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STUDY OF RISK MANAGEMENT IN LOGISTICS

Santhosh Kumar k

Student

Sathyabama university

ABSTRACT

Nowadays, with the globalization of business operations, logistics systems are threatened by all kinds of uncertainties and disruptions. Almost every month, serious accidents in transportation and natural disasters all around the world are reported in the media. As a result, an effective and efficient risk management scheme is of a top most priority in the mind of all professionals in logistics management. This paper concisely explores risk management of logistics systems in several critical areas, namely disruption risk management, operational risk control, disaster and emergency management, and logistics service risk analysis. The papers featured in the special issue are also introduced and examined. This paper ends with a proposal of various future research directions for advancing risk management of logistics systems.

Due to the complex market and business environment, undesirable disruptions in logistics can affect enterprises and weaken its business strength. Risk Management has become the key in avoiding business losses. Logistics interruption can come from an unforeseen exogenous event such as an earthquake or from an endogenous event, like the Toyota Quality recalls in 2010 that interrupted enterprise logistic operations and degraded its performance (Trkman & McCormack, 2009). In this chapter, the risk management in logistics is studied from the process flow perspective. The topics discussed consist of logistics processes, risk management strategy, risk management process in logistic, and enterprise performance evaluation. Several risk management theories and framework from the literature are presented in the chapter. The aim is to provide valuable insights for enterprises through understanding the essential risk management concepts in logistics

The quality of service connecting risks is one of the most discussed topics of today in everyday work and social life. The main reason for the research was the necessity to look for new ways of improving quality that would meet international standards and reflect the increasing demands of customers in transport undertakings. The fundamental findings come from dynamic models

application, such as Lynn Shostack and Leonard Berry model divided into routine and exceptional operation.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Logistics is a process linking the activities of product manufacturing from suppliers to its customers. The Journal of Logistics Managements defined logistics is the “process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements.“ From the perspective of the logistics function, in the beginning, logistics is defined to manage physical delivery and storage in an efficient way to meet enterprise business requirements. Because of market competition forced business strategy should aim to achieve seven rights, which including delivery the right product to the right place at the right time with right quantity and right quality, and at the right price to the right customer. More to the point, to coordinate all the seven rights are not easy and need to integrate all internal units and external partners for achieving a synergetic result. Especially, in a global business, to comply with all rights will highly rely on collaboration with external resources, both of upstream and downstream partners. The key to success in logistics management requires heavy emphasis on integration of activities, cooperation, coordination and information sharing throughout the entire supply chain, from suppliers to customers.” Incessant changes in the information technology are support to logistics management on data exchange and communication across entire process flow, such as, bar code and RFID, point of sales, EDI and VPN, or ERP system, nor only helping to reduce the complexity of physical process flows but also lower the uncertainty through information sharing among the partners in the chain. 4 Besides of management control on process operations, there have many external or internal disturbs will affect logistics outcomes For example, Iceland's volcano eruption disturbed the airline schedule, or wage increasing forced manufacturing moving, all will affect and increase cost of logistics management.

However, disturbs might not cause losses only if when enterprise’s vulnerability leads to a risk of being attacked. In general, the sources of threat or disruption can be categorized in two fields, exogenous and endogenous. Enterprise cannot avoid exposing to uncertainty events either from exogenous or endogenous, and the level of losses of a risk will be relied on how to mitigate the risk prior to its occurrence. Additionally, the higher complex processes the higher likelihood being attacked by a risk. As now a global business environment, enterprise has to extend business network to other countries in order to service their customers in the local market which lengthen logistics processes and adding more activities in natural. At the same time, any disruption

happened at a node of logistics flow will affect the performance of entire logistics. Moreover, the logistic complexity is highly relevant to the business relationship with their partner and the business strategy deployment. For example, the inventory holding cost should be as lower as much in a lean production. But for a rapid response strategy, certain level of inventory holding cost has to be suffered as tradeoff of the synergetic result. All activities in logistics have to be planned well in advance and organized all activities in accordance to its plan. Any disruption will lower the designed performance. In order to sustain logistics performance, a risk management should be put in place as part of enterprise risk management. Same as business development, logistics will subject to change to meet business requirements, at the same time, naturally, more risks can be found in the chain. Therefore, an adaptive logistics is needed to meet the market competition as well as a continuous risk management improvement is required to be build. In the following sections, the risks in logistics will be discussed and continuous risk management processes will be presented as well as the techniques of risks identification and assessment will be described for references.Logistics is a process linking the activities of product manufacturing from suppliers to its customers. Logistics is the “process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements.“ From the perspective of the logistics function, in the beginning, logistics is defined to manage physical delivery and storage in an efficient way to meet enterprise business requirements. Because of market competition forced business strategy changing in order to provide more services such as VMI and Cross-Docking warehouse operations, as well as the trend of globalization leads to a configuration assembly and multiple dispatching centers, which caused a complex logistics network and increased inventory in the pipeline of logistics flow. Therefore, managing logistics in the effective and efficient manner has become a business strategy as sustainability of enterprise long term development. According to the council of supply chain management professions, logistics management should aim to achieve seven rights, which including delivery the right product to the right place at the right time with right quantity and right quality, and at the right price to the right customer. More to the point, to coordinate all the seven rights are not easy and need to integrate all internal units and external partners for achieving a synergetic result. Especially, in a global business, to comply with all rights will highly rely on collaboration with external resources, both of upstream and downstream partners. The key to success in logistics management requires heavy emphasis on integration of activities, cooperation, coordination and information sharing throughout the entire supply chain, from suppliers to customers.” Incessant changes in the information technology are support to logistics management on data exchange and communication across entire process flow, such as, bar code and RFID, point of sales, EDI and VPN, or ERP system, nor only helping to reduce the complexity of physical process flows but also lower the uncertainty throughinformation sharing among the partners in the chain

1.2 INDUSTRY PROFILE

LOGISTICS

1.2.1 WHAT IS LOGISTICS?

Logistics management is the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory and the related information flows through the organization and its marketing channels in such as way that current and future profitability are maximized through the cost-effective fulfillment of orders.

1.2.2 HISTORY

LOGISTICS AND SUPPLY CHAIN HISTORICAL BACKGROUND

Logistics 1.0

Industry 1.0 was the first industrial revolution. It started as a result of machining transportation, where the industry changed from manual production to machining when steam engines were discovered during the second half of the 17th century. The linguistic roots of the word "logistics" come from the French term "Logis" which means the accommodation of the troops. The Greeks had a term called "Rhocrematics" that discussed material flow. Early in the 19th century, Logistics was introduced and defined by the military as the planning and movement of troops. In 1964 Logistics was first introduced as a business process and was called business Logistics. Back then, the business Logistics discussed was only concerned with the physical distribution of goods. The study and practice of this distribution were discussed between the 1960s and 1970s. Accordingly, logistics was concerned only with the optimization of the three P's, as given in Place (Location and destination) – creating value to the customer by moving goods between locations which will achieve the best value to the customer. Period & Pace (Time value) – creating value to customers by focusing on time. This is reflected in inventory management along with the flow of goods. Pattern (Forms of order) – Value creation through ordering by focusing on the desired form of goods. The rise of the logistics or Logistics 1.0 term was related to military applications only and it shifted towards the business organizations during the 60's . However, it was just focusing on the optimization of transportation and moving goods (physical distribution) – not personnel – inside an organization, which was enhanced by the machining of transportation tools. Hence, logistics 1.0 satisfied the industrial needs that were created by the customers in the first place.

Logistics 2.0

During the 1960's, Industry 2.0 recognized the importance of mass production. Mass production required the automation of cargo handling. Automation of cargo handling was considered an evolution in the Logistics field and was called "Logistics 2.0". During the 1980s, companies started to deal with each other to manage and coordinate physical flow - inside and outside their organizations. Therefore, the term, "Supply Chain Management" rose. Recently, the Council of Supply Chain Management Professionals (CSCMP) adopted the following definition for supply chain management: "Supply Chain Management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all Logistics Management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers".

Logistics 3.0

The third industrial revolution (industry 3.0) started in 1968 when the first industrial robot was manufactured. Also, it was then when the Numerically Controlled (NC) machines were introduced to the industry. On the logistics side, the third logistical revolution (Logistics 3.0) rose due to what was known as "Systems of logistics management". However, it was obvious after "Logistics 2.0" that companies' activities were divided into "product development" and "operations" or "Supply Chain Management" supported by several activities such as Legal, Finance, Human Resources, Marketing, etc. Hence, companies and organizations realized that the previously mentioned aspects can form obstacles in coordination. At this time, a new "P" was introduced to Logistics to change the focus into "Flow Management". The fifth "P" was called "Pliancy" or "agility", where the primary focus was not on the physical flow only. The process considered also workflows at administrative levels of each organization, cash flows, service flows, flow of decisions and ideas, and everything creating value to the customer Considering the above, Logistics 3.0 may be identified as the "Pliant flow", which makes it an evolution rather than a revolution. Table 1 summarizes the different characteristics of Logistics 1.0, Logistics 2.0, and logistics 3.0 based on the given historical background. According to the historical background of different Logistics revolutions/evolutions, this work finds the definition given in and most relevant to real practice. This is because it addresses the needs of customers and businesses. The timeline presented that the transformation of different logistical eras happens after each industrial revolution, and not at the same time as the industrial revolution. In this work, a definition of the fourth logistics revolution "Logistics 4.0" is introduced. The definition will follow the same sequence of the previously mentioned logistical revolutions. As a result, the definition starts by reviewing the literature, characteristics, and features of Industry 4.0 to

figure out how it may influence Logistics 4.0. Afterwards, the definition is derived through identifying the impact of the 4th industrial revolution on supply chains and logistics. Drivers for the transformation from logistics 3.0 to logistics 4.0 are identified as well

LOGISTICS4.0

The expected impact of the fourth industrial revolution and its characteristics on logistics and supply chain are that Industry 4.0 (or digitalization) will benefit the manufacturing sector and the logistics services sector through overall cost reduction of 17.6% and 34.2%, respectively. Additionally, the retail business will benefit from a 7.8% reduction of operating costs. On the revenue streaming side, the manufacturing sector, logistics services sector, and the retail business, will gain an increase of 22.6%, 33.6%, and 33.3%, respectively. Logistics and supply chain within industry 4.0 can be described as collaborative cyber-physical systems. The German Committee of Experts on Industry 4.0 defines Cyber-Physical Systems (CPS) as follows: "Systems, that directly link real (physical) objects and processes with information processing (virtual) objects and processes via open, partially global and always interconnected information networks."

1.2.3 Aspects that influence logistics

Logistics is considered as the set of methods and means necessary to organize a company or service. The logistics sector focuses on delivering products to the customer, according to the conditions previously agreed (quantity of products, stipulated time, geolocation . Within logistics, it is usually included the transport of goods, storage costs, handling, preparation and order planning (among many other aspects). In the logistics sector, there are different aspects that have a great influence. Currently, both globalization**,** technology**,** consumer evolution**,** legal aspects**,** government policies**,** etc**.,** are aspects that directly influence the sector. Currently, one of the key aspects that make the difference is that we are facing a globalized market. Without a doubt, this is one of the aspects that completely changes the sector.

