An Empirical Study on Logistics Service Management Based on Means Values

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Abstract

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 a way that the current and future profitability are maximized through the cost-effective fulfillment of orders. So, the purpose of the logistics management is to plan and coordinate all those activities necessary to achieve desired levels of delivery of the final products. Transportation is the operational area of logistics that geographically positions the inventory transportation requirements. The factors of logistics service management are Logistics Source Capability, Logistics Performance, Logistics Importance, Information Technology on Procurement, Reliability of Supplier, Logistics Service Quality, Competitiveness and Cost Components.

Keywords: *Performance, cost, technology, and reliability.*

INTRODUCTION

Council of Logistics Management defines “Logistics as a part of the supply chain process that plans, implements, and controls efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption to meet customers' requirements.” (CLM, 1998). Magee et al. (1985) defines logistics strategy as "the process of developing a more efficient physical-distribution and supply-system." Whereas Chow et al. (1995) defines logistics strategy as "a pattern of action plans designed for the purpose of achieving logistics goals".

Key issues in Logistics Management

1.1.1 Logistics Integration and Coordination

The important issues in the logistics management are the way of integrating the supply chain with Logistics. Integration refers to internal and with suppliers and distributors and customers. Here the word collaboration refers to joint working and action with reference to planning, development, exchange of information and so on.

Facility Location and Network Design

The firm must balance the costs of opening new warehouses with the advantages of being close to the customer. Warehouse location decisions are crucial determinants of whether the supply chain is an efficient channel for the distribution of the products.

Transportation and Vehicle Routing

The important issues in the SCM are maintaining and coordinating the materials between the places. The challenging job is sending the product from a central place to all over the markets. The movement of the material or product is controllers by the fleet of vehicles, sometimes it may not happen. Companies must take of care of the selecting the model of transportation, route, schedule and shipment.

Warehouse Management and Distribution Strategies

In the logistics systems warehouse plays a major role and there must be good relation between the inventory management and customer services. The adaptation of inventory management system is acceptable by all the industries. This warehouse is a part of supply chain process stores the material/products and sends to the customers place and gives information to the management about the balance of products in store. Its maxims the flexibility and minimizes the handling of store unnecessarily.

Inventory Management

Maintaining an optimum inventory is highly needs for the logistics companies. The complexities in the inventory management arises because of the uncertain demand in the market. A better inventory management system minimizes the cost, there must be a good coordination between the Logistics services management and inventory management.

Product Design

Product is an important element is the supply chain process and logistics coordination. Warehouses, transportation of products, handling of raw materials, ordering activities are the main attributes in the logistics management. Packaging and storages are highly essential in the process. Also, the need for short lead times and the increased demand from customers for unique and personalized products put pressure on efficient product design, production and distribution. Movement of a product within a warehouse is a no value-added activity but it incurs a cost. But handling of materials and picking of materials of finished stock within a plant or warehouse is highly essential is the logistics distributions. These activities are cost absorbing and therefore need attention from the managers. Packaging is valuable

for storage from a logistical perspective. Packaging can ease movements and storage by being properly designed for the warehouse configuration and material handling equipment.

Logistics of Production and Scheduling

The relationship between Production and Logistics Management (LM) is enormous, since manufactures wants raw materials to produce a product, and it must distribute as per the schedule of the customers. Coordination between the above said areas is important for an efficient supply chain.

Information Systems and Decision Support System (DSS)

Computerization along with latest information technology has been essential to support performance of the logistics services. IT is a key factor that are essential of the growth and functioning of logistics, and plays an important role in the decision-making process. The decision support systems, simulation and meta heuristics systems will be applied directly to support decision making within modern businesses and particularly in Logistics Management. E-commerce and E-logistics. In e-commerce, trade partners and customers connected via Internet or other electronic communication systems to contribute in trading. Companies are looking for DSS, such as the one relating to e-commerce and e-business that help them to make the best decisions in an uncertain and rapidly changing world.

