A STUDY ON FACTORS INFLUENCING FOR LOGISTICS OPERATIONS – WITH SPECIAL REFERENCE TO TIRUPUR GARMENT EXPORT INDUSTRY, TAMILNADU

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Abstract—*Logistics Operations is the charge of effectively and efficiently cooperating material flow and the storage of goods, services and related information from the point of origin to the point of consumption for the purpose of satisfaction towards their customer requirements. The objective of the study is to analysis the factors influencing for logistics operations, which are adopted by Tirupur Garment Export industry, TamilNadu. Based on the objective framed, a systematic research methodology has been adopted. Data collected from the companies and analyzed with proper statistical tools. The study reveals that, exporters understood that there are factors influenced which are extracting the information from the items under study. Therefore it creates opportunity for the garment exporters to identify the major factors which are influencing the logistics operations. And also creates awareness and helps the exporters to fulfill their needs and improve their logistics activities related to their operations. It will be useful for future research proposals and improve the logistics sectors to lead the country to next level.*

Introduction

The logistics industry in India is evolving rapidly and it is the interplay of infrastructure, technology and new types of service providers that will define whether the industry is able to help its customers to reduce their logistics costs and provide effective services. The Textile and Hosiery Supply Chain comprises diverse raw material sectors, ginning facilities, spinning and extrusion processes, processing sector, weaving and knitting factories and garment (and other stitched and non-stitched) manufacturing that supply an extensive distribution channel. This particular study focuses more on the factors influencing the logistic operations specifically with Tirupur city garment industry.

Statement of the problem

The Logistics sector is rapidly evolving in India and forms the backbone for some key sectors like retail, textile, automobiles, pharmaceuticals, etc. The sector faces multiple challenges due to poor conditions of storage infrastructure, inefficiencies in transportation, poor roads, a complex tax structure and low rate of technology adoption, issues with GST is also hampering growth. Therefore the above detailed issues and upgraded challenges in the Indian logistics sector, have made the researcher to select the research study for analyzing the factors influencing the logistics operations with reference to garment export industry in Tirupur city, Tamil Nadu State, India.

Objectives of the study

The objectives formulated for the present study are as follows

1. To analysis the factors influencing for logistics operation of Tirupur hosiery export industry.

Methodology of the study

The research has been fully carried out by adopting the required research methods, appropriate statistical tools and techniques were used to support the study.

Sources of data- Adopted a fundamental social science research design for the entire research activity. The study has used both primary and secondary data which are available at hosiery garment export industry, Tirupur. Primary data's are collected from the garment export industry. Period of the study is 2018 – 2019. Factor analysis is adopted as statistical tools for the study.

Factor analysis of influencing the logistic operation of the organization

The hosiery export industry has the factors which are influencing the logistic operations, in Tirupur. The important factors influencing cannot be identified on the basis of all these factors taken for the study. So the attempt made to find out the important factors influencing the hosiery export industry in Tirupur, on the basis of opinion given by the organisation in Tirupur.

This comes under data reduction and factor analysis is followed to reduce the complexity of the data. Kaiser Meyer Olkin and Bartlett's test (KMO) is conducted on data to judge the application of factor analysis. The following table provides the KMO Test.

TABLE 1: Kaiser-Meyer-Olkin Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.657
Bartlett's Test of Sphericity	Approximately Chi-Square	661.261
	Difference	91
	Significance	0.000

The KMO Test value 0.657 which is closer to unity (1) ensures the sample adequacy to apply the test and Barlett's Test ensures the significance of the Co-relation matrix.

The following is the table of Communalities, the Communalities is the contribution og the item to the factors extracted.

TABLE 2: Communalities of influencing the logistic operation of the organization

Factors	Initial	Extraction
Infrastructure	1.000	0.653
Adequate financial support	1.000	0.568
Suitable transport system	1.000	0.741
Technical knowledge	1.000	0.682
Inventory Management system	1.000	0.557
Adequate Warehouse / Storage	1.000	0.555
Adequate Equipments	1.000	0.681
Adequate support from labours	1.000	0.586
Government support / co-operation / motivation	1.000	0.798
Cost of the logistic operations	1.000	0.813
Communication network	1.000	0.741
Trust / faith / relationship with logistic service providers	1.000	0.736
Logistic management strategy	1.000	0.633
Market competition	1.000	0.452
Extraction Method: Principal Component Analysis.		

