



A Study on the Role of Finance in Logistics Management with reference to Tamilnadu State Road Transport of India

Dr. P. Subbaiah, Dr.G. Madhu Sri, K. Sai Sowjanya, K. Swaroop

Department of Business Administration, Vijaya Institute of Technology for Women, Enikepadu, Vijayawada.

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ABSTRACT

Logistics is generally the detailed organization and implementation of a complex operation. In a general business sense, logistics is the management of the flow of things between the point of origin and the point of consumption in order to meet requirements of customers or corporations. The results indicate that transporters are not happy with the approach of RSO officials. They are facing issues with regard to the condition of vehicles during transit, availability of the drivers and retention of the drivers. The condition of vehicles received from distant locations is found to be bad

1. INTRODUCTION

Logistics, as a business concept, evolved only in the 1950s. This was mainly due to the increasing complexity of supplying one's business with materials, and shipping out products in an increasingly globalized supply chain. The experts in this field are called Supply Chain Logisticians. This can be defined as having the right item in the right quantity at the right time at the right place for the right price and to the right target customers or end-users and it is the science of process and has its presence in all the sectors of an industry. Logistics is concerned with getting or transmitting the products and services where they are needed or when they are desired. It is difficult to accomplish any marketing or manufacturing operation without logistical support. Logistics involves in the integration of information, transportation, inventory, warehousing,

material handling, and packaging. The operating responsibility of logistics is the geographical repositioning of raw materials, work in process, and finished inventories where required at the lowest cost possible. Logistics management is that part of the supply chain which plans, implements and controls the efficient, effective, forward and backward (reverse) flow and storage of goods, services and information between the point of origin and the point of consumption in order to meet customers' requirements rather than the customers' delight. A professional working in the field of logistics management is called a Logistician. The primary objective of logistics management is to move effectively and efficiently, so as to extend the desired level of customer service at the least cost. Thus, logistics management starts with ascertaining customer's needs till their fulfillment through product supplies. Indian

Supply Chain and Logistics Industry is more than \$ 100 Billion in size and it is the backbone of Indian Economy. Logistics industry is growing at a rate of 8-10% annually and has been a crucial contributor in the growth and development of the Indian economy.

2. THE IMPORTANCE OF THE STUDY

Logistics is one of the main functions of a company, as it involves both internal and external focus, covering the flow and storage of materials from point of origin to point of consumption. Logistics is much more and much wider than handling of the goods that are being returned to the manufacturer by the customer and vice versa. It covers all the activities that determine the fate of the returned goods. Logistics has been found to play an important role in almost any manufacturing firm, regardless of size, product and geographical reach of the firm. The focus initially is to conduct the survey and interviews in various firms. Transport Corporation of India Ltd stands for an integrated solution provider to the consumers. Even among the organized Indian logistics players, very few are offering across multiple modes through a single window. Transport Corporation of India Ltd.'s aim is just not only to deliver from point A to B, but to enhance the customers' business productivity.

STATEMENT OF THE PROBLEM

The inefficiency level in the logistics activities in India has been very high across all modes. With the evolving business environment, creating a strong demand pull for quality and efficient logistics services, core issues around enabling infrastructure, regulatory environment and the fragmented nature of the industry are gradually being overcome. The required pace of efficiency and quality improvement will demand rapid development of capabilities of logistics service providers. And with logistics, which is a service oriented sector, skill development will emerge as a key capability while skill issues exist in varying degrees in all the segments of logistics; those segments where the gaps are not only wide but also widening at a relatively fast pace. India's contribution towards logistics activities which is 13 per cent of its GDP is higher than that of the developed nations. The key reason for this is the relatively higher

level of inefficiencies in the system, with lower average trucking speeds, higher turnaround time at ports and high cost of administrative delays being just a few of the examples. These inefficiencies have arisen over the years from a combination of a nonconductive policy environment. At the same time, the absence of logistics under single umbrella led to a disintegrated approach for the development of the logistics sector. The researcher has identified the problems being faced in the field of logistics finance and the policies which are handled by the top management in Transport Corporation of India Ltd the researcher has provided a frame work for an efficient functioning of logistics operations. The present research seeks to build a knowledge based frame work to topple down all the issues.