1.2.4. Advantages of the logistics sector

The truth is that the logistics sector has many advantages, including:

- **A better use of the distribution network**: When you have a good logistics system, with different logistics operators, you can optimize the times, along with the distribution chain. This means that there are different companies dedicated to logistics and distribution that are fundamental at a national and international level.

- **Costs reduction**: This is possible thanks to the different globalized distribution systems, since they reduce transport costs.
  A more efficient logistic chain: If it is possible to carry out a more efficient logistic management, getting to improve both the final customer satisfaction and the service.
- **Transportation and express delivery:** Today more than ever, systems that allow urgent transport are being implemented. In this way, orders can reach their final destination in much less time than a few years ago.
- **Information technology:** Technology is helping to evolve the sector itself, improving times and processes.

1.2.5. Disadvantages of the logistics sector

The truth is that there are also some disadvantages that must be taken into account, including:

- **Coordination:** Especially in cases of international logistics, there may be some failures in international coordination, usually the most frequent problems are: language, schedule, cultural change Multinationals and large companies**:** The usual thing is that the sector is covered with very large companies. Both medium and small companies have very difficult access.
- **Cost of transport:** The greater the distance to travel, the greater its cost. This makes it difficult to get a competitive price.
- **Legality:** In logistics, the legislation has much to say both at the level of laws, customs policy, and the entry and exit of product.

1.2.6 RISK MANAGEMENT

Recently, risk management has been widely discussed especially when many disturbance events happened such as earthquakes, Iceland's volcano eruption, labor wage increasing in China, or BP oil leak and so on. Each disturbance may affect business operations and need to adjust their logistics system to deal with it. The impact of accidental events can be controlled if the enterprise has a plan put in place already.

In general, risk management can be classified into two approaches, one is mitigation strategy and another is contingency strategy. Mitigation action is managing the risk sources and contingency action is handling the risk consequences.

1.2.7 The role of risk management of the logistic processes

Risk is understood as the likelihood of damage or loss of income, the likelihood of which can be calculated. The probability of risk event is definable, therefore we can predict the onset of risky event and apply various methods of control to prevent it or at least to solve the problems resulted from it.

Determining the risk is associated with determining several elements of logistics systems and processes:

First, there are internal risks associated with intra-regional supply systems and processes related to self-sufficiency. Among the causes of these risks are:

- Reduction of the projected traffic volume (or capacity freight);
- The increase of cost of transport services (eg. to cover primary or secondary needs);
- Rising costs of fares and tax payments in the region's transport systems;
- Reduction in demand for transport services due to lower income of households and businesses in the region.

The risk of delays may result in breaching the supply contract by violating the basic conditions: the quantity, the quality and the delivery time.

In the area of commerce we can identify the risks associated with trade and transportation. Creation of an integrated system of transport and logistics in the region will reduce the level of risk, which is of great concern to all stakeholders, regardless of the method and cost of insurance.

Usually, uncertainty and risk may occur if such logistic terms as: "exactly in", "the lowest cost", "required quality" and "in required quantity" are used. The model uncertainties were presented earlier in the form of Howard's cube, which is formed of three faces of uncertainty. In the case of uncertainty in logistics, the management should take into account more than three types of state conditions.

Multi-level classification of risk on the following grounds:

- on the basis of the type of the system (micro- and macrologistics risks);
- on the ground of logistics flow (risks associated with material, financial, information and personnel flow); – on the ground of logistics operations or industrial logistics (procurement, transportation, manufacturing, distribution, warehousing, service).

Logistic function is related to logistics management risk associated with planning, organization management, control of logistics processes.Macro- and micrologistics risks are associated with the risk of commercial nature, ie. with market fluctuations. As logistic system operates in the external environment of the market, all the risks are associated with changes, uncertainties and limitations

of the infrastructure sector. Consequently, the more resistant is the regional logistic system to external changes, and the more flexible are its organizational units, the lower is the level of infrastructure risk. These micrologistics risks include the risk of business competitors in field of logistics as well as the appearance of limitations in logistical structures of legislative nature and regulatory dependence on the activities of logistics partners. In particular, in macrologistics, there are risks of late delivery due to change of time of registration of documents for international transport and risks associated with legislative restrictions on transportation rules and customs clearance. When classifying the risk by the type of logistics flow, we can distinguish the risks associated with material, financial, information and personnel flow. The risk of personnel flow it almost absent. On of the features of the logistics management area is to manage exactly this kind of flow. The personnel flow is the flow of labor, characterized by the quantity and quality of the production facilities area. Personnel flow is controlled by the same principles of logistics management as other types of flows. Why is it necessary to manage the personnel flow? This is primarily due to the irregularity of intra- and inter-regional development, which generates the migration of labor resources. Over the past five years the flow of migration in Irkutsk region has increased by 16,5% and in 2009 population decreased by 6061 people

1.2.8 Five Steps Of Risk Management

Step 1: Identify the Risk

The first step is to identify the risks that the business is exposed to in its operating environment. There are many different types of risks – legal risks, environmental risks, market risks, regulatory risks, and much more. It is important to identify as many of these risk factors as possible. In a manual environment, these risks are noted down manually. If the organization has a risk management solution employed all this information is inserted directly into the system. The advantage of this approach is that these risks are now visible to every stakeholder in the organization with access to the system. Instead of this vital information being locked away in a report which has to be requested via email, anyone who wants to see which risks have been identified can access the information in the risk management system.

Step 2: Analyze the Risk

Once a risk has been identified it needs to be analyzed. The scope of the risk must be determined. It is also important to understand the link between the risk and different factors within the organization. To determine the severity and seriousness of the risk it is necessary to see how many business functions the risk affects. There are risks that can bring the whole business to a standstill if actualized, while there are risks that will only be minor inconveniences in the analysis. In a manual risk management environment, this analysis must be done manually. When a risk management solution is implemented one of the most important basic steps is to map risks to different

documents, policies, procedures, and business processes. This means that the system will already have a mapped risk framework that will evaluate risks and let you know the far-reaching effects of each risk.

Step 3: Evaluate or Rank the Risk

Risks need to be ranked and prioritized. Most risk management solutions have different categories of risks, depending on the severity of the risk. A risk that may cause some inconvenience is rated lowly, risks that can result in catastrophic loss are rated the highest. It is important to rank risks because it allows the organization to gain a holistic view of the risk exposure of the whole organization. The business may be vulnerable to several low-level risks, but it may not require upper management intervention. On the other hand, just one of the highest-rated risks is enough to require immediate intervention.

Step 4: Treat the Risk

Every risk needs to be eliminated or contained as much as possible. This is done by connecting with the experts of the field to which the risk belongs. In a manual environment, this entails contacting each and every stakeholder and then setting up meetings so everyone can talk and discuss the issues. The problem is that the discussion is broken into many different email threads, across different documents and spreadsheets, and many different phone calls. In a risk management solution, all the relevant stakeholders can be sent notifications from within the system. The discussion regarding the risk and its possible solution can take place from within the system. Upper management can also keep a close eye on the solutions being suggested and the progress being made within the system. Instead of everyone contacting each other to get updates, everyone can get updates directly from within the risk management solution

Step 5: Monitor and Review the Risk

Not all risks can be eliminated – some risks are always present. Market risks and environmental risks are just two examples of risks that always need to be monitored. Under manual systems monitoring happens through diligent employees. These professionals must make sure that they keep a close watch on all risk factors. Under a digital environment, the risk management system monitors the entire risk framework of the organization. If any factor or risk changes, it is immediately visible to everyone. Computers are also much better at continuously monitoring risks than people. Monitoring risks also allows your business to ensure continuity.

1.4.Need for the study

Logistics can be demanding, yet it offers a rewarding work environment that highlights both teamwork and community. And because more and more logistics providers are offering job training and career development See the most common problems in logistics and supply chain! This is exactly the purpose of a risk management process: identifying your business' risks and developing the most adequate strategy to manage each one, providing a safe and productive workplace – even in the worst case scenarios.

1.5.Scope and Significance of Study

Logistics is playing an important role to sustain business competency through customer satisfaction as well as reduce cost by process efficiency improvement. Moreover, logistics is linking internal functions and collaborate with external upstream and downstream partners for achieving a synergistic result under its operational constrains. Nevertheless, globalization movement drives enterprise to compromise between customer satisfaction and the complexity of logistics network operations. But, at the same time, the constantly progress of information technology enhanced the capability to handle the complexity driven by market demand

1.6. OBJECTIVES OF THE STUDY

1.6.1.Primary Objective

- A study on Risk Management In Logistics

1.6.2.Secondary Objective

- To reduce the cost of operations.
- To maintain transparency in operations.
- Reliable and consistent delivery performance
- Freight economy
- Minimum product damage
- Quick response

1.7.LIMITATIONS OF THE STUDY

- It is difficult to check the accuracy of information provided
- The secondary data collected may vary.
- only 141 numbers of respondents were considered

CHAPTER 2

REVIEW OF LITERATURE

K Aljohani, RG Thompson – (2016)

The location of logistics facilities significantly affects not only the activities of urban goods movement, but also the urban environment as these facilities represent major originators and receivers of freight. Recently, the phenomenon of logistics sprawl, ie the relocation of of logistics facilities away from inner urban areas to suburban areas has received an increasing level of attention from both academics and policy makers. In this paper, a literature review of the various impacts of logistics sprawl is provided with a detailed taxonomy of the impacts. It has been observed that logistics sprawl contributed changes in geography of urban freight, increasing trucks' travelled distance and consequent emissions and impacting the commuting of logistics employment.

Y Yang, W Jin, (2008)

Revenue management conception has been used for reference in the car rental industry to develop booking, pricing and inventory strategies. In order to get a high degree of customer satisfaction and optimize vehicle fleet utilization, logistics managers in the car rental business approximately adopt three decision-making steps: namely, pool segmentation, strategic fleet planning and tactical fleet planning. Optimizing resource deployment and reducing the logistics cost are the targets of logistics management in enterprise. We will review the existing literature on the car rental logistics problem and identify some gaps in current research. This sort of research is prospective and useful for future development of the car rental industry.

P Rajagopal, VP Kaliani Sundram (2015)

Logistics management is known for its complexity, dynamics and uncertainty. The advent of rapid technology development, intense business competition and changing customer needs and requirements, has forced companies to reshape their business model and strategies. Numerous new terms such as Global Supply Chain, Third Party Logistics, Green Logistics, E-Logistics and Reverse Logistics are becoming issues that have to be deal with by all companies, local, multinational and global. Lately Reverse Logistics start to get attention by most of the firms. The purpose of this assignment is to review and identifies clear definition of Reverse Logistics, comparison Reverse Logistics with Forward Logistics in order to have a better understanding and finally future direction of Reverse Logistics in gaining competitive advantages.

