

ICT IMPACT ON LOGISTICS AND SUPPLY CHAIN – A QUALITATIVE STUDY

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Abstract

Information and Communication Technologies (ICT) play a key role in this process, assuring the linkages between chain participants as well as a more effective control of time, cost, and quality of the service rendered. ICT plays a very important role in the Logistic sector. With the implementation of new tools and software there was a growth in logistics sector. A structured questionnaire was designed and data was collected from representative of logistic industry. The data was analysed and interpreted by applying inferential statistics. The study will help companies to understand the impact of ICT in logistics. This study is important for the logistics and IT industry to understand the depth of penetration of ICT and its effective use in the organization. The main focus is to manage and control overseas activities as a single business unit. Therefore, companies try to harness the value of overseas product, services, marketing, and turn them into competitive advantage. Logistics is the process involved to move the goods from the point of origin to the point of consumption.

Keywords: Information and Communication Technologies (ICT), penetration, IT industry

Introduction

Logistics is the process of implementing, planning, and controlling procedure for the effective and efficient storage and transportation of goods. Logistics is the method of organizing, carrying out, and monitoring the steps involved in the safe and effective storage and movement of commodities. From the point of origin to the point of consumption, it consists of services and related information. Its objective is to satisfactorily meet the client's demand. "International Logistics, also known as Global Logistics, covers incoming, outbound, internal, and external movements. It focuses on the best ways to successfully manage and oversee international corporate operations as a single business. The main focus is to manage and control overseas activities as a single business unit. Therefore, companies try

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to harness the value of overseas product, services, marketing, and turn them into competitive advantage. Logistics is the process involved to move the goods from the point of origin to the point of consumption. Any organization has to improve and develop its supply chain and logistics processes to be successful and gain competitive advantage in the market. Measuring delivery of goods on time is very important for company to make its logistics system very effective.

Logistic firms use ICT as facilitating technologies to gather, process, and use knowledge and skills about the application of technologies that will help in making their business to be more progressive and contribute in increasing the efficiency of urban goods transport. Impacts on costs and benefits of ICT needed an in-depth research to fully measure the effect. Moderate impact of ICT signifies that ICT is re-shaping the logistics system from traditional methods to modern logistics.

Need of the Study

Keeping in view the significant impact of ICT on the logistic process is great extent in the modern logistic business activities. Each and every activity and aspect of logistic and supply chain are relating with the ICT for smooth running of their business activities like sophisticated communication methods using to reach each and every corner of the globe. Efficient tracking system in logistics and supply chain are sending goods and services to the customers, vendors and other parties is in easiest way to satisfy them. Therefore, we propose this research paper on ICT impact on logistics and supply chain – a qualitative study.

Review of Literature

The literature review is very important part of the researches it expands the importance aspects and issues related to research. It places a previous work before us what has been done by the previous researchers. It also helps in finding out the missing aspects of the topic we choose i.e., finding out the research gap between the period. In this paper, we will refer to what the previous researchers have done in their concerned studies and what have been their views which are as under:

Anil Gurung (2022) conducted A Survey of Information Technologies in Logistics Management and analyze the impact of information technologies (IT) on logistics by conducting a survey of literatures on academic logistics journals and practitioner journals. It is important to assess the viability of adopting the technology.

Lucas D. Introna (2021) studied the Impact of Information Technology on Logistics and suggested to guide the integration of information technology effectively into the logistic

function. He also suggested the important aspect of building commitment as a key success factor in the effective management of information technology in logistics is examined.

Adithya D Shetty (2015) conducted the study on Trends and Issues of Logistics Management in Healthcare Industry and understands the transformation in current Indian healthcare and challenges in logistics.

Objectives of the Study

The main objective of this research study is to assess the depth of adaption and analyze the impact of ICT on logistics industry (transport industry in particular) in India, and to identify needs for more effective ICT adaption. The study is conducted with a focus on smaller firms with these specific objectives:

1. To assess the level of implementation of ICT in the logistics industry
2. To identify the factors behind the success of ICT driven innovative processes

Methodology of the Study

The study covers Descriptive research. It deals with the awareness of tentative framework for better ICT usage in the industry. Primary data is collected with the help of questionnaire from representatives of logistics and supply chain industry. Magazines and websites were used to collect secondary data. Stratified Random sampling method was applied and samples are collected from 30 representatives of logistics and supply chain industry in Bhopal. Various statistical tools were applied in this research paper.

