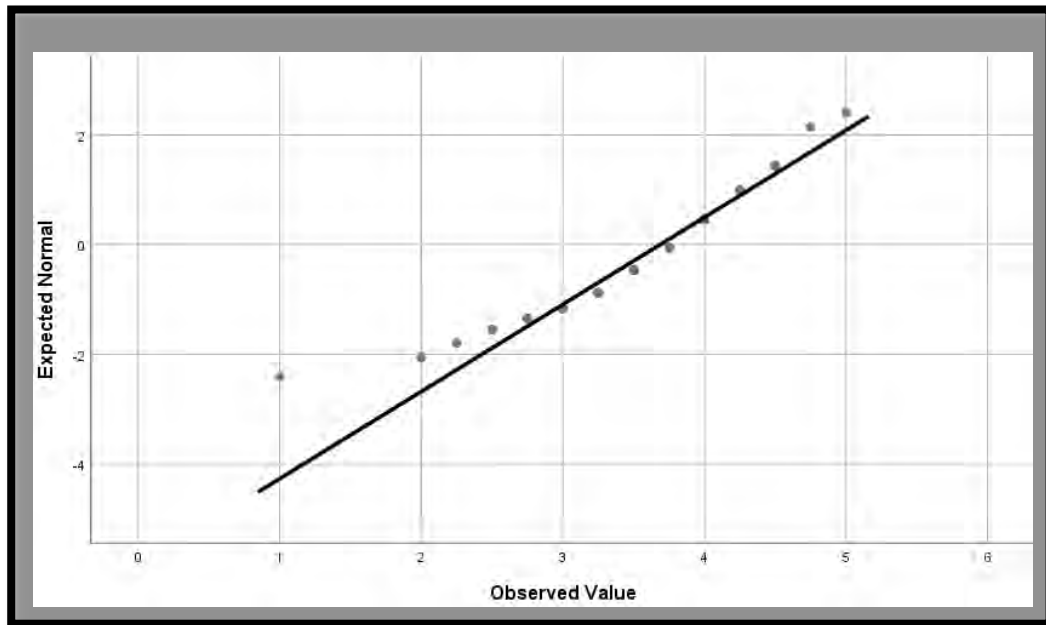


Figure 4.2.1: Normality test of tangibility variable.

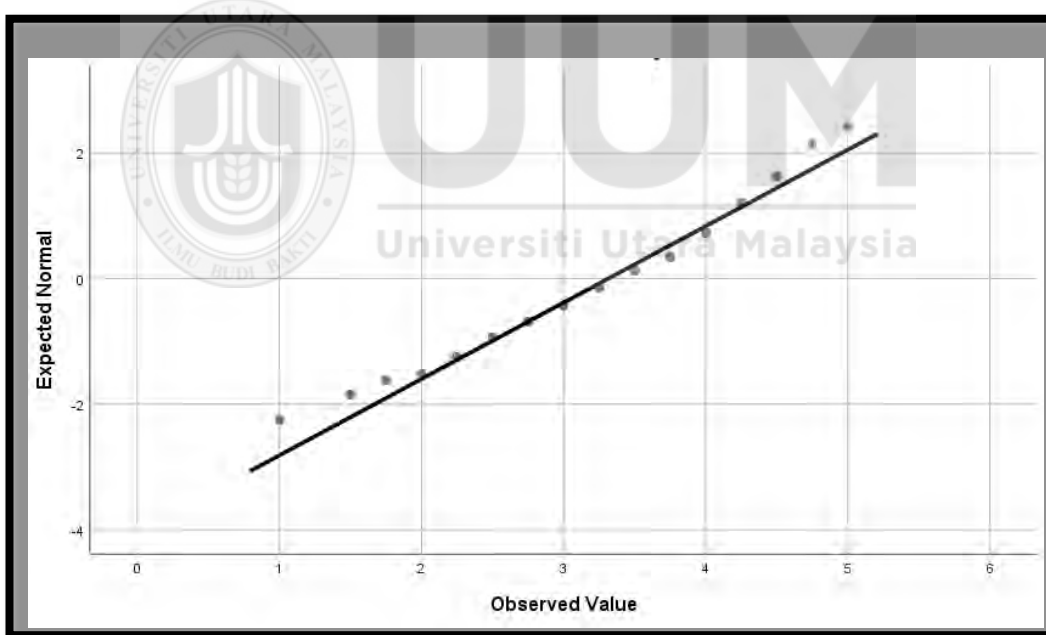


Figure 4.2.2: Normality test of reliability variable.

