IMPACT OF E-COMMERCE ON SUPPLY CHAIN MANAGEMENT

Submitted in partial fulfillment of the requirements for the award of

MASTER OF BUSINESS ADMINISTRATION

By

VASANTH KUMAR.M

Register No.40410185

SCHOOL OF MANAGEMENT STUDIES

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

Accredited with Grade "A" by NAAC I 12B Status by UGC I Approved by AICTE

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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bona-fide work of **VASANTH KUMAR.M**

40410185 Who carried out the project entitled **"IMPACT OF E-COMMMERCE ON SUPPLY CHAIN MANAGEMENT"** under my supervision from January 2022 to March 2022 .

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Submitted for Viva voce Examination held on_____

Internal Examiner

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DECLARATION

I **VASANTH KUMAR.M (40410185)** hereby declare that the Project Report entitled **"IMPACT OF E-COMMERCE ON SUPPLY CHAIN MANAGEMENT"** done by me under the guidance of **DR.THAMILSELVAN** is submitted in partial fulfillment of the requirements for the award of Master of Business Administration degree.

DATE:

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VASANTH KUMAR.M

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ABSTRACT

The impact of E-commerce B2C industry on Supply chain management (SCM) is a crucial topic in the last decade since the conventional supply chain activities are transformed into an Information technology oriented practices. A number of big companies and start ups have been trying to dominate the e-commerce B2C sector. E-commerce industry has influenced so many variables in the supply chain; suppliers, consumer purchasing behavior, information technologies, logistics, inventory and warehousing management.

In the competitive economy where many big companies and several start-ups are trying to take hold of the market share, it is very essential to understand the overall impact of the ecommerce industry on different levels of Supply chain management. The Supply chain management distribution channel is mainly concentrated for this paper and it starts from the moment the product is available with the retailer or supplier and ends with the order fulfillment of the customer.

This paper focuses on how Indian e-commerce industry have impacted the field of Supply chain management and the case studies of two big giants of Indian e-commerce; Flipkart and Amazon enhances the knowledge about the impact of e-commerce sector on several supply chain activities. By interviewing the top management from both the companies, it gives a proper insight to know the impact in real time. Literature review and case studies have raised few research questions which are answered through this paper, however, there are many limitations in Indian market which doesn't allow these companies to function efficently and they are also been mentioned in the end of this paper. Summary of the findings guides through the channel to know more about various situations of uncertainty.

Not many researchers have studied about Indian e-commerce industry and the findings from this paper would fill the gap in the literature and could help in conducting any further researches. At the end of this paper, it has been found that their is a huge impact of ecommerce industry on SCM distribution channel activities and it is quite different from the conventional supply chain which involves manufacturer, distributor, retailer and customer. Internet plays an important role and further research should be conducted in this area and this paper would provide the proper justice for other researchers to carry out their work and fill the gap in existing literature.

Key words: E-commerce, Impact of e-commerce, Supply chain management, Flipkart, Amazon India, E-commerce case studies, E-commerce Supply chain.

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CHAPTER - 1
INTRODUCTION

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1.1. INTRODUCTION:

Ever Since the internet has revolutionized the way people communicate and do business around the world, it has given a large indefinite liberty for the customers to meliorate in their lifestyle and how they see the technology to make use of it for the betterment in every possible way. In India, the penetration of internet has been increasing rapidly in the last decade and claiming the population of approximately 130 crores people, it attracts all the major players in the market to benefit them by selling their products which could finally reflect in their financial reports. The conventional method of customer arriving to the retail shops has been transformed into an effortless purchasing by placing an order online through the facilitation of e-commerce companies. The estimation at the end of the year 2014 was 302 million users, which was observed to be a significant year since it saw 32% remarkable growth in just one year. It took almost a decade to increase the number from 10 million users to 10 crores users, three years to increase from 10 crores users to 20 crores, but it achieved 30 crores milestones from the past 20 crores in just one year. The estimated internet users as of today are approximately 35.4crores and it is still growing at the rate more than everyone expected. Also, the mobile internet users grew to nearly 21.3 crores users at the same span of time.

E-commerce is the fastest growth area in the global economy and almost carries potentials beyond measure. It provides consumers with the benefit of anytime, anywhere transation with lower costs. Moreover it shortens the distance between the buyer and the seller and shrinks the world into a small village. (porter, 2001)

As the number of internet users grew, the e-commerce companies also started up to provide them qualified products on their doorsteps. Few such examples are Flipkart (found in 2007) and recent entrant Amazon (2013). Also the challenges faced by these companies also grew because of diversified Indian market, culture, tax laws in different states. The major challenge which will be discussed in this research is about supply chain distribution which includes reverse logistics when a customer is unwilling to accept the product and it has to be returned to the company’s warehouse.

The traditional supply chain management in India has largely got transformed into strategic supply chain management (SCM) due to the impact of e-commerce companies. It's been a challenging task for all the e-commerce companies to cope up with the problems arising from disruption in the supply chain distribution networks. Since from the beginning, this has been a game changing factor for Supply chain management to meet the demands of customers and fulfill the orders. They have to be self-sufficient to design and implement better supply chain management strategies, design and control or else it will be very difficult to sustain in the competitive market like India which accounts to 17.5% of the world population. This research is mainly oriented on the challenges faced by e-commerce companies in the area of supply chain management distribution and what measures could be taken to overcome them or to make the system more efficient to deliver the products. Due to the gap in the past literature and not much research has been done particularly about Indian e-commerce industry, this could spread light for various problems associated with the e-commerce supply chain management distribution and possible solutions to them. The technology driven ecommerce and supply chain management is changing and more research should be done on this topic and this thesis would provide justice to spread light on various undiscussed issues in the literature and researches conducted so far.

