The Factors faced by The Courier Service in India with reference to Chennai Location, Special Study with Road Transportation

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Abstract:
Recently, the issue of most people does not know about the distribution challenges faced by the courier services in Chennai. Therefore, this study aims to study the distribution challenges faced by the courier services in Chennai – 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 Chennai 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 Chennai.
Keywords: Manpower shortage, Weather conditions, Road conditions, Vehicle conditions Customer satisfaction

1.0 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)[1], the customer (either internal or external) wants the needed product to be delivered in the right place, time, and in the right quantity. Road transportation is one of the modes of transport that have been used in Chennai 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 is using in Chennai is Van, Truck, car, and motorcycle for the process of delivering the product to the customer.

One of the principal factors that prevent the process of freight transportation is the insufficient reliability of road transport means (especially with extension in the operation time) and their failures caused by various reasons (Algimantas Smičius, 2002)[2]. 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)[3]. 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.

1.2. PROBLEM STATEMENT

The challenges faced by the courier services here in Chennai are held by many factors 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.

1.3 RESEARCH QUESTION

1. Is there any relationship between manpower shortage and customer satisfaction towards distribution challenges faced by the courier services in Chennai?
2. Is there any relationship between weather conditions and customer satisfaction towards distribution challenges faced by the courier services in Chennai?
3. Is there any relationship between road conditions and customer satisfaction towards distribution challenges faced by the courier services in Chennai?
4. Is there any relationship between vehicle condition and customer satisfaction towards distribution challenges faced by the courier services in Chennai?

1.4 RESEARCH OBJECTIVES

1. To determine the relationship between manpower shortage and customer satisfaction towards distribution challenges faced by courier services in Chennai.
2. To study the relationship between weather conditions and customer satisfaction towards distribution challenges faced by the courier services in Chennai.
3. To explore the relationship between road conditions and customer satisfaction towards distribution challenges faced by the courier services in Chennai.

1.5 SCOPE OF THE STUDY

The research conducted was to determine the distribution challenges faced by the courier services in Chennai- a special study on road transportation. There are four challenges such as main power shortage, weather conditions, road conditions motorcycle conditions.

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1.6 SIGNIFICANCE OF THE STUDY

The results of the present study can be useful for many parties such as the Ministry of Transport Chennai, India. This research can help transport department to examine what are the challenges and how affect the distribution challenges faced by the courier services in Chennai.

1.7 DEFINITION OF THE TERM

1.7.1 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 leveled, 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.

1.7.2 Labor Shortage

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

1.7.3 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.

1.7.4 Vehicle 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.

1.7.5 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)[4].

1.7.6 Brand Imagine

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).

2.0 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 Chennai. 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 Chennai.

2.2 INDEPENDENT VARIABLES
2.2.1 MANPOWER SHORTAGE

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 (Hsain, 2022)[5] India is currently facing labour shortages in many sectors. Lack of truck drivers can cause delays and disruption in the delivery of goods. The whole UK food supply chain has a labour shortfall of around 12.5%, or nearly 500,000 workers. A high degree of unemployment may coexist with both a labour and skill deficit. 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.

2.2.2 WEATHER CONDITIONS

The second challenge faced by courier services in Chennai is weather conditions. The term "weather" refers to the aggregate of several aspects of the atmosphere. According to Jabatan Meteorologi India, the climate of India is defined by two distinct monsoon seasons - Southwest Monsoon and Northeast Monsoon. "Monsoon" is simply the name given to the predominant winds that blow during a certain season. The Northeast Monsoon causes flooding in Chennai every year from November to March. Delivery operations can be hampered by inclement weather such as heavy rain, flooding, or hazy windows. When the weather is unpleasant, it might be difficult for delivery drivers to make sure they are delivering on time.

2.2.3 ROAD CONDITIONS

Road infrastructure is regarded as one of a nation's most valuable assets, contributing significantly to economic progress and social benefits. Periodic maintenance and rehabilitation efforts keep assets in good shape and improve their performance and safety. When to carry out these tasks is determined by each agency and is usually dependent on the desired level of serviceability. Chennai's Public Works Department (PWD) has identified 16 areas that need repairs at an estimated cost of RM14.90 million, but only three locations have received approval for repair

work. PWD also identified eight locations on the access route to Chennai via Gerik for repairs at a cost of £8 million.