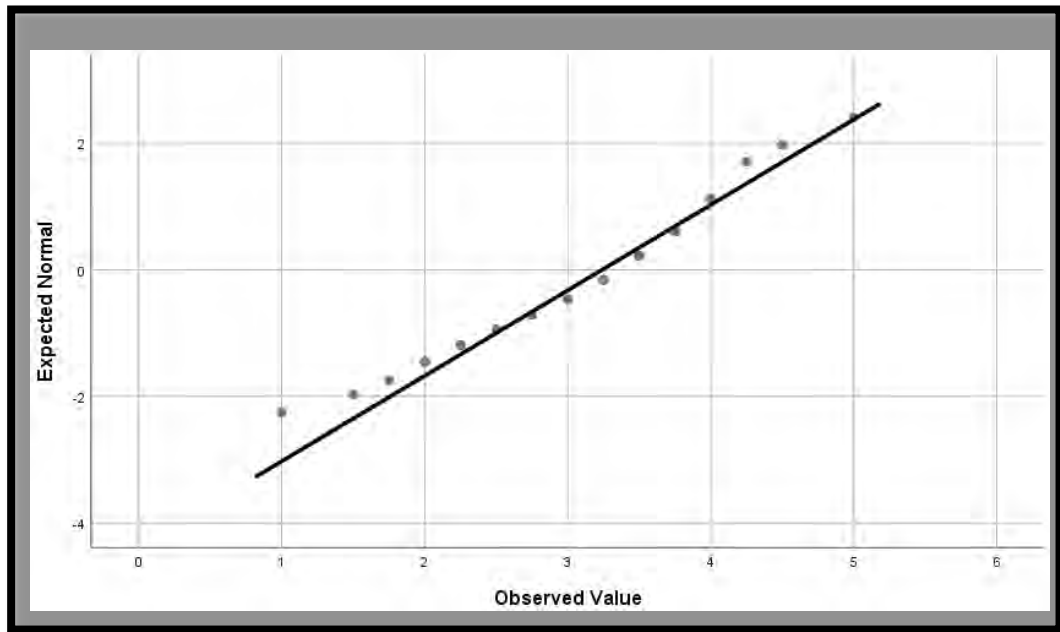


Figure 4.2.3: Normality test of responsiveness variable.

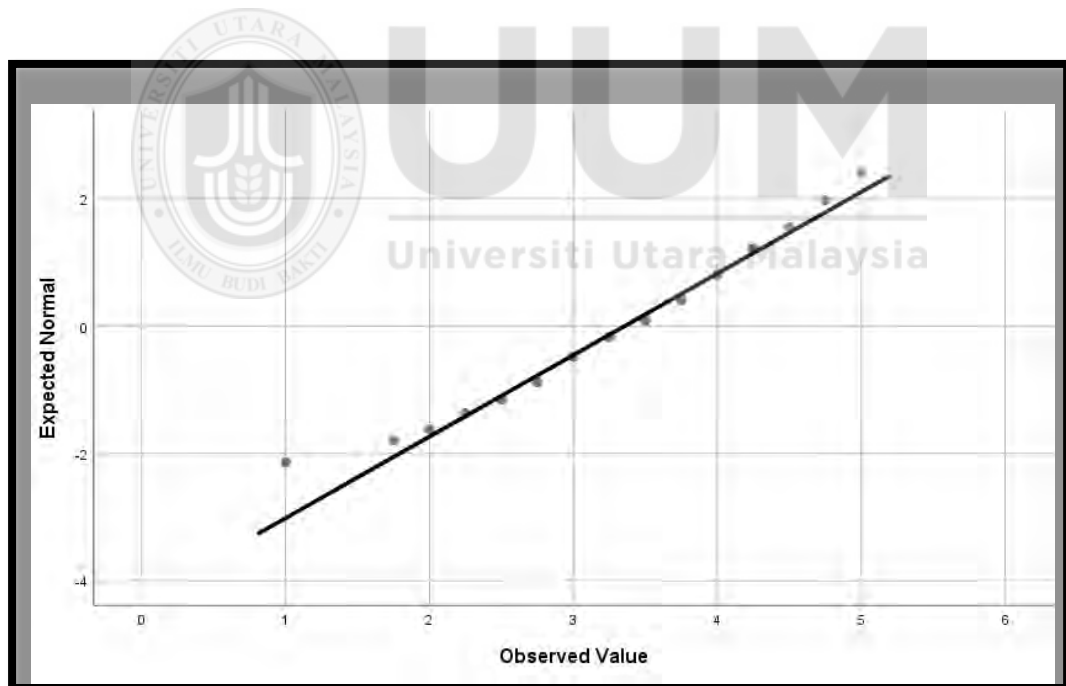


Figure 4.2.4: Normality test of Value-Added variable.

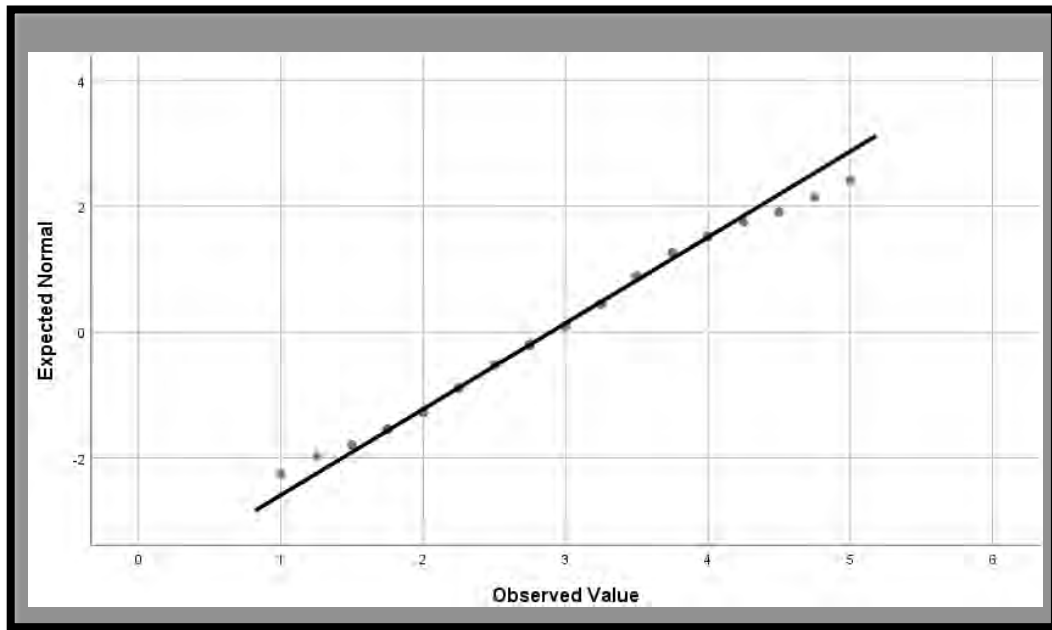


Figure 4.2.5: Normality test of empathy variable.

