THE DISTRIBUTION CHALLENGES FACED BY THE COURIER SERVICES IN KELANTAN – THE SPECIAL STUDY WITH ROAD TRANSPORTATION

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ABSTRAK

Sejak kebelakangan ini, isu ramai tidak mengetahui tidak tahu mengenai cabaran pengedaran yang dihadapi oleh perkhidmatan kurier di Kelantan. Oleh itu, kajian ini bertujuan untuk mengkaji cabaran pengedaran yang dihadapi oleh perkhidmatan kurier di Kelantan – kajian khas dengan pengangkutan jalan raya. Kaedah kuantitatif digunakan dalam menyempurnakan penyelidikan ini. Persampelan rawak mudah digunakan untuk mengumpul data dan soal selidik berstruktur direka bentuk untuk mengumpul data daripada 384 responden. Pakej Statistik untuk Sains (SPSS) versi 25 dan PLS 4.0 digunakan untuk analisis data. Hasil kajian merumuskan bahawa pembolehubah tidak bersandar kekurangan tenaga kerja, keadaan cuaca, keadaan jalan raya, dan cabaran pengagihan keadaan kenderaan yang dihadapi oleh perkhidmatan kurier di Kelantan adalah ke arah kepuasan pelanggan. Batasan kajian dan cadangan ini disertakan dalam kajian ini bagi memberi gambaran yang lebih baik kepada pengkaji akan datang berkaitan kajian yang melibatkan cabaran pengedaran yang dihadapi oleh perkhidmatan kurier di Kelantan.

ABSTRACT

Recently, the issue of most of people does not know about the distribution challenges faced by the courier services in Kelantan. Therefore, this study aims to study the distribution challenges faced by the courier services in Kelantan – the special study with road transportation. A quantitative method is used in completing this research. Simple random sampling is used to collect data and the structured questionnaire was designed to collect data from 384 respondents. The Statistical Package for Sciences (SPSS) version 25 and PLS 4.0 was used for data analysis. The results concluded that the independent variables of the manpower shortage, weather conditions, road conditions, and vehicle conditions distribution challenges faced by the courier services in Kelantan are towards customer satisfaction. Limitations of this study and recommendations are included in this study to give a better idea for future researchers related to studies involving the distribution challenges faced by the courier services in Kelantan.

Keywords: *Manpower shortage, Weather conditions, Road conditions, Vehicle conditions, and Customer satisfaction.*

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Courier service focuses on the delivery of goods to the destination by providing door-to-door delivery for the people that buy its online or want to deliver the product or goods to the destination. Products will be delivered in real-time by courier services, which means they will be responsible for the product getting to the customer or the person that should receive it. According to Jacek Karcz (2016), the customer (either internal or external) wants the needed product to be delivered in the right place, time, and in the right quantity. Also, the courier service available in Kelantan includes J&T, DHL, and Pos-Laju that people always use here. That is the top three courier service that always peoples in Kelantan. Because of that three companies are well known in Malaysia not only in Kelantan because the company can cover courier services all around Malaysia including Sabah and Sarawak. Road transportation is one of the modes of transport that have been used in Kelantan for the courier service because the courier service here uses road transportation which is the use of vehicles to send the product to the customer. The vehicle that couriers service are using in Kelantan is Van, Truck, car, and motorcycle for the process of delivering the product to the customer.

The time of the delivery process is important to make sure didn't any delays in the process of delivery which will affect a lot of consumers. There has many reasons or issues that make the process of delivery delayed, especially for road transportation in Kelantan. Any area's economy depends on how well goods and commodities are delivered, and trucks, vans, cars, and motorcycles are the most popular mode of transportation. The speed, effectiveness, and eventually the cost of transportation is directly impacted by the condition of the roads. The road and management are the factors that can make the delivery delay because anything can happen during the delivery process. If packages are discovered to be damaged, missing, or not delivered on time, a complaint can be made against courier service providers to the Consumer

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Claims Tribunal, according to the Domestic Trade and Consumer Affairs Ministry (Murali, 2020).

One of the main things that slow down transporting goods is that road transport means aren't reliable enough, but even more so as their hours of operation get longer and they break down for varied things. (Algimantas Smičius, 2002). Delay Time in courier service is important to take action to make sure the process of time delivery meets the time that has been required. Three alternative viewpoints on the variability of journey times exist the daily variability, the daily fluctuation throughout the course of a day, and the vehicle-to-vehicle variability. (Noland & Polak, 2002). In an ideal world, packages would always be delivered on time and without any problems or delays. However, shipments can come with flaws, defects, and inaccurate qualities. Daily occurrences include getting defective goods as well as shipping delays. Customers who experience these problems become irate and want to know why they happen and when they will receive the package or compensation. Many issues can happen during the delivery process or management process that happen to the company courier service in Kelantan or any courier service in another place too.

Quality of service is important to take an action to meet customer satisfaction with the delivery process. Courier service companies' revenue and reputation of the company can both rise because of the improvement in the service quality. Quality service also can significantly impact a company's ability to meet customer needs and stay profitable, no matter what industry it's in. Being able to evaluate and improve the quality of courier services is a valuable skill, but it takes knowledge and insight to do so. Despite being at the intersection of logistics and postal services, courier services have unique qualities that set them apart, such as guaranteed delivery times that are accurate to the hour, money-back guarantees, receipt of shipments, door-to-door delivery of addresses, and the ability to track shipments using tracking systems. (Aleksandra Gulc, 2017). For example, if the customer complaint about the delivery date and product

damage that can affect the quality of service of the courier service company which is can affect the company's reputation in the future because in courier service already decide the time of delivery when the parcel or goods arrived to the destination by that its importance the courier service to manage the parcel arrived to the destination on time.

Furthermore, this study is about the distribution challenges faced by courier services in Kelantan. Courier service is one of the modes of road transportation that has been using in here to deliver goods to their destination. There are many ways that consumers use the courier service which as buying online from online websites which are Lazada, Shopee, and many more online websites that are available on the market or posting products, and goods to other destinations by using this the consumer can save cost and time by using the courier service because of that the courier service should be responsible for the customer satisfaction about the delivery. There are many challenges to meeting the quality of the service that is faced by the courier service to meet customer satisfaction. One such theory is Total Quality Management (TQM), which tries to influence people's relationships and behavior in the workplace through their attitudes, goals, and motivations to deliver quality service. (Pike & Bernes 1996).

1.2 PROBLEM STATEMENT

The challenges faced by the courier services here in Kelantan are held by many factors. These challenges cause major problems in many aspects of the services that can be provided by the courier. Delivery delays can happen due to multiple reasons. But the biggest cause of delivery delays is the rigid delivery ecosystem of the delivery businesses. Most delivery businesses depend on manual and traditional operations, which cause inefficiencies and human errors. It can lead to delayed or failed delivery results that can hinder the quality of customer experience and minimize the business's effectiveness. Also, A complex process requiring the coordination of various tasks is the planning and efficient execution of transportation operations. (Emrah Demir, 2019)

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Courier management systems are supposed to be effective and utilize the resources as effectively as possible to ensure prompt service at the lowest possible cost. The operation which is the pickup must be logged properly. All the movement of the goods between the hubs will have a time limit because the need to be set under the time must complete the process. The last-mile transportation also will be important because there are usually delays there because it takes time to find the destination. The sender will be informed last if any packages are unclaimed or undeliverable, followed by the recipient. The courier service provider will SMS or email a tracking ID to the recipient. This may be used to follow it around. The project's objective will be the design and implementation of this system. This study aims to evaluate how Kelantan's courier service quality affects customer satisfaction and delivery time. Delivery delays can happen due to multiple reasons. But the biggest cause of delivery delays is the rigid delivery ecosystem of the delivery businesses. Most delivery businesses depend on manual and traditional operations, which cause inefficiencies and human errors. It can lead to delayed or failed delivery results that can hinder the quality of customer experience and minimize the business's effectiveness.

According to (Ganeshwaran, 2022) the number of complaints against courier service providers has surged, in tandem with the rise in the total number of shipments. The complaint or problem in courier service is not only in Kelantan but in other areas also having a problem with the shipment that there using. Many different types of mail delivery services, including regular mail, express mail, private package delivery services, and LTL (less-than-truckload) freight companies, provide this service. The demand for inexpensive package transportation services has increased as business-to-consumer (b2c) e-commerce growth continues (Henry, 2017). That is important to improve and find the challenge

that affected the quality of the service to customers because it has many consumers that are using the courier service in the future.

Lastly, having that problem can affect the late delivery timing of the delivery process to the customer. Next, is the damage to the product itself because of the lack of management on the courier services. Moreover, it damages the retailer brand's reputation which is the courier company's image to the public by having all the complaints from the company. This is all related to the problem with the courier service management and the problem with the courier service company.

1.3 RESEARCH QUESTION

The research questions are being asked to acquire the relevant information required to fulfill the objectives. The proposed questions to be answered in this research are as follows:

I.   Is there any relationship between manpower shortage and customer satisfaction towards distribution challenges faced by the courier services in Kelantan?

II. Is there any relationship between weather conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan?

III. Is there any relationship between road conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan?

IV. Is there any relationship between vehicle conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan?

1.4 RESEARCH OBJECTIVES

The general purpose of this research is to examine the distribution challenges faced by the courier services in Kelantan (special study with road transportation). The specific ware is as follows:

I.   To determine the relationship between manpower shortage and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

II.   To study the relationship between weather conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

III. To explore the relationship between road conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

IV.   To investigate the relationship between vehicle conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

1.5 SCOPE OF THE STUDY

The research conducted was to determine the distribution challenges faced by the courier services in Kelantan- a special study on road transportation. This study explored the distribution challenges faced by the courier services in Kelantan -a special study with road transportation. There are four challenges such as main power shortage, weather conditions, road conditions motorcycle conditions. The research being conducted is to investigate these challenges. Instead, this study aimed to develop an idea that could represent the solution to overcome the distribution challenges faced by the courier services in Kelantan – a special study on road transportation. The challenges included main power shortages, weather conditions, road conditions, and motorcycle conditions. This is a standard challenge investigated by this study.

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1.6 SIGNIFICANCE OF THE STUDY

This research is examined the distribution challenges faced by the courier services in Kelantan special study with road transportation. This research will identify or highlights the challenges (customer satisfaction) that are affecting the distribution challenges faced by courier services. Besides, this research will examine these challenges in dept including the external and internal challenges. The study has both theoretical dan practical significance. The theoretical significance of this study is that the result will give theoretical information about the importance of how the challenges can affect the distribution challenges faced by the courier services in Kelantan -a special study with road transportation. Moreover, the results of the present study can be useful for many parties such as the Ministry of Transport Malaysia and Jabatan Kerja Raya (JKR). From this research, there are many benefits that we can get. This research can help JKR to examine what are the challenges and how affect the distribution challenges faced by the courier services in Kelantan – a special study with road transportation. At the same time, this research can provide some ideas to the Minister of Transport Malaysia on how to solve the challenges faced by the courier services regarding the road transportation system. So that, the challenges about road transportation can be improved.

1.7 DEFINITION OF THE TERM

Road transport:

Road travel refers to the movement of people and goods on or over the ground by any means of transportation, as well as the usage of any equipment and infrastructure in association with it. A road is a well-defined way, method, or pathway connecting two or more locations. Roads are generally levelled, surfaced, and or prepared to allow for easy travel; however, this is not needed, and several roads were previously simply known routes with no formal

construction or upkeep. Streets in urban areas are highways that run throughout a city and serve both as an urban space allowance and a pathway.

Labour shortage:

In a given field of employment, there is a deficiency in the available workforce in the form of an inadequate number of suitably competent persons.

Road conditions:

It is ideal to have proper language for documenting road conditions that can be utilized consistently throughout all aspects of communication in governmental road monitoring, and for all commuters.

Vehicles Conditions:

Vehicles involve automobiles operated or managed by the Company and any of its affiliates, such as motorcars, lorries, farm vehicles, mobile homes, SUVs, utility vehicles, bus services, campers, camper vans, motorbikes, and other motor cars, and also automobiles rental or leased to or even by the Business any of its affiliates.

Customer satisfaction:

In the research, there are presently two primary definitions of satisfaction (satisfaction as a process and satisfaction as an outcome). Nonetheless, these are complementary viewpoints since one usually relies on another. To confuse matters further, other authors have linked pleasure to the experience of making the decision to purchase themselves, a description that lies beyond the categories outlined previously (Westbrook and Newman, 1978; Kourilsky and Murray, 1981).

Brand Image:

The subjective elements that identify a company's or its items' brand, and that have a substantial impact on client buying behaviour, are referred to as brand image (Arora & Stoner, 2009). Consumers select a product not just for its functionality, but also due to the impression it evokes and for brand awareness with other users. The idea of brand identity is not uniform and differs amongst authors. A brand is defined by the American Marketing Association (AMA) as a "term, word, style, sign, or whatever other feature that differentiates one seller's products or services from those offered by other sellers," while the brand image is defined as "people's impression of a product[...]." It refers to what people assume about a brand based on their sentiments, opinions, and assumptions" (AMA). Aaker and Kellers describe the brand image as a "collection of connections, generally structured in such substantial manner" with "preconceptions about just a brand as represented by the brand image preserved in memory of consumers".

1.8 ORGANIZATION OF THE PROPOSAL

CHAPTER 1: INTRODUCTION

This chapter includes the Background of the study, the Problem Statement, and the Research Question. Next, this chapter also includes the Research Objectives, Scope of Study, and Significance of the Study as well as the Definition of the Term and Organization of the Proposal.

CHAPTER 2: LITERATURE REVIEW

This chapter includes the Introduction, Underpinning Theory and Previous Studies. Next is the Hypotheses Statement and Conceptual Framework as well as the Summary/ Conclusion.

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CHAPTER 3: RESEARCH METHODS

In this chapter includes the Introduction, Research Design, Data Collection Methods, and Study Population. Next is the Sample size, Sampling Techniques, and Research Instrument Development. This chapter also includes Measurement of the Variables, Procedure for Data Analysis, and Summary / Conclusion.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter will explain the dependent variable and independent variable for this study which is the distribution challenges faced by the courier services in Kelantan. Focuses on the challenge and explains the challenge faced by the courier service which is the independent variable. It had four independent variables which are Manpower shortage, weather conditions, road conditions, and motorcycle conditions. Other than that, the dependent variable will be customer satisfaction and how the variable can affect the variable and challenges facing the courier service in Kelantan.