2.2.4 VEHICLE CONDITIONS

During the maintenance procedure, the vehicle's technical condition is crucial. These metrics seem to be, first, 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 VARIABLES
2.3.1 CUSTOMER SATISFACTION

Improving customer satisfaction leads to behavioral outcomes like commitment, intent to stay, the formation of a mutual link between the company producer and the consumer, increased consumer endurance for failures, and positive word-of-mouth advertising about the business. Clients will develop service quality standards based on their expectations of a business, as per the service quality model (Oliver, 1980)[6] As a consequence, client expectations serve as the foundation for exceptional service. 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. There are a lot of challenges faced by courier services in Chennai. Bad weather may create delays in delivery by either completely blocking roads or significantly moving slow movement.

2.4.2 DAMAGE PRODUCT

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 product's safety. 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.

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2.4.3 DAMAGE TO THE RETAILER BRAND'S REPUTATION

Having complaints about the delivery service can lead to reputation damage to the courier service company. Customer review and customer satisfaction are important to take an action. A company's reputation will deteriorate until it more closely resembles the truth once it has failed. to deliver on the time that should arrive.

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)[7].

2.5.2 Transactional Cost Theory

In the literature on supply chain management, the transaction cost theory (TCT) has gotten a lot of attention (Williamson, 1985, 1991). In a nutshell, TCT looks at how a company could handle its activities that cross boundaries to lower its total production and transaction costs. The size of a company's operations, how well it learns from its mistakes, its location, and its proprietary effects, such as patents, trade secrets, and procedures, all affect how much it costs to make something.

2.6 PREVIOUS STUDY

According to Raphaëlle and Loïc (2013)[8], 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. 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.

Framework:
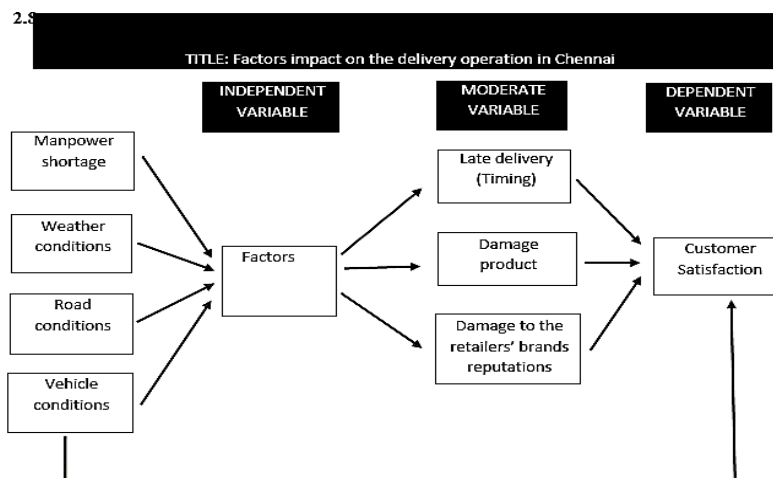
Figure 2.0: The conceptual framework on the distribution challenges faced by the courier services in Chennai – special study with road transportation.

2.7 HYPOTHESIS STATEMENT

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

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 Chennai.

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

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

3.0 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 Chennai. To obtain results, a quantitative research method deals with quantifying and analyzing variables. This study used quantitative research to understand the correlation between the independent variable, which is manpower shortage, weather conditions, road conditions, and vehicle conditions.

3.3 DATA COLLECTION METHODS

The method that is used is the questionnaire related to the objective of this study which was distributed to 384 people in Chennai. A set of questionnaires were disseminated to targeted respondents in Chennai. 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), Chennai has totaled around 1.71 million people. The target population of the research was chosen Chennai residents. Moreover, the research investigated the distribution challenges faced by the courier services in Chennai – 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 Chennai.

3.5 SAMPLE SIZE

The importance of sample size is that a sample that is excessively big will squander valuable resources and may expose more people than necessary to any associated danger. Probability sampling is difficult, time-consuming, and expensive. Based on Krejcie & Morgan (1970)[9] table, the sample size for this research is 384 people.

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 several different ways. Data are often gathered using techniques such as interviews, everyday monitoring, and focus groups. The data analysis may also make use of methods such as online questionnaires, digital surveys, and digital interviews.