OBJECTIVES OF THE STUDY

- ❖ To study logistics operations in general and in particular about Transport corporation of India Ltd
- ❖ To analyze the financial performance of Transport corporation of India Ltd
- ❖ To assertion the role of financial managers in mobilizing the fund and optimum utilization of the fund for logistics operations.
- ❖ To identify the problems faced by the top management for optimum utilization of funds in Transport corporation of India Ltd
- ❖ To develop a conceptual model for efficient functioning of logistics operations.

REVIEW OF LITERATURE

The review of literature sets forth a deep insight and clear perspective of the overall field. No researcher can think of undertaking a study without receiving the contributions made by previous investigations on the same subject. The review of literature helps to find out the gap in the concerned area and forms a strong foundation upon which the future studies can be built up. An attempt has been made here to briefly review the previous studies made in the area of financial role in logistics management. The following are some the of available studies in the form of research articles, committee reports and survey carried out in the logistics management.

Feng Gengzhong and Su Xiao (2006) in their recent study points out that the booming business innovation

activities of logistics financing have been effective solutions that address SMB financing problems in China. In this paper, the legal characteristics, the business model, and the future development of the business innovation are investigated and analyzed.

Huang Fang et al (2007) in their recent study reveal that Logistics industry in China has been developed rapidly and has become one of the backbone industries for national economy. The prosperity of logistics industry brings opportunity for financial market, and thus accelerating the development of logistics finance. Logistics finance not only necessary for the nation's economic development, but also creates a huge market demand. Logistics, by its nature, is a value-added physical movement of commodity. In the process of logistics, there must exist a flow of capital, information and they cannot be divided. Therefore, development of modern logistics needs substantial support from financial market; while on the other hand, innovation in financial industry depends on the continuous development of logistics industry. Logistics industry collaborates with financial industry and forms a new cross-function and mutually affects the business. Collaborative development of logistics with finance will be a win-win choice for both industries.

Wang Yang et al (2008) in their study on Logistics finance of supply chain system has the openness feature with nonlinear and complexity. The financing effect of supply chain system's logistics/commercial banks can enhance its effectiveness and gain the appreciation of capital flow and the maximization of system's financing amount. The logistics financing amount of supply chain system is the nonlinear integration of each fractal unit's financing amount. As an innovative model of logistics finance with a broad business prospect the pledge/factoring financing based on supply chain system changes the state of commercial banks applying inventory financing or factoring finance separately. Commercial banks are involved in the logistics finance of supply chain system and achieve the effectiveness appreciation of commercial banks/supply chain system.

Zhang Yuan-Yuan (2008) in his study, considers a three-tier credit chain consisting of a bank, a logistic company and a retailer. His paper analyses the following outsourcing structure implemented by a top-tier bank: in-house consignment, under which the bank signs independent contracts with the logistic

company and the retailer. Under the assumption that the logistic company cannot change its decision, the paper investigates the equilibrium

behavior of the decentralized credit chain with non-cooperation newsvendor under demand uncertainty. The model includes the case of a risk-neutral bank offering loan to a non co-operative risk-neutral retailer who mortgages its inventory to the bank to finance more inventory. The retailer faces a random demand in a single sales season as in the classical newsvendor problem. By game theorem, his paper gives the optimal loan to value the retailers with different initial capital.

3. METHODOLOGY

The validity of any research depends on the systematic method of collecting the data and analyzing the same in a sequential order. In the present study, an extensive use of both primary and secondary data is made.

Sampling Design

For collecting primary data, field survey technique was employed in the study area. First-hand information pertaining to the behavior, satisfaction, benefits accrued problems in mobilizing funds and optimum utilization of the funds from various sources under study were collected from five hundred sample respondents. Transport Corporation of India Ltd has thirty five offices at random in Tamilnadu. The respondents were chosen from all thirty five offices at the rate of fifteen each. The selection of respondents was made in active consultation with finance managers, branch managers of various branch offices of Transport Corporation of India Ltd and the research supervisor, so as to represent all categories such as rural, urban and metro. The respondents were selected on a simple random basis from the managers of Transport Corporation of India Ltd.