Customer Service

Now a days Customers and its services are taken seriously. The fulfilment of customer needs and wants is an important task in Logistics Management, and it decides the level of profits. Customer service starts from product availability, after-sales services. Customer service can be seen as the output of all logistics activities.

OBJECTIVES

1. To study the factors of logistics service management

2. To study the mean values of each statement of the factors that determine the logistics service management

3. To compare the mean values of each statement of logistics service management

RESEARCH METHODOLOGY

The present research is done on Logistics Service Management with special reference to small and medium enterprises. Tiruvallur district is selected for the study because it is very close to Chennai. In this district, 44,140 companies have registered in Micro, Small and Medium Enterprises (MSME). The study focuses on 6151 companies, 6001 small scale companies and 150 medium scale companies. Since it is very tough to cover all the small and medium enterprises. 10 small enterprises and 10 medium enterprises is taken for study.

The sample size for the study is fixed as 420.

The study applies the quantitative research approach which involves measuring data on constructs of logistics service management, using quantitative scales. A simple random sampling method is used in the process of data collection. The questionnaire is self-constructed in nature. The questionnaire is measured using a 5-point Likert scale with closed-ended questions. The data is collected from the small and medium scale industries in Tiruvallur district. The questionnaires are administered to the participants after briefly explaining the purpose of the test. A pilot study is conducted with 30 samples to confirm the factors of Logistics service management. Reliability is tested using Cronbach's alpha test. The value is 0.723. 420 samples are screened and taken for further analysis. The completed questionnaires are validated using Cronbach's Alpha. The data were entered in SPSS. Statistical Tools Used:

ANALYSIS AND INTERPRETATION

TABLE 1 Logistics Source Capability

Statements	Mean	SD
Order Processing of Logistics service provider is fast	4.59	.597
Inventory Management services of Logistics company is efficient	4.49	.722
Purchasing Services offered is vital to an organization	4.47	.678
Firm practices Rate Negotiation process with suppliers	4.37	.915
Logistics Planning service are sufficient to meet the future needs	4.33	.893

From the examination of mean value, it is understood that Order processing of logistics service provider are fast has mean score 4.59 followed by Inventory management services of logistics company is efficient with 4.49. The mean score for Purchasing services offered is vital to an organization is 4.47 and the mean score for Firm practices rate negotiation process with suppliers is 4.37 , Least comes Logistics planning service are sufficient to meet the future needs with mean score of 4.33. It shows that fast processing of order and good inventory system is much preferred by the company from the logistics service providers. It shows that all the companies focusses to meet the customer demand which can be efficiently done by the quick order processing and proper inventory management system.

TABLE 2 Logistics Performance

Statements	Mean	SD
Maintain good relationship with the stake holders	4.11	.671
Giving pre-alert notices of shipment / delivery problems	4.52	.722
Handling Customer Complaints Patiently	4.57	.731
Recommending alternative action when unforeseen problems arises	4.40	.933
Ability to provide emergency services to the organization	4.16	.684

For Logistics performance the minimum means score is 4.11 and maximum mean score is 4.57 and most of the respondents are in agreed opinion. It is shown from the table Handling customer complaints patiently has high means score of

4.57 followed by Giving pre-alert notices of shipment / delivery problems with mean score of 4.52. Maintain good relationship with the stake holders with means score of 4.11 occupies the last position. Recommending alternative action when unforeseen problems arises has mean score of 4.40 and Ability to provide emergency services to the organization has mean score of 4.16. It is clear that respondents prefers and gives significance to the handling of customer complain in proper way and giving solutions to it. Customer opinions are not same it differs from person to person. So the chance of lodging complains is a natural one, every logistics company wants to solve the complains immediately. The focus on directly contacting the customers and asking them to rate for the services is followed by most of the organization.