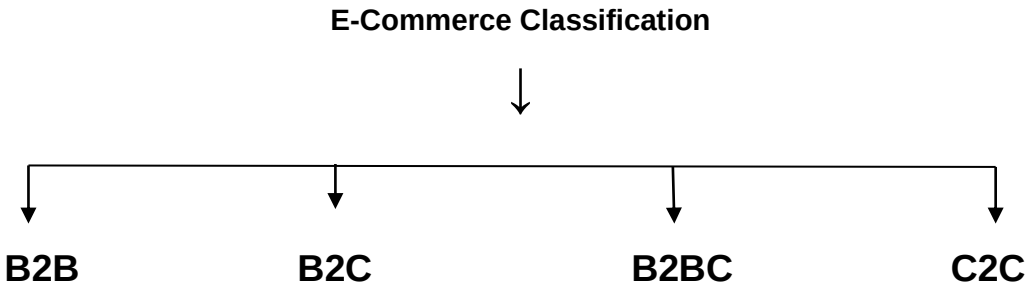
1.1.1. E-commerce

Defined E-commerce as the process of the process of buying, selling ,or exchanging products, services, or information via computer. It as commercial activity of buying and selling over the Internet . E-commerce as an technology that provide the capability to buy and sell online – including market creation, ordering, supply chain management , and transfers through opening protocol.

Despite controversies surrounding e-commerce and the burst of the "dot com" bubble, many large companies continue to deploy e-commerce extensively in their enterprise value chain and develop internet-enable initiating to manage inventor using electronic links to suppliers, to strengthen online integration with distributors and business partners, to design and customize product and service and to attempt to serve customer more effectively. Today , e-commerce has been widely used and many business have moved from the offline world in the order to serve the global Internet population.

1.1.2. E-Commerce classifications

E-commerce utilize information and communication technology to carry out market transaction among two or more parties usually businesses and consumers. At time one of these parties may be the government as well. In (2010) classified e-commerce by the nature transactions or the relationship among the participants into these categories:



- **Business to Business B2B:**

  E-commerce model in which all the participants are business or other organizations for example dell sells its products to other companies.

- **Business to Consumer B2C:**

  E-commerce model in which business sell to individual shoppers for example any person can enter amzon.com and buy product from that website.

- **Business to Business to Consumer B2BC:**

  E-commerce model in which a business provide some product or service to a client business that maintain its own customer for example Intel manufacturing computer processor and sell it to HP which make computer that final consumer can buy even e-retail giant like Alibaba uses same model.

- **Consumer to Consumer C2C:**

  E-commerce model which consumers sell directly to other consumer. Various marketplace [lay the role of mediator by enable the user to buy from other users like ebay.com and olx.in.

1.1.3. Supply Chain Management

Supply Chain Management is a complex process that required the coordination of many activities so that the shipment of goods and services from the suppliers right through to customer is done efficiently and effectively. Defined supply chain management as the coordination of all supply activities of an organization from its suppliers and partners to its customer. It also classified supply chain management to:

- Upstream supply chain: transaction between an organization and its suppliers and intermediaries, equivalent to buy-side e-commerce.
- Downstream supply chain: transaction between an organization and its customer and intermediaries, equivalent to buy-side e-commerce.

Supply chain management was originally developed as a way to reduce costs. It focused on very specific element in the supply chain and tired to opportunities for process efficiency. Today, supply chain management is used to add value in the form of benefits to the ultimate consumer at the end of the supply chain. This required more view of the entires supply chain than had been common in the early days of supply chain management.

1.1.4. Infrastructure of Supply Chain Management

The Activities mentioned above use a variety of infrastructure and tools. The following are the major infrastructure element and tools:

- **Electronic data interchange(EDI)**

Electronic data interchange (EDI) is an electronic communication system that provides standard for exchanging data via any electronic means. By adhering to the same standard, two different companies even in tow different countries, can electronically exchange documents(such as purchase orders, invoices, shipping notice and many other)

- **Extranets**

An extranet is a computer network that allow controlled access from outside of an organization's intranet. Extranets are used for specific use cases including business-to-business(B2B). In a business-to-business context, an be viewed as an extension of an organization's intranet that that is extended to users outside the organization, usually partner, vendor, and suppliers, in isolation from all other intranet or internet. In contrast,

business-to-consumer (B2C) models involve known servers of one or more companies, communicating with previously unknown consumer users. An extranet is similar to a DMZ in that it provides access to needed services for channel partners, without granting access to an organization/s entire network.

- **Intranets**

An intranet is a computer network that uses Internet Protocol technology to share information, operational system, or computing services with an organization. This term is used in contrast to extranet between organization, and instead refers to a network within an organization. Sometimes , the term refers only to the organization's information technology infrastructure, and may be composed of multiple local area networks. The objectives is to organize each individual's desktop with minimal cost, time and effort to be more productive, cost efficient, timely, and competitive.

- **Corporate portals**

A Corporate portal is basically a secured website used by employees, manufacturers, alumni and even customers. The portal is the perfect starting point for everyday task that usually would consist of using many different type and source of information and tools in one environment, users save huge amounts of time.