The Geographical Distribution of Sample Respondents in the Study Area

S. N o.	Name of the Branch Office	Total	S.No.	Name of the Branch Office	Total
1	Arkonam	14	19	Palani	14
2	Ambattur	14	20	Rameswaram	14
3	Avadi	14	21	Ranipet	14

4	Coimbatore	14	22	Rajapalayam	14
5	Cuddalore	14	23	Salem	14
6	Coonoor	14	24	Sivakasi	14
7	Chennai-Regional office	24	25	Sriprembudhur	14
8	Dindigul	14	26	Tirunelveli	14
9	Erode	14	27	Tiruchengode	14
10	Hosur	14	28	Tiruchy	14
11	Karur	14	29	Tiripdamalpettur	14
12	Kumbakonam	14	30	Tuticorin	14
13	Karaikudi	14	31	Udamalpet	14
14	Kanchipuram	14	32	Vellore	14
15	Madurai	14	33	Vaniyambadi	14
16	Madhavaram	14	34	Villupuram	14
17	Nammakal	14	35	Vanchi Maniyachi	14
18	Nagercoil	14	Total		500

Data Collection

Primary Data

In order to fulfill the objectives set, a sample study was undertaken by using a well framed questionnaire which was duly filled by the respondents. The respondents were selected with varying background based on the important aspects of their occupation, education, age, area, and so forth, in the Transport Corporation of India Ltd in South India. A noteworthy feature was that all respondents filled the questionnaire with much zeal. This was due to the high level of literacy among the respondents and the researcher's rapport established with them. The specimen of the questionnaire given to the selected sample respondents

Secondary Data

The primary data were supplemented by a spate of secondary sources of data. The secondary data pertaining to the study was gathered from the records of Transport Corporation of India Ltd. Latest information was gathered from well - equipped libraries in Bangalore, Mysore, Chennai and Coimbatore and also from Internet Web resources. Further, the secondary data were also collected from leading journals such as International Journal of Logistics Management, IEEE, European Journal of Management, and International Journal of Physical Distribution and Logistics Management, CII Bulletin, RBI Bulletin, Logistics Performance Index, Survey of Indian Industry etc., also a number of standard text books were studied to obtain pertinent literature on finance in logistics.

Discussion and Informal Interviews

In order to know the working pattern of Logistics Systems in Transport Corporation of India Ltd, several rounds of discussion were held with knowledgeable persons in the field of logistics finance, such as Regional Managers, Managers, and Officers and with the research supervisors.

Tools of Data Collection

By virtue of a mass of data obtained from research survey, as well as data from secondary sources collected and presented in the present report, descriptive and analytical research was considered as most appropriate for the study. The research problems and the questionnaire were all framed accordingly. The suggestions offered in the final chapter of the present research report emerged from the inferences drawn from the study of the sample respondents' information who utilized funds for logistics operations. The researcher used closed -ended and open -ended questions in the questionnaire to collect primary data.

Construction of Questionnaire

The key aspect of the present research was identified through the preliminary interviews (pilot study) with some selected respondents. The questionnaire so drafted was circulated among some Research Experts, Senior Finance Managers and Research Scholars for a critical view with regard to wording, format, sequence and the like. The questionnaire was re-drafted in light of their comments.

Pre – test

The questionnaire meant for the respondents was pre-tested with respondents who have worked as a finance manager in Transport Corporation of India Ltd. After pre-testing, necessary modifications were made in the questionnaire to fit into on the track of the present study.

Frame Work of Analysis

The core of the study being 'Utilization of Funds in Logistics Operations', centres around the dependent variables viz., the effective utilization of funds by the Finance Manager in Transport Corporation of India Ltd., and their relationship with the related independent variables.

Tools of the Study

1. Simple statistical tools like Time series, percentage, average, scale scoring are used.

2. Chi-square technique was employed to study the relation between the milk supply to the society and the factors distance, education, other income, etc.

