



A STUDY ON MATERIAL MANAGEMENT AND SUPPLY CHAIN INTEGRATION IN LOGISTICS & COMPANY (VRL LOGISTICS)

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ABSTRACT

Supply Chain Management (SCM) plays a vital role in enhancing organizational efficiency by managing the flow of goods, services, information, and finances from the point of origin to the point of consumption. The present study focuses on analyzing the material management and supply chain practices at VRL Logistics Ltd, Coimbatore District. In the current competitive environment, effective integration of procurement, planning, storage, transportation, and distribution is essential for achieving operational excellence and customer satisfaction. The emergence of electronic supply chain management (e-SCM) through the integration of Internet and information technology has further strengthened coordination among supply chain partners.

KEYWORDS: Chain Management (SCM) Economic growth, Industrial development, Electronic supply chain management (e-SCM), Coimbatore City

1. INTRODUCTION

Supply Chain Management(SCM) refers to the operation of the inflow of goods and services. It includes the movement and storehouse of raw accoutrements, work- in- process force, and finished goods from the point of origin to the point of consumption. Interconnected networks, channels, and business bumps are involved in the provision of products and services needed by end guests in a force chain. SCM is defined as the design, planning, prosecution, control, and monitoring of force chain conditioning with the ideal of creating net value, erecting a competitive structure, using worldwide logistics, coinciding force with demand, and measuring performance encyclopedically.

The Internet and recent technological developments have really changed the way associations live and work, opening new openings for achieving competitive advantages. In this regard, the development of information technology has introduced new confines in force chain operation. As a result, the conception of electronic force chain operation(e-SCM) has surfaced, representing the openings deduced from integration and synchronization of conditioning, functions, and operations among force chain mates. The integration of Internet technology with force chain operation has come an necessary asset for successful associations.



2. STATEMENT OF THE PROBLEM

Current material management practices in the logistics industry are often carried out on a fragmented basis, with unstructured communication and no clearly defined responsibilities among the parties involved. This fragmentation creates gaps in information flow, which adversely affects the decision-making process and leads to delays in material ordering and receiving. Decisions taken at one stage of the supply chain significantly influence other activities and processes; however, this interdependence is often overlooked due to fragmented practices.

3. OBJECTIVES OF THE STUDY

The study is designed with the following specific objectives:

- To portray the personal and organizational factors of **VRL Logistics**.
- To compare and analyze the important factors related to manufacturing and logistics operations.

4. METHODOLOGY

4.1 Sample Design

This study is exploratory and descriptive in nature, as it aims to analyze the supply chain management practices followed at VRL Logistics. The convenience slice system was used for collecting primary data from the repliers.

4.2 Sample Size

A sample of 97 repliers was named for the study, and the needed data were collected from them.

4.3 Data Collection

The study is grounded on two types of data:

- Primary Data
- Secondary Data

5. REVIEW OF LITERATURE

Piyush Singhal and Gopal Agarwal (2011), studied *Supply Chain Risk Management*. Their research emphasized that supply chain disruptions, uncertainties, and operational risks affect overall supply chain performance. Effective risk management strategies improve supply chain stability and reliability.

Md. Mamun Habib (2010), studied the *theoretical and practical perspectives of Supply Chain Management*. The study highlighted that supply chain management helps organizations deliver the right

product, at the right time, and at the right place while minimizing operational costs. The study emphasized the growing importance of supply chain management in achieving sustainable growth and profitability.

Ruben Vrijhoef and Lauri Koskela (2000), in their study titled “*The Four Roles of Supply Chain Management in Construction*,” argued that due to the unique characteristics of the construction industry, supply chain management plays four distinct roles. Their study analyzed practical initiatives aimed at improving construction supply chains and compared present supply chain practices with earlier research. The study concluded that construction supply chains suffer from inefficiencies, waste, and poor coordination. These problems are often caused by outdated supply chain control systems. The findings highlight the importance of efficient supply chain coordination, integration, and management for improving operational performance.

6. ANALYSIS AND INTERPRETATION

6.1 PERCENTAGE ANALYSIS

Percentage refers to a special kind of rate in making comparison between two or further data and to describe connections. Percentage can also be used to compare the relation terms in the distribution of two or further sources of data.

