

A Study on Determining the Best Logistics Service for the Export of Lotus Industries Ltd.

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Abstract

Freight forwarding consists of strategic logistics planning and execution for the domestic and international movement of goods, on behalf of shippers. Specifically, a freight forwarder will carry out activities of freight rate negotiations, container tracking, customs documentation, and freight consolidation and other tasks. At the same time clearing the goods through legal documentation from and to one country to another country is customs clearance. These goods need to be delivered as specified and in good condition that constitute logistics.

Methodology: This paper attempt to find out what factor determines the best logistics service provider for the export of goods with special reference to Lotus industries Ltd. a textile company. The researcher used exploratory research and followed non-probability method of collecting data from 104 logistics companies with justification of Cochran test and reliability test. With structured questionnaire he collected the data and analysis were done. It is also justifies with statistical tools like one way Anova and rank correlation.

Result: From the 104 samples, on data analysis. It is traced that only 25% from the sample population claim that they are good in clearance service. In pricing for clearance service 94.2% claim that their price is good and reasonable. It is suggested that a good software need to be implemented. The logistic companies nearby to the location need be selected. When more employees very employed fast clearance will be made. Mode of transport also decides the identification of best logistics. More experienced person in the company can provide better service than others.

Keywords: Logistics; Clearance Charges; Forwarding Charges; Mode of Transportation

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INTRODUCTION

Freight forwarding consists of strategic logistics planning and execution for the domestic and international movement of goods, on behalf of shippers. Specifically, a freight forwarder will carry out activities of freight rate negotiations, container tracking, customs documentation, and freight consolidation, and other tasks.

Custom Clearance

Customs clearance is the act of taking, documentation according to legal regulations, and clearing goods through the customs authority to facilitate the movement of cargo into a country (import) and outside the country (export).

Carriers

Unlike freight forwarders, the carrier will handle the freight shipment directly. Carriers make money by transporting products around the country and world through trucks, ships, airplanes, etc. Trucking companies, rail services, ocean freight, and air freight are all examples of carriers. In most cases, shipments require multiple carriers to reach their final destinations.

The paper attempts to study the customer

clearance of various products of a textile industry. The modern textile industry is still closely related to the apparel industry, but production of fabrics for industrial use has gained in importance. The resulting wide range of end uses demands a high degree of specialization. In the most technically advanced communities, the industry employs technicians, engineers, and artists; and a high degree of consumer orientation leads to emphasis on marketing operations. Some manufacturing operations, usually serving specialized or local markets and dependent on a limited number of firms for product consumption, still employ many hand operations.¹

The domestic apparel & textile industry in India contributes approx. 2% to the country's GDP, 7% of industry output in value terms.⁶ The share of textile, apparel and handicrafts in India's total exports was

The market has various sub-segments and includes different types of products

Textile Market Segmentation

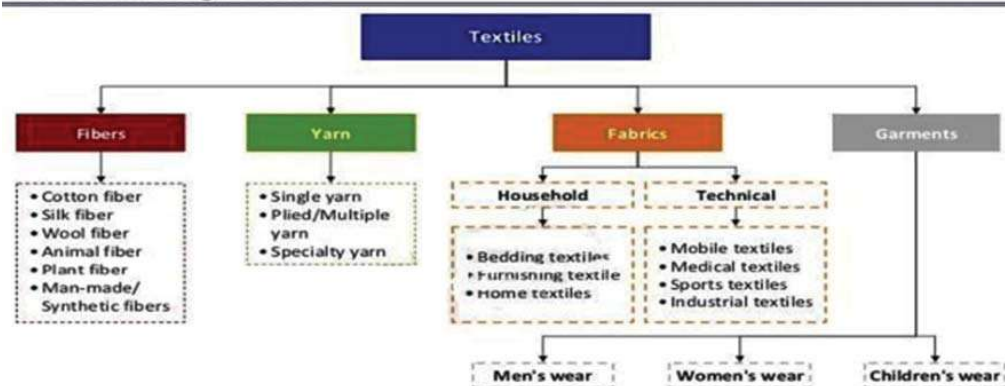


Fig. 1: Market sub segments

11.4% in 2020-2021. India holds 4% share of the global trade in textiles and apparel.