TABLE 3 Importance of Logistics Service Provider

Statements	Mean	SD
Multi Model Transportation capability of the service provider is appreciable	4.17	.751
Problem Solving ability of the organization is good	4.06	.788
Prior Relationship with Logistics services providers was conducive	4.35	1.058
Ability to respond and maintain punctuality	4.11	.754
Ability to respond and provide Punctual Time Performance	4.61	.608

It above table clearly shows that solving the problems occupies the first place. Another important thing preferred by the respondents is pre alert shipment and the delivery pattern because companies have to get ready to receive the shipments and arrange a warehouse as per their need. It is clear that logistics performances are judged mainly on solution to the problems and pre shipment notice to the customers.

With respect to Importance of Logistics service provider respondents has scored mostly agreed range on all the statements with mean score from 4.06 to

4.61. The means score for Ability to respond and provide punctual time performance is4.61 next comes Prior relationship with logistics services providers was conducive with mean score of 4.35. The means score for Multi Model Transportation capability of the service provider is appreciable and Ability to respond and maintain punctuality is 4.17 and 4.11 respectively. Last comes Problem solving ability of the organization is good has mean score of 4.06. Respondents of the study weighs the importance of logistics service providers on their ability to respond and provide the services punctually and also their previous relationship with the service providers. It shows that service provider's ability will surely satisfy the needs of the company, if not will give a negative effect of not meeting the customer expectation. In the same way a good relationship is taken as a great services to the customers.

TABLE 4 Information Technology on Procurement

Statements	Mean	SD
Management encourages the usage of IT within the Company	4.09	.696
Online tracking and Management of Cargo is more secure than the manual	4.06	.847
All supply chain employer are trained on supply chain risk management	4.30	.538
Integration of IT services improves the control system of an organization	4.22	.721
All the activities within the company are computerized	4.31	.652

With regard to Information technology on procurement All the activities within the company are computerized has high mean score of 4.31and All supply chain employer are trained on supply chain risk management has means score of 4.30 which is very closer to previous statement. Least comes online tracking and management of cargo is more secure than the manual with mean score of 4.06. Integration of IT services improves the control system of an organization has mean score of 4.22 and management encourages the usage of IT within the company has mean score of 4.09. It is evident that full computerization and trained employees plays a major role in logistics service management. Everyone knows the significance of the

information technology and makes the logistics system most efficient and effective. It is not a surprise that respondents prefers the full computerization.

TABLE 5 Reliability of Supplier

Statements	Mean	SD
Possibilities of supply packages containing different assortment / large package	4.17	.756
Organization pushes supplier for shorter lead time	4.21	.730
Continuance maintenance of quality of service	4.44	.903
Organization strives to establish Long term Agreement with its suppliers.	4.10	.861
Are your supplier assessed, developed and selected systematically	4.17	.751

With respect to reliability of suppliers, continuance maintenance of quality of service has high mean score of 4.44 followed by organization pushes supplier for shorter lead time with means score of 4.21. Online tracking and management of cargo is more secure than the manual has minimum mean score of 4.06. The means score for possibilities of supply packages containing different assortment / large package and the means score for Are your supplier assessed, developed and selected systematically are same i.e. 4.17. It clearly shows that maintenance of quality is preferred by majority of the respondents. Quality maintenance will surely overlook all the services rendered by the logistics service providers. Reliability of the suppliers are also highly judged by their shorter lead time because the customers cannot wait for a long time. So here the long term agreement does not has any significance.

TABLE 6 Logistics Service Quality

Statements	Mean	SD
The company goods can be sourced within time required	4.18	.692
Professional and friendly attitude of the company staff is commendable	4.35	.521
Quality of service is good	4.14	.803
The service of return and exchange good are simple	4.32	.723
Cargo tracking service provided by the Company is commendable	4.02	.146

With regard to logistics service quality Professional and friendly attitude of the company staff is commendable has high mean score of 4.35 followed by the service of return and exchange good are simple with mean score of 4.32. Cargo tracking service provided by the Company is commendable has minimum score of

4.02. The means score for the company goods can be sourced within time required and Quality of service is good are 4.18 and 4.14 respectively. The glance of the mean value shows that friendly attitude of the company is very helpful for the company to increase its brand value. It also shows that friendly attitude of the company staff is very helpful to increase the logistics service quality. In the same way if the return policy and exchange goods procedure are very simple and easy it also helps to improve the service quality of the logistics providers. Cargo tracking services are highly required by the customer to find the movement of cargoes but the respondents of the study given a low means score and give least importance when compared to the other statements.