- **Groupware and other collaboration tools**

Collaboration software is application software designed to help people involved in a common task to achieve goals. One of the earliest definition of collaborative software is international group processes plus software to transform the way document and rich media are shared to enable more effective team collaboration, the differences in human interaction is necessary to ensure appropriate technologies are employed to meet interaction needs.

- **Identification and tracking tools**

An Ecommerce site is an investment which must ensure a return by securing a certain number of sales. It is necessary to compare a measurable and realistic return objectives to electronic sales operations and same time, meet customer expectations. For these very reasons, it is important to analyze in detail, using E-commerce module, how uses behave when making a purchase, how they use their shopping cart , which products fuel the volumes. The E-commerce module allow for the identification of how each product contributes to the overall turnover and specific insight for those managing electronic sales sites and evaluates the return on investment.

1.1.5. Relationship between E-Commerce and Supply chain

With the continuous development of e-commerce, enterprise supply chain has undergone enormous changes, which increasingly reflected in the supply chain management based on the e-commerce.

With the wide spread of computer network, communication technology and internet, e-commerce as an advance transaction method, which based on the computer network, is fashionable all over the world. Supply chain management under e-commerce environment is a combination of e-commerce and supply chain management. It focus on customers, integrates whole the process of supply chain, makes full use of external resources ,realizes rapid and sharp reaction, immensely reduce the level of stock. The development of e-commerce provides good situation for the implement of supply chain management, and at the same time it also raise higher requirement, electronic supply chain management will truly become the format of enterprise supply chain management and will be known and applied by more and more enterprises. Supply chain management become an important way for enterprise to improve adaptability and competitiveness, and also is the important direction and international business management

1.1.6.Understanding E-commerce users

E-commerce user are those people, enterprise or organization that are likely to interact with your client via e-commerce. E-commerce solution for your client should be driven by users by external business relationship and network that are important to the enterprice customers and those involved in the enterprise supply chain. These network and relationship can be usefully classified as follows:

- Target Audience
- Existing Customer
- Potential Customer
- Suppliers
- Partners and Collaborators
- Enterprise Employees

1.1.7.Ecommerce in India

The growth of e-commerce industry has been phenomenally high. However, its growth is dependent on a number of factor and most important of them is internet connectivity. As Peer Forrester McKinsey report of 2013 , India has 137 million internet user with penetration of 11% . Total Percentage of online buyer to internet user is 18%. Compared to India , China, Brazil, Sri Lanka and Pakistan have internet population of 538(40%), 79(40%),3.2(15%) and 29(15%) million respectively. Therefore, lower internet density continues to remain a challenge for e-commerce. Industry survey suggest that e-commerce industry is expected to contribute around 4% to the GDP by 2020. In comparison , according to a NASSCOM report, by 2020 , IT-BPO industry is expected to amount for 10% India's GDP, while the share of telecommunication service in India's GDP is expected to increase to 15% by 2015. With enabling support the e-commerce industry too can contribute much more to the GDP.

Around 90% of the global e-commerce transaction are stated to be in the nature of B2B, leaving meager 10% as B2C e-commerce. Case of India is no different where most of such transaction are in the nature of B2B. Moreover Indian e-commerce industry is characterized by market place model. It allows large number of manufactures/trades especially MSMEs to advertise their products on the market place and benefit from increased turnover.

A significant 63% of e-commerce venture have been strated by first time entrepreneurship Indian e-commerce industry is in nascent stage and is nowhere in the league of big global players. Major domestic e-commerce companies are Flipkart, Snapdeal, Amozon ,Jiomart, homeshop18 etc.

Overall, e-commerce including online retail in India constitutes a small fraction of tatal sales, but is set to grow to a substantial amount owing to a lot factor such as rising disposable income, rapid urbanization, increasing adoption and penetration of technology such as the internet and mobile, rising youth population as well as increasing cost of running offline stores across the country.

1.1.8.Benefits of E-commerce

E-commerce can provide substantial benefit to enterprises via improved efficiencies and raise revenues. It enable a new way of working to emerge as business face the future and embrace the new economy . E-commerce enable small business entrepreneurs to gain access to better quality information and thus empower them take information decisions in their businesses.

Most importantly, e-commerce can give a competitive advantage. It can strengthen market position and open up new business opportunities with the potential to improve profits. Benefit of e-commerce can arise in the following way:

- **Cost Reduction Benefit:**
    1. Reduced travel costs
    2. Reduced cost of material
    3. Reduced marketing and distribution cost
    4. Reduced sales cost
    5. More efficient supply chain management
    6. Improved internal functions

- **Market Benefits:**
    1. Greater Reach
    2. More brand awareness
    3. Improved customer service
    4. Increased market awareness

- **Other Competitiveness Benefits:**
    1. Increased efficiency
    2. Continuous trading
    3. Specialization

1.2. Statement of the Problem

This Study on the topic “Impact of E-Commerce on supply Chain Management” is aimed to address related to the question listed below. Various studies have been made on this topic below in the literature review, but some of the factors like velocity , and cost are yet to explored. Studies have shown the relationship between Ecommerce and Supply chain management. But question like how the Ecommerce has changed the cost, velocity, and flow of information of supply chain are still left to be answered. Hence this research problem is being purchased to analyze the impact of ecommerce on the supply chain management in relation to cost i.e. speed.