Growth of the Textile Industry

The Indian textile and apparel industry is expected to grow at 10% CAGR from 2019-20 to reach US\$ 190 billion by 2025-26. India has a 4% share of the global trade in textiles and apparel. Projected data is expressed in the Fig. 2. India is the world's largest producer of cotton. Estimated production stood at 362.18 lakh bales during cotton season 2022-23. Domestic consumption for the 2022-23 cotton season is estimated to be at 338 lakh bales. Cotton production in India is projected to reach 7.2 million tonnes (~43 million bales of 170 kg

each) by 2030, driven by increasing demand from consumers.

Production of fiber in India reached 2.40 MT in FY22 (till January 2022), while for yarn, the production stood at 4,762 million kgs during the same period.

Need for the Study

Logistics plays a greater role in the economic development of a country. Many company struggles to find a way out for smooth supply of goods in overseas. So in order to find a best logistic service provider and what are all the factors need to be taken into account for clearance, carriage and supply by the logistic supplier and finally to decide how to

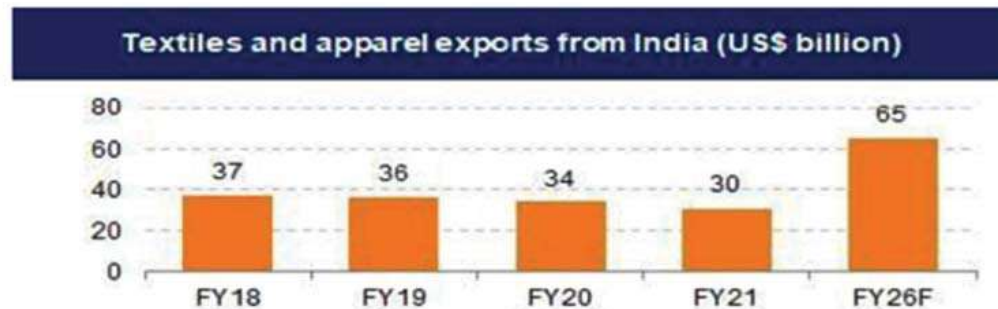


Fig. 2: Trend in Textile Industry

choose the best logistics supplier. In this view the researcher taken the company Lotus industries Ltd. and framed all the analysis benefiting lotus industries as Lotus Industries Ltd. wishes to streamline its logistics activities by selecting a better logistics service to avoid unnecessary delays or damages. Lotus Industries Ltd. wishes to find the best logistics service to start exporting its goods across the globe.

Objectives of the Study

- To determine the best logistics service suitable for transportation of goods both domestically and internationally for the exports of products of Lotus Industries Ltd.
- To identify the significant relationship between experience and the factors influencing efficiency of logistics company.
- To calculate the significant association between experience and the factors influencing efficiency of logistics company.

Scope of the Study

The study can be used by any company to select a reliable logistics service provider. This research helps us to understand the types of logistics companies in Chennai city and helps to decide a good one based on empirical observation.

The research is carried out on different companies such as freight forwarders, custom clearance and transportation which is fundamental for any company/individual who wishes to start any business regarding exports, imports, consolidation, or any other service providing company. It can also help any business/individual wishing to import or export goods seeking a reliable source.

Review of Literature

N Jena (2015)³ stated that on the inspiration driving this paper to fathom piece of fiscal plus social factors affecting the logistics rate

for the Indian steel zone and its relationship of the organization value. A sorted out survey think about is used for the data collection in this examination. The survey included assorted parts of co-ordinations cost on in bound and out bound co-ordinations, and organization quality. This examination perceived distinctive basic segments of logistics coordinations cost for Indian steel division and watched its relationship with transportation cost, warehousing cost and administrative cost. The disclosures of this examination demonstrated positive association between logistics coordinations cost and organization quality.

Zhaojian Liu, Guangqi Sun, Qing (2017)² has mentioned on the latest decade the researchers have understood a steady advancement and increase in overall trade along the worldwide transport especially in ocean transportation. This paper will upgrade our understanding with the relationships between exchange, coordination, transport and other logistics activities which are done by 3PL. Their significant stage is that the necessity for huge capable transportation and complex logistics services in the industry.

Ryszard Barcik and Marcin Jakubiec (2019)⁸ on the paper creators indicated genuine point concerning association amongst show casing and logistics and their circles. The paper is partitioned into four primary sections which include: great's appropriation and showcasing instruments, logistics and advertising, promoting logistics and strategic advertising administration. Showcasing couldn't exist without logistics and logistics couldn't exist without advertising this principle point creators endeavoured to enhance in following papers. All positive and negative variables of connection amongst advertising and logistics were appeared.