2.2 INDEPENDENT VARIABLES

2.2.1 Manpower shortage

A manpower shortage in the courier service can affect the delivery service due to didn't have a driver to deliver the product to the customer. By that this can make the delivery late and can happen a lot of shipment can't deliver to the customer. According to (Hsain, 2022) Malaysia has a shortage of laborers in many fields right now. This is mostly because the procedure for recruiting foreign workers has been frozen for the past two years. This was done to stop the COVID-19 pandemic from spreading. Manpower shortages happen in a lot of sectors that affect this because they didn't have the person that can work in that sector. For example, this happen on the J&T courier service they publish on the online platform, which is

Facebook which states Dear customers, please be informed that there will be a minor delay in our delivery service due to manpower and transport shortages. We are currently resolving this matter as soon as possible (J&T 2020).

The supply chain sector may indeed be severely affected by a lack of skilled workers. For instance, the haulage industry expected a driver shortage of between 90.000 and 100,000, according to a supply chain challenges analysis from the Institute for Government. Lack of truck drivers can cause delays and disruption in the delivery of goods since they are required to transfer things from one place to another. If food and other necessities are not delivered on time to balance the increased demand, their prices may increase. The paper also noted that the whole UK food supply chain has a labour shortfall of around 12.5%, or nearly 500,000 workers. (Dwight 2020). Due to this, a manpower shortage is a challenge for the courier service sector that gives trouble to the transportation process or management process.

When employment is almost no vacant and companies are having trouble filling open positions with qualified candidates, there is a labour shortage. There is a lack of employees with the necessary skills when there aren't enough people with the required education, training, or experience to do a job. A high degree of unemployment may coexist with both a labour and skill deficit. (Paul HK 2016). Manpower shortage can define in many aspects that can happen which lack of skill is one of the problems that can be faced in the courier sector because if the worker wants to do a job for the delivery process, they need a license to drive the vehicle and need to have the skill for the delivery. Because they need to know which ways to use and understand the process of delivery and sorting the parcel by the destination. This can be learned and take time to deliver on time and on-time delivery to the customer.

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2.2.2 Weather conditions

The second challenge faced by courier services in Kelantan is weather conditions. The term "weather" refers to the aggregate of several aspects of the atmosphere, such as the temperatures, the directions and strength of the wind, the amount and quality of moisture, the number of sunny hours, and so on. A brief period, sometimes spanning many days, may be defined by the weather. According to D Guedj, and A Weinberger, weather condition describes the climate of an area for a predetermined amount of time, which might range from one day to many weeks. Weather conditions are a description of regular weather events, such as a string of thunderstorms during the warm summer months, a month of fog during the fall, or other weather conditions that are common for a certain place and or season. According to Jabatan Meteorologi Malaysia, the climate of Malaysia is defined by two distinct monsoon seasons the Southwest Monsoon, which lasts from the end of May until the end of September, and the Northeast Monsoon, which lasts from November until March. The Southwest Monsoon is often associated with weather that is on the drier side, in contrast to the wetter conditions brought on by the Northeast Monsoon, which is notably noticeable in the east coast states of Peninsular Malaysia and western Sarawak.

As a result, the term "monsoon" does not always refer to the presence of precipitation rather, it is simply the name given to the predominant winds that blow during a certain season. For instance, the statement stated by Bernama, the Northeast Monsoon causes flooding in the states of Kelantan and Terengganu every year from November to March. During this time, the tiny islands along the east coast, such as Perhentian, Redang, and Tioman, are unable to function due to the weather. According to the statement above, weather conditions in Kelantan remain unstable, so it will affect road transportation to make their daily delivery services, especially in urban areas stated in Bernama news 2021.

When the weather is unpleasant, it might be difficult for delivery drivers to make sure they are delivering on time. Delivery operations can be hampered by inclement weather such as heavy rain, flooding, or hazy windows. Make sure that delivery drivers have the option to choose an alternate route so that they may avoid being held up by inclement weather and stay on schedule. Utilize a route planner that is capable of analysing the current state of the weather in real time and providing the desired and optimum delivery routes for the items. If the deliveries need to be done quickly, courier staff should be trained to deal with inevitable weather circumstances so that it can perform at its highest level of efficiency and effectiveness.

2.2.3 Road conditions

According to Sulaiman (2015), Road infrastructure is regarded as one of a nation's most valuable assets, contributing significantly to economic progress and social benefits. Without a good infrastructure network, goods and services cannot be moved efficiently. The economy of any region is dependent on the efficiency with which products and materials are shipped and received; trucks are the most common mode of transportation. Indirectly, the condition of the roads affects how quickly and effectively people can travel, as well as how much it will cost. (Wisconsin, 1984). Traffic loads, the environment, aging, and other research studies have been finished or are now being conducted to better understand pavement behaviour (performance) under varied situations of traffic volume and loading, climate, subgrade, structural composition, and other aspects (Sharma et. al., 1995).

Transportation assets are assumed to be in good condition when first built or substantially rehabilitated and to provide service as intended. Assets deteriorate due to usage, age, weather, and other factors, and the asset's performance drops off in quality. Periodic maintenance and rehabilitation efforts keep assets in good shape and improve their

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performance and safety. When to carry out these tasks is determined by each agency, and is usually dependent on the desired level of serviceability.

Based on The Sun Daily (20 July 2022), Datuk Azami Mohd Nor, chairman of the State Public Works, Infrastructure, Transport, and Utilities Committee said for road repair projects totalling RM20.55 million, 22 areas have been selected. He claimed that the FT003 Jalan Kuala Terengganu-to-Kota Bharu, FT008 Jalan Gua Musang-to-Kota Bharu, and FT004 Jalan Gerik-to-Jeli were the three primary entry roads into Kelantan with poor road conditions. Additionally, he stated that the PWD intended to concentrate on the main entryways into Kelantan. The government's financial capacity and the approval of funding allocations, however, both affect how this maintenance work will actually be carried out. He explained that this year (2022) Kelantan PWD had identified 16 areas on the major road close to Gua Musang that would need repairs at an estimated cost of RM14.90 million, but only three locations had received approval at a cost of RM2.55 million. The department only received RM4.7 million for all locations to cover the five spots, he continued, adding that eight locations on the access route to Kelantan via Gerik had been identified for repairs at a cost of RM8 million. Meanwhile, he also said for the route leading to Kelantan via Terengganu, an application for RM5.75 million was submitted for the repair of roads at seven locations, but approval was given for only one location with an allocation of RM850,000.

Based on this statement, we know that a consistent and reliable flow of funds was required for proper maintenance. There are several reasons why this does not always occur. Those in control of budget allocation may be unaware of the economic and social significance of maintenance, or they may assume that fiscal limitations justify deferring maintenance, which merely raises future costs. Postponing road maintenance and rehabilitation costs a lot of money, both directly and indirectly. When road problems are swiftly rectified, the overall cost is often

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cheap. If a problem is overlooked, an entire road segment may fail, forcing major reconstruction at three times or more than the typical cost of maintenance.

2.2.4 Vehicle conditions

During the maintenance procedure, the vehicle's technical condition is crucial. These metrics seem to be, first of all, and primarily, a method to monitor the state of the automobile and assess the amount of alteration and restoration services that must be performed as well as, secondly, an instrument for anticipating and utilizing the resources, namely, making predictions a stockpile of proper working until the subsequent servicing. As a result, it is critical to know the maximum standards of indications of the practical system and the dynamics of their development depending on the route, since it is feasible to calculate the time until the next servicing subject to the laws of variation in readings. The mechanical status of an automobile continuously worsens as its life span extends due to the deterioration of components: engine output and mechanical speed of movement drop, fuel usage and wear rate increase, usefulness deteriorates, repair and servicing increase slightly, and reliability declines.

2.3 DEPENDENT VARIABLE

2.3.1 Customer satisfaction

It was revealed that customer satisfaction has an effect on customer satisfaction levels (Jamali, 2007). There are a number of beneficial behavioral outcomes that may be attained by focusing on customer satisfaction, including greater customer commitment and retention, higher customer tolerance for setbacks, and good word-of-mouth advertising. Clients will develop service quality standards based on their expectations of a business, as per the service quality model (Oliver, 1980) As a consequence, client expectations serve as the foundation for exceptional service. Oliver went on to argue that when service quality increases, so do customer satisfaction.

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Park and Regan (2004) carried out an in-depth examination of the effect of e-commerce on home delivery services in regard to Parcel Service Delivery (PSD). As per their results, the logistical demands of e-commerce products may result in greater supply chain complexity and potentially increased prices in transport fleet operations. In the twenty-first century, PSD providers must constantly and quickly alter their structure, procedures, personnel, commodities, facilities, information systems, performance metrics, and business partners to respond to a rapidly changing business environment.

2.4 MODERATE VARIABLE

2.4.1 Late delivery (timing)

The act of delivering items from their point of origin to a place that has been selected in advance is known as delivery. On land, cargo (physical items) is most often transported by roads and trains; on the sea, cargo is transported via shipping roads; and in the air, cargo is transported via airline networks. There are a lot of challenges faced by courier services in Kelantan. Customer retention suffers as a result of late delivery. As a result, the company's lifetime value will drop significantly if its deliveries are consistently delayed. The drivers of courier services are responsible for delivering and collecting a significant number of items on a daily basis. When the intended receiver is not available at the address where the delivery is being attempted, the delivery operation is regarded as a failure. The majority of the time, the courier will not be able to come back to this destination the following day. In addition, he is unable to keep waiting for the sender or the receiver for an excessive amount of time since this may result in delivery delays for more shipments. There are occasions when the delivery time might be delayed due to unexpected circumstances that are beyond the control of the carrier. Bad weather may create delays in delivery by either completely blocking roads or significantly moving slow movement.

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2.4.2 Damage product

The damage that occurs to customers' orders during shipping is one such problem in the courier service. Not only are shipping-related damages heart-breaking for the vendor, but they also ruin the customer experience. While a customer can see any product damage at a physical store, they are unable to do so when making an online purchase. Additionally, even though many courier service companies offer free returns, the whole process might be troublesome for the customer. More than 15-20% of production does not reach the consumer, according to an analysis of data on the harvest and on-farm transportation of easily damaged products. Delays in loading and unloading can account for up to 50% of a vehicle's total time on the road, which is detrimental to the products' safety (N. V. Byshov 2018). By that this damaged product is a common issue that happens to the customer and the courier service takes care of the damaged product and complains.

2.4.3 Damage to the retailer brand's reputation.

When having complaints about the delivery service can lead to reputation damage to the courier service company. There are many thoughts that can happen that make the reputation of the company bad review by the consumer, especially in courier service companies. According to (Amierul 2022) that state J&T Express has come under fire as customers expressed their unhappiness with their poor level of service. Customer review and customer satisfaction are important to take an action. Do make sure the customer gives a positive review and comments on the courier service company. If the customer is unhappy with the service, this can lead to the company's reputation in the future and the company's profit. The reputation of the courier service company can be better or worse and is disconnected from the actual personality or behaviours of the corporation. When a company's reputation is better than its actual situation, this discrepancy raises serious questions. A company's reputation will deteriorate until it more

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closely resembles the truth once it is revealed that it has failed to deliver on the time that should arrive. (Robert 2007).

2.5 UNDERPINNING THEORY

2.5.1 Institutional Theory

According to institutional theory, institutional contexts put pressure on firms to seem legitimate and to conform to prevalent societal standards. Using this notion in a corporate setting, institutional pressures allegedly push organizations to pursue goals in order to strengthen their legitimacy and appear to be in compliance with their business surroundings' prevalent guidelines, criteria, and conventions (Oliver, 1990; Touboulic and Walker, 2015). Participation in supply chain interactions is one way for firms to do this. Partnerships with larger, higher-mounted businesses, for example, can help a small business boost its visibility, reputation, image, and prestige. In actuality, the reward for this type of tactic might be substantial.

2.5.2 Transaction Cost Theory

Transaction cost theory (TCT) has sparked a lot of attention in the supply chain management literature (Williamson, 1985, 1991). In a word, TCT focuses on how a company could manage its boundary-crossing sports in order to lower the total of its production and transaction costs. Corporations' production costs vary owing to the scope of their operations, learning/revel in outcomes, geographical advantages, and proprietary effects such as patents and trade secrets and procedures. Transaction expenses vary as well and include costs related to transaction preparation, administration, and monitoring across markets. (Halldorsson et al., 2015). The potential of a trading associate to engage in opportunistic behaviour, defined as self-interested or dishonest behaviour, enhances transaction costs.

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2.6 PREVIOUS STUDY

Previous studies are all studies that have been conducted on the same subject as the one the researcher is now investigating. If a researcher is serious about a topic, he or she will dig out old studies on the topic, read them carefully, and figure out what they have in common with or what sets them apart from the current work. The prior study is its own distinct part of the research framework and often takes up residence in the second section; yet, it is obviously highly related to the first part of the framework. By providing a foundation and comprehensive background for the researcher, past studies enhance and deepen scientific inquiry. In this way, the researcher may become well-versed in everything that pertains to their study.

According to Raphaëlle and Loïc (2013), when faced with both changes in urban logistical challenges and new consumer and logistic patterns, a new component of the courier, express and parcel service, (CEP) industry specialised in urban package delivery has emerged in France during the last several years. Both urban logistics and last mile delivery challenges have an impact on the urban package delivery market. It is made up of a diverse cast of characters descended from express, postal, and transportation traditions, as well as a swarm of imaginative new players. A new segment has emerged as a result of common Business-to-consumer (B2C) and Business-to-Business service (B2B) parcel-oriented tactics and shared trials in novel organisations, services, and vehicles to address last-mile concerns and environmental restrictions in cities. In a ten-year horizon, the views of the urban parcel market will be questioned. Changes in end user logistics demand and evolutions in urban logistics regulation in urban regions will be studied to better understand the implications for the parcel distribution sector and to provide well-suited solutions to the unique characteristics of urban territory.

According to Edwin Van Hassel, Thierry Vanelslander all of the papers in this SI add to the scientific understanding of the possible impact of COVID-19 virus prevention strategies on freight transport supply chains. Based on the papers gathered, it is possible to assume that all stages of the supply chain were disrupted. The principal difficulties are ship operations, deep sea ports, and land transit. In addition, the influence of more uncertainty in investment initiatives has been explored. A considerable field of study has been devoted to last-mile transportation, where there has been significant growth in online purchasing and e-commerce, as well as changes in the logistics system and worker safety during the epidemic.

Antonio Garcia-Olivares, Jordi Sole, and Oleg Osychenko argue that transitioning to a 100% renewable energy economy is the only way to permanently confront climate change, energy policy, sustainability, and pollution. The transformation of the present transportation infrastructure seems to be one of the more difficult parts of such a transfer to renewable energy. This research looks at the strategies and technologies that have been suggested or shown as alternatives to transportation fuelled by fossil fuels and analyses their energy and technical viability in the post-carbon era. Estimates are made for both the electrical power required to operate the new renewable public transit sector and the dynamic cost of transitioning from the existing transport system to a global one that is 100% renewable. Around 18% less energy would be needed to run a worldwide transportation system if it was powered by renewable energy sources. The majority of the savings will come from a decrease in road transport (69%) but significant increases in consumption from shipping (163%) and aviation (149%). All-renewable transportation is possible, according to the study's findings, but it may not work with a perpetual growth in resource use. The most significant resource and energy constraints, as well as barriers, faced by the various transport sectors in making this transformation, are outlined.