1.3. Research gap:

Based on the observation:

1. Increased information dose not decrease the perception of uncertainty, but creates more uncertainty.
2. Web is changing the way of interaction of organization with suppliers and customer.
3. Organizations which have implemented E-commerce have perceived moderate level of benefit.

1.4. Research Questions:

1. To what extent E-commerce benefit affect supply chain management?
2. To what extent has e-commerce change the cost and speed of supply chain?
3. To what extent has e-commerce has helped in serviceability?
4. Has e-commerce helped in implementation of JIT?
5. To what extent has ecommerce helped in customer management?

1.5. Objectives

The main objective of this study is to clarify the impact of e-commerce on supply chain management and e-marketplace usage the companies that use B2B e-commerce in Chennai city through achieving the following objectives:

1. Examine the effect of e-commerce benefits on supply chain management in the companies that use B2B e-commerce in Chennai city.
2. Examine the effect of e-commerce benefits on e-marketplace usage in the companies that use B2B e-commerce in Chennai city.
3. Examine the effect of e-marketplace usage on supply chain management in the companies that use B2B e-commerce in Chennai city.
4. Examine the indirect effect of e-commerce benefits on supply chain management through e-marketplace usage as a mediator in the companies that use B2B ecommerce in Amman city.

1.6. Study Delimitations

The study scope deals with the following:

Human delimitations: the employees working in the companies that use B2B ecommerce who occupy these positions: (General manager, purchasing manager, purchasing employee, and specialists in e-business).

Place delimitations: companies using B2B e-commerce.

Time delimitations: the time absorbed to study accomplishment.

1.7. Study Limitations

1. Implementing the study on the companies that use B2B e-commerce, especially, companies that works .
2. The study is limited to the General manager, purchasing manager, purchasing employee, and specialists in e-business in the companies that use B2B e-commerce .
3. The studies related the e-commerce benefits with supply chain management through e-marketplace usage are little.

1.8. Study Difficulties

The study was implemented on the companies that use B2B e-commerce, especially, companies that work in Chennai city. And it was limited to the general manager, purchasing manager, purchasing employee, and specialists in e-business in those companies. The main difficulty faced the researcher was the lack of response and interest of the respondent and the delay of returning back the questionnaire to the researcher.

CHAPTER 2
REVIEW OF LITERATURE

2.1. Literature Review

Susan L.Golicic & Donna F. Davis has concluded on the relationship E-commerce has on supply chains. They have found that strong emphasis on relationship management as part of business strategy enable manager uncertainty better. Increased information does not decrease the perception of uncertainty, but create more uncertainty. They also found support for the application of transaction cost analysis and the resources dependence theory in explaining inter-organizational relationship formation in e-commerce.

JOHNSON,M.E. and WHANG,S. The web is having a significant impact on how firm interact with each other and their customer. Past stumbling block for supply chain integration such as high transaction cost between partners, poor information availability and the challenges of managing complex interface between functional organization are all dissolving on the web. In this paper, we examine how the web changing supply management.

Simon R .Croom, E-commerce system and process that use ubiquitous platform such as web browser and internet have profound impact on the management of inter-organizational processes. This paper focuses on the development in e-business system adoption and deployment in the support of supply chain management.

HL Lee, S Whang E-business and supply chain management .the main purpose of the study is to clarify the impact of E-commerce on supply chain management and E-marketplace usage in the companies that use B2B E-commerce in Chennai city. After executing the analysis to study hypotheses; the study concluded the following results:- the moderate level of perceived benefits of E-commerce application in companies that use B2B E-commerce. The study also indicate the moderate level of E-marketplace usage as well as Supply chain management for those companies.

Arun Rai, Centerr for process Innovation and department computer information system Georgia state University, USA Best exemplar suggest that digital platform play critical role in managing supply chain activities and partnership that generate performance gains for firms. However there is limited academic investigation on how and why information technology can create performance gain for firm in a supply chain management(SCM).

Lisa R. William, Terry L. Esper, John Ozment,(2002) “The electronic supply chain: its impact on the current and future structure of the strategic alliance, partnership and logistic leadership”, International Journal of physical distribution &logistic management. The advent of the internet and electronic communication has enable companies to be more responsive to their customer. However the same technological advancement are changing the marketplace and providing an impetus for changes in stragic alliance and partnership structures. Successful leaders of the futre will have to understand how to operate in the new marketplace and with evolving organizational structure where alliance and partnership are changing.

Hau L. Lee and seungin Whang, Stanford university E-business the uses of Internet based computing and communication to execute both front-end and back-end business process- has emerged as a key enabler to drive supply chain integration. Business can use the internet to gain global visibility across their extend network of trading partner and help them respond quickly to a range of variable from customer demand to resource shortages. By adopting e-business approach business can reap the benefit of supply chain integration reduced costs, increased flexibility, faster response time more rapidly and effectively.

Aysegul Sarac, Nabil Absi, Stephane Dauzere-Peres, RFID Technologies may improve potential benefit of supply chain management through reduction of inventory losses increase of the and speed of processes and improvement of information accuracy various RFID system can be obtained by combining different tags, reader, frequencies and levels of tagging etc. The cost potential profit of the each system change in a wide range.

CHAPTER 3 – RESEARCH METHODOLOGY

3.1. Introduction:

This chapter is divided into the following Five section: Research Design, Data collection, Primary data, secondary data, Sample Technique.