Bernard J lalonde, Terrance L Pohlen (2022)¹⁸ on combination of the production network offers numerous chances to enhance client benefit and dispense with superfluous expenses. Supply chain

costing gives a way to deal with estimating the cost of exercises crossing the whole channel. Having the ability to enhance client esteem while focusing on open doors for cost lessening opens new out skirts for production network administration.

B.S. Sahay, Ramneesh Mohan (2022)¹⁷ states on most of the organizations refer to big noteworthy adaptableness, working proficiency, efficiency, logistics speed by automation in the supply chain process as a major aspect advantage of drawing in the directions with outsider logistics suppliers. Despite the many points of interest of outside logistics and store network problems, many of connections either come up short or are broken down. The Study demonstrate huge inclusions of 3PL connections, prompting shared associations, will positively affect expanded utilization of 3PL administrations.

HuanNeng Chiu (2022)¹⁶ presents this structure to set up and improve their logistics systems continually. Recently, much thought has been given to robotization in administration, manufacturing and other logistics activities with the use of new data innovation and coordination of inventory network arrange. These areas which can grow boosting logistics productivity and help customers with high service quality with faster service and efficient processes. The examination of each territory is progressed with Taiwanese organization rehearse system.

METHODOLOGY

The research design involved in the study is exploratory research in nature and convenient sampling method is chosen for data collection. 104 logistics companies were selected in and around Chennai data were collected through survey method and questionnaire. Pilot study were conducted for 25 companies then with help of Cochran formal sample size were fixed After data collection, reliability test were conducted and on showing data is reliable percentage analysis was applied for data interpretation and Statistical tools like Chi square, One way ANOVA, Rank correlation were applied to justify the findings.

Reliability Test

It refers to the degree to which a test is consistent and stable in measuring what it is intended to measure. Cronbach's alpha is a measure used to assess the reliability, or internal consistency, of a set of scale or test items. Reliability tests, like

Cronbach's alpha, are most commonly used to see if questionnaires with multiple scale questions are reliable. These questions are designed to measure latent variables. A latent variable is a hidden or unobservable variable, like a person's conscientiousness, neurosis or openness.

Table 1: Case Processing Summary

Case Processing Summary for Custom Clearance Rating			
		N	%
Cases	Valid	104	100.0
	Excluded ^a	0	.0
	Total	104	100.0

Table 2: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	No of Items
.978	5

Kmo and Bartlett's Test

KMO is a test used to determine the strength of the partial correlation (how the variables explain each other). KMO values near 1.0 are considered ideal, while values less than 0.5 are considered unacceptable.

The Bartlett's test of sphericity is used to test the null hypothesis that the correlation matrix is an identity matrix. The identity correlation matrix means that the variables are not related and are not ideal for factor analysis. An important statistical test (usually less than 0.05) shows that the correlation matrix is not really an identity matrix (rejection of the null hypothesis).

Table 3: Showing the KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.959
	Approx. Chi-Square	8847.8
Bartlett's Test of Sphericity	Df	300
	Sig.	.000

Inference: The KMO and Bartlett's value of 0.959 reveals that the sampling is adequate. Goodness of fit test and the Chi-square test of independence.

Limitations of the Study

- Time constraints has prohibited from going in depth into the subjects.

- The information obtained or the collection of data is limited.
- The in experience makes analysis less precise compared to profession analysis.
- The geographical limit of the study was restricted to Chennai.

Data Analysis

Percentage analysis were done the important factors were displayed for reference.

Table 4: Percentage (%) Analysis

Rating Score	Rating Category	Not Applicable	Very Poor	Poor	Average	Good	Very Good
Custom Clearance Service		50	0	0	6	26	18
Freigh Forwarding Service		41	0	0	8	35	20
Transportation Service		36	0	0	5	51	12
Warehousing Service		21	0	0	7	60	16
Pricing of Services		-	0	0	6	67	31
Software used in Services		48	0	0	3	33	21
Efficiency of Services		-	0	0	14	74	16
Expertise of Services		-	0	0	17	59	28

Sources: Primary Data

efficiency

Chi-Square Test

Null hypothesis (H₀): There is no association between the experience of companies and their

Alternative hypothesis (H_a): There is significant association between the experience of companies and their efficiency.

Table 5: Chi-Square test

Chi- Square Tests			
	Value	df	Asymptotic Significance (2-Sided)
Pearson Chi-Square	23.602 ^a	12	.023
Likelihood Ratio	24.474	12	.018
Linear-by-Linear Association	.238	1	.625
N of Valid Cases	104	—	—

a. 6 cells (30.0%) have expected count less than 5. The minimum expected count is 1.04.