TABLE 7 Competitiveness of your Logistics Service Provider

Statements	Mean	SD
Price of the Service is Competitive	4.98	.146
Flexible in Operation	4.98	.146
Low Service failure of Logistics Service	4.96	.292

Provider		
Logistics service provider is Technically Competent	4.96	.292
Global competence of Logistics Service Provider	4.96	.292

With respect to Competitiveness of your Logistics service provider, the mean value of Price of the service is competitive and flexible in operation is 4.98 for Flexible in operation also the means score is 4.98. And for the other statements Low service is a failure of Logistics service provider, Logistics service provider is Technically competent and global competence of Logistics service provider has the means score i.e. 4.96. It clearly shows mean value for all the five statements are closer to each other with a little difference. Respondents were agreed to all the statements in this criteria and gives a high means score. It shows that price of the service and flexibility in operation plays a major roles in deciding the competitiveness of the logistics service providers. In means the other three statements which has the same means score of 4.96 also plays a major role in deciding the competitiveness of logistics service providers.

TABLE 8 Cost Components of Logistics

Statements	Mean	SD
Warehouse cost involved	4.68	.466
Cost of Transportation and handling cost	4.47	.865
Cost associated with held inventory	4.57	.719
Administrative cost incurred	4.56	.832
Logistics service provider strives to reduce wastage in operation	4.48	.910

With regard to Cost components of logistics, the mean score for Warehouse cost is 4.68 which has high means score among all the statements, the means score for the Administrative cost incurred is 4.56 and least comes is Cost of transportation and handling cost 4.47. The means score of Cost involved with inventory and Logistics service provider strives to reduce wastage in operation has means score of 4.47 and 4.48 respectively. The means score mentioned in the table shows warehouse cost is most important because the location of warehouse is highly significant to reduce the cost and to meet the demand of the customer by supplying the goods at right time, right place and at right quality. The raw materials/semi-finished goods/finished are stored in the warehouse without affecting the quality of the products and free movement of the product in the warehouse. Even though cost associated for holding the inventory in highly essential to satisfy the demand at the time of need of the product.

CONCLUSION

It is evident from the findings the logistics service gets more importance in the market. Timely delivery of products, good transportation, maintaining the quality of services, proper warehouse facilities to take care of the quality of the products has gained more importance. The findings of the study will be an eye opener for the logistics companies.

References

1. Baradwaj. (2010). Logistics information systems: The strategic role of top management", Journal of Business Logistics, 15(1), 23-30.

2. Barbara Gaudenzi , Ilenia Confente , Ivan Russo. (2020). Logistics service quality and customer satisfaction in B2B relationships: A qualitative comparative analysis approach, The TQM Journal, 33(1) 25-139.

3. D.-W. Kwak, Y.-J. Seo, and Mason, R (2018). “Investigating the relationship between supply chain innovation, risk management capabilities and competitive advantage in global supply chains,”

International Journal of Operations & Production Management, 38(1), 2–21

4. Daniel, P., & Olhager, J. (2015). Supply chain integration and performance: The effects of long-term relationships, information technology and sharing, and logistics integration, International Journal of Production Economics 135(1), 514-522.

5. Fawcett, S. E., Ellram, L. M., & Ogden, J. (2014) A. Supply chain management: from vision to implementation. London: Pearson.

6. La Londe, B.J. and Masters, J.M. (1994). Emerging Logistics Strategies: Blueprints for the Next Century, International Journal of Physical Distribution & Logistics Management, 24(7), 35-47.

7. M. Christopher, (1998). Logistics and Supply Chain Management: Strategies for Reducing Cost and Improving Service, 2 Edition, Financial Times/Prentice Hall, London,

8. M. Kumar, P. Basu, and Avittathur, B (2018). Pricing and sourcing strategies for competing retailers in supply chains under disruption risk, European Journal of Management.