The Communalities values ranging from 0.452 to 0.813 indicates that all the items contribute more than 50% of the information to the factors extracted.

Eigen values the number of factors decided by the Eigen values which are greater than or equal to. The following is the table of Eigenvalues.

TABLE 3: Eigenvalues of influencing the logistic operation of the organization

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	%of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Infrastructure	3.887	27.763	27.763	3.887	27.763	27.763	2.508	17.911	17.911
Adequate financial support	2.593	18.524	46.287	2.593	18.524	46.287	2.434	17.386	35.297
Suitable transport system	1.565	11.177	57.464	1.565	11.177	57.464	2.423	17.307	52.604
Technical knowledge	1.150	8.214	65.678	1.150	8.214	65.678	1.830	13.074	65.678

Inventory Management system	.965	6.890	72.568							
Adequate Warehouse / Storage	.828	5.911	78.479							
Adequate Equipments	.802	5.729	84.208							
Adequate support from labours	.539	3.847	88.055							
Government support / co-operation / motivation	.403	2.882	90.937							
Cost of the logistic operations	.368	2.625	93.562							
Communication network	.296	2.114	95.676							
Trust / faith / relationship with logistic service providers	.256	1.832	97.508							
Logistic management strategy	.187	1.336	98.844							
Market competition	.162	1.156	100.000							
Extraction Method: Principal Component Analysis.										

From the table it is understood that there are four factors (Infrastructure, Adequate financial support, Suitable transport system, and Technical knowledge) which are extracting 65% of the information from the items under study.

TABLE 4: Rotated component matrix

The following rotated component matrix gives the factors identified.

Factors influencing the logistic operation of the organization	Component			
	1	2	3	4
Infrastructure	.753	-.129	-.190	-.180
Adequate Warehouse / Storage	.677	-.297	-.075	.051
Adequate Equipments	.665	-.402	.265	.085
Adequate support from labours	.648	-.350	-.126	-.167
Trust / faith / relationship with logistic service providers	.597	-.325	.459	.249
Market competition	.511	.162	.279	-.295
Logistic management strategy	.466	.116	.452	-.445
Suitable transport system	.183	.710	.451	-.018
Technical knowledge	.377	.650	-.205	.275
Inventory Management system	.317	.637	.143	-.175
Cost of the logistic operations	.376	.608	-.521	-.177
Adequate financial support	.267	.582	.049	.394
Government support / co-operation / motivation	.600	-.119	-.635	-.142
Communication network	.562	-.070	-.027	.648

This analysis reveals that the following are the major factors influencing the logistic operations in Tirupur to the organisations.

Findings

The hosiery export industry has the factors which are influencing the logistic operations, in Tirupur. The important factors influencing cannot be identified on the basis of all these factors taken for the study. So the attempt made to find out the important factors influencing the hosiery export industry in Tirupur, on the basis of opinion given by the organisation in Tirupur.

The Communalities values ranging from 0.452 to 0.813 indicates that all the items contribute more than 50% of the information to the factors extracted. From the table it is understood that there are four factors (Infrastructure, Adequate financial support, Suitable transport system and Technical knowledge) which are extracting 65% of the information from the items under study.

Suggestions

The researcher would like to present certain points in the form of suggestions so that may be considered for better logistics operations in the near future. The following are valuable suggestions.

1. Infrastructure

This study clearly reveals that there is a need for adequate infrastructure in order to boost the logistics operations. Nearly 75% of the respondents accepted that the infrastructure influence more for better logistics operations in export or import and even in domestic business transactions.

2. Technology

Most of the respondents opined that the technology or innovative strategy induce and help the logistic operation for better results. Most of the respondents adopted Just In Time Concept (JIT) concept to overcome the problems of inventory management and they also recommend this concept can be followed in other organisation to manage their inventory efficiently.

Conclusion

The logistic operation is creating a link between the manufacturer and consumer. As far as the business and marketing process is concern the distribution channel or policy or method influences the success story of business. The channel or logistic design involves determination of length and width of logistic operation and supply chain system. Developed countries followed the systematic and adequate logistic operation which helps in building the strong foundation for the nation. Whereas the country like India is developing and witnessing many positive government policies which are helping business with efficient logistic and supply chain system. It is clearly understood that the above study shows the factors influencing the logistic operations on the performance of hosiery export units in Tirupur, Tamilnadu state, India.

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