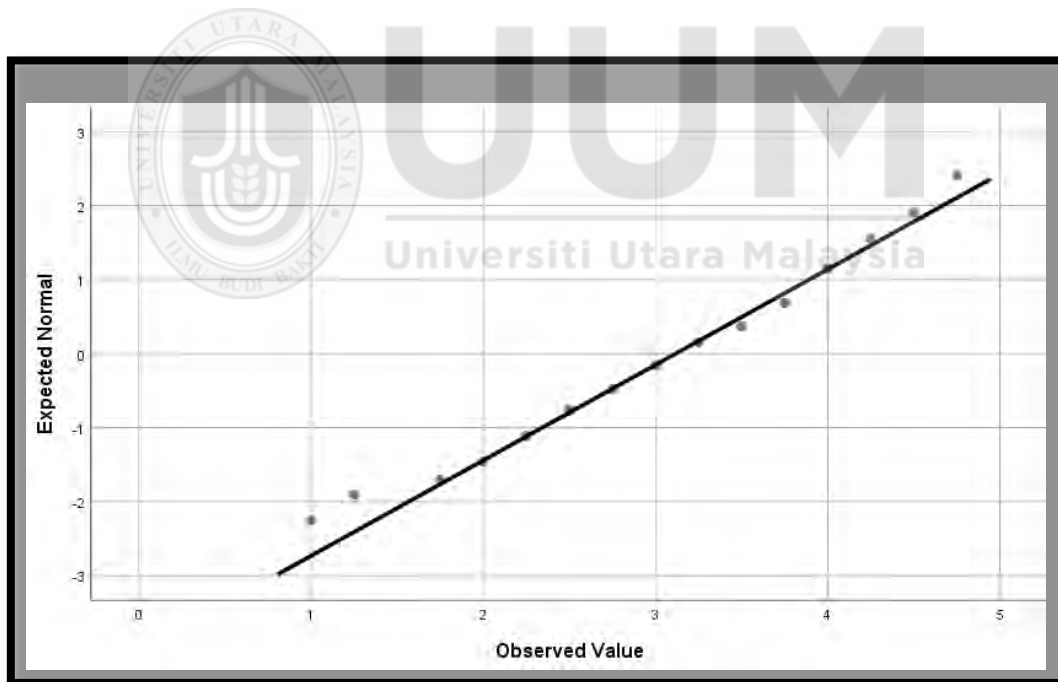


Figure 4.2.6: Normality test of Customer satisfaction towards green logistics variable.

4.3 Descriptive Analysis

4.3.1 Descriptive Analysis of Respondents

Table 4.3.1 shows the demographic profiles of the study which include gender, age, race, academic qualification, and position. The sample profiles showed a higher number of male (113) respondents than female (37), representing a ratio of 75% and 25%, respectively as because most of the logistics employee is male than female. The rest of the demographic variables describe in Table 4.3.1.

Table 4.3.1 Demography profile

Variable	Frequency	Percentage (%)
Gender		
Male	113	75
Female	37	25
Age		
20 and below	47	31
21-25	54	36
26-30	22	14
31 and above	27	18
Race		
Malay	109	72
Chinese	6	4
Indian	32	21
Christian	3	2
Qualification		
Diploma and below	121	80
Degree	22	14

Master	7	4.7
Position		
Clerk	6	4
Executive	14	9.4
Intern	11	3.3
Manager	4	2.6
Material Handler	16	11
Operator	75	75
Supervisor	12	8
warehouse assistant	12	8

4.3.1 Gender

As depicted in Figure 4.3.1, most of the respondent is male (75%), and the remaining is female (24%). Figure 4.3.1 shows that most of the logistics employees in male rather than female it is because the job scope and description are more suitable for a male employee it is because they deal with a heavy job during their operations.

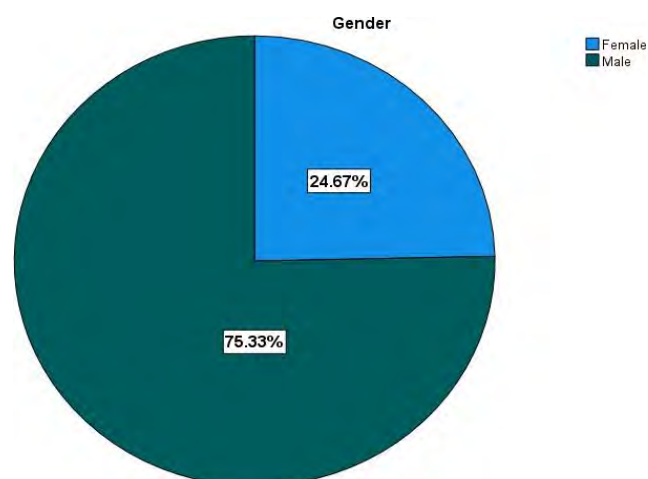


Figure 4.3.1: Percentage Of Respondents By Gender

4.3.2 Age

As depicted in Figure 4.3.2, shows most of the respondents is in the age 20 to 25 years (31.33%) and the second is the aged 26-30 years (36%), the third is from 20 and below years old (15.2%) and the least is the age of 30 years and above (6%). Figure 4.3.2 shows most of the employee's ages are between 20 to 25 years it is because warehouse materials handle age are more suitable for them because of stamina of working due to handling heavy work and also they have experience in the logistic field.