3.2. Research Design:

“Research means different things to different enterprises” and the intention behind it are to investigate innumerable data, theories, experience concept and law. “The procedural framework within which the research is conducted” is the definition of research methodology. The two broad and distinct approach to social research cover the Quantitative and Qualitative method of enquiry.

The quantitative paradigm on the other hand intends to gain to a deeper understanding, knowledge and insight into a particular situation or phenomenon, by providing answers to questions of ‘how?’ rather ‘what?’. Unlike quantitative research which occurs in natural settings, quantitative research is where hypotheses are established.

3.3. Data Collection:

The data required for understanding will be collected the from the stores within Medavakkam. In order to conducted survey questionnaire is given to store in order to find out their view on the e-commerce. And those responses are collected in a spread sheet and further analysis was done.

The data collection method in this particular research comprises 30 different stores: namely primary data and secondary data. One needs to be carefully using secondary data as maybe the collected data may be based as the collector of that original data might have highlighted only a partial picture or another aspect may be that data may be quite old and also the quality could be unknown.

3.3.1. Primary Data

In this study, the primary data is collected through well-formed structured questionnaire. The questionnaire consists of quantitative and qualitative choice and respondents are asked to choose the one choice which suits them the best amongst the choices.

3.3.2. Secondary Data

Secondary data is all the information collected for purpose other than the completion of a research project and it's used to gain initial insight into the research problem. Source of secondary data include the internet, libraries, company reports, newspapers etc. secondary data was collected from journals and Research articles to support the research.

Thus the study carried out has analyzed the primary data with the analysis tool and validation of the secondary data.

3.4. Sample Technique

In this study the sample strategy used is Convenience Sampling. The sample size is 30.

3.5. Study Hypotheses

Based on the study problems and the literature review, the research hypotheses are:

H1: E-commerce benefits have a positive direct effect on supply chain management at level ($\alpha \leq 0.05$).

H2: E-commerce benefits have a positive direct effect on e-marketplace usage at level ($\alpha \leq 0.05$). H3: E-marketplace usage have a positive direct effect on supply chain management at level ($\alpha \leq 0.05$).

H4: E-commerce benefits have a positive indirect effect on supply chain management with e-marketplace usage as a mediator at level ($\alpha \leq 0.05$).

CHAPTER 4 – DATA ANALYSIS AND INTERPRETATION

4.1. DATA ANALYSIS

Analysis of data is a process of inspecting, cleaning, transformation, and modeling data with the goal of discovering useful information, suggesting conclusions, and supporting decision making. Data analysis has multiple of names, in different business, sciences, and social science domains.

Data mining is a particular data analysis technique that focuses on modeling and knowledge discovery for predictive rather than purely descriptive purposes. Data has been collected through questionnaire method and transformed into useful information for the purpose of research. For transforming data and representing data useful information bar chart and pie chart has been used. Information gained from the various representation has been interpreted so that it can easily be understood.

For the purpose of analysis, various statistical tools that will be used for the research purpose are web technologthe purpose of research. For transforming data and representing data useful information bar chart and pie chart has been used. Information gained from the various representation has been interpreted so that it can easily be understood.

For the purpose of analysis, various statistical tools that will be used for the research purpose are web technology, Microsoft excel data analysis package. Also hypothesis test will be done on certain parametric and non-parametric sample data. For the purpose of hypothesis testing Chi-Square has been used.

Data analysis has been done keeping in view that it meets the objectives of the research project. All statistical tools used has helped for summarizing the project data and building supporting information required for the project.

THE ANALYSIS IS DONE ON THE FOLLOWING BASIS ACCORDING TO THE DATA COLLECTED FROM THE VARIOUS STORES

4.1.1 Categories of Business

Sample of 30 various stores has been taken into consideration and following is the frequency distribution of the finding

Table 4.1: Categories of Business

S NO	Particulars	No. of Respondents	Percentage
1.	Cloth store	10	30
2.	Logistic solution	3	10
3.	Fast food	5	10
4.	Retail stores	10	30
5.	Travel and Tours	1	10
6	Other	1	10
		30	100

Interpretation:

On the basis of responses collected following information was found:

- 30% of the respondent store are engaged in the cloth store.
- 10% of the respondent store are engaged Logistic Solution.
- 10% of the respondent store are engaged Fast food.
- 30% of the respondent store are engaged Retail stores.
- 10% of the respondent store are engaged Travel and tour and 10% belonged to other Business categories

Chart4.1: Categories of Business

4.1.2. Preference Given TO Way of Procuring:

Table 4.2: Preference Given TO Way of Procuring

S NO	Particulars	No. of Respondents	Percentage
1.	Online	28	92
2.	By phone	2	8
3.	In person	0	0
	Total	30	100

Interpretation:

Various 30 Respondent when asked about the way of procuring following data was received:

- 92% Preferred Online Procurement.
- Rest Preferred procuring through phone i.e.8% gave preference to telecommunication for placing order.