A Edirisuriya, S Weerabahu – (2018)

Sustainability is emerging as a main consideration throughout the industrial world due to the environmental pollution and degradation happening in a major scale as a result of industrial wastes while lean management is becoming a popular management tool in minimizing waste. Logistics industry contributes for these issues due to the wastes released in a considerable amount. Experts have highlighted that implementing lean principles in parallel to green concepts is more successful; which could lead to waste and cost reduction. A theoretical gap has been identified in the field of logistics in applying lean and green concepts in the context of Industry 4.0. A comprehensive literature review was conducted to address the identified research gap with the objective of examining the important lean practices and green concepts which are expected to enhance the operational performance of logistics functions.

A Marasco ,(2008)

Third-party logistics (TPL) has attracted considerable research attention in the recent past. Despite the growing body of literature on this topic, precious little effort has been devoted to synthesizing the overall state of art of research on TPL. In this paper, an attempt is made to review the status of literature on TPL. A literature review scheme is presented. A total of 152 articles published between 1989 and 2006 in 33 reputable international journals are reviewed and classified into content- and methodology-related issues. Based on the review, suggestions for future research are likewise provided.

TM Choi, CH Chiu, HK Chan (2016)

Nowadays, with the globalization of business operations, logistics systems are threatened by all kinds of uncertainties and disruptions. Almost every month, serious accidents in transportation and natural disasters all around the world are reported in the media. As a result, an effective and efficient risk management scheme is of a top most priority in the mind of all professionals in logistics management. This paper concisely explores risk management of logistics systems in several critical areas, namely disruption risk management, operational risk control, disaster and emergency management, and logistics service risk analysis.

Vanany, S Zailani, N Pujawan (2009)

Supply chain risk management has increasingly becoming a more popular research area recently. Various papers, with different focus and approaches, have been published since a few years ago. This paper aims to survey supply chain risk management (SCRM) literature. Paper published in relevant journals from 2000 to 2007 are analysed and classified into five categories: conceptual, descriptive, empirical, exploratory cross-sectional, and exploratory longitudinal. We also looked at the papers in terms of the types of risks, the unit of analysis, the industry sectors, and the risk

management process or strategies addressed. The literature review will provide the basis for outlining future research opportunities in this field.

F Kache, S Seuring (2014)

This paper aims to assess the links among these supply chain constructs by conducting a full-scale systematic review of all supply chain management (SCM) literature reviews published in ten leading logistics, SCM and operations management journals from 1989 to 2012. Collaboration and integration are as central to SCM as risk and performance management.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

My research design will be descriptive followed by partially exploratory because the entire project will be based on the data collected from reports, journals and analysis so that the detailed and clear description will be there in the project, so there is a mix of explanation and description design. It will cover all the major information about Risk management in Logistics and will give a clearer view to the reader how it works

3.2 SAMPLING TECHNIQUE

3.2.1 Convenience sampling method

A convenience sampling is one of the main type of non-probability samplings methods, a convenience sample is made up of people who are easy to reach.

3.3 SOURCES OF DATA

3.3.1 Primary Data

The source of information in my project will be through data collected by taking survey through Questionnaire from people working in manufacturing industries in Chennai and the sample size is 141

3.3.2 Secondary Data sources

Secondary data refers to data that was collected by someone other than the user. Common sources of secondary data for Journal, Books, Websites, organizational records and data that was originally collected for other research purposes.

3.4 STRUCTURE OF QUESTIONNAIRE

There are two broad types of questions open ended or open questions, and closed ended or closed questions. Open questions enable respondents to answer as they wish. Closed questions provide respondents with a list of options from which they choose

3.5 SAMPLE SIZE

The sample size is 141

3.6 PERIOD OF STUDY

The period of study is from January 2021 to March 2021

3.7 ANALYTICAL TOOLS

The analytical tools used are SPSS for testing the Hypothesis, Anova test and correlation in SPSS tool.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.1. PERCENTAGE ANALYSIS

Table 4.1.1. Table showing Gender of the respondents

S.No	Gender	Responses	Percentage%
1	Male	99	70.2
2	Female	42	29.8
Total		141	100

(Source: Primary data)

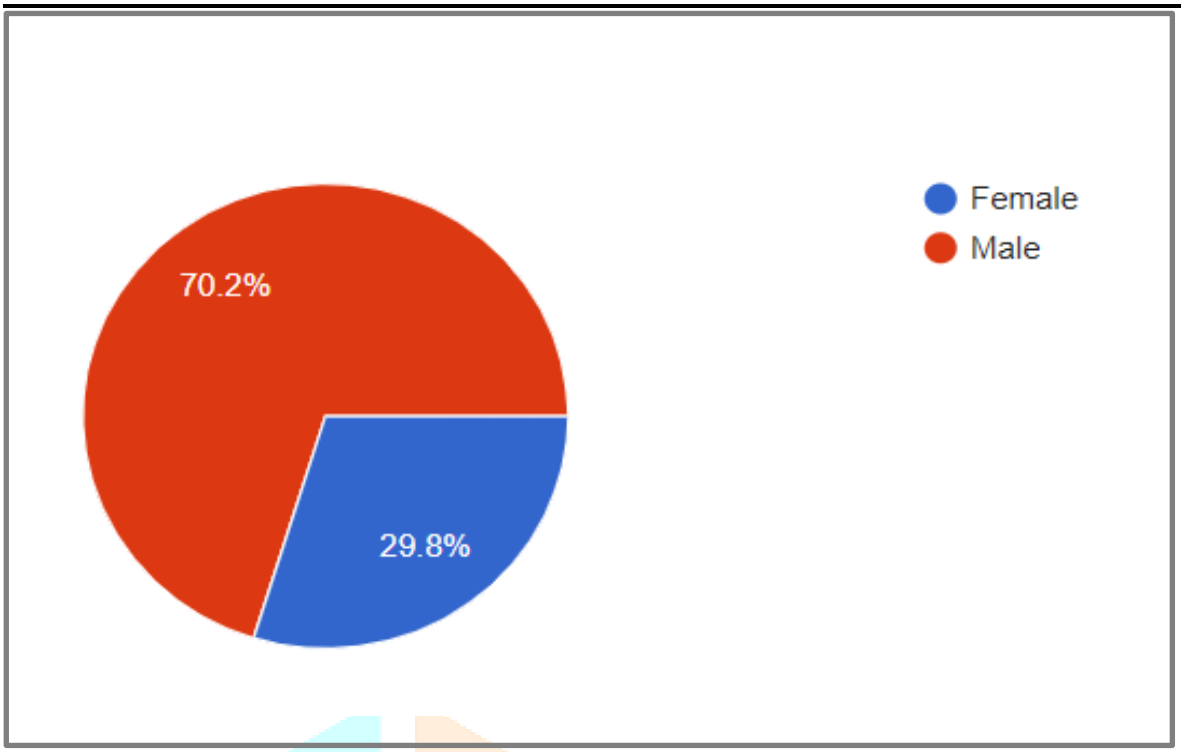

Chart 4.1.1 GENDER OF RESPONDENTS

Interpretation

From the above table it is interpreted that the number of Male respondent is 70.2 and Female respondent is 29.8%.

Inference

Majority (70.2%) of the respondents are Male.

Table 4.1.2. Table showing age of the respondents

S.No	Particulars	Responses	Percentage%
1	18-25	96	68.1
2	26-40	28	19.9
3	41-55	14	9.9
4	Above 45	3	2.1
Total		141	100

(Source:Primary data)

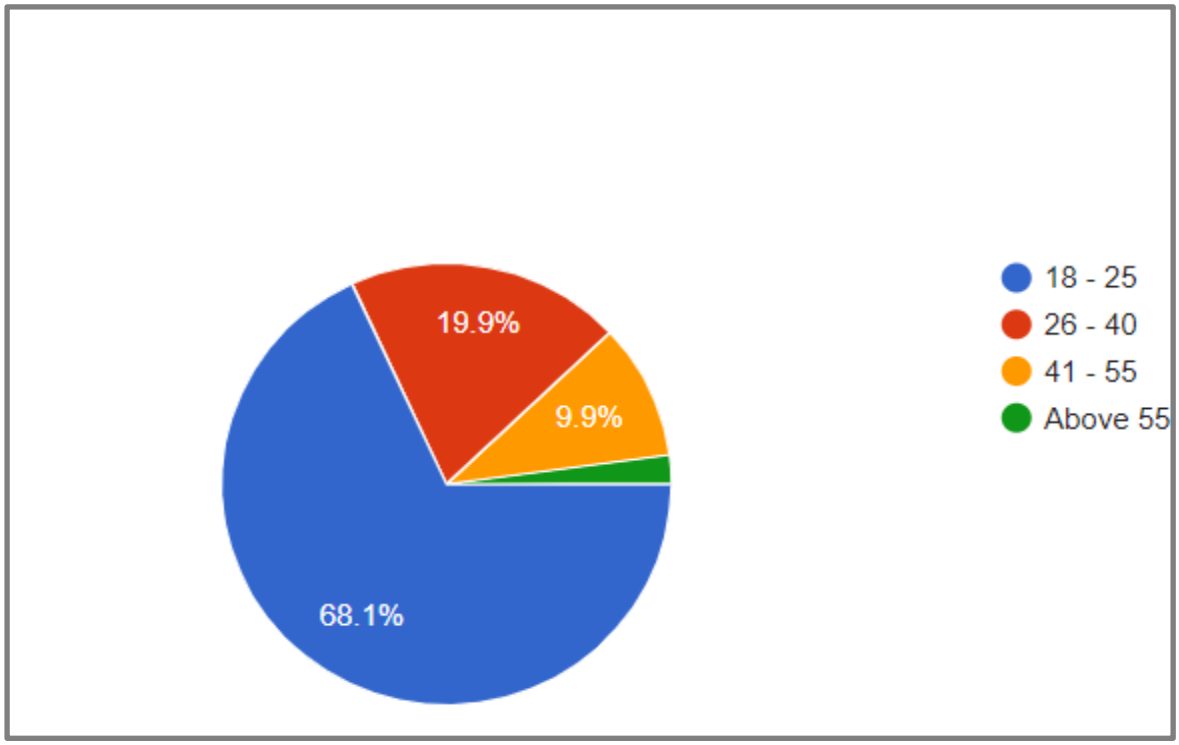

CHART 4.1.2.AGE OF RESPONDENTS

Interpretation

From the above table it is interpreted that the number of respondents between 18-25 is 68.1%, 26-40 is 19.9%,41-55 is 9.9%, above 45 is 2.1%.