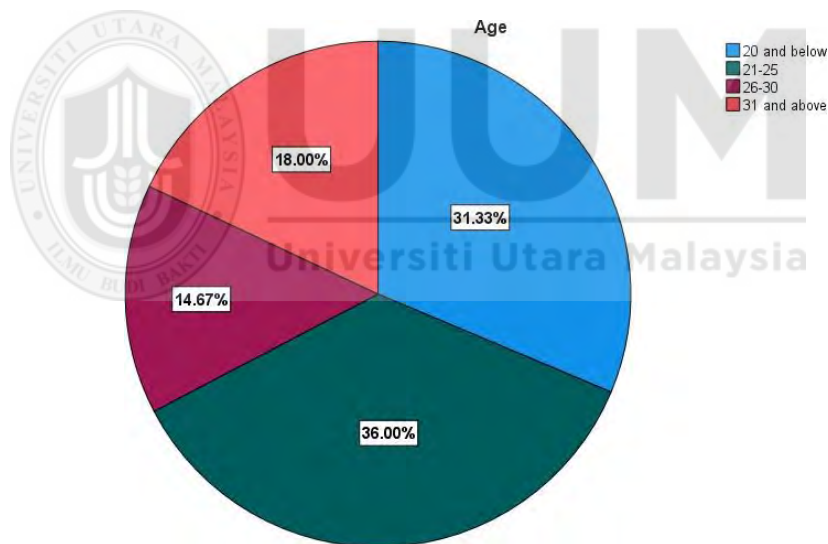


Figure 4.3.2: Percentage Of Respondents By Age

4.3.3 Race

As depicted in Figure 4.3.3, most of the respondent is Malay (72.86%). The second majority is Indian (21.33%) and the remaining is Chinese (4.00%), Christian (2.0%). From the below it shows that more of the warehouse employee is Malay because in Malaysia the biggest ethic is Malay compare the second highest is Chinese and the highest is Indian

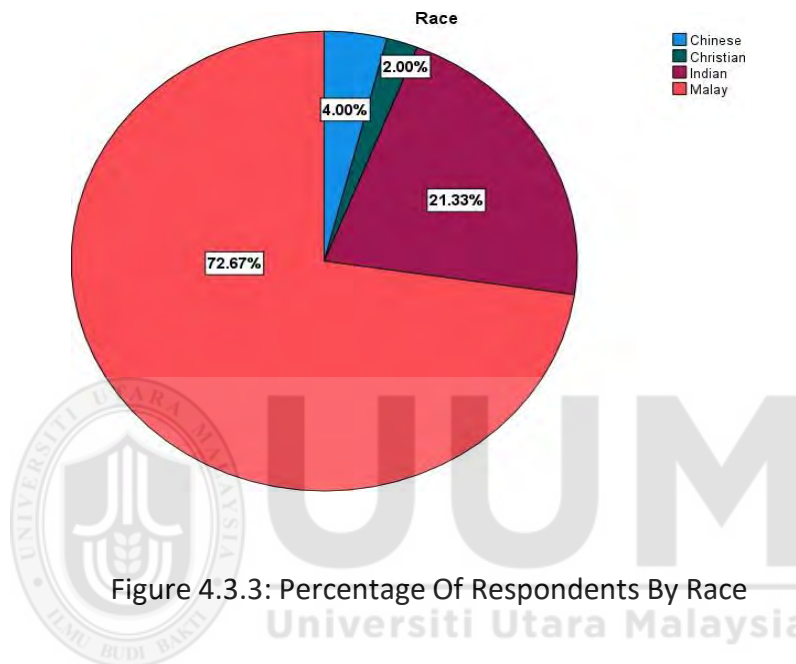


Figure 4.3.3: Percentage Of Respondents By Race

4.3.4 Qualification

As depicted in Figure 4.3.4, show most of the respondents is Diploma and below (80.67%). The second majority is Degree (14.67%) and the remaining is Master (4.67%). From the below graph it shows that most of the employee academic background is diploma and below, it is because for the below qualification most is SPM student which during their waiting for the result they will go for a part time work and for the diploma student it is because after their complete study they would like to find working experience.

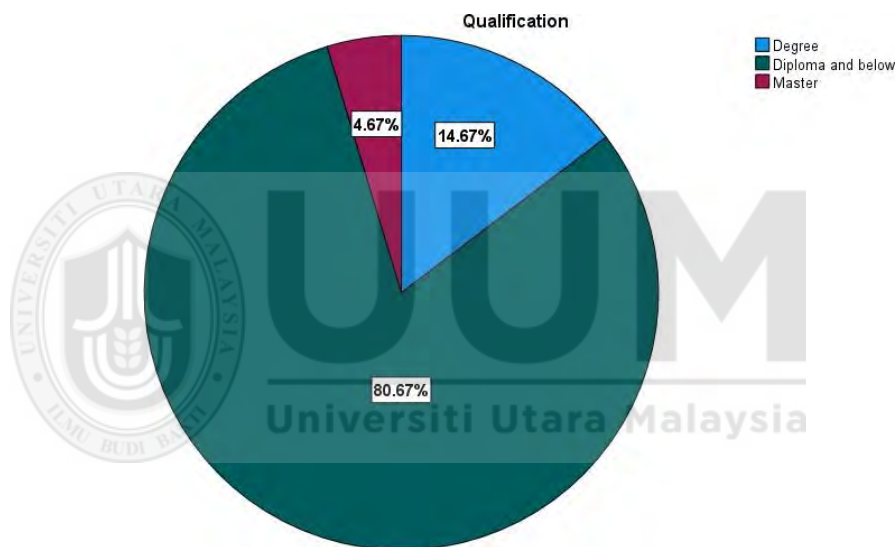


Figure 4.3.4: Percentage Of Respondents By Qualification

4.3.5 Position

Figure 4.3.5 shows that most of the respondents is operator (49.9%). The second majority is material handler (11.00%), and the remaining is third majority is executive (9.4%), and other position were show below picture were mentioned. From below graph it can say that most of the logistic company respondent are operator because of know their daily job and process during working. They have more experience in their daily operation.