Chi-square test (2) = $E(O - E)^2$

Degrees of freedom = (R-1) (C-1)

O = Observed frequency

E = Expected frequency

ANALYSIS & INTERPRETATION

In this section r factors influencing the Transport Corporation of India Ltd, have been analyzed.

The Chi-square test has been applied to find out the factors influencing the performance of Transport Corporation of India Ltd. For this purpose the main factors such as, delivery accuracy, material handling, distribution, information system, packaging, customer friendliness, and operating effectiveness have been taken as independent variables and performance of the Transport Corporation of India Ltd as dependent variable.

Chi – Square Test

In order to find the relationship between the selected independent variables such as delivery accuracy, material handling, distribution, information system, packaging, Customer Friendliness and operating effectiveness have been taken into consideration for analysis. Since the study centres on the dependent variable i.e., the performance of Transport Corporation of India Ltd a chi-square test was employed and the results of the test are shown in the following.

DELIVERY ACCURACY AND PERFORMANCE OF TRANSPORT CORPORATION OF INDIA LTD

Delivery Accuracy is the key factor which enables to measure the performance of Transport Corporation of India Ltd and an attempt has been made to analyze the relationship between the delivery accuracy and the performance of Transport Corporation of India Ltd. For this purpose the respondent's feedbacks have been classified based on the delivery accuracy viz., Order Processing Time, Delivery Consistency, Delivery frequency, Timely Delivery and Safety Delivery. With a view to find the degree of association between the delivery accuracy and the performance of Transport Corporation of India Ltd, a two way table

was prepared and is depicted in the following Table 4.1.

Table 4.1 Cross Table – Performance of Transport Corporation of India Ltd versus Delivery Accuracy

S. No.	Delivery Accuracy	Performance of Transport Corporation of India Ltd						Total
		Low	%	Medium	%	High	%	
1	Order Processing	20	21.51	15	12	50	17.73	85
2	Delivery Consistency	20	21.51	20	16	60	21.28	100
3	Delivery frequency	15	16.13	30	24	68	24.11	113
4	Timely Delivery	20	21.50	25	20	49	17.38	94
5	Safety Delivery	18	19.35	35	28	55	19.5	108
Total		93	100	125	100	282	100	500

The cross Table 4.1, displays the following respondents feel that frequency of delivery is necessary to measure the performance of Transport Corporation of India Ltd. The order of preference extends to safety, consistency and timeliness. This is general as the people would not consider the order processing time, and also the logistics delivery. At a glance, one can observe the performance of Transport Corporation of India Ltd is at high level and this may be based on the delivery characteristics. Verification of this is supported by the Chi-square test that is displayed in the subsequent Table 4.2. The underlined hypothesis taken for the same is that **“Performance of Transport Corporation of India Ltd is independent of Delivery characteristic**

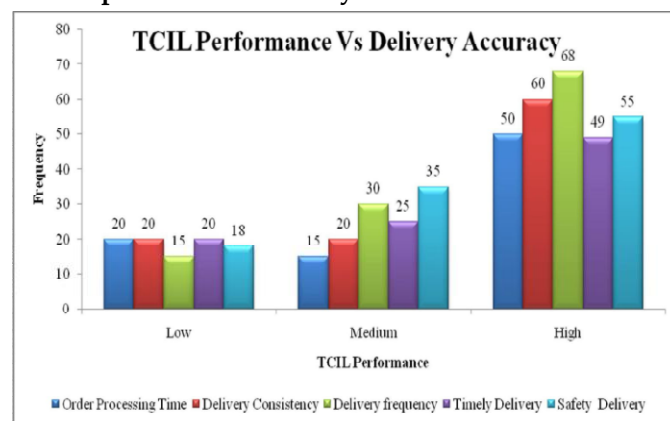


Figure 4.1 Performance of TCIL versus Delivery Accuracy

Table 4.2 Chi-Square Statistics

	X ² value	Critical Value	Degrees of Freedom
Performance of Transport Corporation of India Ltd and Delivery Accuracy	10.42	15.50	8

Analysis of Delivery accuracy and performance of Transport Corporation of India Ltd shows that the underlined variables are independent of each other. Statistically, as the test statistic value is lesser than the critical value, the underlined hypothesis is accepted. This means that, Performance of Transport Corporation of India Ltd is high as revealed by the cross table irrespective of various characteristics assumed.

