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A Study on the Effectiveness of Material Handling Storage and Packaging Challenges in FALCON Lines PVT LTD, Chennai

HARSHAN K[1], Dr. M. RAJA [2]

[1] Student of MBA School of Management Studies Sathyabama Institute of Science and Technology Chennai- 600119

[2] Assistant Professor, MBA School of Management Studies Sathyabama Institute of Science and Technology Chennai- 600119

ABSTRACT:

Material handling, storage, and packaging are vital elements within the logistics and supply chain ecosystem, directly impacting operational efficiency, product integrity, and customer satisfaction. This article analyzes the common challenges faced in each of these areas, such as inefficient layouts, poor space utilization, inadequate inventory control, and unsustainable packaging practices. It explores the effectiveness of modern solutions, including automation, warehouse management systems, and sustainable packaging technologies, in addressing these issues. The study highlights how integrating smart technologies and adopting strategic approaches can significantly improve performance, reduce costs, and support sustainability goals. The findings underscore the importance of continuous innovation and process optimization in overcoming the evolving demands of material handling, storage, and packaging.

INTRODUCTION:

The everyday functioning of the logistics cycle requires a large number of items and commodities. As a result, trustworthy material handling and packaging are needed. Processing and packaging of goods is one of the five related logistics tasks. Aspects of material handling include moving objects into and out of storage spaces as well as within buildings. It requires transferring the appropriate items to the appropriate places at the appropriate times in the appropriate ways. Materials, products, and packaged goods are transferred, stored, managed, and protected throughout the manufacturing, distribution, and disposal processes. One of the most important aspects of packing, and hence of materials handling, is the protection of materials and items for distribution and transportation. Among other things, it provides protection, makes transportation easier, and conveys product information. In this section, we'll look at significant packaging and material handling difficulties.

Material handling plays a significant role in the industrial sector. Although it has always been a human activity, all industrial processes now include this vital, specialized feature. Many people have distinct positions as" material moving machine operators," even though this operation is a component of every industrial worker's job description. The material handling machinery transports various goods in a variety of industrial settings, such as loading cargo into buses, trains, aircraft, and ships or relocating building supplies around construction sites.

Loading, transporting, and unloading of commodities are all parts of materials handling. When handling materials is referred to as mechanical handling of materials, many sorts of tackles, gadgets, and equipment are employed to perform it safely and affordably. Since early man learned how to utilize wheels and levers, materials have been moved mechanically. Any human action involving materials requires management of those items. However, the word "materials handling" is used to refer to industrial activities in the fields of engineering and technology. Materials must be handled as raw materials, intermediate goods, or finished products from the point of receipt and storage of raw materials through production processes and up to finished goods storage and dispatch points in any industry, large or small, involving manufacturing or construction type work.

OBJECTIVES OF THE STUDY:

The study is designed with the following specific objectives:

Primary Objectives

- To analyze the Effectiveness of Material Handling Storage, Transportation of the company.

Secondary Objectives

- To study the socio economic profile of the respondents.

- To measure the levels of satisfaction and to cull out the various problems encountered by logistics service providers on the Organization.

- To suggest suitable recommendations for overcoming the issues on logistics service providers.

COMPANY PROFILE:

Falcon India Pvt Ltd has been providing a high quality, cost effective level of service for the past few years. We focus on supporting the needs of the International Trade Community by providing complete logistics solution through a host of activities and nurturing its relationship with clients in providing a comprehensive line-up of services that are integral to the smooth and efficient movement of inbound and outbound consignments and sees it as a key element of success

Falcon India Lines Pvt. Ltd., headquartered at Chennai with branches at Overseas – Srilanka, Malaysia, Singapore and in India – Coimbatore, Tuticorin and Madurai and a combination of agents / representatives at Mumbai, Gujarat, Delhi and Calcutta.

Falcon India Lines Pvt. Ltd., is assocaiated with a global network of partners that provides it the reach and resources to provide comprehensive solutions on door to door basis with a fully dedicated team, experienced, trained and supported by required office automation. We are able to meet the most demanding deadlines and service requirements of clients including various multinational in advese situations.

REVIEW OF LITERATURE:

Dr.Anitha.M.N (2024), "Impact of Goods and Service Tax (GST) on Logistics Sector in India". The main objectives of the study to an analysis of what the impact of Goods and Service Tax. Convenience samples of 396 respondents were taken. For data analysis mean reliability analysis and correlation analysis were employed. This paper is an analysis of what the impact of Goods and Service Tax (GST) will be on Logistics Sector in India primarily in Transportation, Warehousing and Logistics Service Providers.