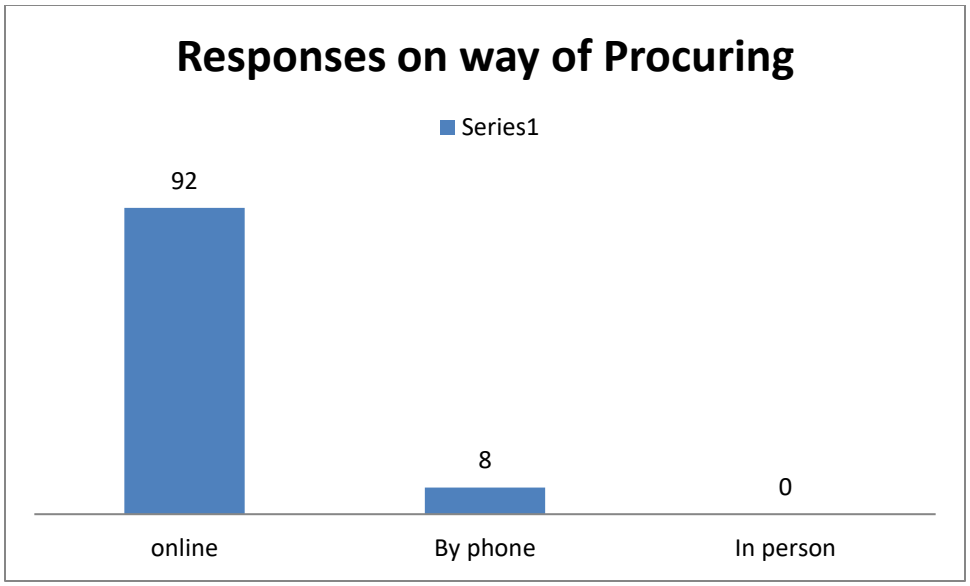


Chart4.2: Preference for Way of Procuring

Table 4.3: Preference Given TO Way of Selling

S NO	Particulars	No. of Respondents	Percentage
1.	Online	6	13.33
2.	By phone	2	10
3.	In person	22	76.67
4.	Other	0	0
		30	100

Interpretation:

As Per responses collected from various 30 store it was found that:

- 13.33% Would prefer to sale online.
- 10%would like to make sale through phone.
- 76.67% Preferred to sale their product from their product from their physical store itself.

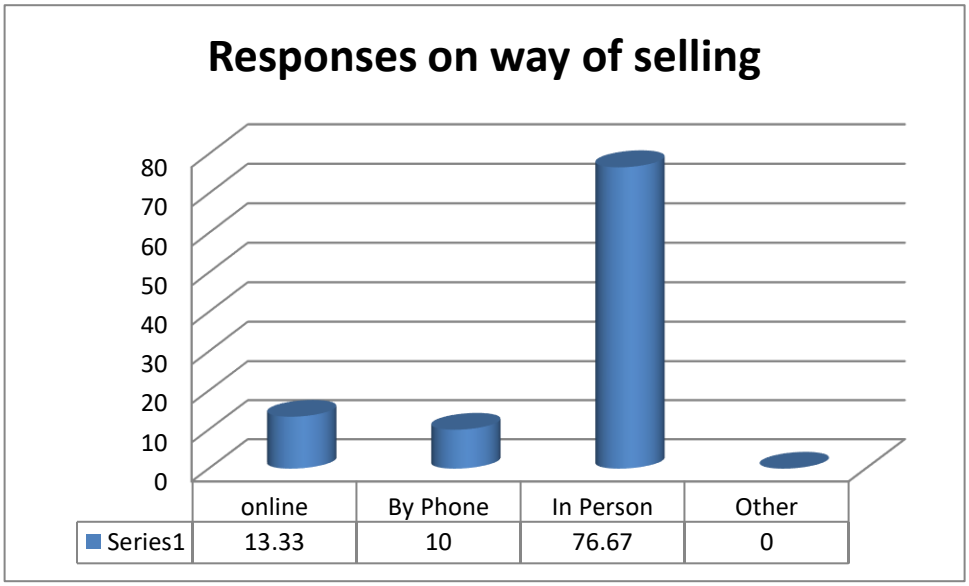


Chart4.3: Preference for way of selling

Table 4.4: Replenishment Cycle

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	11	37
2.	High	10	33
3.	Average	7	23
4.	Low	2	7
5.	Very low	0	0
	Total	30	100

Interpretation:

From the data collected from various 30 stores it is founded that:

- 37% of the respondents have very high Replenishment cycle
- 33% have high replenishment cycle.
- 23% have average and 7% have low replenishment cycle.