Inference

Majority (68.1%) of the respondents fall in the age category of 18 to 25 years

Table 4.1.3. Table showing Education Level of The Respondends

S.No	Particulars	Response	Percentage
1	12^{th}	12	8.5
2	Graduate	78	55.3
3	Post Graduate	41	29.1
4	Professional	10	7.1
Total		141	100

(Source:Primary data)

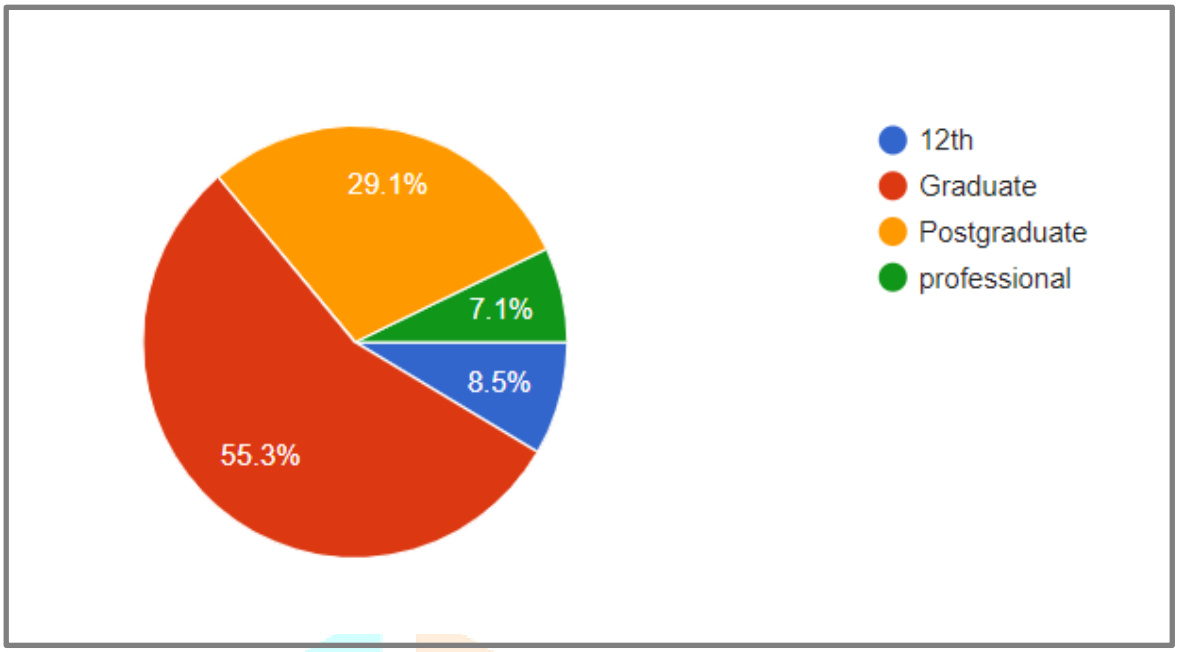

CHART 4.1.3. Respondents Educational Level

Interpretation

From the above table it is represented that the number of respondents were8.5 %in 12th , 55.3 % in Graduate, 29.1 in Post Graduate, 7.1% in Proffessional.

Inference

Majority(55.3%) of respondents are Graduates.

Table 4.1.4. Table showing Occupation of respondents.

S.No	Particulars	Responds	Percentage%
1	Student	70	49.6
2	Private Employee	50	35.5
3	Govt Employee	8	5.7
4	Business Man	13	9.2
Total		141	100

(Source:Primary data)

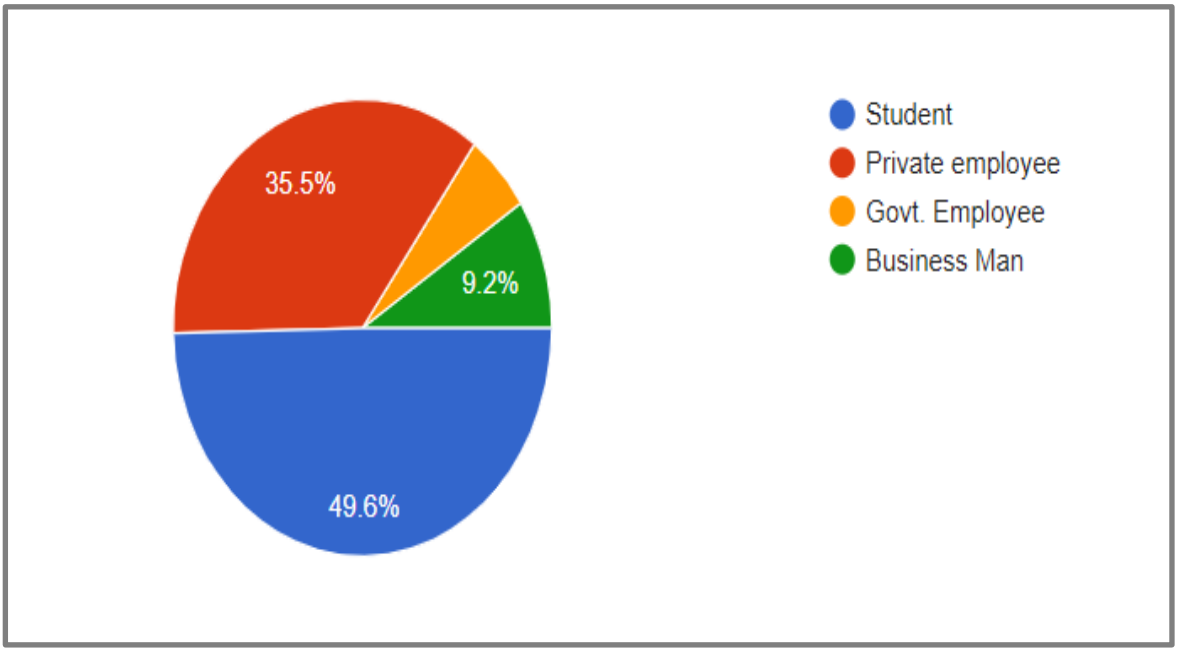

CHART 4.1.4 Respondents Occuppation

Interpretation

From the above table it is represented that respondent Occupations were 49.6% in Student, 35.5% in Private employee, 5.7%in Government Employee, 9.2% are Businessman

Inference

Majority (49.6%) of respondents occupations as Students

Table 4.1.5 Table showing Repondents Organization concerned About Logistics Risk

s.no	Particulars	Responses	Percentage
1	Yes	92	65.2
2	No	49	34.8
Total		141	100

(Source:Primary data)

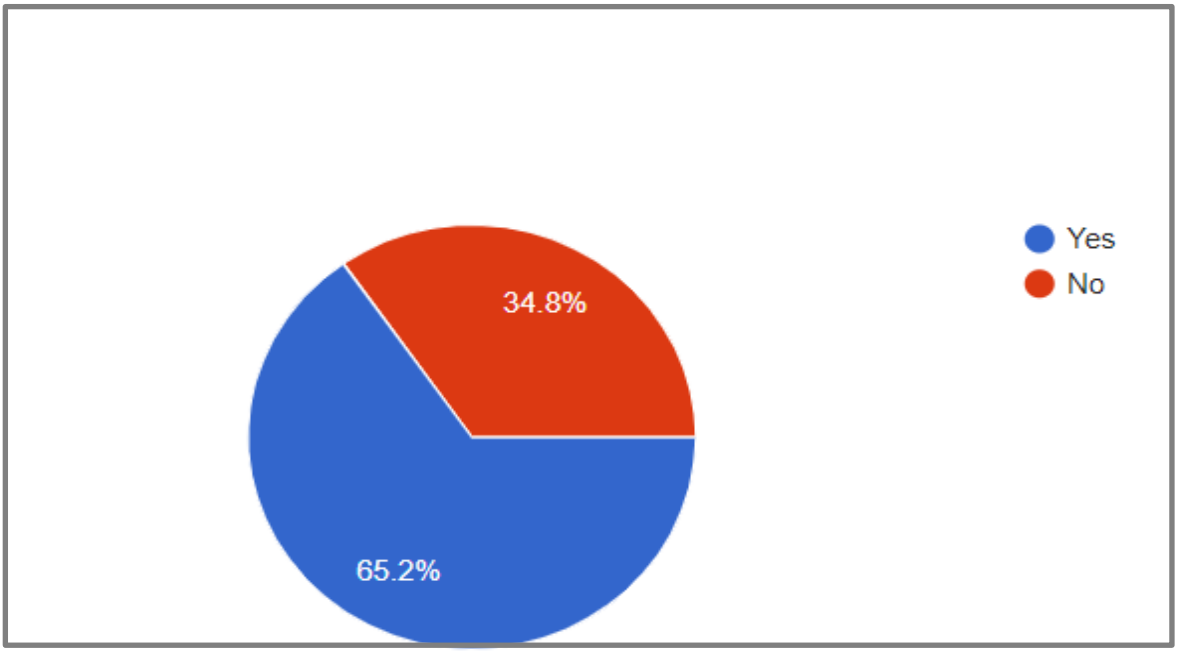

CHART 4.1.5. Organization concerned About Logistics Risk

Interpretation

From the above table it is interpreted that Respondents Organization Concerned About logistics as 65.2% Respondents Says Yes and 34.8% Says No.

Inference

Majority(65.2%) of respondents Says YES

Table 4.1.6 Table showing Least Preliminary Discussions with Logistics Management About Risk.

S.no	Particulars	Responds	Percentage
1	Yes	85	60.3
2	No	56	39.7
Total		141	100

(Source: Primary data)

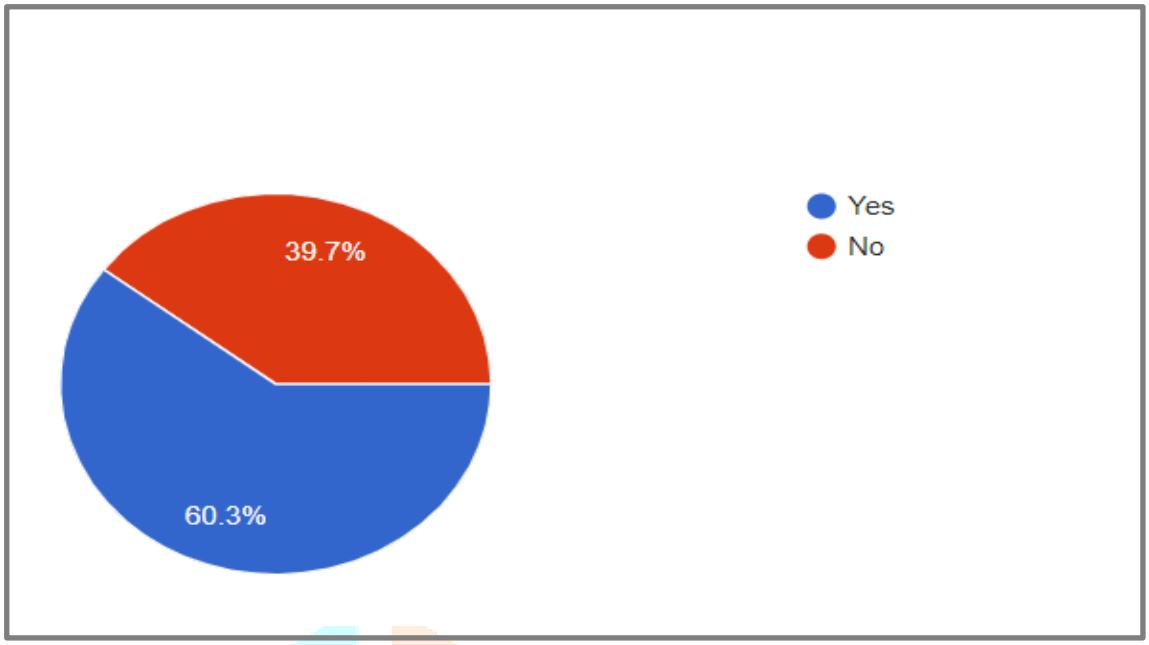

CHART 4.1.6. Least Preliminary Discussions with Logistics Management About Risk.