Source: Primary Data

Inference:

As p-value is 0.023 which is <0.05 we reject the null hypothesis and accept alternative hypothesis. At the level of significance, there exists enough evidence to conclude that there is significant association between the experience of companies and their efficiency.

One-Way Anova

Null hypothesis (H₀): There is no significance difference among the experience of companies and their factors influencing the efficiency.

Alternative hypothesis (H₁): There is significant difference among the experience of companies and their factors influencing the efficiency.

Table 6: Anova

Anova						
		Sun of Squares	df	Mean Square.	F	Sig.
Custom Clearance Ratings	Between Groups	14.206	3	4.735		
	With in Group	272.376	103	1.692	2.799	0.042
	Total	286.582	103			
Freight Forwarding Ratings	Between Groups	15.148	3	5.049		
	With in Group	291.919	101	1.813	2.785	0.043
	Total	307.067	103			

table cont.....

Warehousing Ratindgs	Between groups	16.753	3	5.584		
	With in Group	290.314	100	1.803	3.097	0.28
	Total	307.067	103			
Transportation Ratings	Between groups	15.148	3	5.049		
	With in Group	291.919	102	1.813	2.785	0.043
	Total	307.067	102			
Expertise Ratings	Between groups	14.933	3	4.978		
	With in Group	291.394	101	1.81	2.75	0.045
	Total	306.327	103			

Source: Primary Data

Inference: As p-value is <0.05 we reject the null hypothesis and accept alternate ve hypothesis. At the level of significance, there exists enough evidence to conclude that there is significant difference among the experience of companies and then in ir factors influencing the efficiency.

Expertise rating has greater influence on experience of a company on export services followed by transportation, freight forwarding, custom clearance and ware housing ratings.

Rank Correlation

Since the sample size is too large, the ranks of first 10 companies are shown below for each category.

Table 7: Rank Correlation

Company	Average Rank of ratings	Rank of Efficiency Ratings
5 Way Logisitcs	1	1
AGX Logistics	2	3
Triway Forwarders	3	2
Thirunga Logistics	4	5
Airgo Logistics	5	7
MAR Logistics	6	6
Pacific Logistics	7	4
Unttex Logistics	8	8
Brizo Global Logistics	9	11
Quest Logistics	10	9

Source: Primary Data

Pearson' correlation co-efficient, $r = 0.881917104$.

There is a positive correlation, hence it can be used as a measure to select the best company.

Thus, it is observed that 5 way logistics has the higher rank and is more efficient the another companies.

RESULTS

- It is found that 58.5% of companies are located in Mannady area, 19.2% of the companies are located in Periamet and the remaining 22.1% of the companies are located in other locations of Chennai.
- It is found that 18.2% of the companies employ less than 15 employees, 61.5% of the companies employ between 15 and 30 employees, 16.3% of the companies employ between 30 and 50 employees, and 0.4% of the companies employ greater than 50 employees.
- It is found that 51.9% of the companies offer custom clearance services, 39.4% of the companies offer freight forwarding services, 34.6% of the companies offer transportation services, and 20.1% of the companies offer warehousing services.
- It is found that 28.8% of the companies offer air shipment, 58.6% of the companies offer sea shipment, and 26.9% of the companies offer road shipment.
- It is found that 11.5% of the companies have less than 5 years' experience in logistics, 49% of the companies have between 5 and 10 years' experience, 25% of the companies have between 10 and 20 years' experience, and 14.4% of the companies have greater than 20 years' experience.
- It is found that 66.5% of companies do not offer express shipping and 33.5% of companies offer express shipping.
- It is found that 58.7% of companies have seasonal business and 41.3% of companies do not have seasonal business.
- It is found that 79.9% of companies do not own warehouse and 20.1% of companies own warehouses.