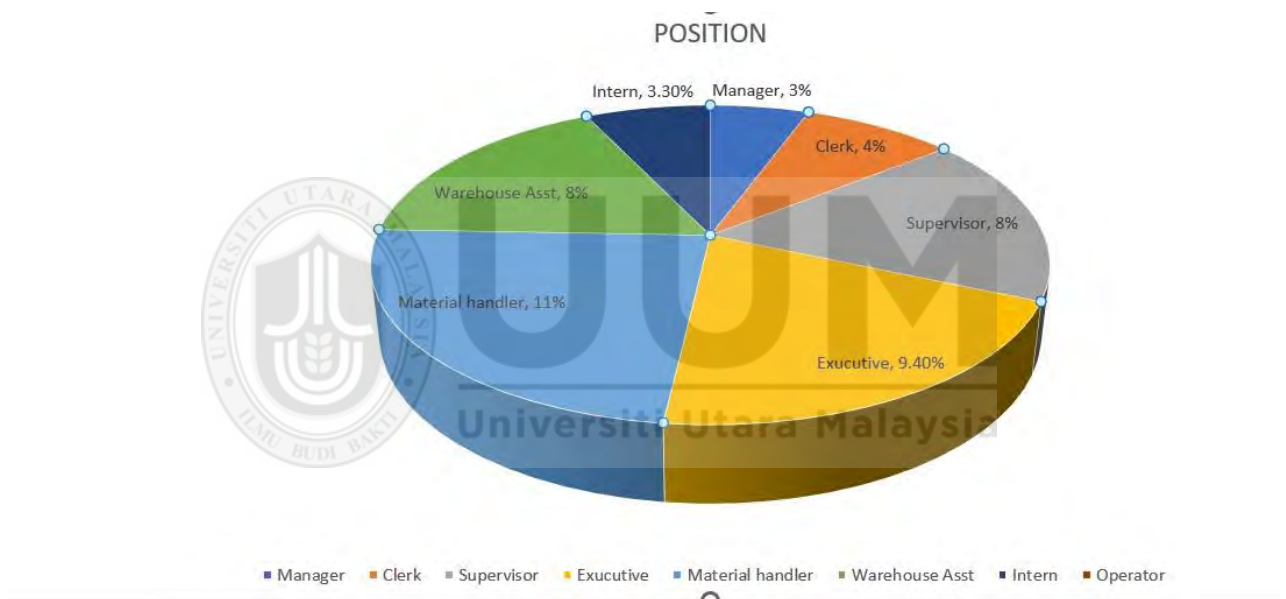


Figure 4.3.5: Percentage Of Respondents By Position

4.4 Descriptive Analysis of Variables

The mean of each variable is presented in Table 4.4.1. The mean ($\bar{x}$) ranges from 2.8984 to 3.1179 out of a possible value of 5.0 on the scale, demonstrating an agreed extent of satisfaction by the respondents to measure the variable of tangibility, reliability, responsiveness, value-added, empathy, and customer satisfaction toward Green Logistics. Table 4.4.1 its shows that the higher means is the tangibility and impact of customer dissatisfaction towards green logistics.

Table 4.4.1: The mean of each variable.

Variables	Mean $\bar{x}$
Tangibility	3.6870
Reliability	3.3171
Responsiveness	3.2419
Empathy	3.3557
Value Added	2.8984
Customer Satisfaction	3.1179

4.5 Correlation Analysis

A bivariate analysis called correlation measures the strength of the relationship between two or more variables as well as its direction. The value of the correlation coefficient ranges from +1 to -1 in terms of how strong the relationship is. A value of less than one indicates that there is a perfect correlation between the two variables. The relationship between the two variables will become less strong as the correlation coefficient approaches zero. The coefficient's sign indicates which way the relationship is going; Positive relationships are represented by (+) signs, while negative relationships are represented by (-).

Measure four kinds of correlations in statistics: (Statistics Solution, 2018) Point-Biserial correlation, Spearman correlation, Kendall rank correlation, and Pearson correlation. This study measures the relationship between the Green Logistics variable's tangibility, reliability, responsiveness, value-added, empathy, and customer satisfaction using Pearson correlation with a level of significance of alpha equal to 0.01.

Pearson correlation (r) is the most widely used correlation statistic to measure the degree of the relationship between linearly related variables. A relationship is linear when a change in one variable is associated with a proportional change in the other variable (Minitab Express Support, 2017). Table 4.2 shows there is a significant relationship between tangibility, reliability, responsiveness, value-added, empathy, and customer satisfaction towards green logistics variable. The correlation (r) tangibility, reliability, responsiveness, Value added, empathy, and customer satisfaction are 1 with the n is 150. The correlation between tangibility and Customer satisfaction Toward Green Logistics is $r = 0.493$, the correlation between reliability and customer satisfaction towards green logistics is $r = 0.690$, the correlation between responsiveness and customer satisfaction towards green logistics is $r = 0.646$, the correlation of value-added and customer satisfaction towards green logistics is $r = 0.688$, and correlation of empathy and customer satisfaction towards green logistics is $r = 0.782$). The analysis indicated that the level of customer satisfaction towards green logistics has a highly significant correlation. From below table it shows that relationship between the variable that tangibility have low relationship, reliability, responsiveness and assurance have average relationship, responsiveness, empathy and customer satisfaction are high relationship.