Material handling and Performance of Transport Corporation of India Ltd

Performance of logistics could be measured by the way how logistics is handled during the course of delivery. Customers feel that their products have to be handled gently with at most care. On the other hand this may not be possible as the logistics to be transported becomes larger and larger. This is where performance is justified. Gentle handling of material differs with respect to product nature, Volume of Material (Logistics), Speed of handle etc,. To ascertain the variation on these factors with performance, association measure of Chi-square test is employed. Cross Table 4.4, outlines the relationship in most general way

Table 4.3 Cross Table – Performance of Transport corporation of India Ltd versus Material Handling

S. No.	Material Handling	Performance Of Transport Corporation of India Ltd						Total
		Low	%	Mediu	%	High	%	
1	Volumes to be handled	55	33.95	35	25.93	69	33.99	159

2	Speed in handling	15	9.26	25	18.52	30	14.78	70
3	Productivit	30	18.52	25	18.52	26	12.81	81
4	Product characteristi	22	13.58	20	14.81	23	11.33	65
5	Nature of the Product	40	24.69	30	22.22	55	27.09	125
	Total	162	100	135	100	203	100	500

The cross Table 4.3 highlights the preference of respondents towards material handling. Customers of logistics desire to have highest priority on Volume of products to be handled. This is most obvious which happens in general cases like purchases. The next character that follows the volume of material is the type of product to be transported. Generally, Customers prefer to send their product with at most care with the type of product. This is mostly appropriate for the glass materials, electronic goods, perishable products etc. To have connection with performance and the material handling general associative measure of categorical variables is applied. The result is shown in the Table 4.4. The Hypothesis undertaken is “Performance of Transport Corporation of India Ltd is not related with Material Handling”.

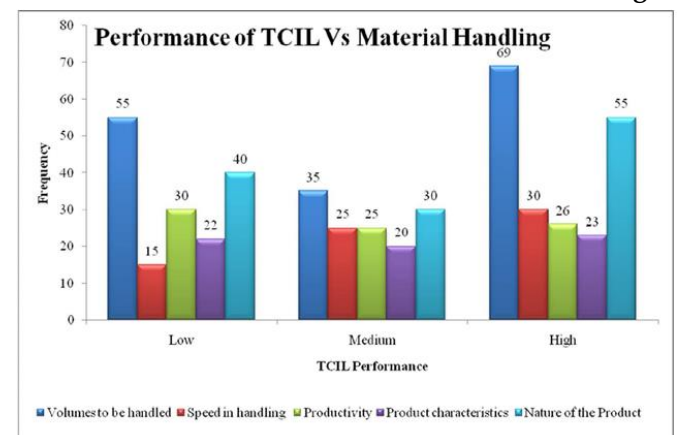


Figure 4.2 Performance of TCIL versus Material Handling

Table 4.4 Chi-Square Statistics

	X ² value	Critical Value	Degrees of Freedom
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Performance of Transport Corporation of India Ltd and Material Handling	10.71	15.50	8
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The categorical associative measure has shown that the underlined variables are independent at each other. This is because of the result revealed by Chi-square test; likelihood value of test is more than the test statistic value. The researcher had the thought of “Performance of Transport Corporation of India Ltd may be measured in the light of Material Handling”. But the statistical procedure has disproved that, the performance is not based on material handling procedure, normally its performance is well.

CONCLUSION

The Logistics Sector has been one of the marked industries which are undergoing a change in its approach and its volume of business generated. An attempt was made to analyse the performance of the Transport Corporation of India Ltd in detail. It was observed that in terms of rate of growth and profitability, it was more efficient. Based on the financial performance during the study period from 2001-2002 to 2010-2011, it is identified that the Transport Corporation of India Ltd showed a good profit.

Conflict of interest statement

Authors declare that they do not have any conflict of interest.

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