2.7 HYPOTHESES STATEMENT

This research may potentially provide light on several theories and their corresponding claims. Based on the previous research that was reviewed in this chapter, the hypothesis of this investigation may be summed up as follows:

Manpower shortage

H1: There is a significant relationship between the manpower shortage and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

Weather conditions

H2: There is a positive linear and significant relationship between the weather conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

Road conditions

H3: There is a significant relationship between road conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

Vehicle conditions

H4: There is a significant relationship between vehicle conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

2.8 CONCEPTUAL FRAMEWORK

In the field of research, a conceptual framework is a graphical representation that serves to demonstrate the predicted link between causes and their effects. According to Ravitch and Riggan (2017), "An argument about why the topic one wishes to study matters, and why the means proposed to study it are appropriate and rigorous." The purpose of this study is to identify the distribution challenges faced by courier services in Kelantan, especially with road

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transportation. This framework is illustrated by the distribution challenges faced by courier services in Kelantan. This section also explains the proposed conceptual framework. In general, this conceptual framework is illustrated mainly with three main variables which are the dependent variable, independent variables, and moderate variable.
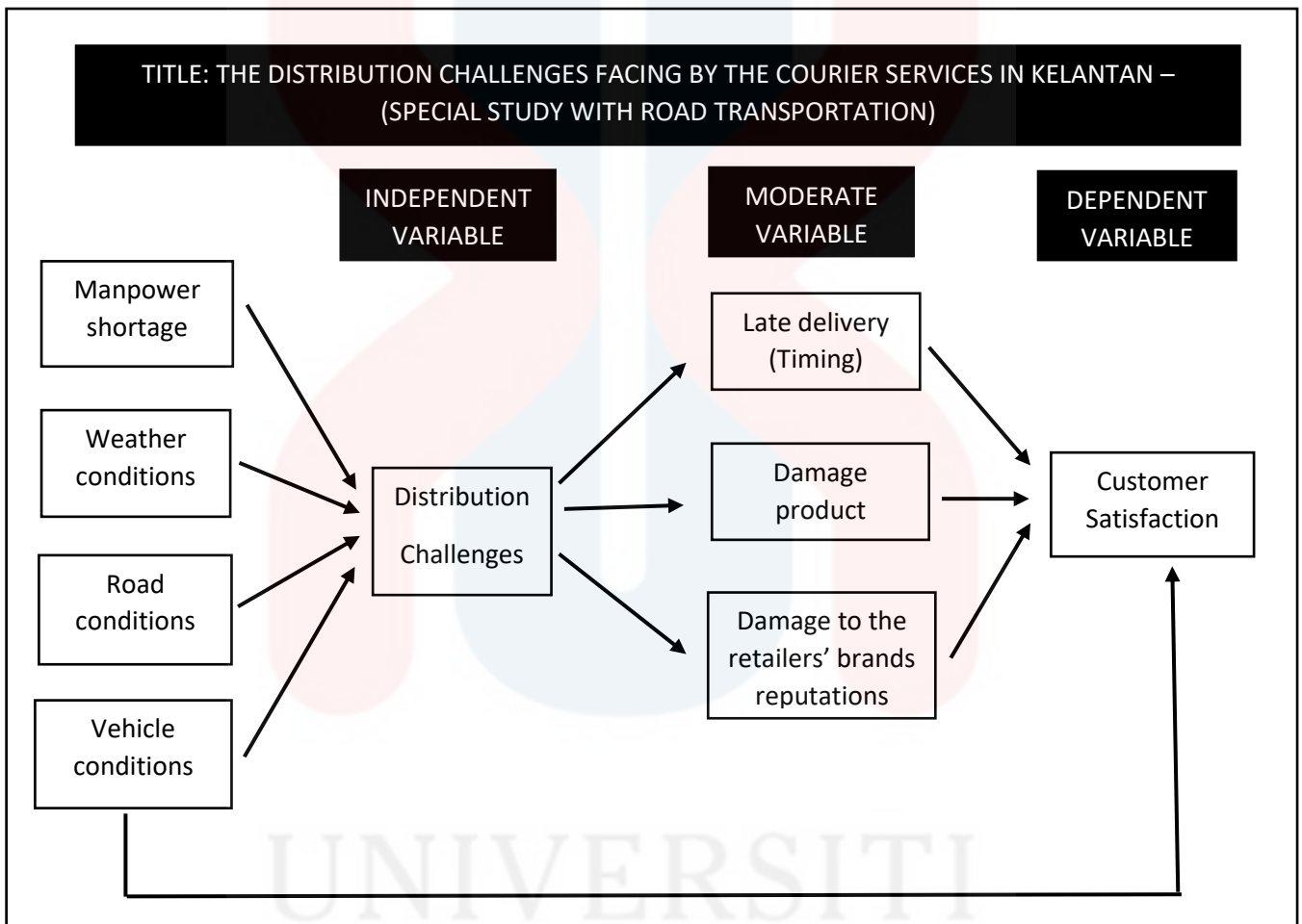
Figure 2.0: The conceptual framework on the distribution challenges faced by the courier services in Kelantan – special study with road transportation.

2.9 SUMMARY

Based on Chapter 2, explains the dependent variable and independent variable for this study. The Independent variable for this study is the manpower shortage, weather conditions, road conditions, and vehicle conditions. For dependent variable will be customer satisfaction, which has a link between the two variables that will affect customer satisfaction for this study.

The courier service should improve the quality of service to the customer. By that, it can improve customer satisfaction with the courier service that they are using.

CHAPTER 3: RESEARCH METHODS

3.1 INTRODUCTION

The research methodology that will be applied in this study will be described in this chapter. It will go through the study design, data collecting method, sample size, sampling techniques, population, research instrument development, variable measurement, and procedure for data analysis. This study's chapter will go into detail on all of this.

3.2 RESEARCH DESIGN

The purpose of this study is to identify customer satisfaction with the courier service in Kelantan and the challenge faced by the courier service that wants to maintain customer satisfaction. In order to obtain results, a quantitative research method deals with quantifying and analyzing variables (Oberiri 2017). This study used quantitative research to understand the correlation between the independent variable, which is the manpower shortage, weather conditions, road conditions, and motorcar conditions and the dependent variable will be customer satisfaction toward courier service in Kelantan. Researchers can use different research approaches to get relevant information for the study. appropriated design of this study has been chosen by the researchers as a descriptive correlational.

Statistically sound inferences about a community may be drawn from studies of representative samples, as stated by (Greg L 2007). Primary and secondary data were used to complete this study. Data from books, journals, and websites that are already in existence and relevant to the topic are also gathered for secondary analysis, which will ultimately improve the original research findings.

3.3 DATA COLLECTION METHODS

The data gathering phase is crucial to obtaining reliable results from this research. Without the information gathered from the survey and data, the researcher will be unable to finish the study. In order to do this, a questionnaire tailored to the aims of the research was sent out to a random sample of 384 residents of Kelantan. The residents of Kelantan were given questionnaires to fill out for data-gathering. Surveys were handed out between 10 am and 10 pm. The procedure requires a significant amount of time and work. Once respondents have finished the surveys, the researchers personally collected them back.

3.4 STUDY POPULATION

According to the Department of Statistics (2014), Kelantan has totaled around 1.71 million people. The target population of the research was chosen Kelantan residents. Moreover, the research investigated the distribution challenges faced by the courier services in Kelantan – a special study with road transportation. Therefore, we target to distribute about 384 questionnaires to the respondents. This will include only customers who usually use courier service in Kelantan.

3.5 SAMPLE SIZE

The number of subjects involved in a sample size is referred to as the sample size in market research. To get the correct sample size, we utilize the table from Krejcie and Morgan (1970). The importance of sample size is that a sample size that is excessively big will squander valuable resources and may expose more people than necessary to any associated danger. The letter n frequently serves as a symbol for sample size. According to earlier studies, sample sizes must cover 30 and under 500 (Ganti,2022). Based on Krejcie & Morgan (1970) table, the sample size for this research is 384 people. Therefore, we distribute the questionnaire to a minimum of 384 customers who use courier services in Kelantan to collect the data for the

further process. The number of respondents is determined by the sample size chosen by the researcher from the population. Probability sampling is the random selection of the sample from a population. Probability sampling is difficult, time-consuming, and expensive. The larger the sample size, the more accurate the data.

Table 3.1: Krejcie and Morgan (1970)

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

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

Source: Krejcie & Morgan, 1970

3.6 SAMPLING TECHNIQUES

We will employ a sample random sampling that made. Probability sampling is the random selection of a sample from a population. Probability sampling is difficult, time-consuming, and expensive. There is no possibility of unfairness because the population has an equal and independent chance of being chosen to be a part of the sample.

3.7 RESEARCH INSTRUMENT DEVELOPMENT

The creation of an instrument may take place in a number of different ways. It may include the fabrication of an entirely new instrument from its fundamental components, or it may involve the significant alteration of an existing instrument. Either way, it may require a significant amount of work. Lastly, it may include the combination of two or more existing instruments into a whole new instrument that is a combination of all of them. Data are often gathered using techniques such as interviews, everyday monitoring, conversation in focus

groups, and other approaches such as free listing, which are not very well organized. The data analysis may also make use of methods such as online questionnaires, digital surveys, and digital interviews.

3.7.1 QUESTIONNAIRE SURVEY

In order to gather data, researchers often use questionnaires, which are sets of questions designed to elicit answers from respondents. A questionnaire may be thought of as a structured, written interview. Conversations may happen face-to-face, over the phone, online, or via the mail. Questionnaires may be used to quickly, cheaply, and effectively collect massive amounts of data from a representative cross-section of a community.. The questionnaire will be in the form of an online survey, and in order for the essential data to be gathered, each respondent will be required to finish the survey. The questionnaire is a compilation of questions that will be sent to the individuals who have been chosen to participate. SPSS was used to analyze the data that was collected from the respondents in the survey. The goal of the survey is to acquire information about SPSS. The purpose of this questionnaire is to gather data on customer satisfaction with courier services in Kelantan. After that, all of the data gathered from the respondents were analyzed via the use of SPSS.

3.7.2 QUESTIONNAIRE DESIGN

Questionnaire design involves creating the survey instrument's framework and questions to gather data about a phenomenon. All survey design and execution phases should be addressed while constructing a questionnaire. The questionnaire is divided into four parts, labeled Section A, Section B, and Section C. Collecting under Section A information on the demographic background of respondents, and other relevant information while Section B discusses independent variables would be things like manpower shortage, weather conditions, road conditions, and vehicle conditions, while dependent variables will be section C would be

customer satisfaction with courier services in Kelantan. There are five questions in the surveys dedicated to each individual variable.

3.8 MEASUREMENTS OF THE VARIABLES

A measurement variable is an unidentified property that measures a specific thing and might have one, several, or none of its possible values. It is often used in several aspects of scientific investigation. In statistics, in contrast to the field of mathematics, measurement variables are capable of not only taking on quantitative values but also taking on qualitative values. In terms of statistics and data measurement, there are four different degrees of measurement. There are four different kinds of scales: nominal, ordinal, interval, and ratio. On the other hand, the researcher just used nominal scales in this investigation, which is very much appropriate for this study due to the nature of the inquiry.

3.8.1 NOMINAL SCALE

To define the range of possible values for a variable, a nominal scale simply labels those categories. The name is a nominative. Nominal variables are a kind of data used in the analysis that may be thought of as either attribute or category information. Values on nominal scales may be assigned to a finite set of categories defined by a single criterion. You may give them names, but there is no logical progression between them. Nominal data, such as the test procedures of the intervention and comparison groups, might establish teams in the data that you wish to compare. The variables may be indicated in discrete categories without a need for a specific number or order when using a nominal scale (Pro, 14 July 2018). Gathering information through an in-depth response to a pre-formulated open-ended query. Section A of the survey will make use of this scale.

3.8.1.1 LIKERT SCALE

The assumption that attitudes can be measured is central to the design of Likert scales, as is the idea that the intensity with which people feel one way or another may be placed on a continuous scale from one end to the other. The researched attitude, for instance, may be quantified by assigning a numerical value to each of the five (or seven) possible responses. This requires the responder to provide detailed responses to a broad range of topics, from which the researcher should preferably be able to choose a balanced set of 1-5 options. It also contains a neutral mid-point.

Example table for interval scale.

Table 3.2: The interval scale that will be used for the questionnaire

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

3.9 PROCEDURE FOR DATA ANALYSIS

The Social Sciences Statistical Package was used to analyze the questionnaire data (SPSS for version 25 of Windows). Descriptive analysis, Pearson's Correlation Analysis, and Multiple Regressions are the three primary types of analyses. To begin, descriptive analysis is performed on the gathered data using analytical techniques such as frequency, percentage, and mean to identify the sample's central tendency. Second, because this study incorporates hypothesis testing, a correlation analysis is carried out to see if the independent variables (factors) impact the dependent variable. As a result, Pearson Correlation and Multiple Regressions were also used in this study to achieve its goals.

3.9.1 RELIABILITY TEST

The reliability of standardized tests is the degree to that they remain constant across multiple testing instances, different versions of the tests, or different ratings evaluating the test participant's replies.

3.9.2 DESCRIPTIVE RESEARCH

The purpose of descriptive research is to provide an accurate and detailed description of the population or phenomenon being studied. It does not address how/when/why the qualities developed. Rather, it answers the "what" argument (what features of the demographic or circumstance are being studied?). Typically, the qualities used to characterize a scenario or population are some forms of the category system, also known as classifications.

3.9.3 PEARSON CORRELATION ANALYSIS

The Pearson correlation coefficient is a statistical measure for establishing a causal relationship between two independent variables. Because it is based on the idea of covariance, it is thought to be the best way to measure how two important variables are related. It shows the size of the link or connection and the way the two things are linked.

3.9.4 MULTIPLE REGRESSION ANALYSIS

Multiple regression analyzes the relationship among a specific dependent variable and many independent variables. Multiple regression procedures predict the value of a single dependent variable using known independent variables. The prediction is weighted by each indicator outcome.

3.9.5 FREQUENCY TEST

Frequency analysis is a descriptive-analytical tool that depicts the frequency of instances of each answer selected by participants. SPSS Statistics can estimate the mean, median, and mode when applying frequency analysis to aid in the process interpret the data and develop conclusions.