Interpretation

From the above table it interpreted that respondents Saying 60.3 % Saying Yes and 39.7% Saying No

Inference:

Majority(60.3%) of respondents Strongly Agree There Should be a Least Preliminary Discussions About Risk Management in Logistics by saying yes

Table 4.1.7.Table showing When Company Plan to Implement a Logistics Solutions

S.no	Particulars	Responds	Percentage
1	0-3 Months	45	31.9
2	3-6 Months	55	39
3	6-12Months	30	21.3
4	12 Months	11	7.8
Total		141	100

(Source: Primary data)

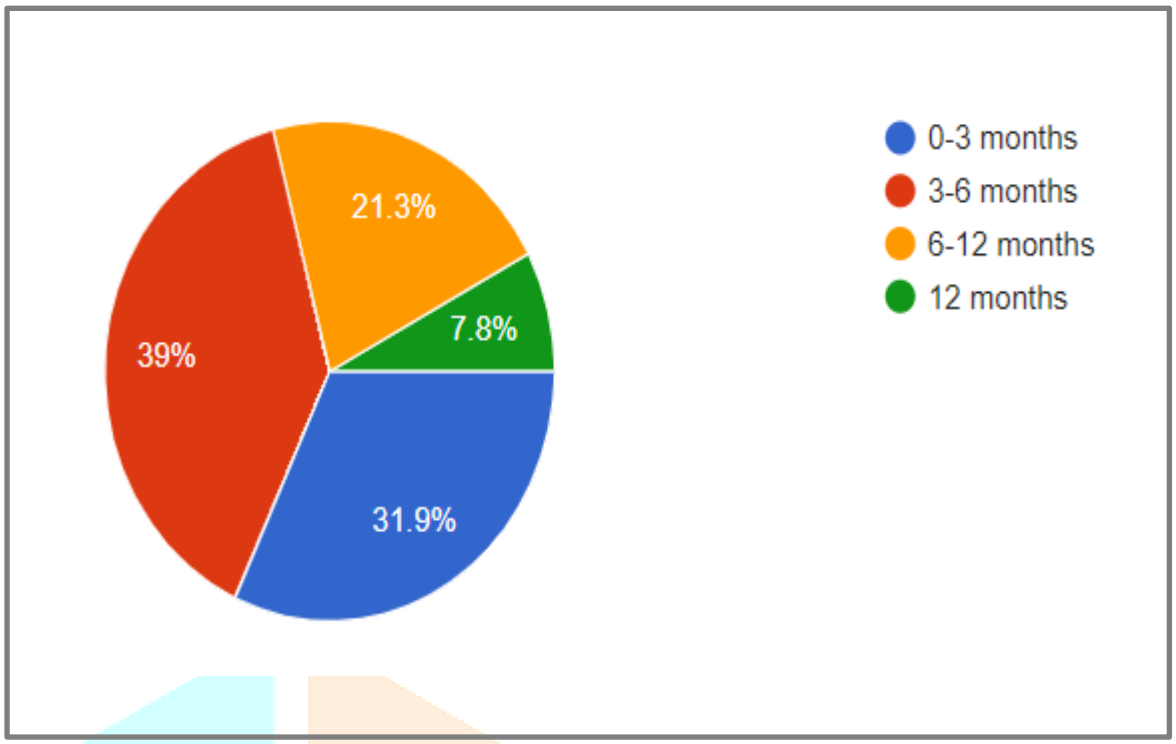

CHART 4.1.7. Respondents about When Company Plan to Implement a Logistics Solutions

Interpretation

From the above table it is interpreted that as Respondents 39 % says for 3-6 Months, 31.9% says 0-3 Months ,21.7 % Says 6-12 Months and 7.8 % says 12 Months.

Inference

Majority(39%) of respondends Saying 3-6 Months

Table 4.1.8.Table showing Company Use of Quality Metrics in Logistics

S.no	Particulars	Responds	Percentage
1	Cost Saving	17	12.1
2	Error Free	29	20.6
3	Reliability	24	17
4	Timely delivery	13	9.2
5	All The Above	58	41.1
Total		141	100

(Source : Primary data)

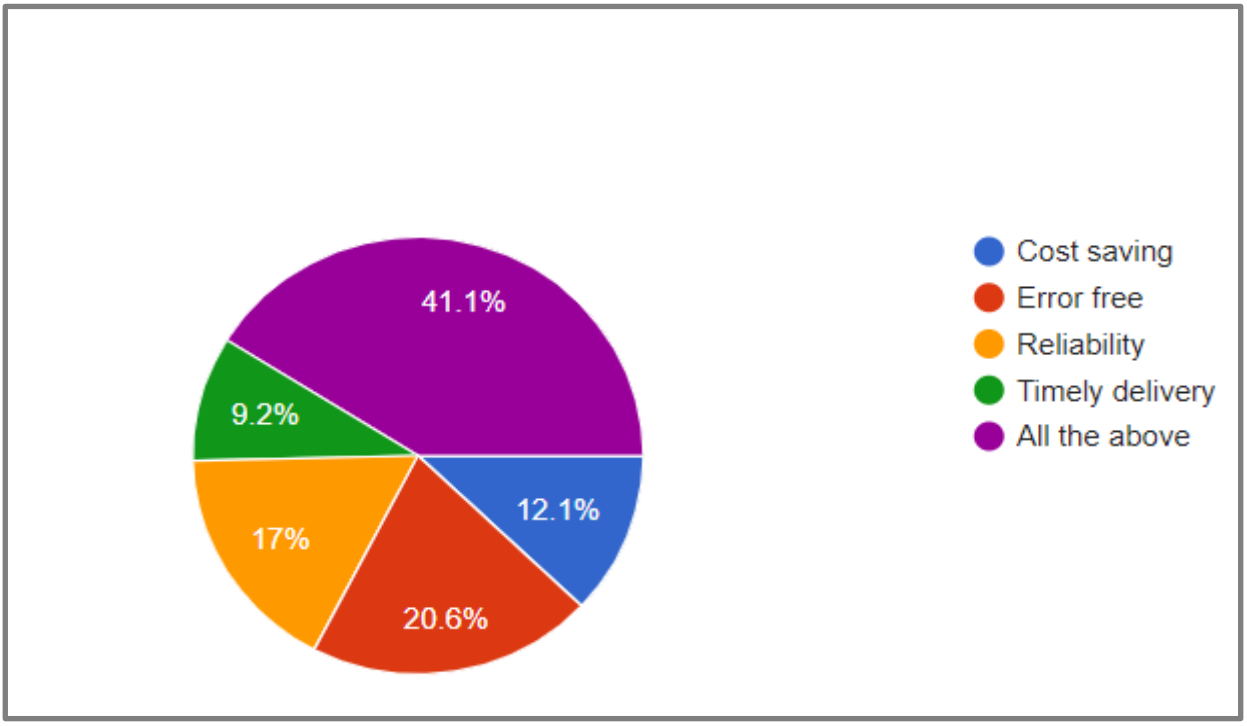

CHART 4.1.8.Respondents Showing Company Use of Quality Metrics in Logistics

Interpretation

From the above table it is interpreted that Respondents Says 20.6 % Says Error Free , 41% Says All the Above , 17%Says Reliability ,12.1% Says Cost Saving , 9.2 % Says Timely Delivery About Use of Quality Metrics In Logistics

Inference

Majority(41.1%) say All the Above For The Company Use Of Quality Metrics in logistics

Table 4.1.9 Table Showing Should logistics be the part of company's strategy

S.NO	Particulars	Frequency	Percentage%
1	Yes	79	56
2	No	29	20.6
3	Can't Say	33	23.4
Total		141	100

(Source: Primary data)

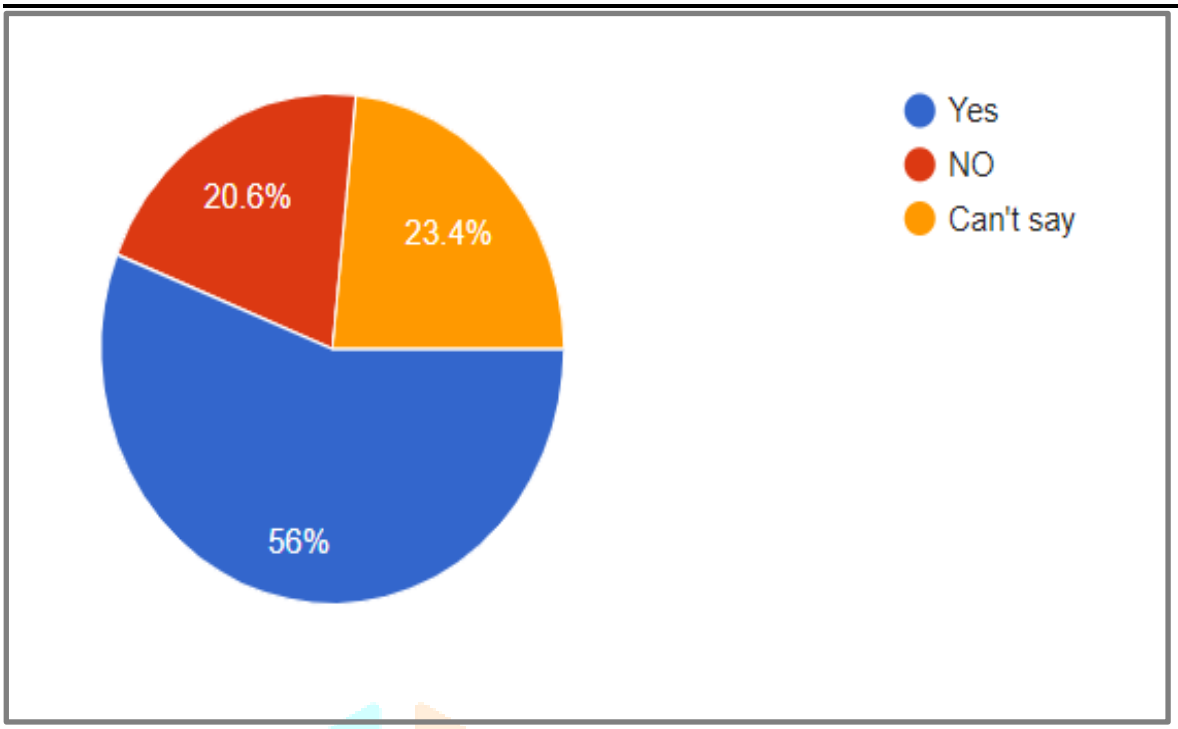

CHART 4.1.9. Respondents knowledge about Should logistics be the part of company's strategy

Interpretation

From the above table it is interpreted that as 56% Says Yes , 20.6 % Says No ,23.4% Says Can't Say to logistics be the part of company's strategy .

