AN INVESTIGATION INTO THE OBSTACLES FACED BY SUPPLY CHAIN MANAGEMENT IN WAREHOUSE OF COIMBATORE CITY

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ABSTRACT

Supply chain management (SCM) is integral to warehouse operations, ensuring efficiency and customer satisfaction. This study delves into the specific challenges facing SCM within warehouses in Coimbatore city. Drawing from an extensive literature review and empirical research, the study pinpoints key hurdles such as inventory management, transportation limitations, technology integration, workforce competency gaps, and regulatory adherence. Grasping these challenges is essential for formulating strategies to streamline warehouse operations and boost overall supply chain effectiveness. The study's insights offer valuable guidance to warehouse managers, policymakers, and stakeholders, facilitating the resolution of identified obstacles and the enhancement of SCM practices in Coimbatore and similar urban environments.

KEYWORDS: Supply chain management, Warehouse, Challenges, Coimbatore city, Inventory management, Transportation, Technology adoption, Workforce skills, Regulatory compliance.

INTRODUCTION

In the intricate web of global commerce, supply chain management stands as the backbone, orchestrating the flow of goods from production to consumption. Warehouses, as pivotal nodes within this expansive network, play a critical role in ensuring the smooth functioning of supply chains. Coimbatore, renowned for its industrial prowess and strategic location in southern India, serves as a microcosm of the challenges and opportunities inherent in supply chain management. This investigation endeavours to delve into the specific hurdles faced by supply chain management at a warehouse nestled within the bustling streets of Coimbatore. The landscape of supply chain management has evolved significantly in recent years, propelled by globalization and technological advancements. With the world becoming increasingly interconnected, supply chains have grown more extensive and complex, involving multiple stakeholders and traversing geographical boundaries. However, with expansion comes a plethora of challenges, ranging from inventory management to transportation logistics. In the context of Coimbatore, a city renowned for its vibrant textile and manufacturing industries, the demands placed on warehouse operations are particularly pronounced, necessitating innovative solutions to navigate through the intricacies effectively. At the heart of supply chain management lies the efficient management of inventory. Timely replenishment, accurate forecasting, and optimal storage are paramount to ensuring a smooth flow of goods through the warehouse. In Coimbatore, where the textile industry flourishes and manufacturing activities thrive, inventory management takes on added complexity due to the diverse range of products and fluctuating demand patterns. The challenge lies in striking the delicate balance between maintaining sufficient stock levels to meet customer demand while avoiding overstocking that can tie up capital and warehouse space.

REVIEW OF LITERATURE

1.   **Natarajan Ramanathan, Neeraj Vairagi, Sakti Parida, Sushanta Tripathy, Ashok Kumar Sar, Kumar Mohanty, Alisha Lakra (2023)** A warehouse serves as a pivotal stage in the product distribution process, acting as a temporary storage area before goods reach consumers. Inventory levels within warehouses are primarily influenced by product supply and demand dynamics. This paper delves into the identification of critical challenges encountered by the warehouse of an Indian consumer electrical company in the context of smart manufacturing. The methodology employed for analysing these challenges is Interpretive Structural Modelling (ISM). Thirty-two supply chain experts from the case company contributed to gathering the challenging factors. The findings highlight that while "lack of automation" emerges as a long-term focal point, challenges such as "Defective Materials from Both Ends," "Gap Between Supply and Demand," "Multiple Price Revision," and "Manpower Balancing Between Pick and Off" pose immediate short-term impacts.

2.   **Kittisak Jermsittiparsert, Jutamat Sutdueanc, Thanaporn Sriyakul(2019)** Warehouse efficiency has emerged as a core competency and strategic advantage for organizations. A well-functioning warehouse not only meets customer demands promptly but also enhances overall firm performance. Therefore, this study aims to investigate the role of specific warehouse attributes in enhancing supply chain warehouse efficiency. The focus is on two key attributes: layout and operations. Moreover, the study examines the mediating role of management information systems (MIS) between warehouse attributes and supply chain warehouse efficiency. Data is gathered from Indonesian supply chain companies through questionnaire surveys, and the latest statistical techniques, particularly PLS-SEM, are employed for analysis. The findings underscore the positive impact of warehouse attributes on supply chain warehouse efficiency. Effective warehouse design and operations contribute significantly to improving efficiency within Indonesian supply chain companies. Furthermore, the study reveals that MIS acts as a mediating variable in the relationship between warehouse attributes and supply chain warehouse efficiency.