3.9.6 PARTIAL CORRELATION

Partial correlation measures the degree and direction of a linear connection between two variables while adjusting for the influence of one or more dependent variables partial correlation does not distinguish between independent and dependent variables, the two independent variables are frequently viewed as such.

3.9.7 EXPLORE – NORMALITY TEST

Explore produces rich univariate statistics and visualizations for numeric scale variables. It may also validate numeric scale variable normalcy using specific inferential analytics and complete diagnostic charts.

3.9.8 FACTOR ANALYSIS

Data may be simplified via the use of factor analysis. In order to achieve this goal, it searches for hidden influences that can be seen in the measurable ones. Principal axis factor analysis, maximum likelihood, generalized least squares, and unweighted least squares are just a few of the methods that may be used to conduct factor analysis.

3.9.9 REGRESSION

Regression analysis is a collection of statistical techniques for determining connections between one or more independent variables and a dependent variable. It could be used to evaluate the strength of the link between variables and to predict their potential relationship.

3.9.10 CHI-SQUARE TEST

Chi-square is a statistical test that looks at the variances among explanatory data from a random sample to see if the predicted and actual outcomes are well-fitting

3.9.11 SMART PLS (VERSION 4)

The Smart PLS application uses the partial least squares (PLS) route suggested model and has a graphical user interface to facilitate variance-based structural equation modeling (SEM). Users may use basic PLS-SEM, weighted PLS-SEM (WPLS), consistent PLS-SEM (PLSc-SEM), or sub-scores regression to make predictions from their data.

3.10 SUMMARY/CONCLUSION

This chapter begins with an overview before delving into the research technique employed in this study. Before discussing the research methodologies used to conduct this study, the demographic and sample study are discussed. To gather information, libraries and outdoor research are used. For field studies, the qualitative approach is applied, and a number of respondents are involved in the research study. The information is analyzed and disputed, and the outcomes are shown.

CHAPTER 4: DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

In this chapter, the results of the questionnaires surveyed respondents' data were analyzed. The demographic profile of the respondent, descriptive analysis, reliability test, partial correlation, normality test, factor analysis, chi-square test, correlation, hypothesis testing (regression), and one-way are the ten types of analysis or tests employed in this study. The total number of respondents required for this study is 384. The researcher analyses the data using IBM/SPSS statistics version 28.0 (Statistical Package for Social Science), Smart PLS version 4 the findings of the statistical analysis will be discussed in this chapter. Finally, toward the end of this chapter, all descriptive and inferential findings will be summarized and discussed.

4.2 PRELIMINARY ANALYSIS

A pilot test was organized to evaluate the survey's reliability and validity in order to confirm that it may be used for the research. The research used Google Forms to appropriate surveys for the pilot test (30 respondents) and collected 364 respondents as information.

Manpower shortage

Table 4.1: Result of pilot test IV (1)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.870	.886	5

The value of Cronbach's Alpha is .870 which shows that the internal consistency is excellent. The Cronbach's Alpha based on Standardized Items is .886 and the number of questions per independent variable is 5.

Weather Conditions

Table 4.2: Result of pilot test IV (2)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.885	.889	5

The value of Cronbach's Alpha is .885 which shows that the internal consistency is excellent. The Cronbach's Alpha based on Standardized Items is .889 and the number of questions per independent variable is 5.

Road Conditions

Table 4.3: Result of pilot test IV (3)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of items
.903	.909	5

The value of Cronbach's Alpha is .903 which shows that the internal consistency is excellent. The Cronbach's Alpha based on Standardized Items is .909 and the number of questions per independent variable is 5.

Vehicle Conditions

Table 4.4: Result of pilot test IV (4)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.933	.938	5

The value of Cronbach's Alpha is .933 which shows that the internal consistency is excellent. The Cronbach's Alpha based on Standardized Items is .938 and the number of questions per independent variable is 5.

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Customer Satisfaction

Table 4.5: Result of pilot test DV

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.904	.907	5

The value of Cronbach's Alpha is .904 which shows that the internal consistency is excellent. The Cronbach's Alpha based on Standardized Items is .907 and the number of questions per independent variable is 5.

4.3 DEMOGRAPHIC PROFILE OF RESPONDENTS

In this study, there are five questions were asked under the respondents' demographic section such as gender, race, age, academic qualifications, and monthly income. This section discussed the basic analysis of the demographic profile of 384 respondents who answered the question through the google form that has been distributed. Then, the recurrence and rate for each segment profile of respondents were shown through tables and improved on diagrams.

4.3.1 Gender

Table 4.6: Gender of respondents

	Category	Frequency (N)	Percentage (%)	Valid Percent	Cumulative Percent
Valid	Male	162	42.2	42.2	42.2
	Female	222	57.8	57.8	100.0
	Total	384	100	100	
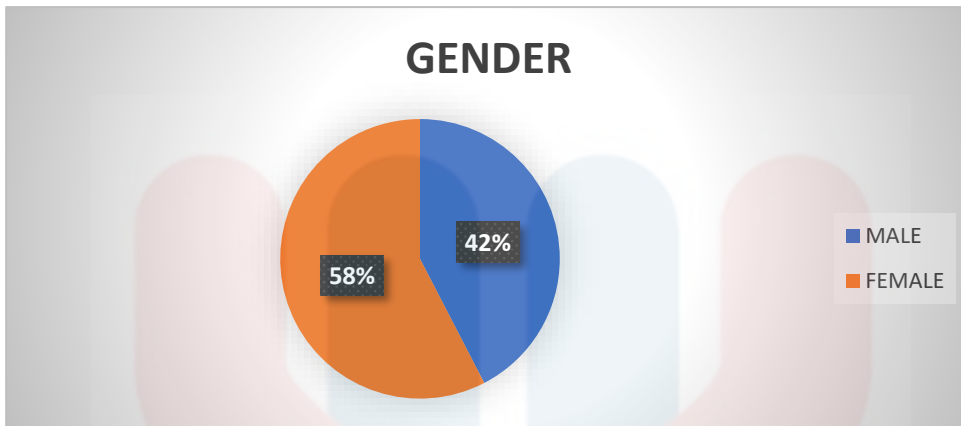
Figure 4.1 Gender of respondents

According to the result shown in table 4.6 and figure 4.1, the female respondent is 57.6% and the male respondent is 42.4%. The analysis of respondent gender female is 222 while the male is 162 of the total sample size.

4.3.2 Race

Table 4.7: Race of respondents

	Category	Frequency (N)	Percentage (%)	Valid Percent	Cumulative Percent
Valid	Malay	191	49.7	49.7	49.7
	Chinese	66	17.2	17.2	66.9
	Indian	89	23.1	23.2	90.1
	Others	38	9.9	9.9	100.0
	Total	384	100	100	
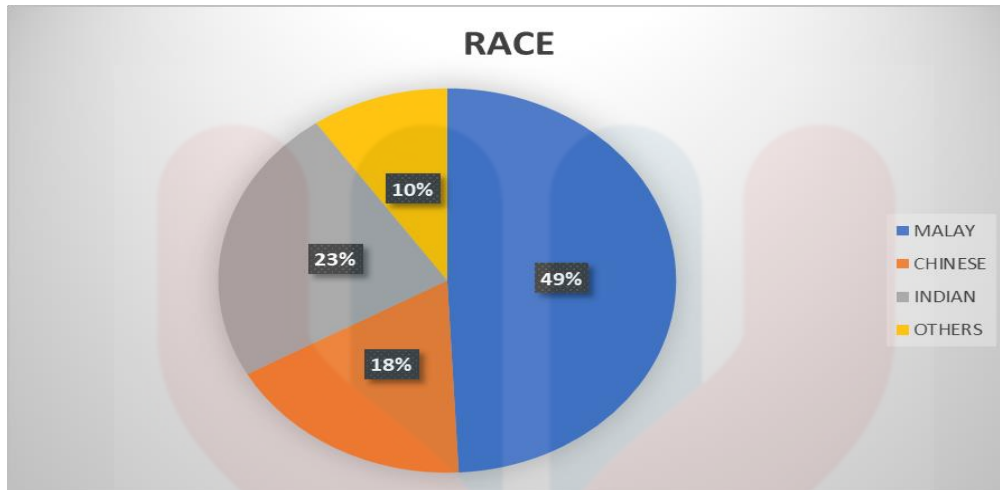
Figure 4.2: Race of respondents

Table 4.7 and pie chart 4.2 showcases were examined in this study. The majority of the respondents were Malay of 191 respondents and it presented 49.2% of the total respondents. Meanwhile, 66 respondents were Chinese and presented 17.7% and Indian respondents represented 89 with 23.4%. Lastly, the other races represented 38 respondents with 9.7% only.

4.3.3 Age

Table 4.8: Age of respondent

	Category	Frequency (N)	Percentage (%)	Valid Percent	Cumulative Percent
Valid	< 19 years old	19	4.9	4.9	4.9
	20 – 29 years old	277	72.1	72.1	77.1
	30 – 39 years old	45	11.7	11.7	88.8
	49 – 49 years old	33	8.6	8.6	97.4
	> 50 years old	10	2.6	2.6	100
	Total	384	100	100	
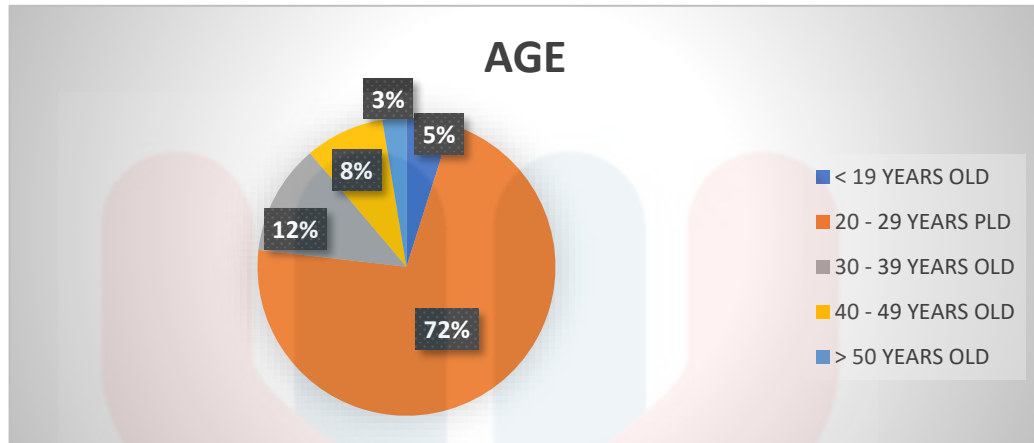
Figure 4.3 Age of respondents

Based on table 4.8 and figure 4.3 there were 4.9 % of 19 respondents falling into the classification of between < 19 years old, 72.2 % of 277 respondents between 20 to 29 years old, and just 11.7 % of 45 respondents shared the class between 30 to 39 years old and 40 to 49 years old stated as 8.6 % of 33 respondents. Last but not least, at age of > 50 years old was 2.6 % out of 10 respondents.

4.3.4 Academic Qualifications

Table 4.9: Academic Qualifications of respondents

	Category	Frequency (N)	Percentage (%)	Valid Percent	Cumulative Percent
Valid	SPM	20	5.2	5.2	5.3
	STPM/Diploma	101	26.5	26.3	31.5
	Degree	213	55.5	55.5	87.0
	Masters	41	10.7	10.7	97.7
	PHD	9	2.3	2.3	100.0
	Total	384	100.0	100.0	

37
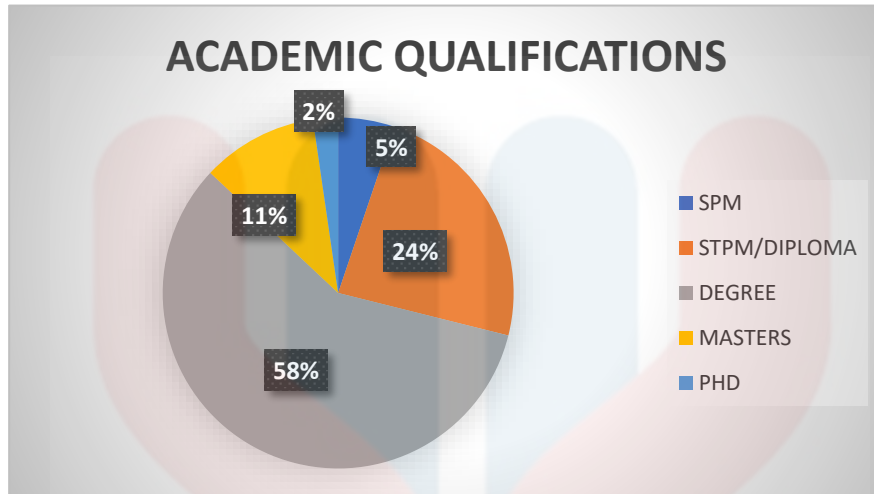
Figure 4.4: Academic Qualifications of respondents

Table 4.9 and figure 4.5 shows the academic qualifications of respondents examined in this study. The results have shown that 20 respondents with 5.2% of academic qualifications represented SPM, followed by 101 respondents with 26.5% STPM/Diploma, 213 respondents with 55.3% certificate Degree, and 41 respondents with 10.6% were Master. Lastly, only 9 respondents of 2.3 % represented other categories.

4.3.5 Monthly Income

Table 4.10: Monthly Income of respondents

	Category	Frequency (N)	Percentage (%)	Valid Percent	Cumulative Percent
Valid	< RM 1000	164	42.7	42.7	42.7
	RM 1000 – RM3000	161	41.9	41.9	84.6
	RM3000 – RM5000	42	10.9	10.9	95.6
	> RM5000	17	4.4	4.4	100.0
	Total	384	100.0	100.0	
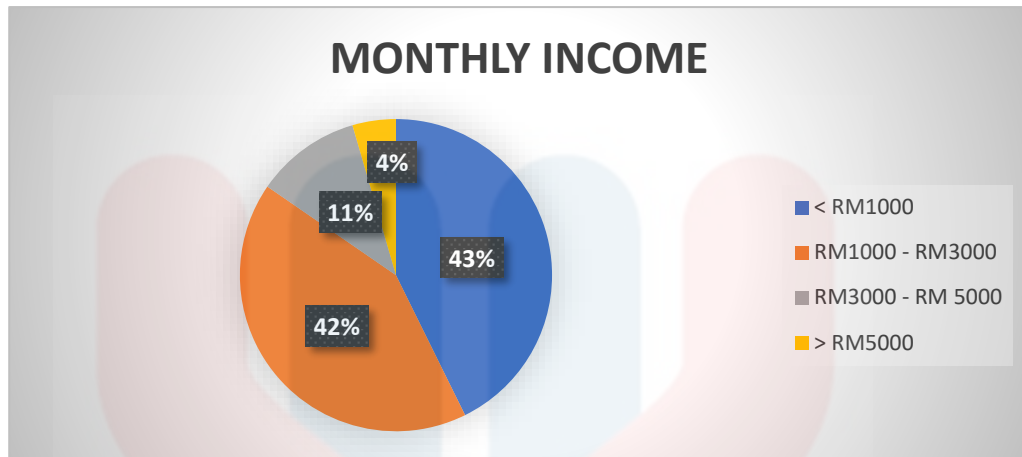
Figure 4.5: Monthly Income of respondents

As shown in Table 4.10 and Figure 4.5, monthly income was examined in this study. There 42.9 % of 164 respondents were recorded as stage of monthly income < RM 1000 and 41.8% of 161 respondents were recorded as stage of a monthly income of RM1000 – RM3000. Meanwhile, 10.9 % of 42 respondents were in another state with a monthly income of RM 3000 – RM 5000. Last but not least, 4.4 % of 17 respondents were recorded as the stage of a monthly income of > RM5000.