3.7.1 QUESTIONNAIRE SURVEY

A questionnaire is a kind of research instrument that includes a set of questions with the goal of eliciting responses from respondents. It is possible to consider a questionnaire as a type of written interview. The purpose of this questionnaire is to gather data on customer satisfaction with courier services in Chennai.

3.7.1.1 QUESTIONNAIRE DESIGN

The questionnaire contains three parts which are section A (demographic profile), section B (independent variable), and section C (dependent variable).

3.8 MEASUREMENT 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. There are four different kinds of scales: nominal, ordinal, interval, and ratio.

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3.8.1 NOMINAL SCALE

Nominal variables are a kind of data that may be thought of as either attribute or category information. To define the range of possible values for a variable, a nominal scale simply labels those categories. Nominal data such as the test procedures of the intervention and comparison groups might establish teams in the data you wish to compare.

3.8.1.1 LIKERT SCALE

A Likert scale is based on the presumption that attitudes are able to be assessed. This requires the responder to provide detailed responses to a broad range of topics. The researcher should preferably be able to choose a balanced set of 1-5 options, and also contain a neutral mid-point.

Example table for interval scale.

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

Table 3.0: The interval scale that will be used for the questionnaire.

3.9 DATA ANALYSIS METHODS

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 use 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.

4.0 DATA ANALYSIS AND FINDINGS

4.1 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.

Table 4.1: Result of Reliability Test for Independent Variable and Dependent Variable

Variables	Cronbach Alpha	Number of items
Manpower shortage	.870	5
Weather conditions	.885	5
Road conditions	.903	5
Vehicle conditions	.933	5
Customer satisfaction	.904	5

According to Table 4.1, all questionnaire subscales are of sufficient quality, with Cronbach's alpha values over 0.700. Cronbach's alpha ranges from 0.870 for a lack of available workers to 0.933 for the state of the vehicles. The entire Cronbach Alpha value, thus, is in strong correlation, which is great and acceptable, and the questionnaire may be utilized in this study.

4.2 DEMOGRAPHIC PROFILE OF RESPONDENTS

Under the demographic component of this survey, respondents were given five questions, including their gender, race, age, educational attainment, 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.

4.2.1 Gender

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	

Table 4.2: Gender of respondents

4.2.2 Race

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	

Table 4.3: Race of respondents

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4.2.3 Age

	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	

	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	

Table 4.5: Academic Qualifications of respondents

4.3.5 Monthly Income

	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	

Table 4.6: Monthly Income of respondents

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4.3 VALID AND RELIABILITY TEST

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

Table 4.7: 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.

4.4 PEARSON CORRELATIONS

Correlations		mean1	mean2	mean3	mean4	mean5
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).						

Table 4.8: Result of Pearson Correlations

4.4 ASSESSMENT OF THE MEASUREMENT MODEL

The measuring methodology was used to check the research hypothesis in this study. Understanding the connection between the things and their meaning was made possible by the measuring model. This analysis requires that the measurement model requirements be fulfilled before proceeding with the analysis. The study's measuring model is shown in Figure 4.8.1.
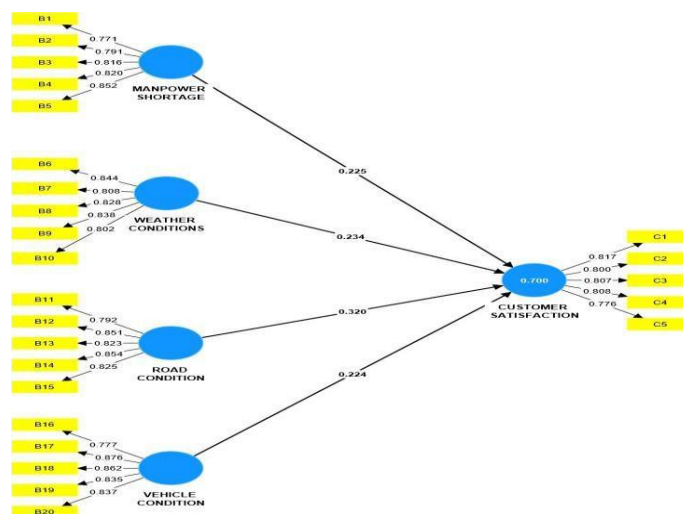
Figure 4.1: Measurement model.