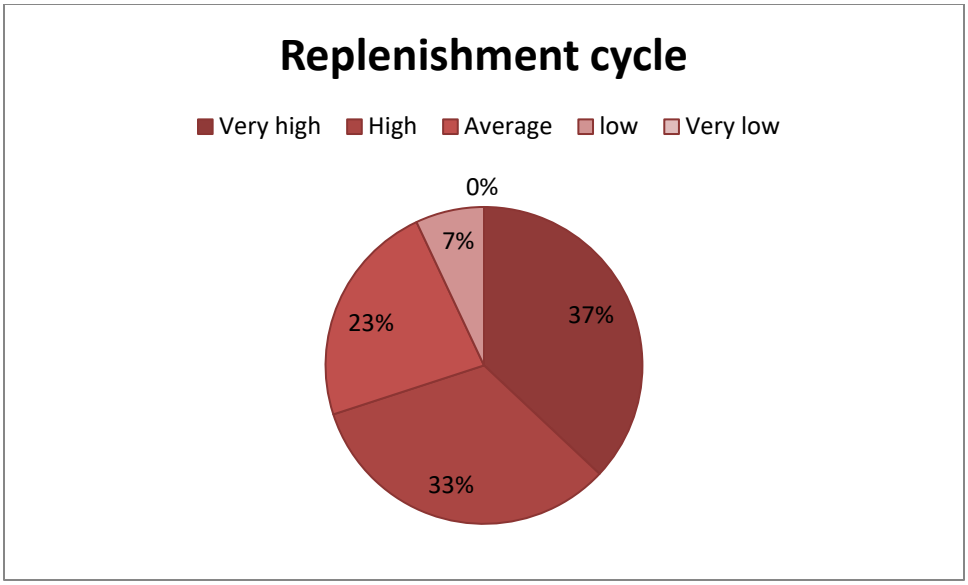


Chart 4.4: Replenishment Cycle

Table 4.5: Replenishment Cost

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	0	0
2.	High	3	10
3.	Average	12	43
4.	Low	12	40
5.	Very low	3	7
	Total	30	100

Interpretation:

From analysis of data collected through primary data collection method it is found that:

- 10% of the stores has high replenishment cost.
- 43% has average replenishment cost.
- 40% have low replenishment cost.
- 7% has very low replenishment cost when replenishment process is done through e-commerce.

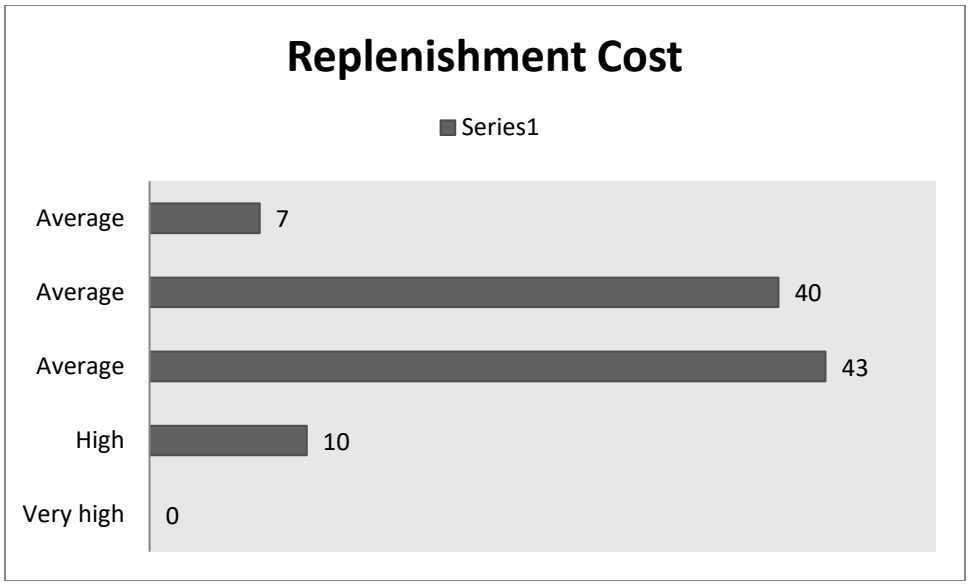


Chart 4.5: Replenishment cost

Table 4.6: Frequency of Placing Order

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	4	13
2.	High	14	47
3.	Average	12	40
4.	Low	0	0
5.	Very low	0	0
	Total	30	100

Interpretation:

From the analysis of data following information has been derived:

- 13% of the stores has very high tendency of placing order.
- 47% has high tendency of placing order.
- 40% has average tendency of placing order.

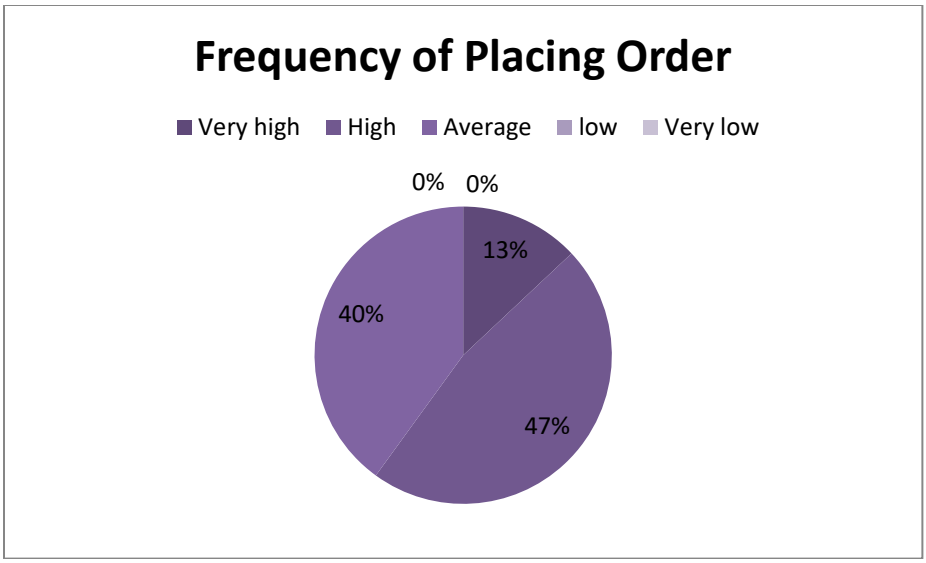


Chart 4.6: Frequency Of Placing Order

Table 4.7: Frequency of selling

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	6	20
2.	High	13	44
3.	Average	10	33
4.	Low	1	3
5.	Very low	0	0
	Total	100	100

Interpretation:

As per data collected following information has been found:

- 20% of the respondent has very high frequency of selling goods.
- 44% has high frequency of selling goods.
- 33% has average frequency and 3% has low frequency of selling goods.