4.4 DESCRIPTIVE ANALYSIS

Descriptive statistics are utilized to summarize data in a planned manner by portraying the association between factors in a model or people (Parampreet Kaur et al., 2018). This section discussed the descriptive statistics of this research's dependent variable which is customer satisfaction and independent variables which are manpower shortage, weather conditions, road conditions, and, vehicle conditions. The mean and standard deviation of each and every variable all in all and questions for every variable in each segment of the poll beginning from section B were dissected and introduced.

4.4.1 Dependent Variable

I. **Customer Satisfaction**

Table 4.11: Descriptive analysis of Customer Satisfaction

	N	Minimum	Maximum	Mean	Std. Deviation
Users of courier service are satisfied with the road transportation service provided in Kelantan.	384	1	5	4.16	.721
Man power shortage in courier service influence the customer satisfaction towards road transportation service n Kelantan.	384	1	5	4.15	.736
Weather conditions in courier service influence the customer satisfaction towards road transportation in Kelantan.	384	1	5	4.23	.695
Road conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan.	384	1	5	4.12	.786
Vehicle conditions in courier service influence the customer satisfaction towards road transportation in Kelantan.	384	1	5	4.20	.696
Valid N (listwise)	384				

The table, showing the highest mean score is 4.23 which is weather conditions in courier service influence the customer satisfaction towards road transportation in Kelantan. Meanwhile, the lowest mean score is 4.12 which is road conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan. .

4.4.2 Independent Variable

II.   Manpower Shortage

Table 4.12: Descriptive analysis of Man-power Shortage

	N	Minimum	Maximum	Mean	Std. Deviation
Man-power shortage do affect the process of delivery in Kelantan.	384	1	5	4.08	.757
Man-power shortage do lead to slow delivery timing.	384	1	5	4.13	.766
Man-power shortage do affect the customer satisfaction toward the delivery services.	384	1	5	4.11	.755
Man-power shortage do lead to low level of customer satisfaction with the delivery services in Kelantan	384	1	5	4.10	.777
Man-power shortage within the courier services lead to problem of delivery in Kelantan.	384	1	5	4.08	.770
Valid N (listwise)	384				

The result in the table above, shows the highest mean score is 4.13 which "man-power shortages do lead to slow delivery timing". Meanwhile there are two question lowest mean score is 4.08 which are "man-power shortage do affect the process of delivery in Kelantan" and man-power shortage within the courier services lead to problem of delivery in Kelantan.

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III. Weather Condition

Table 4.13: Descriptive analysis of Weather Conditions

	N	Minimum	Maximum	Mean	Std. Deviation
The weather change problem disrupts the courier services of the delivery process in Kelantan.	384	1	5	4.18	.719
The problem of weather change causes damage to the customer's goods.	384	1	5	4.10	.753
The problem of climate change affects the reputation of a firm.	384	1	5	4.18	.697
The change in weather causes customers to be dissatisfied with the courier service.	384	1	5	4.16	.753
The weather change is the main factor in delaying the delivery of goods in Kelantan.	384	1	5	4.19	.746
Valid N (listwise)	384				

The result in the table above shows the highest mean score is 4.19 which is "the weather change is the main factor in delaying the delivery of goods in Kelantan". Meanwhile, the lowest mean score is 4.10 which "the problem of weather change causes damage to the customer's goods.".

IV. Road Condition

Table 4.14: Descriptive analysis of Road Conditions

	N	Minimum	Maximum	Mean	Std. Deviation
The courier service is satisfied with the road conditions in Kelantan.	384	1	5	3.95	.890
The road condition in Kelantan delays the delivery services.	384	1	5	4.02	.877
The road condition in Kelantan endangers the safety during delivery service.	384	1	5	3.98	.855

	N	Minimum	Maximum	Mean	Std. Deviation
The road condition in Kelantan causes accidents during delivery service.	384	1	5	4.01	.846
The road conditions in Kelantan affects the delivery services.	384	1	5	4.10	.793
Valid N (listwise)	384				

From the result in table above, the highest mean score is 4.10 which "the road conditions in Kelantan affects the delivery services". Meanwhile, the lowest mean score is 3.95 which "the courier service is satisfied with the road conditions in Kelantan".

V. Vehicle Conditions

Table 4.15: Descriptive analysis of Vehicle Conditions

	N	Minimum	Maximum	Mean	Std. Deviation
The vehicle condition in the process of delivery affects the level of customer satisfaction.	384	1	5	4.25	.839
The vehicle condition affects the reputation of a company.	384	1	5	4.33	.774
The vehicle condition causes damage to the goods and services.	384	1	5	4.26	.836
The vehicle condition affects the process of delivery of goods in Kelantan.	384	1	5	4.29	.796
The type of affects the process of delivery of goods to customer in Kelantan.	384	1	5	4.33	.746
Valid N (listwise)	384				

From the result in the table above, the highest mean score is 4.33 which is two questions "The vehicle condition affects the reputation of a company" and "The type of affects the process of delivery of goods to customer in Kelantan". Meanwhile, the lowest mean score is

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4.25 which "the vehicle condition in the process of delivery affects the level of customer satisfaction".

4.5 VALID AND RELIABILITY TEST

This section discussed the reliability of this research's questionnaire that represents the dependent variable, customer satisfaction, and independent variables, which are manpower shortage, weather condition, road condition and vehicle condition. In this section, Cronbach's Alpha of every question for each variable and section was analyzed and presented.

Manpower Shortage

Table 4.16: Reliability test of Manpower Shortage

Cronbach's Alpha	N of Items
.869	5

The value of Cronbach's Alpha is .869 which shows that the internal consistency is excellent. The number of questions per independent variable is 5.

Weather Conditions

Table 4.17: Reliability test of Weather Conditions

Cronbach's Alpha	N of Items
.881	5

The value of Cronbach's Alpha is .881 which shows that the internal consistency is excellent. The number of questions per independent variable is 5.

Road Conditions

Table 4.18: Reliability test of Road Conditions

Cronbach's Alpha	N of items

.886	5

The value of Cronbach's Alpha is .886 which shows that the internal consistency is excellent. The number of questions per independent variable is 5.

Vehicle Conditions

Table 4.19: Reliability test of Vehicle Conditions

Cronbach's Alpha	N of Items
.893	5

The value of Cronbach's Alpha is .893 which shows that the internal consistency is excellent. The number of questions per independent variable is 5.

Customer Satisfaction

Table 4.20: Reliability test of Customer Satisfaction

Cronbach's Alpha	N of Item
.861	5

The value of Cronbach's Alpha is .861 which shows that the internal consistency is excellent. The number of questions per independent variable is 5.

Summary of Reliability

Table 4.21: Summary of Reliability

VARIABLES	N OF ITEM	CRONBACH'S ALPHA	RELATIONSHIP
Manpower Shortage (IV 1)	5	.869	Acceptable
Weather Condition (IV 2)	5	.881	Acceptable
Road Condition (IV 3)	5	.886	Acceptable
Vehicle Condition (IV 4)	5	.893	Acceptable
Customer Satisfaction (DV)	5	.861	Acceptable

Summary of Reliability

The table above shows the reliability test for the dependent and independent variables. The value of Cronbach's Alpha for the dependent variable which is customer satisfaction is .772. Meanwhile, for the independent variable, the value of Cronbach's Alpha for manpower shortage is .869, the weather conditions are .881, road conditions are .886, and vehicle conditions are .893. All pf independent variable reliability s shows acceptable.

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4.6 NORMALITY TEST

Table 4.22: Result of Normality Test between Mean 5 and 1

	Tests of Normality					
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Mean5	.213	384	.000	.898	384	.000
Mean1	.214	384	.000	.880	384	.000

The table above shows that the relationship between mean 1 and mean 5 is the results of each test show that all the significant values, p, are less than 0.05, showing that the data is abnormal since it does not follow a normal distribution.

Table 4.23: Result of Normality Test between Mean 5 and 2

	Tests of Normality					
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Mean 5	.213	384	.000	.898	384	.000
Mean 2	.214	384	.000	.892	384	.000

The table above show that the relationship between mean 2 and mean 5 is the results of each test show that all the significant values, p, are less than 0.05, showing that the data is abnormal since it does not follow a normal distribution.

Table 4.24: Result of Normality Test between Mean 5 and 3

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Mean 5	.213	384	.000	.898	384	.000
Mean 3	.138	384	.000	.921	384	.000

Tests of Normality

The table above show that the relationship between mean 3 and mean 5 is the results of each test show that all the significant values, p, are less than 0.05, showing that the data is abnormal since it does not follow a normal distribution.

Table 4.25: Result of Normality Test between Mean 5 and 4

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Mean 5	.213	384	.000	.898	384	.000
Mean 4	.196	384	.000	.870	384	.000

The table above shows that the relationship between mean 4 and mean 5 is the results of each test show that all the significant values, p, are less than 0.05, showing that the data is abnormal since it does not follow a normal distribution.

Summary

The table above shows the Normality test using SPSS. The result is presenting the two test which is the Kolmogorov-Smirnov test and Shapiro-Wilk. This sample can handle more than 2000 sizes of samples. By that, we use the Shapiro-Wilk test. The table above shows the result of mean 1 from mean 5 and the relationship between mean 1 until mean d the mean 5.

The results of each test show that all the significant values, p are 0.000 less than 0.05, showing that the data is abnormal since it does not follow a normal distribution. Based on the results of this test, define the relationship between the two elements in this review.

4.7 PARTIAL CORRELATIONS

Table 4.26: Result of Partial Correlations

			Mean 1	Mean 2	Mean 3	Mean 4	Mean 5
-none-	Mean 1	Correlation	1.000	.705	.615	.628	.728
		Significance (2-tailed)	.	.000	.000	.000	.000
		df	0	382	382	382	382
	Mean 2	Correlation	.705	1.000	.690	.586	.744
		Significance (2-tailed)	.000	.	.000	.000	.000
		df	382	0	382	382	382
	Mean 3	Correlation	.615	.690	1.000	.342	.694
		Significance (2-tailed)	.000	.000	.	.000	.000
		df	382	382	0	382	382
	Mean 4	Correlation	.628	.586	.342	1.000	.611
		Significance (2-tailed)	.000	.000	.000	.	.000
		df	382	382	382	0	382
	Mean 5	Correlation	.728	.744	.694	.611	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.

		df	382	382	382	382	0
Mean 5	Mean 1	Correlation	1.000	.356	.223	.337	
		Significance (2-tailed)		.000	.000	.000	
		df	0	381	381	381	
	Mean 2	Correlation	.356	1.000	.362	.249	
		Significance (2-tailed)	.000	.	.000	.000	
		df	381	0	381	381	
	Mean 3	Correlation	.223	.362	1.000	-.143	
		Significance (2-tailed)	.000	.000	.	.005	
		df	381	381	0	381	
	Mean 4	Correlation	.337	.249	-.143	1.000	
		Significance (2-tailed)	.000	.000	.005		
		df	381	381	381	0	

The strength of a link between two variables may be assessed using a technique called partial correlation, which takes into consideration the impact of one or more additional factors. For instance, you could wish to investigate whether or not there is a connection between the quantity of food ingested and blood pressure, taking into account factors such as one's weight and the amount of physical activity one gets. It is feasible to exercise control over a number of variables at the same time called control variables or covariates. However, it is generally not

advisable to incorporate more than one or two control variables since the reliability of your test will decrease proportionately with the number of control variables you employ.

4.8 PEARSON CORRELATIONS

Table 4.27: Result of Pearson Correlations

		mean1	mean2	mean3	mean4	mean5
Correlations						
mean 1	Pearson Correlation	1	.705**	.615**	.628**	.728**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	384	384	384	384	384
mean 2	Pearson Correlation	.705**	1	.690**	.586**	.744**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	384	384	384	384	384
mean 3	Pearson Correlation	.615**	.690**	1	.342**	.694**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	384	384	384	384	384
mean 4	Pearson Correlation	.628**	.586**	.342**	1	.611**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	384	384	384	384	384
mean 5	Pearson Correlation	.728**	.744**	.694**	.611**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	384	384	384	384	384
**. Correlation is significant at the 0.01 level (2-tailed).						

The data of the correlations are shown in the table above, beginning with mean 1 and continuing through mean 5. The word "correlation" refers to a kind of statistical analysis that uses two variables to assess both the strength of a relationship and the path that the connection takes. The value of the correlation coefficient ranges from +1 to -1, and this range is dependent on the strength of the link being measured. A value of 1 indicates that the two variables are completely connected to one another. As the value of the correlation coefficient gets closer to zero, the connection between the two variables will become less strong. The sign of the

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coefficient specifies the direction of the connection; a positive relationship is shown by a plus sign, while a negative relationship is denoted by a minus sign. As a consequence of this, each and every Pearson correlation indicating that data from mean 1 through mean 5 indicates that the result is +1, which is the ideal degree of connection between the two variables. Mean 1 is the starting point. Mean 5 is the ending point.

4.9 HYPOTHESIS TESTING

This study tested a total of four main hypotheses. To evaluate the relationship between independent variables and dependent variables, Pearson's Correlation and Multiple Regressions are performed. Each hypotheses test's results are summarized below.