Inference

Majority(56%) of respondents say that Yes to logistics should be a part of company's strategy

Table4.1.10.Table showing How Important to Taking Steps To Improve Logistics

S.no	Particulars	Frequency	Percentage%
1	Important	56	39.7
2	Very Important	73	51.8
3	Less Important	12	8.5
Total		141	100

(Source: Primary data)

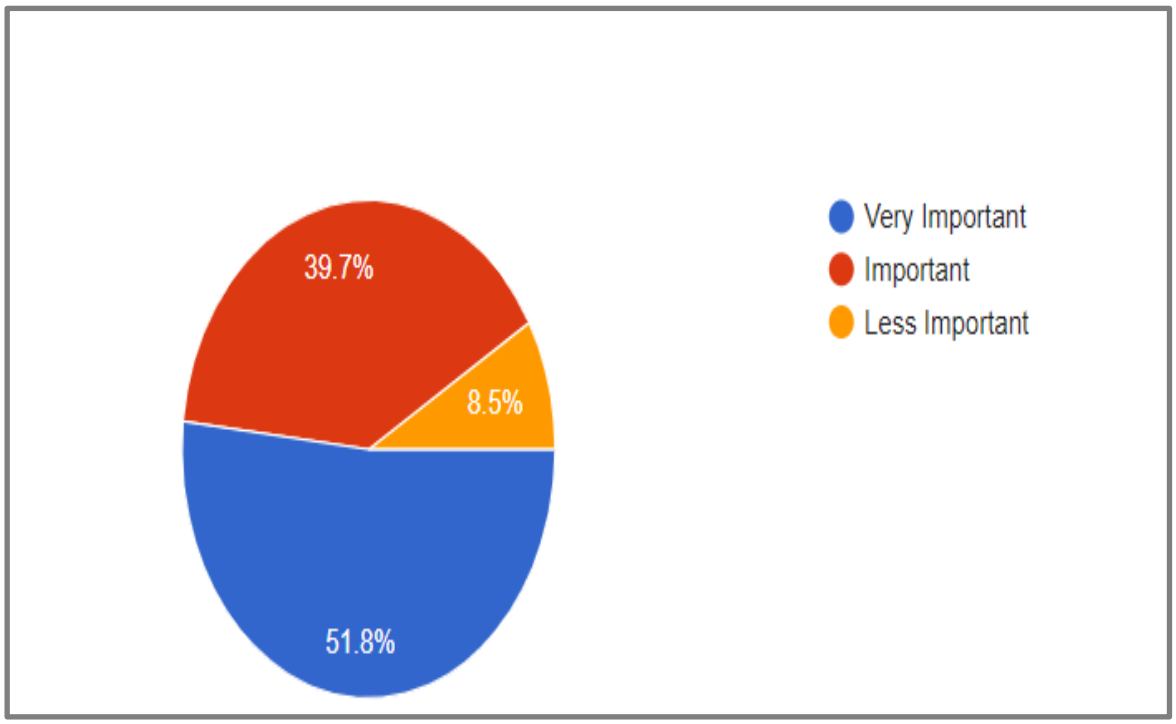

CHART 4.1.10. CHART SHOWING How Important to Taking Steps To Improve Logistics .

Interpretation

From the above table it is interpreted that as 39.7 % respondents says Important 51.8% says very Important , 8.5 % Says Less Important

Inference

Majority (51.8%) of respondents came to Say Showing How Important to Taking Steps To Improve Logistics .

Table 4.1.11.Table showing How often Logistics Reviewed at Respondents Company

S.no	Particulars	Frequency	Percentage%
1	Daily	26	18.4
2	Weekly	48	34
3	Monthly	45	31.9
4	Quarterly	22	15.6
Total		141	100

(Source: Primary data)

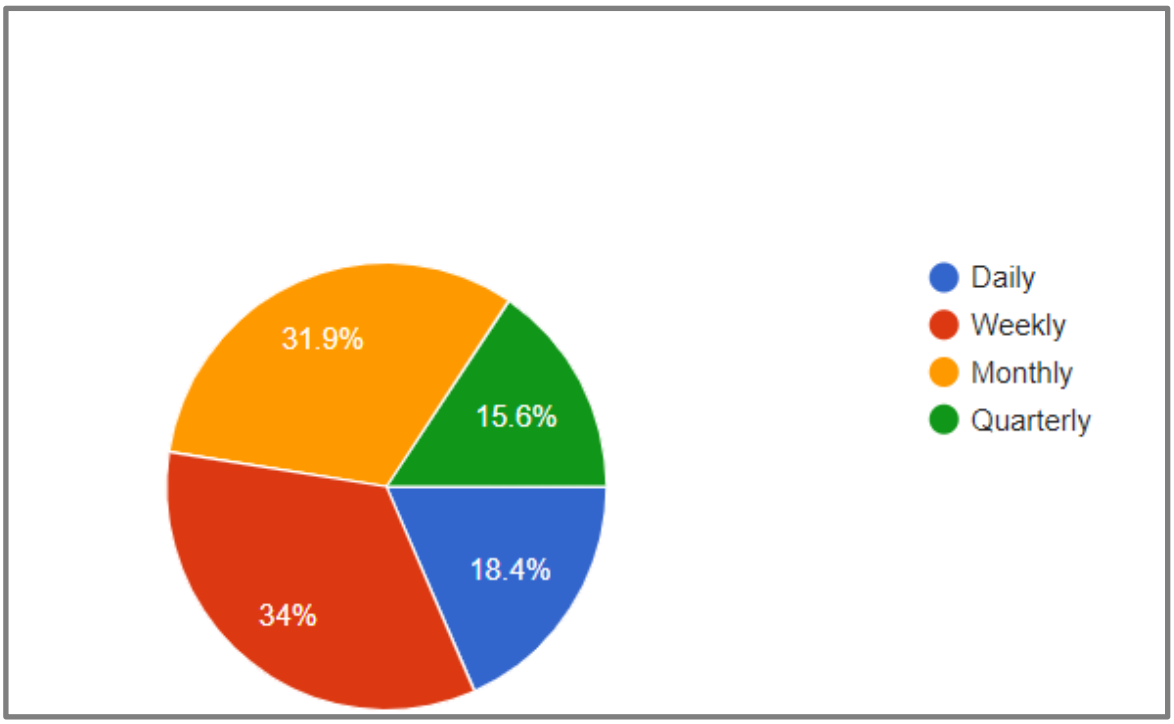

CHART 4.1.11. showing How often Logistics Reviewed at Respondents Company

Interpretation

From the above table it is interpreted that as 34% of respondents say their organization Reviewed often Logistics at weekly, 31.9% say Monthly, 18.4% say Daily , 115.6 says quarterly

Inference

Majority (34%) of Respondents organization Reviewed Logistics at weekly

Table 4.1.12. Table showing That By Implementing 3Pl (Third party Logistics) for Solving Logistics problem?

S.no	Particulars	Frequency	Percentage%
1	Definitely	35	24.8
2	Never	45	31.9
3	Future Plans	41	29.1
4	Implementing Different Logistics Plan	20	14.2
Total		141	100

(Source: Primary data)

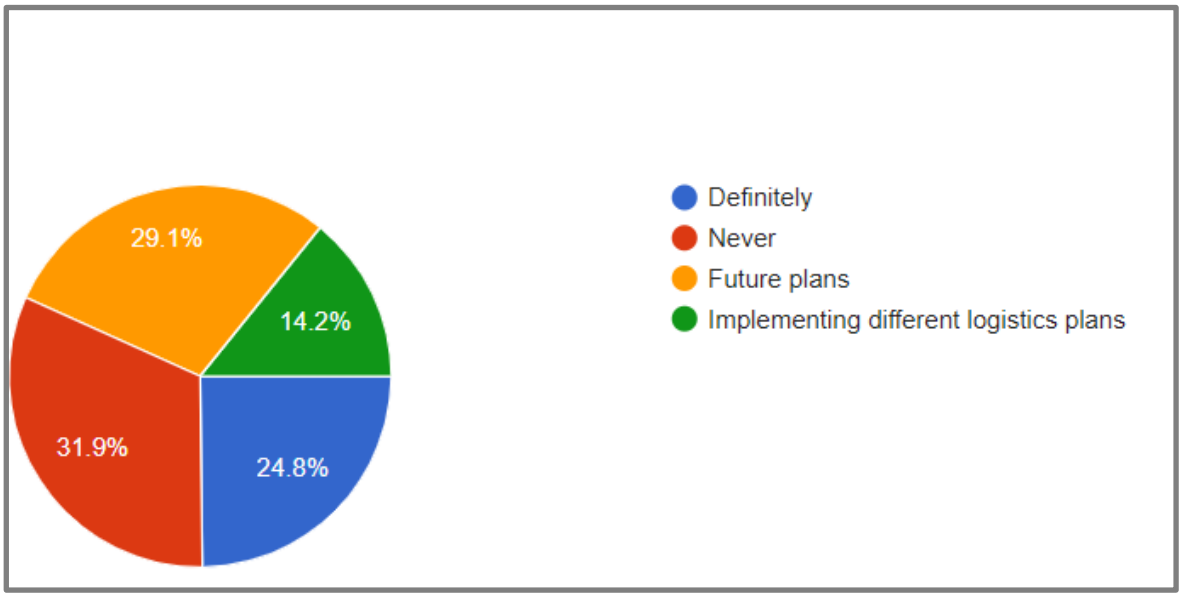

CHART 4.1.12 showing That By Implementing 3Pl (Third party Logistics) for Solving Logistics problem .