Table 4.5.1: Correlations between service quality and customer satisfaction.

Correlations

		Tangibility	Reliability	Responsiveness	Assurance	Empathy	Customer Satisfaction	
Tangibility	Pearson Correlation	1	.594**	.571**	.620**	.512**		.493**
	Sig. (2-tailed)		0	0	0	0		0
	N	150	150	150	150	150		150
Reliability	Pearson Correlation	.594**	1	.647**	.711**	.654**		.690**
	Sig. (2-tailed)	0		0	0	0		0
	N	150	150	150	150	150		150
Responsiveness	Pearson Correlation	.571**	.647**	1	.722**	.788**		.646**
	Sig. (2-tailed)	0	0		0	0		0
	N	150	150	150	150	150		150
Empathy	Pearson Correlation	.620**	.711**	.722**	1	.735**		.688**
	Sig. (2-tailed)	0	0	0		0		0
	N	150	150	150	150	150		150

Value added	Pearson Correlation	.512**	.654**	.788**	.735**	1	.782**
	Sig. (2-tailed)	0	0	0	0		0
	N	150	150	150	150	150	150
Customer Satisfaction	Pearson Correlation	.493**	.690**	.646**	.688**	.782**	1
	Sig. (2-tailed)	0	0	0	0	0	0
	N	150	150	150	150	150	150

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

4.6 Hypothesis Testing

Results of hypotheses testing are explained in detail in the following subsections.

4.6.1 Regression Analysis

Multiple Regression analysis was performed to test the following hypotheses.

There is significant relationship between tangibility and customer satisfaction towards green logistics service quality.

- H1: In green logistics, there is a strong relationship between customer satisfaction and tangibility.
- H2: In green logistics, there is a strong relationship between responsiveness and customer satisfaction.
- H3: In green logistics, there is a strong relationship between reliability and customer satisfaction.
- H4: In green logistics, there is a strong relationship between empathy and customer satisfaction.
- H5: In green logistics, there is a strong relationship between value added and customer satisfaction.

As depicted on Table 4.6.1, the F-statistics (96.429) is large and the corresponding p-value is highly significant ($p = 0.000$, $p < 0.05$). This indicates that the value of the estimated linear regression model line is not equal to zero confirming that five is a linear relationship between customer satisfaction towards green logistics. The R-squared of 0.540 implies that the five predictors' variables explain about 54% of the variance in green logistics. This is quite a good and respectable result.

From five dimensions of customer satisfaction towards green logistics, tangible ($b = 0.201$, $p < 0.05$), responsiveness ($b = 0.202$, $p < 0.05$), reliability ($b = 0.218$, $p < 0.05$), empathy ($b = 0.206$, $p < 0.05$), and value added ($b = 0.370$, $p < 0.05$) are positively significant with customer satisfaction towards green logistics. Thus, H1, H2, H3, H4 and H5 were accepted. From the below table it shows that all the variables have a signification relationship towards customer satisfaction towards green logistics and the reading of the significant is 0.000.

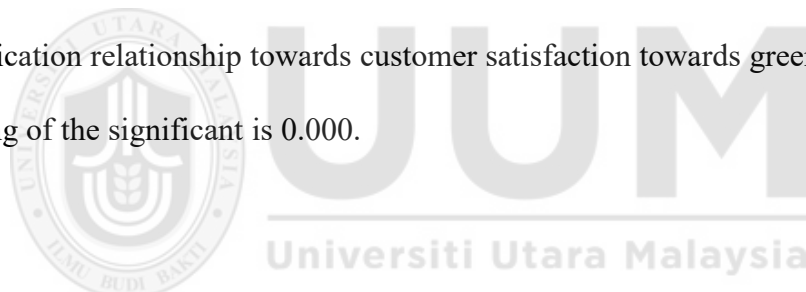


Table 4.6.1 Result of Regression analysis

	Standardized Beta	T	Sig.
tangible	0.201	3.354	0.000
responsiveness	0.202	3.863	0.000
reliability	0.218	3.948	0.000
empathy	0.206	3.453	0.000
value added	0.370	7.067	0.000
Sig	0.000		
F	96.429		
R Square	0.540		
Adjusted R Square	0.535		

4.7. Independent Sample T-Test

Independent Sample T-Test was performed to test the following hypothesis:

There is a significant mean difference in customer satisfaction towards green logistics between male and female respondents.

Based on Table 4.7.1, Levene's test for equality of variances was found to be violated for the present analysis ($F = 0.467$, $p = 0.495$). Thus, the assumption of homogeneity of variance was not met. The result shows a significant difference in customer satisfaction toward green logistics between male and female respondents ($p = 0.037 < \alpha$). The result indicates that significant mean difference in customer satisfaction towards green logistics between male and female respondents.

Table 4.7.1 T-test

Satisfaction	f	Sig.	t	df	Sig.(2-tailed)	Mean Difference
Equal variances assume	0.467	0.495	2.096	248	.037	.13590
Equal variances not assumed			2.098	247.189	.037	.13590
		N	Mean			
Male		113	4.2128			
Female		37	4.0769			

4.8 Summary of Hypothesis Results

As depicted in Table 4.5, out of five hypotheses in this study, all of them were supported.