Manpower shortage

H1: There is a significant relationship between the manpower shortage and customer satisfaction towards distribution challenges faced by the courier services in Kelantan. Pearson's Correlation was used to investigate the relationship between man-power shortage and customer satisfaction. Table below summarised the outcome of this study. There were obvious relations between man-power shortage and customer satisfaction (r= 0.728, p=0.01), where the significant value is at 0.000, which is less than 0.01. Therefore, H1 fail to be rejected. This has affected the relationship between man-power shortage and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

Weather conditions

H2: There is a positive linear and significant relationship between the weather conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan. Pearson's Correlation was used to investigate the relationship between the weather conditions and customer satisfaction. Table below summarised the outcome of this study. There were obvious relations between weather conditions and customer satisfaction (r=0.744, p=0.01),

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where the significant value is at 0.000, which is less than 0.01. Therefore, H2 fail to be rejected. This affected the relationship between the weather conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

Road conditions

H3: There is a significant relationship between road conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan. Pearson's Correlation was used to investigate the relationship between road conditions and customer satisfaction. Table below summarised the outcome of this study. There were obvious relations between road conditions and customer satisfaction (r=0.694, p=0.01), where the significant value is at 0.000, which is less than 0.01. Therefore, H3 fail to be rejected. This affected the relationship between road conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

Vehicle conditions

H4: There is a significant relationship between vehicle conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan. Pearson's Correlation was used to investigate the relationship between vehicle conditions and customer satisfaction. The table below summarised the outcome of this study. There were obvious relations between vehicle conditions and customer satisfaction (r=0.611, p=0.01), where the significant value at 0.000, which is less than 0.01. Therefore, fail to be rejected. This affected the relationship between vehicle conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan.

4.10 MULTIPLE REGRESSION

The table below represents the overall sample of people's thoughts on the distribution challenges faced by the courier services in Kelantan. Based on ANOVA, F= 216.626 and which is significant. The Multiple regression showed Man-power shortage (β=0.231), Weather conditions (β=0.237), Road conditions (β=0.313), and Vehicle conditions (β=0.220). For unstandardized coefficients, Man-power shortage is (β=0.217), Weather conditions (β=0.228), Road conditions (β=0.258,) and Vehicle conditions (β=0.192).

Table 4.28: Result of ANOVA

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	90.524	4	22.631	216.626	.000b
	Residual	39.594	379	.190		
	Total	130.118	383			
a. Dependent Variable: Mean5						
b. Predictors: (Constant), Mean4, Mean1, Mean2, Mean3						

Table 4.29: Result of Coefficients

Coefficientsa								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.475	.129		3.691	.000	.222	.728
	Mean1	.217	.043	.231	5.090	.000	.133	.301
	Mean2	.228	.046	.237	4.970	.000	.138	.319
	Mean3	.258	.034	.313	7.533	.000	.191	.325
	Mean4	.192	.034	.220	5.684	.000	.125	.258
a. Dependent Variable: Mean5								

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4.11 FACTOR ANALYSIS

Table 4.30: Result of Factor Analysis

Communalities

	Initial	Extraction
Man-power shortage do affect the process of delivery in Kelantan.	1.000	.509
Man-power shortage do lead to slow delivery timing.	1.000	.589
Man-power shortage do affect the customer satisfaction toward the delivery services.	1.000	.741
Man-power shortage do lead to low level of customer satisfaction with the delivery services in Kelantan.	1.000	.593
Man-power shortage within the courier services lead to problems of delivery in Kelantan.	1.000	.663
The weather change problem disrupts the courier service of the delivery process in Kelantan.	1.000	.682
The problem of weather change causes damage to the customer's goods.	1.000	.544
The problem of climate change affects the reputation of a firm.	1.000	.605
The change in weather causes customers to be dissatisfied with the courier service.	1.000	.625
The weather change is the main factor in delaying the delivery of goods in Kelantan.	1.000	.622
The courier service is satisfied with the road conditions in Kelantan.	1.000	.566
The road condition in Kelantan delays the delivery services.	1.000	.658
The road condition in Kelantan endangers the safety during delivery service.	1.000	.645
The road condition in Kelantan causes accidents during delivery service.	1.000	.613

The road conditions in Kelantan affects the delivery services.	1.000	.667
The vehicle condition in the process of delivery affects the level of customer satisfaction.	1.000	.587
The vehicle condition affects the reputation of a company.	1.000	.733
The vehicle condition causes damage to the goods and services	1.000	.740
The vehicle condition affects the process of delivery of goods in Kelantan.	1.000	.681
The type of vehicle affects the process of delivery of goods to customer in Kelantan	1.000	.676
Users of courier service are satisfied with the road transportation service provided in Kelantan	1.000	.542
Manpower shortage in courier service influence the customer satisfaction towards road transportation service in Kelantan.	1.000	.507
Weather conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan.	1.000	.544
Road conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan.	1.000	.549
Vehicle conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan.	1.000	.550

The approach of factor analysis necessitates a high sample size. Factor analysis is based on the correlation matrix of the variables involved, and correlations typically require a large sample size to stabilise. Tabachnick and Fidell (2001, page 588) reference Comrey and Lee's (1992) advice on sample size: 50 cases are very poor, 100 cases are bad, 200 cases are fair, 300 cases are good, 500 cases are very good, and 1000 or more are excellent. To prevent computing issues, a bare minimum of 10 observations per variable is required. By that, we use a 384-sample size which is good to run the data ad get the exact result that we want. In the table above the data for the factor analysis which focuses on the Communalities show the data on the initial

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is the same which is 1.000 for all the questions that we provide. Theraction is the different result that we get. All the question result of data is above 0.5.

4.12 CHI SQUARE TEST

Table 4.31: Result of Chi Square test for Manpower Shortage

	Chi-Square	df	Asymp. Sig.
Man-power shortage do affect the process of delivery in Kelantan.	350.271a	4	.000
Man-power shortage do lead to slow delivery timing.	407.693a	4	.000
Man-power shortage do affect the customer satisfaction toward the delivery services.	416.781a	4	.000
Man-power shortage do lead to low level of customer satisfaction with the delivery services in Kelantan.	418.370a	4	.000
Man-power shortage within the courier services lead to problems of delivery in Kelantan.	411.755a	4	.000

Table 4.32: Result of Chi Square test for Weather Conditions

	Chi-Square	df	Asymp. Sig.
The weather change problem disrupts the courier service of the delivery process in Kelantan.	411.755a	4	.000
The problem of weather change causes damage to the customer's goods.	413.755a	4	.000
The problem of climate change affects the reputation of a firm.	423.786a	4	.000
The change in weather causes customers to be dissatisfied with the courier service.	369.255a	4	.000
The weather change is the main factor in delaying the delivery of goods in Kelantan.	438.786a	4	.000

Table 4.33: Result of Chi Square test for Road Conditions

	Chi-Square	df	Asymp. Sig.
The courier service is satisfied with the road conditions in Kelantan.	220.505a	4	.000
The road condition in Kelantan delays the delivery services.	247.432a	4	.000
The road condition in Kelantan endangers the safety during delivery service.	238.109a	4	.000
The road condition in Kelantan causes accidents during delivery service.	242.120a	4	.000
The road conditions in Kelantan affects the delivery services.	282.563a	4	.000

Table 4.34: Result of Chi Square test for Vehicle Conditions

	Chi-Square	df	Asymp. Sig.
The vehicle condition in the process of delivery affects the level of customer satisfaction	327.120a	4	.000
The vehicle condition affects the reputation of a company.	401.417a	4	.000
The vehicle condition causes damage to the goods and services	357.589a	4	.000
The vehicle condition affects the process of delivery of goods in Kelantan.	362.068a	4	.000
The type of vehicle affects the process of delivery of goods to customer in Kelantan	389.958a	4	.000

Table 4.35: Result of Chi Square test for Customer Satisfaction

	Chi-Square	df	Asymp. Sig.
Users of courier service are satisfied with the road transportation service provided in Kelantan	410.167a	4	.000
Manpower shortage in courier service influence the customer satisfaction towards road transportation service in Kelantan.	394.151a	4	.000
Weather conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan.	422.146a	4	.000
Road conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan.	362.302a	4	.000
Vehicle conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan.	414.229a	4	.000

A chi-square test is a statistical test that is used to compare observed and predicted outcomes. The goal of this test is to identify whether a disparity between actual and predicted data is due to chance or to a link between the variables under consideration. Chi-square is a statistical test used to assess the goodness of fit between predicted and observed findings by examining the differences between categorical variables from a random sample.

4.13 ASSESSMENT OF THE MEASUREMENT MODEL

In this study, the research hypothesis was tested with the measurement model. The measurement model showed the relationship between the items and what they meant. Before going on with the analysis, this analysis must be met in the measurement model stage. Figure 4.8.1 shows the study's measurement model.
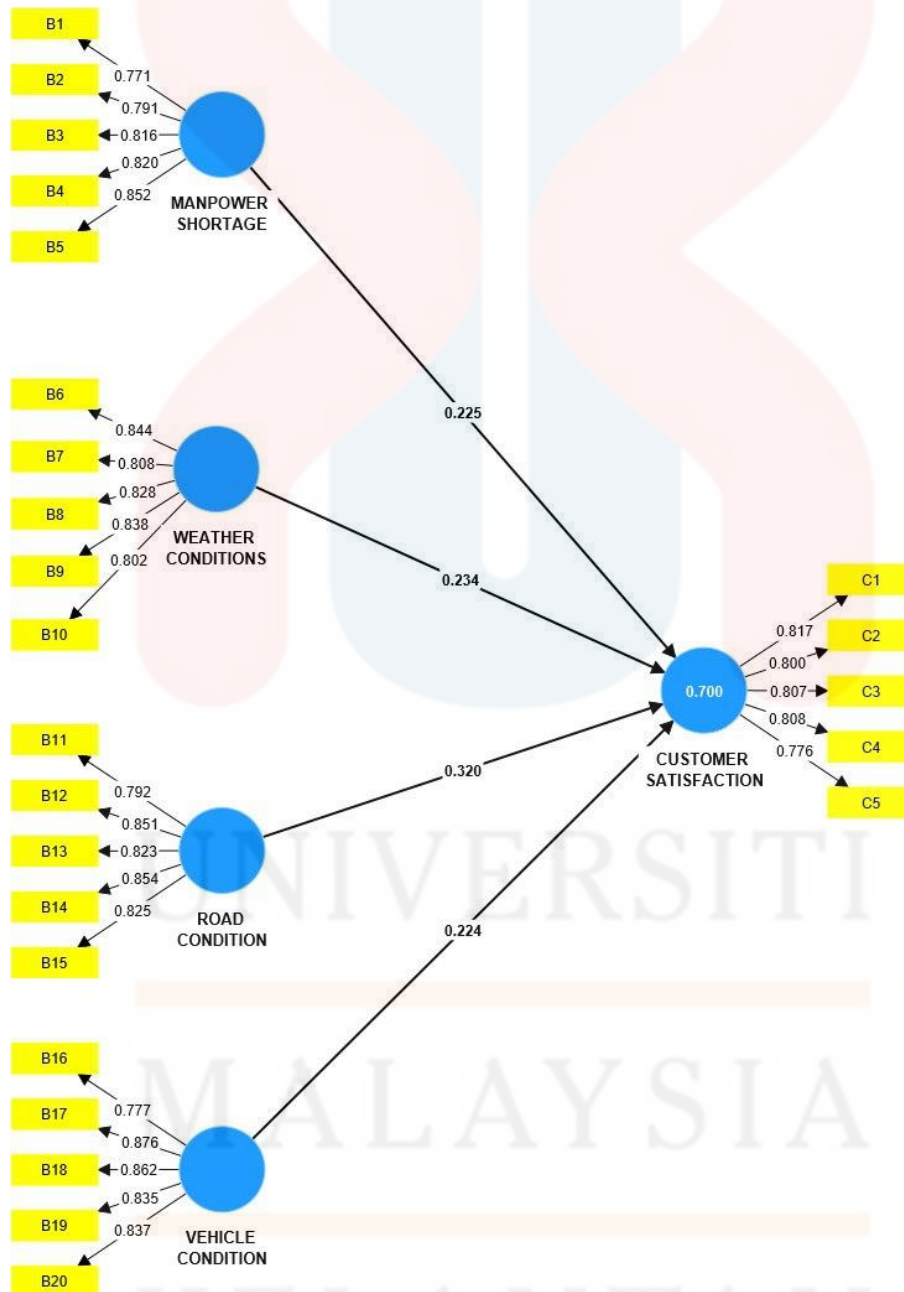

Figure 4.6: Measurement model.

The measurement model can be confirmed valid and reliable if the loading is higher than 0.5, the average variance extracted (AVE) is higher than 0.5, and the composite reliability is higher than 0.7, respectively (Hair et al., 2017). Table 4.8 clearly illustrates that all the requirements to establish convergent validity have been fulfilled; hence, the study concludes that convergent validity was not a problematic issue for the study.

Table 4.36: Summary of Reliability and Validity Test

Reliability and Validity Table				
	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability(rho_c)	Average variance extracted (AVE)
Customer Satisfaction	0.861	0.861	0.9	0.643
Man-power shortage	0.869	0.872	0.905	0.657
Weather conditions	0.886	0.888	0.917	0.688
Road conditions	0.894	0.898	0.922	0.702
Vehicles conditions	0.882	0.883	0.914	0.679

In data validation, the research gets information from respondents that is used to figure out how reliable the information is. Cronbach's alpha and the average variance were used to check how reliable the data were. In this study, 364 people gave answers, which were then split into 4 independent variables which are man-power shortage, weather conditions, road conditions, and vehicle conditions. For dependent variable is customer satisfaction with the courier services in Kelantan. There was also a test of the reliability of each factor, which ranged from 0.861 to 0.894. Since the coefficients of all the factors are above 0.7, the data was thought to be reliable enough to analyze further.