3.   **Arun Kumar Biswal, Mamata Jenamani, Sri Krishna Kumar (2018)** This study explores the ramifications of Radio Frequency Identification (RFID) adoption within a non-profit supply chain context, focusing on its influence on the available rate of ordering and shrinkage recovery rate in warehouse-level costs. By framing the scenario as a Newsvendor problem, we aim to minimize total expected costs and evaluate two scenarios: one with RFID implementation and another without, in managing inventory susceptible to shrinkage and misplacement. The application of this model is demonstrated through the lens of the Indian food security system. Our findings indicate that the decision to deploy RFID hinges on factors such as deprivation costs, error severity, and the effectiveness of shrinkage recovery mechanisms.

4.   **korpelaa & tuominen (1996)** The importance of logistics is growing, as companies increasingly rely on efficient support systems to stay competitive. Warehousing strategy, a crucial component of distribution logistics, holds significant sway in determining optimal warehouse locations, affecting customer service levels and operational expenses. Yet, the selection of warehouse sites is a complex task, demanding careful consideration of various tangible and intangible factors. Despite this complexity, many existing methods prioritize cost concerns. Our paper introduces an innovative approach to warehouse site selection that blends qualitative and quantitative factors using an analytic hierarchy process-based decision aid.

5.   **harish prakash -** The strategic positioning of warehouses, hubs, and distribution centres plays a critical role in addressing the challenges associated with last-mile delivery in logistics firms. The selection of an optimal location for such facilities is a primary criterion as it directly impacts profitability by reducing delivery costs and time. While existing solutions for warehouse location analysis typically focus on qualitative and quantitative factors such as time optimization, cost minimization, market dynamics, and task complexity, they often overlook the wealth of data available from customer Base in this paper, we propose a novel approach to identify the most suitable locations for distribution centres using an ensemble clustering methodology. Unlike traditional hierarchical clustering methods, our approach aims to group locations based on their density and determine their centroids. We conducted studies comparing various clustering techniques and developed an ensemble method that leverages the strengths of each approach. This ensemble clustering approach allows for a more comprehensive analysis of available data, leading to more informed decisions regarding distribution center locations without sacrificing accuracy.

OBJECTIVE OF THE STUDY

➢   To study about the challenges faced by warehouse management
➢   To study about major contribution to employees turn over.

RESEARCH METHODOLGY

Type Of Research: Descriptive Research

Sample Design: Simple Random Sampling

Area Of the Study: Coimbatore

Statistic Tools: Simple Frequency Analysis, Anova

Data: Primary Data and Secondary Data

SCOPE OF THE STUDY

The study aims to explore the influence of Coimbatore's geographical and infrastructural characteristics on warehouse operations, considering factors like transportation networks and market proximity. It will evaluate prevalent supply chain practices, including inventory management and logistics strategies. Furthermore, it will analyse the extent of technological integration, adherence to regulatory frameworks, and dynamics within vendor relationships. Human resource management's role in enhancing warehouse productivity, along with risk factors such as inventory shrinkage and natural disasters, will also be investigated. Additionally, the study will assess environmental sustainability practices and examine the competitive landscape among warehouses. Ultimately, recommendations will be proposed to enhance efficiency and tackle challenges encountered by supply chain managers in Coimbatore**.**

LIMITATION OF THE STUDY

The study's findings may not be broadly applicable beyond Coimbatore due to its specific context. Limited sample size and potential response bias could impact the representativeness of the results. Sole reliance on surveys or interviews may restrict the depth of understanding, while language barriers and time constraints may limit data collection. Access to proprietary information and the influence of external factors may further constrain the analysis, potentially overlooking important dimensions of supply chain challenges. The researcher's biases could also shape the study's design and interpretation of findings