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
Manpower 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

Table 4.9: Summary of Reliability and Validity Test

If the loading is more than 0.5, the average variance extracted (AVE) is more than 0.5, and the composite reliability is more than 0.7, then the measurement model is valid and reliable (Hair et al., 2017). Table 4.8 shows that all of the requirements for establishing convergent validity have been met. This means that convergent validity was not a problem for the study. In data validation, researchers ask respondents for information that helps them figure out how reliable the data 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 manpower shortage, weather conditions, road conditions, and vehicle conditions. For dependent variable is customer satisfaction with the courier services in Chennai. 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. By these average variances extracted (AVE) tests, it has been determined that the measurement items are of acceptable quality.
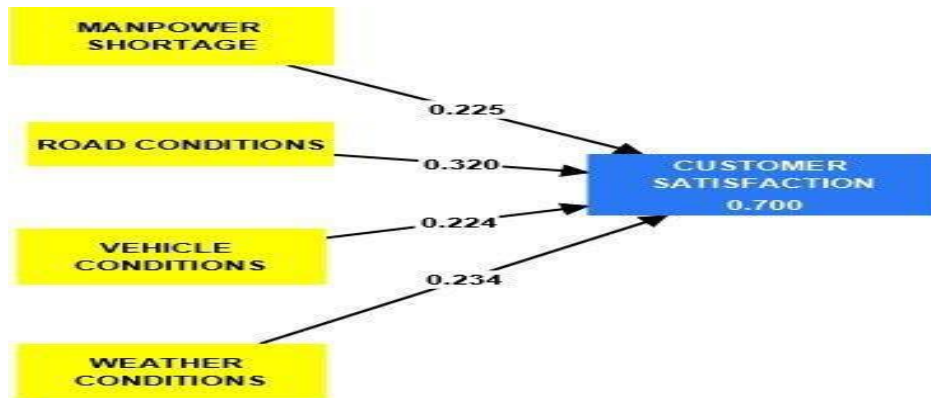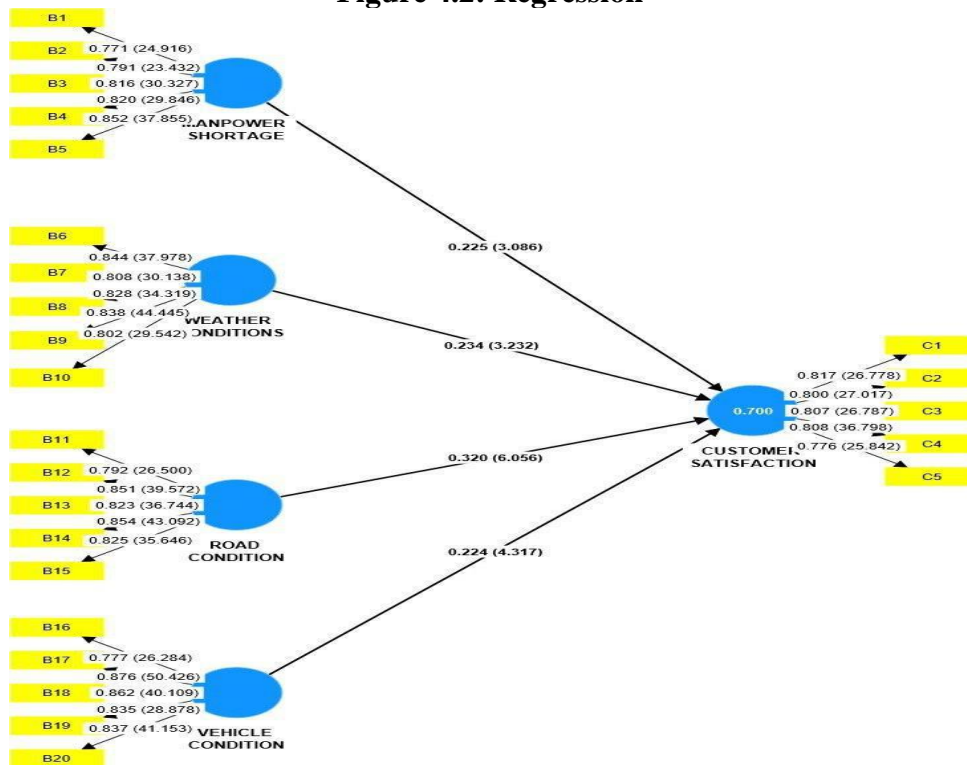