Table 4.8 Summary of hypothesis result

Hypothesis	Relationship / Difference	Results
H1	There is a significant relationship between Tangibility And Customer satisfaction towards Green Logistics service quality.	Acceptable
H2	There is a significant relationship between Reliability And Customer satisfaction towards Green Logistics service quality.	Acceptable
H3	There is a significant relationship between Responsiveness and Customer satisfaction towards Green Logistics service quality.	Acceptable
H4	There is a significant relationship between Value-added And Customer satisfaction towards Green Logistics service quality.	Acceptable
H5	There is a significant relationship between Empathy and Customer satisfaction towards Green Logistics service quality.	Acceptable

4.9 Chapter Summary

In this chapter four, examined on the investigation of information collected from the logistics company respondents. Unshaken quality tests show the validity of the factors tested in this survey. Secondly, the questionnaire results were presented in frequency analysis that contains demographic of the respondents. Moreover, based on the results it also recorded on a filter questions, generating correlation analysis, correlation analysis, and also the T- test analysis. In this chapter, it will end with the description of the results. The results of this chapter review are important to ensure that accurate conclusion are drawn in Chapter 5 and recommendation are made based on the key finding presented in this chapter.



CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.0 Introduction

This final chapter presents the summary or overview of the research well as the discussion and conclusion of this research. On Section 5.1 discuss about of the discussion of the overall report and section 5.2 research distributions. Section 5.3 discusses about limitation and future research and the final section is 5.4 is the conclusion of this thesis.

5.1 Discussion

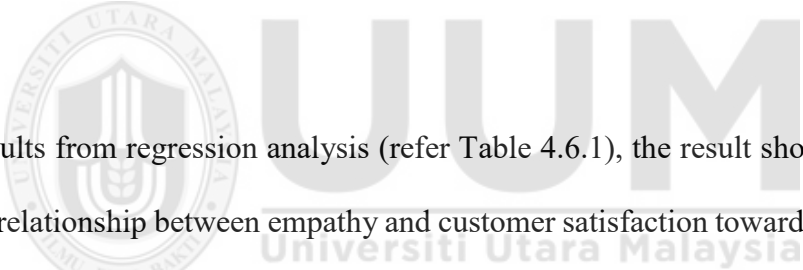
The main reason of this research is study the level of customer satisfaction towards green logistics in Kedah and Penang. The research framework theorized that how does services quality influence customer satisfaction. The independent variables (IV) in this study are service quality variables which are tangibility, responsiveness, empathy, reliability and value added and meanwhile the dependent variable (DV) customer satisfaction towards green logistics. Specifically, this study has examined the variable of services quality that influenced the level customer satisfaction towards green logistics.

Based on the research, the five independent variable of this research which is tangibility, responsiveness, empathy, reliability and value added has a positive relationship with the dependent variable. The positive relationship of independent and dependent variable form supported the research hypothesis.

Based on results from regression analysis (refer Table 4.6.1), the result shows a significant and positive relationship between tangibility and customer satisfaction towards green logistics ($b = 0.201$, $p < 0.05$). The result indicates that tangibility plays an important role in maximizing the level of customer satisfaction towards green logistics. This result of tangibility finding is similar to previous studies. According to Revathi and Saranya (2016), tangibility helps to improve customer satisfaction towards green logistics. The previous study finding support this research objective. Besides that, according to Parasuraman, Zeithaml, and Berry (1988), "tangible" refers to the physical appearance of staff members, equipment, and facilities. The equipment is referred the logistics company has to upgrade the truck equipment such as using renewable energy and need to do study the truck layout to ensure they can reduce the movement of the truck which can help to reduce carbon monoxide emission.

Based on results from regression analysis (refer Table 4.6.1), the result shows a significant and positive relationship between responsiveness and customer satisfaction towards green logistics ($b = 0.202$, $p < 0.05$). The result indicates that responsiveness plays an important role in maximizing the level of customer satisfaction towards green logistics. This result of responsiveness finding is similar to previous studies. According to Revathi and Saranya (2016), responsiveness helps to improve customer satisfaction towards green logistics. The previous study finding support this research objective. Besides that, referred to the definition of responsiveness is a willingness to help the customer and provide prompt service Parasuraman, Zeithaml, and Berry (1985). As for service times is the most important reason for satisfaction according to the customer it had a significant relationship with customer satisfaction. Most of the logistic industry does need to implement reverse logistics which, by using reverse logistics, may allow the logistic company to use digital technologies that help to increase paperless reduction.

Based on results from regression analysis (refer Table 4.6.1), the result shows a significant and positive relationship between reliability and customer satisfaction towards green logistics ($b = 0.218, p < 0.05$). The result indicates that reliability plays an important role in maximizing the level of customer satisfaction towards green logistics. This result of reliability finding is similar to previous studies. According to Revathi and Saranya (2016), reliability helps to improve customer satisfaction towards green logistics. The previous study finding support this research objective. The reliability is the ability to perform the promised service dependably and accurately Parasuraman, Zeithaml & Berry, (1988). It means that the logistics company needs to implement the 3R concept which is to reuse, recycle, and reduce to ensure to reduce the environmental pollution and get customer satisfaction



Based on results from regression analysis (refer Table 4.6.1), the result shows a significant and positive relationship between empathy and customer satisfaction towards green logistics ($b = 0.206, p < 0.05$). The result indicates that empathy helps to improve the level of customer satisfaction towards green logistics. This result of empathy finding is similar to previous studies. According to Revathi and Saranya (2016), empathy helps to improve customer satisfaction towards green logistics. The previous study finding support this research objective. For empathy also had a significant strong relationship with customer satisfaction toward logistic company service quality. The term of empathy is caring individual attention, the firm provides to its customers.(Parasuraman, Zeithaml, and Berry, 1985). The reason for the result is simple, whether the logistic company does implement green packing and always care of environmental issues for get customer satisfaction.