Mahesh and P. Suresh (2023), "Logistics and Its Competitive Advantages in Retail Sector with Special Reference to Big Bazaar". The objectives of the study to to understand the recent logistics activities in selected retail sector. Data is collected from 100 respondents and the simple random sampling method is used to collect data. The study is exploratory in nature. Likert scale has been used and SPSS version is used to analyze the primary data. This study conclude their logistics service such as packaging, labeling and reverse logistics, since it has competitive advantage comparatively rival firms.

Ramachandran, Mayur S Nakhava, and Kumar Pratik (2021), "Logistics in India: Challenges and Scope". The objectives of the study to required to compete through excellence in managing their logistics. Convenient sampling was used in this study it is a non-probabilistic sampling method. The size of the sample selected for the study is 300 respondents. The study findings that provide a perspective on these issues, outline some of the key challenges with the help of secondary information, and describe some interesting initiatives that some are required to compete through excellence in managing their logistics.

RESEARCH DESIGN:

A research design is the arrangement of condition for   collection and analysis of data in manner that aims to combine relevance to the research purpose with economy in procedure. The study Is descriptive in nature. As it is describes, the effectiveness of material handling and transportation.

SAMPLE SIZE

The employees of Falcon India Lines Pvt. Ltd were taken as the sampling area to conduct the survey for the purpose of study.

The sample size of the study is 116.

METHOD OF DATA COLLECTION

The data for this study are of two types: -
- Primary data
- Secondary data

Primary Data

Primary data is the data is collected from the respondent for the first time, it is original in nature. For the purpose of collection of primary data, a well structured questionnaire was framed and filled by the respondents. The questionnaire comprises of close ended as well as open ended questions. In close ended questions, checklist questions and multiple choice questions are used.

Secondary Data

Secondary data are collected from books, magazines, web sites etc, and both open ended & close-ended questions are incorporated in the questionnaire for the collection of data.

PERIOD OF THE STUDY

The period of the study is for 3 months (from January 2025 to March 2025).

AREA OF THE STUDY

The sample area chosen for conducting the study in Falcon India Lines Pvt. Ltd, Chennai.

LIMITATIONS OF THE STUDY

- The primary data are being collected using questionnaire. Hence, this retains its own limitation.
- The sample size was limited to 116.
- The study was completed in short period. Lack of time for study is another drawback.

STATISTICAL TOOLS

The following statistical tools are used in the study
Percentage Analysis
Chi – square test
ANOVA

PERCENTAGE ANALYSIS

Percentage refers to a special kind of ratio in making comparison between two or more data and to describe relationships.
Percentage can also be used to compare the relative terms in the distribution of two or more sources of data.

$$\text{Percentage of Respondents} = \frac{\text{Number of Respondents}}{\text{Total Respondents}} \times 100$$

CHI SQUARE TEST

The chi square test is an important test among the several tests of significance developed by satisfaction. Chi-square, symbolically written x^2 is a statistical measure used in the contexts of sampling analysis for comparing a variance to a theoretical variance. It can also be used to make comparison between theoretical population and actual data when categories as used. By comparing a calculated value with the table value of x^2 for degrees of freedom at given level of significance. We may either accept or reject the null hypothesis .If the calculated value of x^2 is less than the value, the null hypothesis is accepted ,but if the calculate value is equal or greater than table, value the hypothesis is rejected.

$\chi^2 = \sum ((O_i - E_i)^2)/E_i$

O_i = Observed Frequency
E_i = Expected frequency

ANOVA

A statistical analysis tool that separates the total variability found within a data set into two components: random and systematic factors. The random factors do not have any statistical influence on the given data set, while the systematic factors do. The ANOVA test is used to determine the impact independent variables have on the dependent variable in a regression analysis.

CONCLUSION :

Material handling is vital for all industries, enhancing efficiency, reducing costs, saving time, space, and labor. It improves working conditions and boosts production. Proper guidelines maximize these benefits, supporting industrial growth and increasing government revenue, thereby contributing significantly to national economic development.

REFERENCE :

1. Transportation & Logistics Chain:
   M. Sreenivas & Dr. T. Srinivas (1996) emphasized transportation's role in logistics efficiency.
2. E-Business & Tech Integration:
   Auramo et al. (2002) and Bhandari (2011) explored e-business and tech impact on logistics.
3. Automation & Buffer Management:
   Fischmann et al. (2004) focused on automated systems in semiconductor industries.

4. Sustainability & Environment:
   Grabara (2006), Tambovcevs (2010), and Pańkowska & Sołtysik-Piorunkiewicz (2013) discussed sustainable logistics and green IT integration.
5. • **Modern Trends & Innovations:**
   Dong (2013), Wang (2019), Ramachandran et al. (2021), and Mahesh & Suresh (2023) explored logistics trends, challenges, and retail competitiveness.
6. • **Policy Impact:**
   Dr. Anitha M.N (2024) analyzed GST's effects on the Indian logistics sector.