Scope of the Study

The study covers the ICT impact on logistics and supply chain taking into consideration the data from recent past. Primary data is collected with the help of questionnaire from representatives of logistics and supply chain industry. Magazines and websites were used to collect secondary data. Stratified Random sampling method was applied and samples are collected from 30 representatives of logistics and supply chain industry in Bhopal. The scope restricted in the study is ICT impact on logistics and supply chain in the Bhopal City of Madhya Pradesh state only.

Data Analysis and Interpretation

The data was collected from representatives of logistics industry.

Table No 1.1:
Use of Computer

	Frequency	Percentage
Yes	28	93%

No	2	7%
Total	30	100%

Source: Primary data

It is evident from the above data that most of the respondents (93 per cent) use computers in their business. 7 per cent still not using computers for their business. It can be implied that most of them are dependent on technology for their routine processes. In today's technology era, it is becoming necessary to use technology on a day-to-day basis.

Table No 1.2:

ICT Adaption in their Business

	Frequency		Percentage	
	Yes	No	Yes	No
Email	25	5	83%	17%
Accounting	27	3	90%	10%
Office automation	20	10	67%	33%
Tacking consignment	30	0	100%	0%
	30		100%	

Source: Primary data

From the above data we can understand the fact that ICT is adapted by business. 83 per cent use it for emailing, 90 per cent for accounting purpose, 67 per cent for office automation (taking print outs of official records, generating manual reports, manually maintaining database of customers, business partners, and intermediaries), 100 per cent people use it for tracking the consignment.

Table No 1.3:

Usage of industry specific software

	Frequency	Percentage
Yes	5	17%
No	25	83%
Total	30	100%

Source: Primary data

It can be seen from the above data that most of them (83 per cent) are not using any industry specific software in their computers for any of their business processes. It is also found earlier that the main purpose the computer is used is for email followed by office automation. 17% industry is using specific software for their business. These exists an opportunity for the

software solution providers to tap this great potential market for providing economical industry specific automation.

Table: 1.4
Preferred kind of system

	Frequency	Percentage
Computer based Information system	29	96%
Physical organization that can bring other firms together	1	4%
Total	30	100%

Source: primary data

The above data clearly indicates the need for a computer-based information system that can integrate the participating partners in fulfilling the orders. About 96% of the respondents feel that a computer-based system will help them integrate while only 4% of them feel that a physical organization will help them in bringing the participating partners together. There was other option too that suggested to have a dedicated telephone network to integrate them. The respondents feel that a computer-based system can share the resources related information in real time among the partners during the crucial times which is the need of the hour.

Table No 1.5:
Expected benefits from ICT

	Frequency		Percentage	
	Yes	No	Yes	No
Reduced waiting time for fleets	28	2	93%	7%
Reduced overall cost	30	0	100%	0%
Increased frequency of orders	28	2	93%	7%
More opportunities for Business expansion	26	4	86%	14%
Accurate information	30	0	100%	0%
Better control over the business	30	0	100%	0%

Source: primary data

The above analysis shows the expected benefit from ICT 93 per cent believed that it reduced their overall waiting period of the fleet, 100 per cent reduced overall cost, 93 per cent believed that their order gets increased and with the implementation of ICT as many consumers are approaching them by seeing their description through internet. 86 per cent users are of the opinion that there opportunities for expansion of their business get increased as they can open there firm all over India and can access them easily.100 per cent believe that

they get accurate information while using internet.100 per cent believe that they had full control over the operation of business as they can check and verify the transaction.

Conclusion

The study was carried out to know about the logistic industry and also by understanding the industry expectations about how adapting ICT can address them. The findings presented in this research will help organizations understand the importance of ICT implementation and subsequently adapt to the same. It is found that though ICT is in use in the industry, it is limited mostly to access internet and perform basic activities classified under office automation. Out of the respondents who said they use computers in their business, at present they use it for e-mailing, office automation (taking print outs of official records, generating manual reports, manually maintaining database of customers, business partners, and intermediaries). Only few of them use ICT for tracking their consignment and very few have automated their business process.

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