TABLE – 4.1

AGE

Age	No of respondents	Percentage
Below 25 years	68	70.1
25 - 40 years	29	29.9
Total	97	100.0

From the above table it is shows that out of 97 respondents, 68 (70.1%) respondents are belonging to the age group of below 25 years and remaining 29 (29.9%) respondents belonging to the age group between 25-40 years.

The majority 68 (70.1%) respondents are belonging to the age group of below 25 years.

TABLE – 4.2

GENDER

Gender	No of respondents	Percentage
Male	42	43.3
Female	55	56.7
Total	97	100.0

The above table 4.2 shows that out of 97 respondents, 42 (43.3%) of the respondents are male and remaining 55 (56.7%) of the respondents are female.

The most of the respondents are female.

6.2 CHI SQUARE TEST

A suitable statistical hypothesis was framed keeping in mind the requirements of the study and data is tested for the significance using Chi square at 5 percent level of significance. The chi square test is an important test among the several tests of signification developed by satisfaction. Chi-square, symbolically written χ^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.

TABLE – 4.3

AGE AND MANUFACTURING

H_0 = There exist no significant association between age of the respondents and Manufacturing.

Age	Manufacturing			Total
	High	Moderate	Low	
Below 25 years	39	12	17	68
25 - 40 years	16	6	7	29
Total	55	18	24	97

Calculated χ^2 Value: 0.125

Degree of freedom: 2

Table Value: Five per cent level: 5.991

INTERPRETATION

Since the calculated χ^2 value (0.125) is less than the table value (5.991) at five percent level of significance. H_0 is accepted. Hence it is concluded that there is no significant association between age of the respondents and manufacturing.

GENDER AND MANUFACTURING

H_0 = There exist no significant association between gender of the respondents and Manufacturing.

TABLE – 4.4

Gender	Manufacturing			Total
	High	Moderate	Low	
Male	25	6	11	42
Female	30	12	13	55
Total	55	18	24	97

Calculated χ^2 Value: 0.895

Degree of freedom: 2

Table Value: Five per cent level: 5.991

INTERPRETATION

Since the calculated χ^2 value (0.895) is less than the table value (5.991) at five percent level of significance. H_0 is accepted. Hence it is concluded that there is no significant association between gender of the respondents and manufacturing.

7. FINDINGS

- The business of manufacturing industry and its SCM during economic upswing and economic recession creates an atmosphere of perfection and emergence of skills among the suppliers.

- The manufacturing Industry in India has grown phenomenally over the past decade and a half has attracted the attention of the world. Indian manufacturing industry has to face the global competition and market demands.
- The manufacturing Industry is maturing and this is reflected in the volume in terms of large pool of skilled manpower hired by big manufacturing companies are clearly presented in this thesis after analyzing their opinion through statistical analysis.
- The majority of the respondents, 68 (70.1%), belong to the age group below 25 years. This indicates that VRL Logistics Limited's supply chain and logistics operations involve a significant proportion of young workforce, suggesting the availability of energetic and adaptable employees who can easily adopt modern logistics technologies and supply chain practices.
- The study reveals that the majority of the respondents are female, indicating that VRL Logistics Limited provides employment opportunities to both genders and promotes gender diversity in logistics and supply chain operations.
- There is no significant association between age and supply chain management implementation.
- There is no significant association between gender and supply chain management implementation.

8. SUGGESTION

- In the manufacturing companies, SCM practices may be accelerated through effective implementation of change management techniques and restructuring the basic environment to increase the individual and organisational efficiency.
- The supplier and customer needs to be totally identified in all manufacturing companies to avoid supply chain breakage. This would help the companies to attain maximum efficiency of the organization within the limited resources.
- The logistic strategic planning in manufacturing companies need to be revamped to meet the present innovative technological requirements of the suppliers and customers.
- The Managers of manufacturing companies should be trained adequately to be able to use state of the art technology. Separate training and development wing may be created to discuss the technological developments and innovations in SCM practices.
- It is necessary to make SCM training cost effective and link it to business strategy and goal.

9. CONCLUSION

It is pertinent from the deep study of the research papers on the Supply Chain Management (SCM) that the role of SCM is very critical and important for the progress and development of the business, firms and ultimately nations. The development and progress of SCM is a continuous process which must be seen and checked closely. Authors from different part of the world have agreed on the facts that SCM is backbone of the business and profitability in the business by the firms is how the firms are making themselves prepared dynamically for serving the customers in better way.

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