Interpretation

From the above table it is interpreted that the 31.9% of respondents say Never, 29.1% say future plans, 24.8% say definitely**,**14.2 Says implementing different logistics plans

Inference

Majority (31.9%) Strongly agree that Never an Lositic Problems Solved by Implementing 3PL

Table 4.1.13. Table showing What Effects Can 3PL Have on Your Logistics Plan

S.No	Particulars	Frequency	Percentage%
1	Major improvement in Efficiency	39	27.7
2	Saving Time	51	36.2
3	Cost Saving	30	21.3
4	Competitive Advantage	21	14.9
Total		141	100

(Source: Primary data)

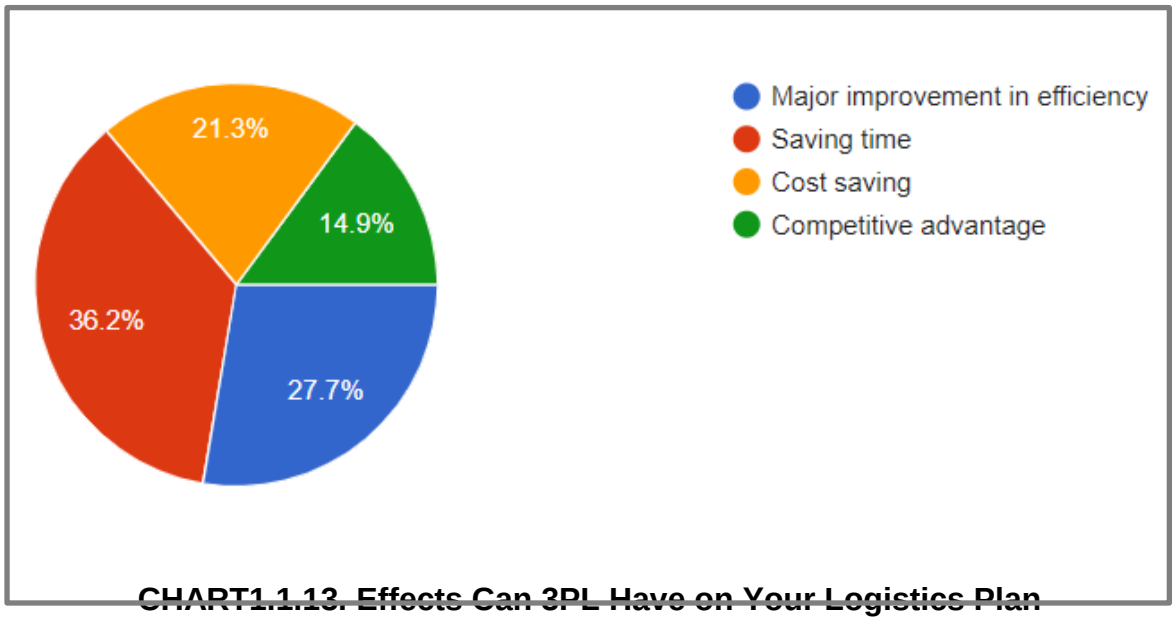

CHART1.1.13. Effects Can 3PL Have on Your Logistics Plan

Interpretation

From the above table it is interpreted that the 36.2% of respondents says saving time,27.7% says Major improvement in efficiency , 21.3% Says cost Saving, 14.9% says Competitive advantage

Inference

Majority (36.2%) Strongly agree that saving time is one of the Best Effect in 3PL logistics Plan

Table 4.1.14. Table showing The Main Logistics Activity That a 3PL should improve.

S.NO	Particulars	Frequency	Percentage%
1	Quality of parts	36	25.5
2	Inventory Management	36	25.5
3	Transportation and Mangement	31	22
4	Overall Logistics Process	38	27
Total		141	100

(Source: Primary data)

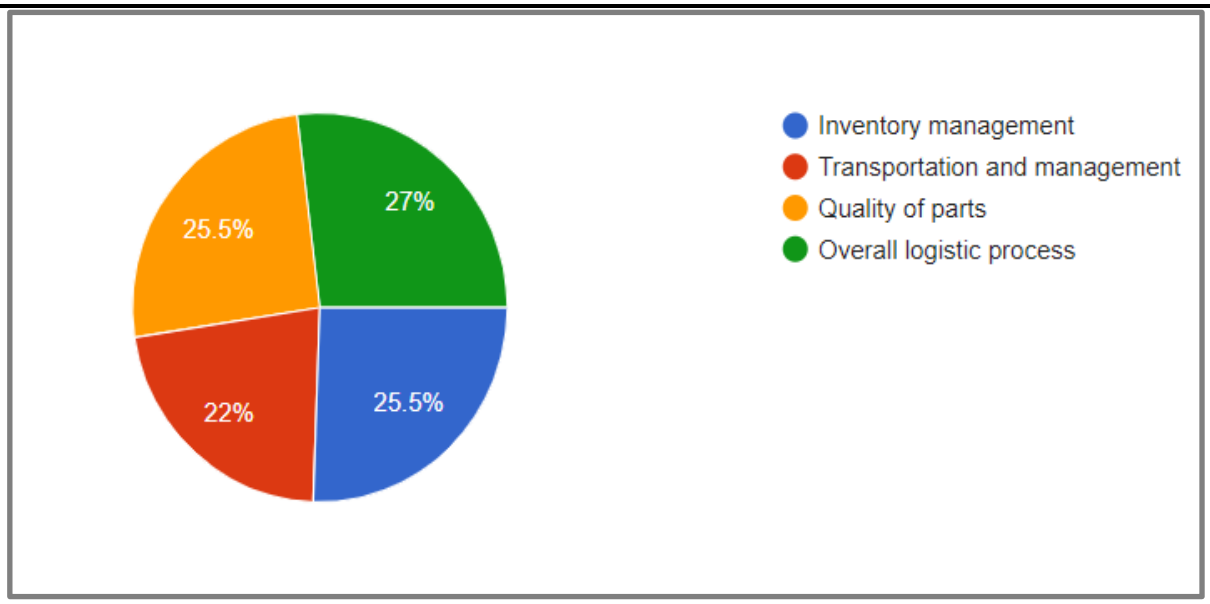

CHART 4.1.13. The Main Logistics Activity That a 3PL should improve

Interpretation

From the above table it is interpreted that the 25.5% says Quality of parts 25.5% say Inventory Management , 22% say Transportation and Mangement and 27% Says Overall Logistics Process The Main Logistics Activity That a 3PL should improve .

Inference

Majority (25.5%) Strongly agree that Inventory Management And (25.5%) of Quality of parts is the Main Logistics Activity That a 3PL should improve

4.2.CORRELATION ANALYSIS TEST

4.2.1 .Table showing the significance difference between Age Group and How Important is to Taking steps to improve logistics

H0: There is no significance difference between the

Age Group and How Important is to Taking steps to improve logistics

H1: There is a significance difference between the Age Group and How Important is to Taking steps to improve logistics

Correlations			
		Type of industry	How Important is to Taking steps to improve logistics
Age Group	Spearman Correlation	1	0.07
	p-value Sig.(2-tailed)		0.36
	N	141	141
How Important is to Taking steps to improve logistics	Spearman Correlation	0.07	1
	p-value Sig.(2-tailed)	036	
	N	141	141

4.2.1 .chart showing the significance difference between Age Group and How Important is to Taking steps to improve logistics

Interpretation

Since the spearman correlation is between -1 and +1, we accept H1 and reject H0. Therefore there is a significance difference between Age Group and How Important is to Taking steps to improve logistics

4.3 ANOVA ANALYSIS TEST

4.3.1Table : Table Showing the Significance Difference between the Respondents Occupation and Respondents Opinion About Should logistics be the Part of a Company Strategy.

H0: There is a No significance difference between Respondents Occupation and Respondents Opinion About Should logistics be the Part of a Company Strategy .

H1: There is a significance difference between Respondents Occupation and Respondents Opinion About Should logistics be the Part of a Company Strategy .

ANOVA						
		Sum of The Squares	df	Mean Square	F	Sig
Yes	Between groups	1.48	2	0.32	0.388	0.20
	Within Groups	106.7	0.38	0.77		
	Total	108.28	0.42			
Can't Say	Between groups	1.993	1.6	0.51	1.1	0.81
	Within Groups	1.325	0.96	1.56		
	Total	1.556	0.34			
No	Between groups	1.59	1.86	1.93	1.45	0.43
	Within Groups	1.786	0.65	1.05		
	Total	1.669	0.88			

4.3.1 Chart Table Showing the Significance Difference between the Respondents Occupation and Respondents Opinion About Should logistics be the Part of a Company Strategy.

Interpretation :

Since P Value is grater Than 0.5. We Accept H1 and H0. Therefore There is a significance difference between Respondents Occupation and Respondents Opinion About Should logistics be the Part of a Company Strategy .

CHAPTER 5

FINDINGS, SUGGESTIONS AND CONCLUSIONS

5.1 FINDINGS

- Majority (70.2%) of the respondents are Male.
- Majority (68.1%) of the respondents fall in the age category of 18 to 25 years.
- Majority(55.3%) of respondents Eduction Level Was was Graduate
- Majority(49.6%) of respondents Occupation Was Student
- Majority(65.2%) of respondents organization concerned about logistics risks
- Majority(60.3%) of respondents Organization had at least preliminary discussions with logistics management about the risks
- Majority(56%) of respondents organization logistics be the part of company's strategy
- Majority(51.8%) of respondents saying that important is to taking steps to improve logistics
- Majority(34%) of respondents says logistics is reviewed critically at your company weekly
- Majority (41.1%) of respondents organizations Does Every company use for quality metrics in logistics by saying All The above
- Majority (39%) Strongly agree that every company plan to implement a logistics solutions for 3-6 Months.
- Majority (31.9%) Strongly agree that By implement 3PL(Third Party Logistics) for solving your logistics problem By Saying Never
- Majority (36.2%) Strongly agree Saving Time effects can 3PL have on your logistics plan
- Majority (25.5%) Strongly agree that quality of Parts and Inventory Management should be the main logistics activity that a 3PL should improve.

5.2.SUGGESTIONS

In order to stay risk-free, you must identify the areas of the risk first. Have a close look at different aspects of your business and understand the areas if high-risk exposure. Through this, you will be able to understand the different potential supply risks and will be able to manage your work process accordingly. By following a certain growth path, you will also be able to understand the financial impact, the frequency and the ways to minimize supply chain risk. Other than this employee retention is a big-time factor for quality maintenance of an organization. This helps in keeping all risks at bay, and also helps a company to grow better. Therefore it is very important to make everyone contribute to your supply chain risk planning. Through this way, you will be able to keep everyone on the same page, and it will become easier to cope with various risks that might come on the way.

5.3.CONCLUSION

Logistics systems and transportation consist of interdependent relationships that logistics managem ent requires transportation to perform its day to day activities and meanwhile, a good logistics syst em can efficiently improve transportation developmenttraffic environment. Since transportation contrib ute the highest cost among the relatedelements in logistics systems, the improvement of transport efficiency can change the overall performance of a logistics system.Transportation plays an import ant role inlogistics system and its activities appear in various sections of logistics processes.
the linking of transportation, a powerful logistics strategy cannot bring its capacity into full play . If you wish to trump over your competitors, you should adapt the latest technology and innovative approach. The aim of effective logistics management is to improve the efficiency of the operations, ensuring customer satisfaction, and increase productivity.

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Appendix 1 (questionnaire)

Questionnaire

1. Name _____

2. Gender

- Male
- Female

3. Age group

- 18-25
- 26-40
- 41-55
- Above 55

4. What is your level of education?

- 12^{th}
- Graduate
- Post Graduate
- Professional

5. Monthly income (in Rs.) _____

6. Occupation

- Student
- Private employee
- Govt. Employee
- Business Man

7. Is your organization concerned about logistics risks?

- Yes
- No

8.Have you had at least preliminary discussions with logistics management about the risks?