The Average Variation Extracted (AVE) is a measure of the variance collected by a construct relative to the measurement error variance. Each latent variable and observed value in the table above ranged between 0.643 and 0.702. A value of at least 0.50 for the average extracted variance (AVE) is widely accepted. According to several research, an AVE of less

than 0.50 implies that there are some inconsistencies in the constructs' variance. In every measurement model, the Average Variance Extracted (AVE) must be computed for each construct and must be at least 0.50. (Lathiya,2022). By these average variances extracted (AVE) tests, it has been determined that the measurement items are of acceptable quality.
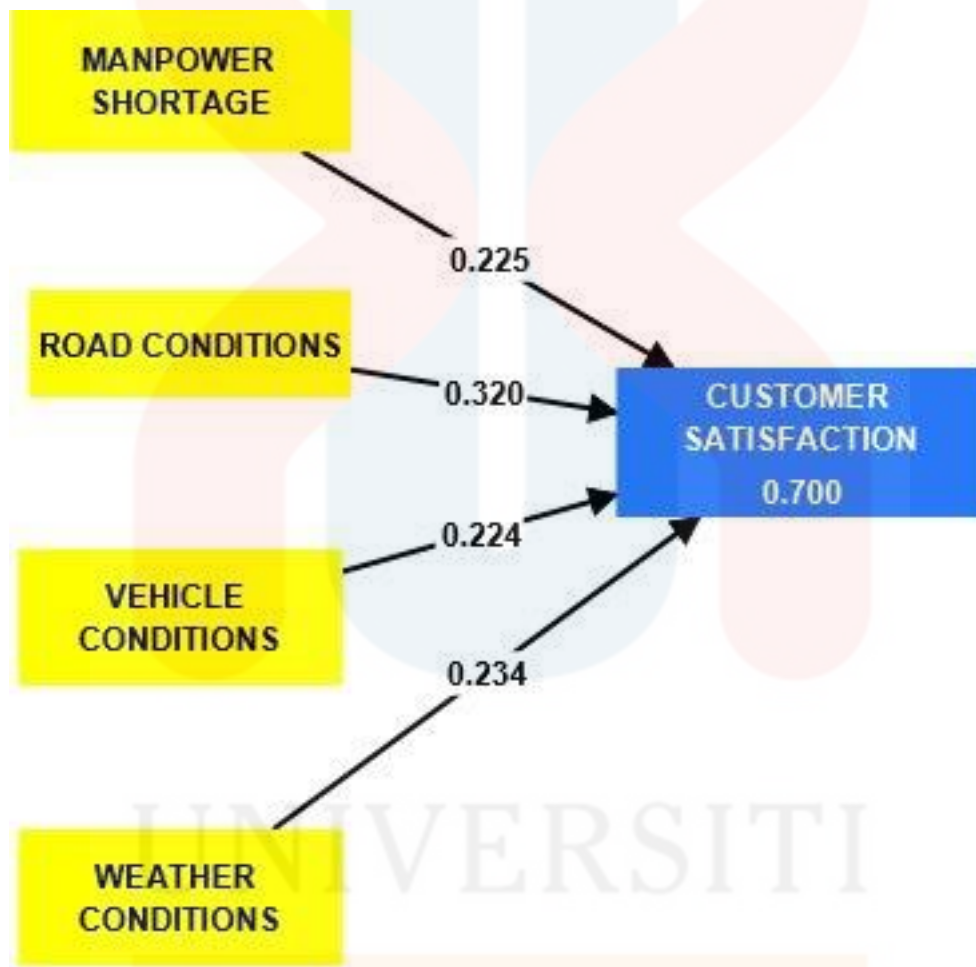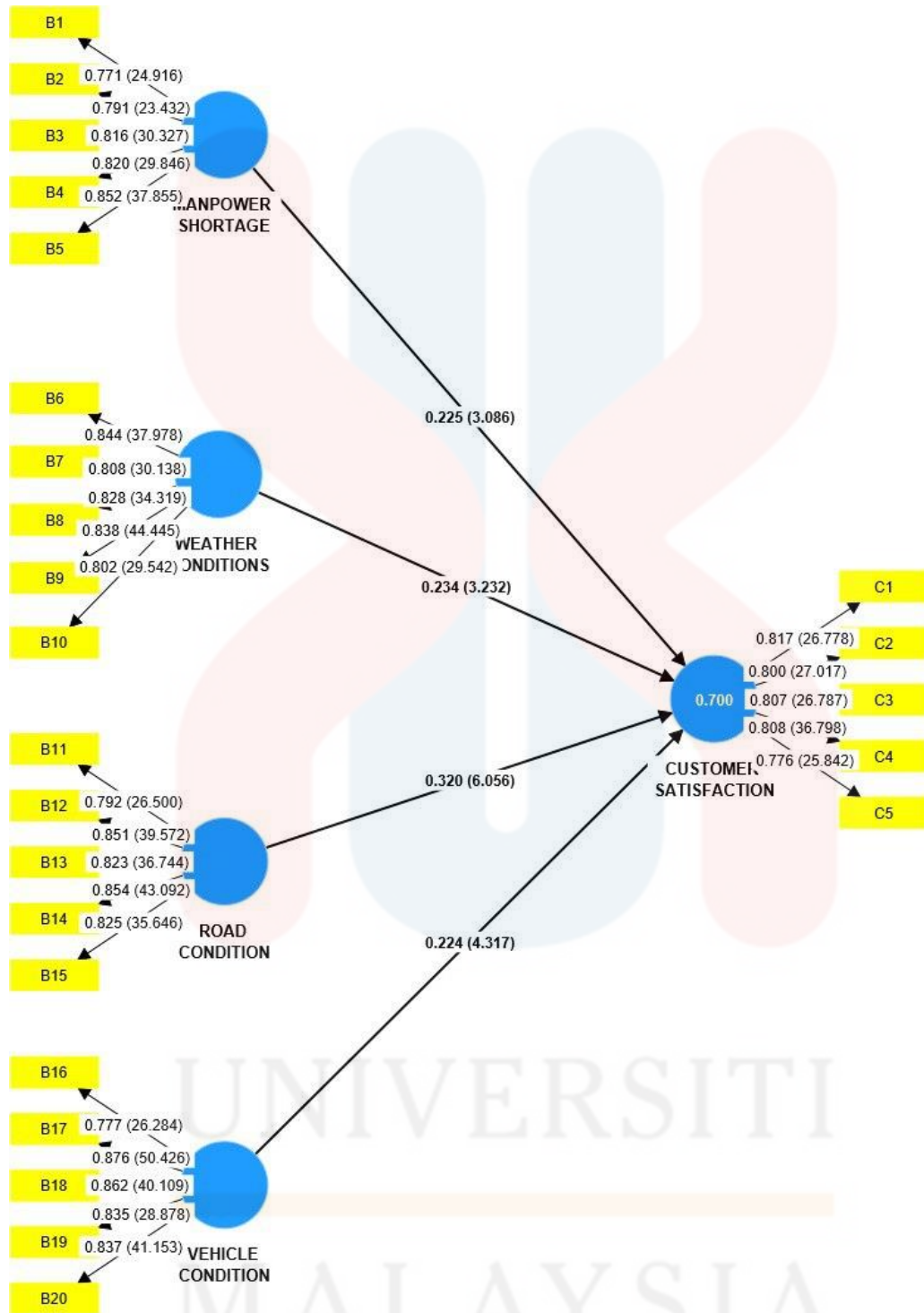

Figure 4.7: Regression

Figure 4.8: Modal of bootstrapping

Table 4.37: Hypothesis testing

Hypothesis relationship	Standard Beta	Standard Error	T value	P value	Decision
H1: MPS-> CS	0.225	0.045	4.93	0	Accept
H2: WC -> CS	0.234	0.048	1.971	0	Accept
H3: RC -> CS	0.32	0.041	7.73	0	Accept
H4: VC -> CS	0.224	0.039	5.799	0	Accept

Note: Man-power Shortage, MPS - Weather Conditions, WC – Road Conditions, RC –
Vehicles Conditions, VC – Customer Satisfaction, CS

Before evaluating the structural model, collinearity must be ruled out as a concern. Assessing the VIF values of each set of predictor components in the structural model is necessary for examining the model for collinearity concerns (Hair et al., 2017). As demonstrated in Table 4.13.2, all VIF values for each sample construct are less than 3.0, as Diamantopoulos and Siguaw proposed (2006). The current analysis shows that there was no problem with collinearity, so we can move on to testing hypotheses.

The research hypotheses may be supported if the beta values are in accordance with the hypothesis's direction, t-values, and p-value. In terms of the confidence interval, which is lower level (LL) and upper level (UL), it should not straddle or overlap at zero between the LL and UL (Hair et al., 2018). In the present analysis, a bootstrapping approach with resampling of 5,000 was used, in which the findings for the direct effect show that four hypothesized relationships were supported, and one hypothesized relationship was not supported. Table 4.13.2 below shows the first hypothesis, Man-power shortage was not satisfied by customer satisfaction ($ß = 0.225$, $t = 4.963$, $p < 0.00$). The second hypothesis, weather conditions were positively related to customer satisfaction ($ß = 0.234$, $t = 4.93$, $p < 0.000$). Next, the third hypothesis, road conditions were positively related to customer satisfaction ($ß = 0.32$, $t = 7.73$, $p < 0.000$). This is followed by the fourth hypothesis, vehicle conditions were positively related to customer satisfaction ($ß = 0.224$, $t = 5.799$, $p < 0.000$). Table 4.8.1 below indicates that the

three direct hypotheses developed for the model were significant; thus H1, H2, H3, and H4 were accepted.

4.14 SUMMARY / CONCLUSION

The data collected in this study is to highlight the distribution challenges faced by courier services in Kelantan, Malaysia. There are 384 respondents that are involved in this study. According to the findings, the majority of the respondents were female and Malay, with the remainder falling into the other groups. The age ranges from below 19 years old to more than 50 years old while the majority of the respondents are from the 20 to 29 years old group. As for academic qualifications, the majority of the respondent was from the Degree groups while the rest belongs to the remaining group. The mean for manpower shortage is 4.0990 and the mean for weather conditions is 4.1599. Next, the mean for road conditions is 4.0135 and the mean for vehicle conditions is 4.1729.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.1 INTRODUCTION

In this chapter, the research has explained and discussed the study's results through the Partial correlation presented in chapter 4. The rundown is worked by the issues introduced in part 2. In addition, the researcher has also discussed hypothesis testing and whether the research hypothesis is accepted or rejected. Overall, this chapter will discuss the findings from the previous chapter, which contains six parts: key findings, discussion, implication, limitation, recommendation, and conclusion of the study.

5.2 KEY FINDINGS

Table 5.1: Relationship between manpower shortage and customer satisfaction

Research Objective: To examine the significant relationship between manpower shortage and customer satisfaction.
Research Question: Is there any significant relationship between manpower shortage and customer satisfaction?

Based on the table above, the result reliability analysis shows manpower shortage has a reliable Cronbach's Alpha of .870. It shows that the manpower shortage is statistically a significant value. Therefore, the research objective was reached. We may conclude, there is a substantial correlation between the manpower shortage and customer satisfaction as the research purpose and question have been satisfied.

Table 5.2: Relationship between weather conditions and customer satisfaction

Research Objective: To examine the significant relationship between weather condition and customer satisfaction.

Research Question: Is there any significant relationship between weather condition and customer satisfaction?

Based on the table above, the result reliability analysis shows weather condition has a reliable Cronbach's Alpha of .782. It shows that the weather condition is statistically a significant value. Therefore, the research objective was reached. We may conclude, there is a substantial correlation between the weather condition and customer satisfaction as the research purpose and question have been satisfied.

Table 5.3: Relationship between road conditions and customer satisfaction

Research Objective: To examine the significant relationship between road condition and customer satisfaction.

Research Question: Is there any significant relationship between road condition and customer satisfaction?

Based on the table above, the result reliability analysis shows road condition has a reliable Cronbach's Alpha of .903. It shows that the road condition is statistically a significant value. Therefore, the research objective was reached. We may conclude, there is a substantial correlation between the road condition and customer satisfaction as the research purpose and question have been satisfied.

Table 5.4: Relationship between vehicle conditions and customer satisfaction.

Research Objective: To examine the significant relationship between vehicle condition and customer satisfaction.

Research Question: Is there any significant relationship between vehicle condition and customer satisfaction?

Based on the table above, the result reliability analysis shows vehicle condition has a reliable Cronbach's Alpha of .933. It shows that the vehicle condition is statistically significant value. Therefore, the research objective was reached. We may conclude, there is a substantial correlation between vehicle condition and customer satisfaction as the research purpose and question have been satisfied.

Table 5.5: Summary of Findings

Research Objective and Question	Finding
Research Objective: To examine the significant relationship between manpower shortage and customer satisfaction. Research Question: Is there any significant relationship between manpower shortage and customer satisfaction?	There is significant relationship between manpower shortage and customer satisfaction.
Research Objective: To examine the significant relationship between weather condition and customer satisfaction. Research Question: Is there any significant relationship between weather condition and customer satisfaction?	There is significant relationship between weather condition and customer satisfaction.
Research Objective: To examine the significant relationship between road condition and customer satisfaction. Research Question: Is there any significant relationship between road condition and customer satisfaction?	There is significant relationship between road condition and customer satisfaction.
Research Objective: To examine the significant relationship between vehicle condition and customer satisfaction. Research Question: Is there any significant relationship between vehicle condition and customer satisfaction?	There is significant relationship between vehicle condition and customer satisfaction.

5.3 DISCUSSION

Research Question 1: Is there any relationship between manpower shortage and customer satisfaction towards distribution challenges faced by the courier services in Kelantan?

In this study examined by SPSS and Smart PLS, the first research objective is to determine the relationship between manpower shortage and customer satisfaction towards distribution challenges faced by the courier services in Kelantan. According to the result shown in Table 5.1, there is a significant value at 0.048 less than 0.05 for Mean 1 which replacement for Manpower Shortage. While based on Table 5.2, Smart PLS analysis does not have a significant value at 0.12 which means more than 0.05 for independent variable 1 which is manpower shortage. This is because nowadays only the economy in Malaysia upgrade to normal after the covid-19 pandemic. During the period, there was a lot of companies closing their operation, and reducing employees' income, especially in the Courier service business. So, after the pandemic, the company did have enough manpower to run its daily business as normal. Therefore, after this manpower shortage will recover with add more employees and reducing the problems faced by the courier service.

Research Question 2: Is there any relationship between weather conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan?

The second exploration objective is to study the relationship between weather conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan. According to the result shown in Table 5.1, there is a significant value at 0.029 less than 0.05 for Mean 2 which replacement for Weather Conditions. While based on Table 5.2, Smart PLS analysis also has a significant value at 0.049 which means less than 0.05 for independent variable 2 which is Weather Conditions.

Research Question 3: Is there any relationship between road conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan?

The third research objective is to explore the relationship between road conditions and customer satisfaction towards distribution challenges faced by courier services in Kelantan. Based on the previous result that showed in Table 5.1, there is a significant value at 0.00 less than 0.05 for Mean 3 which replacement for Road Conditions. While based on Table 5.2, Smart PLS analysis also has a significant value at 0.00 which means less than 0.05 for independent variable 3 which is Road Conditions.

Research Question 4: Is there any relationship between vehicle conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan?

The fourth exploration objective is to investigate the relationship between vehicle conditions and customer satisfaction towards distribution challenges faced by the courier services in Kelantan. As per the outcome in Table 5.1, there is a significant value at 0.00 less than 0.05 for Mean 4 which replacement for Vehicle Conditions. While based on Table 5.2, Smart PLS analysis also has a significant value at 0.00 which means less than 0.05 for independent variable 4 which is Vehicle Conditions.

5.4 IMPLICATIONS OF THE STUDY

This study can help the courier service company to improve their service. This is because our study is focuses on the customer satisfied toward courier service in Kelantan. Based on our study and result, we can see that the problem that make the delivery services late in Kelantan that on what our research can find from the questioner that we contribute.