Figure 4.2: Regression

Figure 4.3: Modal of bootstrapping

Boostrapping					
	Orginal sample (o)	Sample mean (M)	Standard devition (STDEV)	T- statistics	P value
Manpower shortage -> Customer Satisfaction	0.225	0.227	0.073	3.086	0.002
Weather conditions -> Customer Satisfaction	0.234	0.321	0.053	6.056	0.001
Road conditions -> Customer Satisfaction	0.32	0.321	0.053	6.056	0
Vehicles conditions -> Customer Satisfaction	0.224	0.232	0.073	3.232	0

Table 4.10: Bootstrapping

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

Table 4.11: Hypothesis testing

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, Manpower 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.

5.0. DISCUSSION AND CONCLUSION

5.1 KEY FINDINGS

1. There is a significant relationship between manpower shortage and customer satisfaction.
2. There is a significant relationship between weather conditions and customer satisfaction.
3. There is a significant relationship between road conditions and customer satisfaction.
4. There is a significant relationship between vehicle condition and customer satisfaction.

5.2 DISCUSSION

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

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 Chennai. 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. This is because nowadays only the economy in India 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 Chennai?

The second exploration objective is to study the relationship between weather conditions and customer satisfaction towards distribution challenges faced by the courier services in Chennai. 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 Chennai?

The third research objective is to explore the relationship between road conditions and customer satisfaction towards distribution challenges faced by courier services in Chennai. 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 Chennai?

The fourth exploration objective is to investigate the relationship between vehicle conditions and customer satisfaction towards distribution challenges faced by the courier services

in Chennai. 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.

5.3 IMPLICATIONS OF THE STUDY

This study can help the courier service company to improve its service. This is because our study focuses on customer satisfaction with courier service in Chennai. Based on this study, courier service needs to improve the service that the company provides to make the customer satisfied with the service. We can see that our study on the courier service in Chennai that makes the delivery late divided into several things. Which is the management of the courier service and the steps that need to be taken to ensure that the delivery process is not late by the time given. The study also provides the problem and what makes delivery late by that the courier service can be improved their performance on the delivery process in Chennai. Delivery delays can happen due to multiple reasons. By that this study can help the improvement of what happened in the courier service late and what makes the customer not satisfied with the courier service in Chennai.

5.4 LIMITATIONS OF THE STUDY

The limitation of our study is the population. To begin with, our research is only taking in Chennai and the community here. This is because this study focuses on the area of Chennai. By that, we only take responses from that who live in Chennai. Moreover, the information their limitation info and resource about the courier service in Chennai. We must conclude and find the information about the courier service problem via google and another method that is available. That we conduct research and study this topic to find the information that makes the courier service in Chennai late delivery. Other than that, about the population and limitation of the questionnaire, because we only take 384 respondents to answer our questionnaire to get the data about the study that we do.

5.5 RECOMMENDATIONS / SUGGESTIONS FOR FUTURE RESEARCH

Morning unloading and cargo sorting on courier sites are automated. Unloading is currently done by hand by couriers using straight transit. Implementing even a basic conveyor belt can assist couriers in completing their jobs more quickly. 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 the Courier's Lists of Parcels Invoiced to be Delivered on the Given Day. 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 delivering items. Some routes are now compensated daily. A new payment system should be an effective instrument for ensuring the efficacy of courier services.

5.6 OVERALL CONCLUSION OF THE STUDY

To achieve a happy medium, this study investigates the difficulties encountered by courier services in Chennai during distribution. Little evidence of a substantial effect on quality criteria was discovered in a review of the literature on supply chain quality. Those that analyze qualitative

indicators seldom consider the supply chain, despite its importance in creating a competitive advantage. All things considered, currently of rising customer quality expectations, courier operators must also enforce changes in the quality of services given by their subcontractors. The investigation showed that after implementing the changes, a key metric, the efficiency with which shipments were delivered, improved. To better serve customers, it is recommended that service quality be raised as a priority.

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