- Yes
- No

9. On a scale of 1 to 5 how important is logistics quality for a company ?

	1	2	3	4	5
Least important	○	○	○	○	○
Important	○	○	○	○	○
Most Important	○	○	○	○	○

10. Should logistics be the part of company's strategy?

- Yes
- No
- Can't Say

11. How important is to taking steps to improve logistics ?

- Very Important
- Important
- Less Important

12. How often logistics is reviewed critically at your company ?

- Daily
- Weekly
- Monthly
- Quarterly

13. How does Every company use for quality metrics in logistics ?

- Cost saving
- Error free
- Reliability
- Timely delivery
- All the above

14. When do every company plan to implement a logistics solutions ?

- 0-3 months
- 3-6 months
- 6-12 months
- 12 months

15. How will you rank the influence of the following problem on logistics?

	1	2	3	4	5
• Lead time	○	○	○	○	○
• Tracking	○	○	○	○	○
• Cost	○	○	○	○	○
• Loading and unloading times	○	○	○	○	○
• Reliability	○	○	○	○	○
• Others	○	○	○	○	○

16. Will you implement 3PL(Third Party Logistics) for solving your logistics problem ?

- Definitely
- Never
- Future plans
- Implementing different logistics plans

17. According to you what effects can 3PL have on your logistics plan ?

- Major improvement in efficiency
- Saving time
- Cost saving
- Competitive advantage

18.What should be the main logistics activity that a 3PL should improve?

- Inventory management
- Transportation and management
- Quality of parts

- Overall logistic process

19. Your Valuable Suggestion_____

APPENDIX 2 (ARTICLE)

STUDY OF RISK MANAGEMENT IN LOGISTICS

Dr.R.Dhivya Sathish, **MBA., M.Phil., Ph.D - Assistant Professor, School of Management Studies, Sathyabama Institute of Science and Technology.**
(dhivyasathish05@gmail.com)

K Santhosh Kumar – MBA Student, Sathyabama Institute of Science and Technology.
(ksanthosh1905@gmail.com)

Abstract:

Nowadays, with the globalization of business operations, logistics systems are threatened by all kinds of uncertainties and disruptions. Almost every month, serious accidents in transportation and natural disasters all around the world are reported in the media. As a result, an effective and efficient risk management scheme is of a top most priority in the mind of all professionals in logistics management. This paper concisely explores risk management of logistics systems in several critical areas, namely disruption risk management,operational risk control, disaster and emergency management, and logistics service risk analysis. The papers featured in the special issue are also introduced and examined. This paper ends with a proposal of various future research directions for advancing risk management of logistics systems.

Keywords:

Cost Reduction and Profit Maximization, Efficient Flow of Manufacturing Operations , Competitive Edge , Effective Communication System Network Design , Order Processing

I Introduction

Logistics is a process linking the activities of product manufacturing from suppliers to its customers. The Journal of Logistics Managements defined logistics is the “process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements.“ From the perspective of the logistics function, in the beginning, logistics is defined to manage physical delivery and storage in an efficient way to meet enterprise business requirements. Because of market competition forced business strategy should aim to achieve seven rights, which including delivery the right product to the right place at the right time with right quantity and right quality, and at the right price to the right customer. More to the point, to coordinate all the seven rights are not easy and need to integrate all internal units and external partners for achieving a synergetic result. Especially, in a global business, to comply with all rights will highly rely on collaboration with external resources, both of upstream and downstream partners. The key to success in logistics management requires heavy emphasis on integration of activities, cooperation, coordination and information sharing throughout the entire supply chain, from suppliers to customers.” Incessant changes in the information technology are support to logistics management on data exchange and communication across entire process flow, such as, bar code and RFID, point of sales, EDI and VPN, or ERP system, nor only helping to reduce the complexity of physical process flows but also lower the uncertainty through information sharing among the partners in the chain. 4 Besides of management control on process operations, there have many external or internal disturbs will affect logistics outcomes For example, Iceland's volcano eruption disturbed the airline schedule, or wage increasing forced manufacturing moving, all will affect and increase cost of logistics management.

II Review of literature

P Rajagopal, VP Kaliani Sundram (2015)

Logistics management is known for its complexity, dynamics and uncertainty. The advent of rapid technology development, intense business competition and changing customer needs and requirements, has forced companies to reshape their business model and strategies. Numerous new terms such as Global Supply Chain, Third Party Logistics, Green Logistics, E-Logistics and Reverse Logistics are becoming issues that have to be deal with by all companies, local, multinational and global. Lately Reverse Logistics start to get attention by most of the firms. The purpose of this assignment is to review and identifies clear definition of Reverse Logistics, comparison Reverse Logistics with Forward Logistics in order to have a better understanding and finally future direction of Reverse Logistics in gaining competitive advantages.

A Edirisuriya, S Weerabahu (2018)

Sustainability is emerging as a main consideration throughout the industrial world due to the environmental pollution and degradation happening in a major scale as a result of industrial wastes while lean management is becoming a popular management tool in minimizing waste. Logistics industry contributes for these issues due to the wastes released in a considerable amount. Experts have highlighted that implementing lean principles in parallel to green concepts is more successful; which could lead to waste and cost reduction. A theoretical gap has been identified in the field of logistics in applying lean and green concepts in the context of Industry 4.0. A comprehensive literature review was conducted to address the identified research gap with the objective of examining the important lean practices and green concepts which are expected to enhance the operational performance of logistics functions.

A Marasco (2008)

Third-party logistics (TPL) has attracted considerable research attention in the recent past. Despite the growing body of literature on this topic, precious little effort has been devoted to synthesizing the overall state of art of research on TPL. In this paper, an attempt is made to review the status of literature on TPL. A literature review scheme is presented. A total of 152 articles published between 1989 and 2006 in 33 reputable international journals are reviewed and classified into content- and methodology-related issues. Based on the review, suggestions for future research are likewise provided.

TM Choi, CH Chiu, HK Chan (2016)

Nowadays, with the globalization of business operations, logistics systems are threatened by all kinds of uncertainties and disruptions. Almost every month, serious accidents in transportation and natural disasters all around the world are reported in the media. As a result, an effective and efficient risk management scheme is of a top most priority in the mind of all professionals in logistics management. This paper concisely explores risk management of logistics systems in several critical areas, namely disruption risk management, operational risk control, disaster and emergency management, and logistics service risk analysis.

I Vanany, S Zailani, N Pujawan (2009)

Supply chain risk management has increasingly becoming a more popular research area recently. Various papers, with different focus and approaches, have been published since a few years ago. This paper aims to survey supply chain risk management (SCRM) literature. Paper published in relevant journals from 2000 to 2007 are analysed and classified into five categories: conceptual, descriptive, empirical, exploratory cross-sectional, and exploratory longitudinal. We also looked at

the papers in terms of the types of risks, the unit of analysis, the industry sectors, and the risk management process or strategies addressed. The literature review will provide the basis for outlining future research opportunities in this field.

III Objectives

- A study on Risk Management In Logistics
- To reduce the cost of operations.
- To maintain transparency in operations.
- Reliable and consistent delivery performance
- Freight economy

IV METHODOLOGY

Research Design

My research design will be descriptive followed by partially exploratory because the entire project will be based on the data collected from reports, journals and analysis so that the detailed and clear description will be there in the project, so there is a mix of explanation and description design.

Participants

The target population consists of employees who are working in Logistics industries in Chennai. A total of 141 respondents has participated in research to share their views about Risk Management in Logistics. The respondents are based on various age groups of 18-25, 26-40, 41-55 and above 55years and the industry they are working and gender of both male and female.

Measures

A set of questionnaire was prepared which include Demographic variables , their occupations , did they Concerned about logistics Process and impact About logistics risk has been asked in the questionnaire and

Procedure

The questionnaire was spread across to the employees working in Logistics industries in Chennai region. From the survey a detailed database has generated from the respondents. The researcher explained the purpose of the study to the respondents. The respondents were assured of their anonymity and confidentially of any information being provided. The respondents completed the

questionnaires and out of the 141 copies of the administered questionnaire, all of it were collated and analyzed statistically using percentage analysis, Correlation test and Anova test.

V RESULTS AND DISCUSSIONS

From the analysis of the data collected, the following results were obtained:

- Majority (70.2%) of the respondents are Male.
- Majority (68.1%) of the respondents fall in the age category of 18 to 25 years.
- Majority(55.3%) of respondents Eduction Level Was was Graduate
- Majority(49.6%) of respondents Occupation Was Student
- Majority(65.2%) of respondents organization concerned about logistics risks
- Majority(60.3%) of respondents Organization had at least preliminary discussions with logistics management about the risks
- Majority(56%) of respondents organization logistics be the part of company's strategy
- There is a significance difference between the Age Group and How Important is to Taking steps to improve logistics
- There is a significance difference between Respondents Occupation and Respondents opinion About should logistics be the part of a Company strategy .

Correlations			
		Type of industry	How Important is to Taking steps to improve logistics
Age Group	Spearman Correlation	1	0.07
	p-value Sig.(2-tailed)		0.36
	N	141	141
How Important is to Taking steps to improve logistics	Spearman Correlation	0.07	1
	p-value Sig.(2-tailed)	036	
	N	141	141

Hypothesis 1

The null hypothesis H0 is is rejected so we Conclude that Therefore there is a significance difference between Age Group and How Important is to Taking steps to improve logistics . The result depicts that the Logistics determines the improvement of Logistics Analysis when they come to risk Management

Hypothesis 2

The null hypothesis H0 is rejected so we conclude that There is a significance difference between Respondents Occupation and Respondents opinion About should logistics be the part of a Company strategy . The result depicts that the Logistics Strategy play a Significant role in determining the improvement of company Strategy By Logistics risk free

VI Suggestions

In order to stay risk-free, you must identify the areas of the risk first. Have a close look at different aspects of your business and understand the areas if high-risk exposure. Through this, you will be able to understand the different potential supply risks and will be able to manage your work process accordingly. By following a certain growth path, you will also be able to understand the financial impact, the frequency and the ways to minimize supply chain risk. Other than this employee retention is a big-time factor for quality maintenance of an organization. This helps in keeping all risks at bay, and also helps a company to grow better. Therefore it is very important to make everyone contribute to your supply chain risk planning

VII Conclusions

Logistics systems and transportation consist of interdependent relationships that management requires transportation to perform its day to day activities meanwhile good logistics s ystem can efficiently improve transportation development

traffic environment. Since transportation contribute the highest cost among the relatedelements in lo gistics systems, the improvement of transport efficiency can change

the overall performance of a logistics system. Transportation plays an important role logistics system and its activities appear in various sections of logistics processes

the linking of transportation, a powerful strategy cannot bring its capacity into full play .If you wish to trump over your competitors, you should adapt the latest technology and innovative approach. The

aim of effective logistics management is to improve the efficiency of the operations, ensuring customer satisfaction, and increase productivity.

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