- It is found that 58.7% of companies have seasonal business and 41.5% of companies do not have seasonal business.
- It is found that 62.5% of companies do not offer tracking feature and 37.5% of companies do not offer tracking feature.
- It is found that 63.4% of the companies use website for marketing, 24.1% of the companies use social media for marketing, and 12.5% of the company do not use any tool.
- It is found that 21.2% of the companies complete less than 50 shipments, 55.7% of the companies complete between 50 to 100 shipments, 26% of the companies complete between 100 and 200 shipments, and 3.8% complete greater than 200 shipments.
- It is found that 48% of the companies do not offer custom clearance services, no company has rated themselves as Very Poor or Poor, 5.7% have rated their custom clearance services as Average, 25% of the companies have rated their custom clearance services as Good, and 17.3% of the companies have rated their custom clearance services as Very Good.
- It is found that 39.2% of the companies do not offer freight forwarding services, no company has rated themselves as Very Poor or Poor, 7.6% have rated their freight forwarding services as Average, 33.6% of the companies have rated their freight forwarding services as Good, and 19.2% of the companies have rated their freight forwarding services as Very Good.
- It is found that 34.6% of the companies do not offer transportation services, no company has rated themselves as Very Poor or Poor, 13.8% have rated their transportation services as Average, 49% of the companies have rated their transportation services as Good, and 11.5% of the companies have rated their transportation services as Very Good.
- It is found that 20.1% of the companies do not offer warehousing services, no company has rated themselves as Very Poor or Poor, 6.7% have rated their warehousing services as Average, 57% of the companies have rated their warehousing services as Good, and 15.3% of the companies have rated their warehousing services as Very Good.
- It is found 0% have rated their pricing as Very

Poor or Poor, 5.7% have rated their pricing of services as Average, 64.4% of the companies have rated their pricing of services as Good, and 29.8% of the companies have rated their pricing of services as Very Good.

- It is found that 46.1% of the companies do not have software services, no company has rated themselves as Very Poor or Poor, 2.8% have rated their software as Average, 31.7% of the companies have rated their software as Good, and 20.1% of the companies have rated their software as Very Good.
- It is found no company has rated their efficiency as Very Poor or Poor, 13.4% have rated their efficiency of services as Average, 71.4% of the companies have rated their efficiency of services as Good, and 15.3% of the companies have rated their efficiency of services as Very Good.
- It is found no company has rated their expertise as Very Poor or Poor, 16.3% have rated their expertise of services as Average, 56.7% of the companies have rated their expertise of services as Good, and 26.9% of the companies have rated their expertise of services as Very Good.
- Using chi square, as p-value is 0.023 which is <0.05 we reject the null hypothesis and accept alternative hypothesis. At the level of significance, there exists enough evidence to conclude that there is significant association between the experience of companies and their efficiency.
- Using ANOVA, as p-value is <0.05 we reject the null hypothesis and accept alternative hypothesis. At the level of significance, there exists enough evidence to conclude that there is significant difference among the experience of companies and their factors influencing the efficiency.

DISCUSSION

- The logistics service and transportation company was suggested to be close to Mannadyarea as Lotus Industries Ltd. is located in Mannady. Hence a company located in Mannady must be selected for its services and transportation.
- A company having more employees must be selected as they will have more orders and more experience. They will have in sight and

clear and transport goods in a more efficient and faster way which is beneficial for the company.

- As all the services including custom clearance, freight forwarding, transportation and warehousing is required for the future exports of Lotus Industries Ltd., A company which caters to all 4 services can be a better and more suitable company to employ for mentioned services.
- Lotus Industries Ltd. is planning to start shipping to Middle East. However, it can decide to expand its market, so any company which takes care of shipping to different parts of the globe is sought after due to ease of expansion.
- Any logistics company having a diverse marketing tool is expected to have more customers which will result in an efficient work flow. Thus, the marketing tools were noted down to determine its customer base.
- The modes of transportation were determined to know whether the company caters to air, sea, and road transportation as all of them can be used for the transport of goods.
- Any company which has experience in logistics field will have a more efficient and faster service of logistics due to more knowledge and understanding of the work process. Thus, a more experienced company must be selected to have better logistics service.
- Lotus Industries Ltd requires tracking feature of goods as it has a modern analytical work flow which helps customers know when the shipment can be reached. This will help to understand if there are any delays and streamline the process.
- Lotus Industries Ltd. also may require express shipping as the demand is high in certain months and express shipping option will help achieve any supply chain gap faced by the company in the future.
- A warehouse can also be necessary for the activities of Lotus Industries Ltd. Hence, companies that offer warehousing services are more suitable for logistics services.

CONCLUSION

Logistics functions such as freight forwarding,

custom clearance and transportation are vital in a business. Any company which offers such services must be reliable, efficient, and fast. This helps to boost sales and can also help in net profit of any business as they can be streamlined with less managerial supervision so managers can focus on other aspects of the business. It is proved that a person with more years of experience can provide a better service than others.

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