Based on results from regression analysis (refer Table 4.6.1), the result shows a significant and positive relationship between value added and customer satisfaction towards green logistics ($b = 0.206$, $p < 0.05$). The result indicates that value added helps to improve the services quality and also improve level of customer satisfaction towards green logistics. This relationship is supported by Merriam Webster, (2016) had stated that Value added can be characterized as the amount of money that something is worth and the price or expense of something that can be obtained at a low or equal price and utility or value. Improving or implementing the value-added it could come to great customer satisfaction, and it may lead to a healthier environment between the logistics company and the customer.

In general, satisfying customers and achieving the research objective require high quality service. The same was found in Agor's (2011) study, "The relationship between customer satisfaction and service quality." One could draw the conclusion that service quality has a significant relationship with customer satisfaction from Parasuraman, Zeithaml, and Berry (1985), who state that the service quality dimension has a significant relationship with both service quality and customer satisfaction. According to Felix (2017), the previous author, customer satisfaction is correlated with service quality. Revathi and Saranya (2016). This suggests that customer satisfaction and service quality are linked. Service quality is a crucial factor in determining customer satisfaction.

Table 5.1.1: Summary of Hypothesis Testing.

Hypothesis	Statement	Result
H1	There is significant relationship between tangibility. And Customer satisfaction towards Green Logistics service quality.	Supported
H2	There is significant relationship between reliability. And Customer satisfaction towards Green Logistics service quality.	Supported
H3	There is significant relationship between responsiveness and Customer satisfaction towards Green Logistics service quality.	Supported
H4	There is significant relationship between value added And Customer satisfactions towards Green Logistics service quality.	Supported
H5	There is significant relationship between empathy and Customer satisfaction towards Green Logistics service quality.	Supported

The summary of the results shows there are significant relationship between service quality and Customer satisfaction. The independent variables are tangibility, reliability, responsiveness, Value added, and empathy. While the dependent variable is customer satisfaction towards Green Logistics variable. The result has supported all hypotheses developed before. Table 5.1.1 shows the summary of hypothesis testing.

5.2 Research Contribution

The findings of the research offer a number of significant contributions that valuable for both academicians and practitioners. The discussion of these implication is divided into two section which is theoretical and practical contribution. This study has contributed to the awareness of the customer satisfaction towards green logistics and all the logistics company worker reflected in their knowledge towards the customer satisfaction and services quality in green logistics. There a few contributions to this field of studies on awareness of the customer satisfaction towards green logistics, since this area of studies mostly never being emphasized as part of an important green logistics where it has minimal research on this field. This study shown that the important to increase the level of awareness among Logistics Company which can helps the logistics company to better understand the customer satisfaction towards green logistics with the knowledge they have. Therefore, this can help students to recognize the resources available and use it to address the needs on green logistics. With the presence of awareness in customer satisfaction towards green logistics, logistics worker can be prepared and proactive to respond as a good services provider to the customer. This creates an idea how the logistics company can engage when they have awareness and knowledge towards the green logistics. Apart from giving the contribution to the logistics company, with this study it helps the society to more aware and have knowledge on a basic resource in managing customer satisfaction towards green logistics. With this study increase their information regarding how to handle their daily operation to ensure customer satisfied with the services had been provided.

5.2.1 Theoretical Contribution

This study has important contribution to the current literature. This study provides an empirical result or testing to support SERVQUAL model developed by Parasuraman, Zeithaml and Berry (1985, 1988). SERVQUAL model is a multi-item scale designed to measure customer expectations and perceptions according to five service quality dimensions which is tangibility, reliability, responsiveness, value added, and empathy. Value added has to be implement to ensure customer satisfaction towards green logistics and continuous improvement. From this study the results shows that customer satisfaction and services quality have a relationship and value added helps the logistics company to improve their daily operation to ensure customer are satisfied with the services had been provided.

5.2.2 Practical Contribution

The Logistics Company need to improve in the empathy variable which is empathy as a caring and individual attention that the firm provides to its customer. Hence, The Logistics Company should give a motivation to their staff about how to be caring and have good communication with customers. The improvement of staff performance will support the Customer satisfaction toward Green Logistics.

5.3 Limitations and Future Research

Although the results offer some contribution and implications, this study also subject to some limitations that need to be addressed. Firstly, the time limitation to complete this research. The period to finish the complete research only 1 1/2 years.

Secondly, the scope of this research is big. This research only focused on Logistics Company from Kedah and few from Penang state due to the pandemics of Covid-19 which make the researcher limitation for collection data.

Finally, this research applied quantitative method it is a basic method to collect the data from the questionnaire. Future studies can apply the quantitative method in which to test the relationship between variables. A similar study could be conducted in other sectors to see if the result is applicable in other contexts.

5.4 Conclusion

In conclusion, overall, most of the customer satisfied with the services that provide by the logistics company, however service provided not achieved level in term of five critical factors. Hence, the Logistics Company should focus on expectation that not achieved satisfaction level by emphasize the five of critical factor including tangible, reliability, responsiveness, valueadded, and empathy. The term "tangible" refers to the appearance of the facilities, equipment, and staff; "reliability" refers to the capacity to provide accurate service; "responsiveness" refersto the willingness to assist and respond to the needs of customers; "value added" refers to the ability to add additional value to the process that is currently in place; and "empathy" refers to the degree to which caring, individualized services are provided. This study demonstrated that customer satisfaction with Green Logistics is correlated with the logistics company's quality of service.

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