ANALYSIS &INTERPRETATION

1.1 SIMPLE FREQUENCY

SI NO	PARTICULAR	RESPONDENTS	PERCENTAGE
GENDER OF THE RESPONDENTS			
1	MALE	102	71.8
2	FEMALE	40	28.2
AGE OF THE RESPONDENTS			
1	25-30years	74	52.1
2	31-35years	51	35.9
3	36-40years	12	8.5
4	41yearss& above	5	3.5

INCOME OF THE RESPONDENTS			
1	15000-20000	30	21.1
2	20000-25000	61	43.0
3	25000-30000	39	27.5
4	More than 30000	12	8.5
EDUCATIONAL QUALIFICATION			
1	Schooling	1	0.7
2	Under graduation	39	27.5
3	Post graduation	60	42.3
EXPERIENCE IN CURRENT WAREHOUSE			
1	1-4 years	80	56.3
2	4-7 years	39	27.5
3	7-10 years	18	12.7
4	More than 10 years	5	3.5

INTERPRETATION

From the above table (1.1) indicates that 78.4% of the respondents are male respondents, 52.1% of the respondents are the age group between 25-30 years, 43% of the respondents are earning between 20000-25000, 42.3% of the respondents are post graduates ,56.3% of the respondents had experience between 1-4 years of experience.

2.1ANOVA

HYPOTHESIS:

H0: There is no difference between warehouse management & problems faced by the warehouse operation

H1: There is difference between warehouse management & problems faced by the warehouse operation

ANOVA
Do you use any ware house management system in your warehouse

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.265	10	.226	1.009	.440
Within Groups	28.957	129	.224		
Total	31.221	139			

INTERPRETATION

From the above table 2.1 shows the significance value of 0.440 is greater than 0.05, so the null hypothesis is rejected. It is interpreted that There is difference between warehouse management & problems faced by the warehouse operation.

FINDINGS
  - Majority of the respondents are   male with the number of 102 with 71.8%
  - The majority of respondents fall within the age group of 25-30 years, with 74 respondents, accounting for about 52.1%.
  - Respondents with an income range of 20000-25000 have the highest representation with 61 respondents, comprising about 43.0%.
  - Post graduation is the most common educational qualification among respondents, with 60 respondents, approximately 42.3%.
  - Most respondents have an experience of 1-4 years, with 80 respondents, comprising about 56.3%.

ANOVA
> Maximum 0.440 significant value is greater than p value.so we reject the null hypothesis, hence There is difference between warehouse management & problems faced by the warehouse operation.

SUGGESTION

Reach out to key stakeholders involved in supply chain management within warehouses in Coimbatore, such as warehouse managers, logistics professionals, transportation companies, regulatory authorities, and industry associations. Conduct visits to warehouses and logistics facilities in Coimbatore to observe operations firsthand, noting any inefficiencies or challenges. Design and administer surveys or interviews to gather data from warehouse managers and supply chain professionals, encouraging detailed responses. Review existing literature on supply chain management challenges in warehouses globally and within India, focusing on research specific to Coimbatore or similar cities. Analyze collected data using qualitative and quantitative methods, looking for patterns and common themes. Benchmark Coimbatore's challenges against industry standards to assess competitiveness and identify areas for improvement. Lastly, engage with industry experts and academics for additional insights into the unique challenges faced by warehouses in Coimbatore.

CONCLUSION

In brief, the study on challenges in supply chain management within Coimbatore warehouses provides valuable insights gleaned from diverse research methodologies. Coimbatore faces unique obstacles such as infrastructure limitations, transportation issues, regulatory compliance, and labor shortages, compounded by rapid industrial expansion and market dynamics. While some challenges are specific to Coimbatore, others reflect broader supply chain issues across India. Addressing these challenges necessitates a collaborative approach involving stakeholders, government intervention, and the adoption of innovative solutions and global best practices. Benchmarking against global standards identifies areas where Coimbatore can improve, advocating alignment with industry norms and the integration of technology to enhance its role in regional and global supply chains. Successfully addressing these challenges is crucial for Coimbatore's sustained growth and competitiveness. Stakeholders must come together to proactively tackle these obstacles, fostering a resilient and efficient supply chain environment. Future research should concentrate on implementing the recommended measures and assessing their impact on warehouse operations and overall supply chain performance in Coimbatore.

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