Based on this study, courier service needs to improve the service that the company provide to make the customer satisfied with the service. We can see that our study on the courier service in Kelantan that make the delivery late divided into several things. Which is the management on the courier service and the steps that need to be taken to ensure that the delivery process not late by the time given.

The study also provides the problem and what make the delivery late by that the courier service can improved they performance on the delivery process in Kelantan. Delivery delays can happen due to multiple reasons. It might result in delayed or failed delivery outcomes, lowering the quality of the client experience and reducing the effectiveness of the firm. By that this study can help the improvement of what happen in the courier service late and what make the customer not satisfied with the courier service in Kelantan.

5.5 LIMITATIONS OF THE STUDY

The limitation of our study is about the population. To begin with, our research is only taking in area of Kelantan and community in here. This is because this study is focuses on area of Kelantan. By that we only take responded that live in Kelantan. Moreover, the information there a limitation info and resource about the courier service in Kelantan. We must conclude and find the information about the courier service problem via google and more other method that available. By that we conduct the research and study this topic to finding the information and that make the courier service in Kelantan late delivery.

Other than that, about the population and limitation about the questionnaire, because we only take 384 respondents to answer out questioner to get the data about the study that we do. Is hard to get the respondent because we only provide the questionnaire vie google form and all the question is in English. By that its take time to get the data and respondent to complete the research. Because surveys are exclusively disseminated via Google Forms, respondents may struggle to comprehend and answer to the questions when compared to physical forms. Due to issues with responses, a face-to-face explanation and prompt response are not possible.

5.6 CONTRIBUTION OF THE STUDY

Some theoretical and practical contributions were made in this study based on the research.

5.6.1 Theoretical Contributions

Transaction cost theory (TCT) has sparked a lot of attention in the supply chain management literature (Williamson, 1985, 1991). In a word, TCT focuses on how a company could manage its boundary-crossing sports in order to lower the total of its production and transaction costs. Corporations' production costs vary owing to the scope of their operations, learning/revel in outcomes, geographical advantages, and proprietary effects such as patents and trade secrets and procedures. Transaction expenses vary as well and include costs related

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to transaction preparation, administration, and monitoring across markets. (Halldorsson et al., 2015). The potential of a trading associate to engage in opportunistic behaviour, defined as self-interested or dishonest behaviour, enhances transaction costs.

Based on this, our research is trying to find out what happens if all the procedure of a delivery is efficient enough to streamlined the delivery services.

TITLE: THE DISTRIBUTION CHALLENGES FACING BY THE COURIER SERVICES IN KELANTAN – (SPECIAL STUDY WITH ROAD TRANSPORTATION)

INDEPENDENT VARIABLE — MODERATE VARIABLE — DEPENDENT VARIABLE

Manpower shortage / Weather conditions / Road conditions / Vehicle conditions → Distribution Challenges → Late delivery (Timing) / Damage product / Damage to the retailers' brands reputations → Customer Satisfaction

5.6.2 Practical Contributions

Practical logistic goals have nearly become current corporate strategy paradigms. During the 1990s, particularly in the American economy, the notion of a strategy based on comparable and concurrent resulting to an ideal of manufacturing costs, quality, and time was developed. The time criteria are addressed in this paper on many levels. Time is a factor that is very scarce. It may or may not be utilised. The expenses of freezing up production elements

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are prejudged by time. Because there is less time for manufacturing elements to freeze up, the more productive the production, the lower the cost.

The lack of time factor substitution in manufacturing is highlighted as an issue. All three primary factors of modern company (costs, time, and quality) arise naturally in commercial logistic plans. As a result, the fundamental problems of corporate industry are realistic logistical ones: what? (To give), how much? when? They emerged considerably earlier than the logistic theory and were caused by actions such as localisation. Even before the decoupling point had its scientific name, the right location of the point of separation between dependent and non-dependent needs allowed for greater benefits. The same thing happened with trade-off decisions, which have been realistically addressed long well before theory and optimization techniques on the subject were developed.

5.7 RECOMMENDATION AND CONCLUSION

In the future, the implemented method of courier delivery quality enhancement may be coupled with other solutions. These are the following:

• Morning unloading and cargo sorting on courier sites are automated. Unloading is currently done by hand by couriers using straight transit. Implementing even basic conveyor belt can assist couriers in completing their jobs more quickly. Sorter that was used in beta version on another terminal saved between 5 and 10 minutes depending on the number of shipments. Similarly, during afternoon loadings, the recalled sorter may be used to optimise the departing schedule of the straight transit first from terminal to the Gateway.

• Morning procedures may be made more flexible by allowing the "first loading wave" of courier vehicles to be loaded before agreeing on the List of Receipts of Parcels to the Terminal with Couriers Lists of Parcels Invoiced to be Delivered on the Given Day. Loaded automobiles from the "initial loaded phase" are making room in gates for the following couriers and are already ready for departure while the List of Recipients and Courier Lists are reconciled. This speeds up overall exit of all couriers by around 45 minutes on average. It enables an earlier arrival to the delivery region and the service of a large number of customers by a single courier, resulting in an increase in indicators by expanding the number of customers served by the courier without the requirement for distant arrival at extra consumers. As a result, couriers serve consumers from outside their service area who are near to the boundary of their delivery area.

• An option in the situation of a courier's unwillingness to initiate proactive contact with the receiver is the potential of rewarding them for efficiently delivered items. Some routes are now compensated on a daily basis. A new payment system should be an effective instrument for ensuring the efficacy of courier services. The proactive communication is also accurate as from

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customer's perspective, since being notified early allows them to better prepare for the parcel's arrival. The majority of courier businesses do not wish to give couriers private contact information. Clients will refuse to report orders via the Website or over the phone to the customer care department and will instead call couriers directly. In such cases, the courier will frequently be unable to make an informed judgement on the chance of parcel reception, and as a result, in order to meet the customer's request, may attempt to modify the route. It will be moved into the absence of optimization. If the firm does not want to reach to actual personal contact on the line couriers - client (the sender or perhaps the recipient), it should develop a proactive call centre or encourage consumers to pick the optimal time for delivering a parcel through the Internet. At the moment, it is feasible to find solutions using the SMS application, in which the client receives a message in the morning including information about the anticipated hour window for the delivery of their package. By responding with a suitable order, someone can adjust the product provides or the hour range. He will also be unable to react to the message if the scheduled hours do not suit them and he has to wait for the delivery.

• The inclusion of new delivery services for midday and late deliveries. The average time it takes to return from the terminal is 15:47. Implementing extra routes that can deliver undelivered items from the prior day between 5 and 9 p.m. or later will allow for even higher efficiency. These deliveries are especially important for receivers who are only present in the evenings, as well as route redirection that is not performed throughout the day following the courier's departure. This adjustment, however, incurs additional expenses and should be applied only within tandem with compensating solely for successfully delivered goods.

• Extending the time frame Not only will earlier departures allow for a speedier access to itineraries and early customer service in delivery regions, but changing CUT OFFs to later hours (the latest allowable hour of taking orders from a specific location) boosts courier availability on routes. Due to the limited volume of shipments, couriers return to regions

immediately after distributing and retrieving all orders. When there is a greater thickness of packages on routes, it is possible to move the last hour, to which the Contact Centre collects market orders for the acceptance of parcels from consumers, which is moved into the higher quantity of supported packages.

In terms of demand, the transportation industry as a whole is on the rise. Demand grows at a rate ranging from either a little something a twelve percent every year. As a result, the quality of this procedure will become increasingly crucial. The courier sector is viewed as a gauge of transportation services. That is why ongoing quality improvement is critical. However, due of its complexity, courier transportation makes the adoption of any quality measures challenging. It is about a large number of subcontractors who are used to complete services. Companies typically decide to hire couriers based on their individual business, on the partner, though subcontracting approach.

It makes it difficult to enforce desired results. Drivers are also hired by subcontractors that service a variety of routes. As a result, despite exercising power on the middleman, it is not often conveyed straight to the driver who makes the delivery. It is much more challenging to oversee such a workforce from the perspective of the courier business. The level of expenses develops extremely favourably in such a view. Couriers, on the other hand, are not completely associating them with the brand of the business they represent. No courier firm can reach perfection in terms of supply effectiveness. So, if a client chooses to engage, he or she must accept a level of efficiency of at least 95% the next day after receiving shipments. It is important to be aware of peak shipping seasons, such as Christmas, when an efficiency of 85-90% is expected. Nevertheless, deliveries carried out inside Just-In-Time, even by specialised drivers, are completed in a completely different way. In such instances, logistic operators may ensure 100% on-time delivery while excluding external influences. The malfunction of the car, or the traffic congestion - for such occurrences, the business must always be ready (they cannot be a

surprise), since if the client truly demands it, deliveries of the identical components are scheduled on two different vehicles, across separate routes.

However, courier' working practises do not allow for such options. The quality characteristics mentioned in the article satisfy the requirements demanded by ultimate clients. The SMART technique is commonly utilised in general goal planning. Each letter symbolises some of the most crucial characteristics to consider while defining objectives. Logistics, as it is often understood, has its own set of criteria. Completeness, integration, adaptability, comprehensiveness, correctness, transparency, integration, and simplicity of implementation are the most significant (Arsovski et al., 2012).

A study of the research on supply chain quality found little evidence of significant impact on quality criteria. Despite the fact that the supply chain is regarded as a priority in the establishment of competitive advantage, those who evaluate qualitative indicators pay little attention to it. Literature just implies the presence of such a problem, not investigates it. However, as the essay indicates, there are several chances to enhance and increase quality. As a result, managers must adopt measures by themselves (Sharma et al., 2012). During the study, improvements that were the simplest to adopt while also producing the best results in a reasonably short period of time were applied. The proof is the study's outcome (Kadubek, 2014). When preparing an amendments project, we should focus on measurability. It is a critical component, notably in the context of reliability, because we can only assess project success after evaluating the outcomes. Striving for excellence in the framework of quality is a long and continual effort. Many modifications are frequently required at various levels of corporate operation. Both in the technological and organisational and financial realms. Verification of current and executed modifications is required in order to tailor future changes to market expectations. A critical factor is engagement at the system's foundation. There, we should identify weak points—critical spots for quality.

Despite the early opposition from lower-level employees, modifications proved to be the most beneficial in their everyday job. The organisation, which would be focused on constant perfection and enhancement of its logistical procedures in regards to quality, is keen to adopt recommended solutions. To summarise, in an era of ever-increasing client quality expectations, courier operators must also impose improvements in the quality of services offered by their subcontractors. Following the implementation of the recommended improvements, the analysis revealed an increase in a crucial measure - shipment delivery effectiveness. The suggested improvements not only increase the quality of the services provided, but they also have the potential to cut their prices. They do not have to spend a lot of money.

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APPENDIX 1 - DRAFT OF QUESTIONNAIRE

SECTION A: DEMOGRAPHIC INFORMATION/ MAKLUMAT DEMOGRAFI

1. Gender/Jantina

- Male / Lelaki
- Female / Perempuan

2. Race/Bangsa

- Malay / Melayu
- Chinese / Cina
- Indian / India
- Others / Lain-Lain

3. Age/Umur

- < 19 Years Old/Tahun
- 20-29 Years Old/Tahun
- 30-39 Years Old/Tahun
- 40-49 Years Old/Tahun
- >50 Years Old/Tahun

4. Academic Qualification/ Kelayakan Akademik

- Spm
- Stpm/Diploma
- Degree/Sarjana Muda
- Postgraduate (Masters/Phd)
- Others/Lain-Lain

5. Monthly Income / Pendapatan Bulanan

- < Rm1000
- Rm1000-Rm3000
- Rm3000-Rm5000
- >Rm5000

SECTION B: INDEPENDENT VARIABLES

MAN-POWER SHORTAGE

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Man-power shortage do affect the process of delivery in Kelantan.					
Man-power shortage do lead to slow delivery timing.					
Man-power shortage do affect the customer satisfaction toward the delivery services.					
Man-power shortage do lead to low level of customer satisfaction with the delivery services in Kelantan					
Man-power shortage within the courier services lead to problems of delivery in Kelantan.					

WEATHER CONDITIONS

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The weather change problem disrupts the courier service of the delivery process in Kelantan.					
The problem of weather change causes damage to the customer's goods.					
The problem of climate change affects the reputation of a firm					
The change in weather causes customers to be dissatisfied with the courier service.					
The weather change is the main factor in delaying the delivery of goods in Kelantan.					

ROAD CONDITIONS

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The courier service are satisfied with the road conditions in Kelantan					
The road condition in Kelantan delays the delivery services					
The road condition in Kelantan endangers the safety during delivery service.					
The road condition in Kelantan causes accidents during delivery service.					
The road conditions in Kelantan affects the delivery services.					

VEHICLES CONDITIONS

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The vehicle condition in the process of delivery affects the level of customer satisfaction					
The vehicle condition affects the reputation of a company.					
The vehicle condition causes damage to the goods and services.					
The vehicle condition affects the process of delivery of goods in Kelantan.					
The type of vehicle affects the process of delivery of goods to customer in Kelantan.					

SECTION C : DEPENDENT VARIABLES

CUSTOMER SATISFACTION

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Users of courier service are satisfied with the road transportation service provided in Kelantan.					
Man power shortage in courier service influence the customer satisfaction towards road transportation service in Kelantan					
Weather conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan.					
Road conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan					
Vehicle conditions in courier service influence the customer satisfaction towards road transportation service in Kelantan.					

APPENDIX 2 - GANTT CHART

NO	ACTIVIVTIES / WEEK	1	2	3	4	5	6	7
1	Determination of students and supervisors by the PPTA Course Coordinator according to student registration and specialization	■						
2	● Final Year Research Project Briefing I and II ● Distribution of Final Year Research Project Guidelines / online	■						
3	● Meetings and discussions with Supervisors ● Verification of the appropriate field/title of the research project		■					
4	Writing a draft of a Research Project Proposal			■	■	■		
5	● Submission of draft Research Project Proposal to Supervisor ● Review by Supervisor ● Correction by students						■	
6	Submission of two (2) Research Project Proposal Reports to the PPTA supervisor and examiner							■
7	Presentation and assessment							■

NO	ACTIVIVTIES / WEEK	8	9	10	11	12	13	14	15
8	Data Collection	■	■						
9	● Data analysis ● Writing a draft of a research project ● Findings report ● Interpretation and discussion of findings ● Implications of the findings ● Conclusion			■	■				
10	● Submission of draft research project results to the Supervisor ● Turnitin filter Review by Supervisor Correction of research project report that has been reviewed by the Supervisor					■			
11	Submission of two (2) copies of the final report of the research project without a volume together with the Turnitin result slip to the coordinator						■		
12	Presentation and evaluation of the final report of the research project							■	
13	Submission of one (1) copy of the final report of the bound research project to the supervisor of the specialization								■