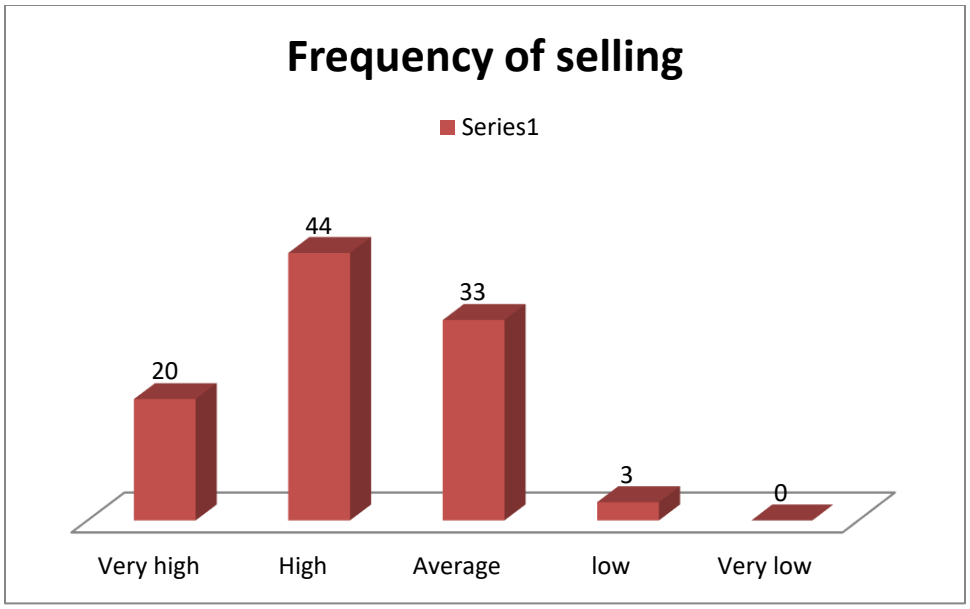


Chart 4.7: Frequency of Selling

Table 4.8: Cost Incurred In Flow of Goods to Customer

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	0	0
2.	High	4	13
3.	Average	15	50
4.	Low	10	34
5.	Very low	1	3
	Total	30	100

Interpretation:

From the analysis of the data following information has been found:

- 13% of the respondent believe that they have to incur high cost for flow of goods to customer.
- 50% believe that cost incurred by them is average.
- 34% believe that cost incurred by them is low.
- Remaining 3% believe that cost incurred by them for flow of goods to customer is very low.

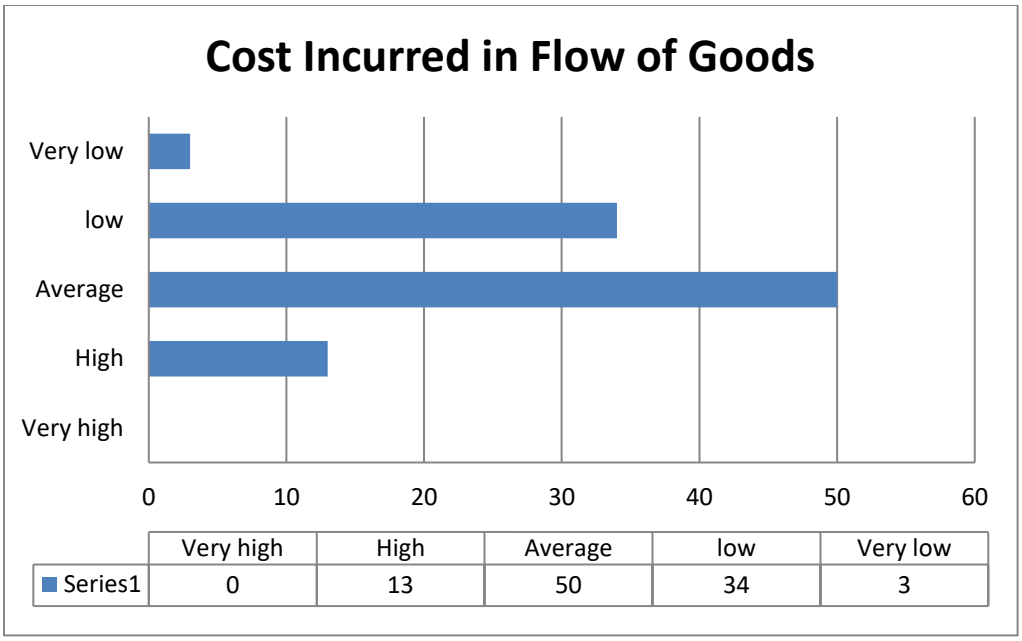


Chart 4.8: Cost Incurred in flow of Goods

Table 4.9: Speed of Delivery of the Product

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	3	10
2.	High	18	60
3.	Average	9	30
4.	Low	0	0
5.	Very low	0	0
	Total	30	100

Interpretation:

From the analysis of data collected following information has been derived:

- 10% of the respondents thinks that their delivery speed for the products ordered is very high.
- 60%thinks that they have high delivery speed of the product.
- Remaining 30% thinks that their delivery is of average speed.

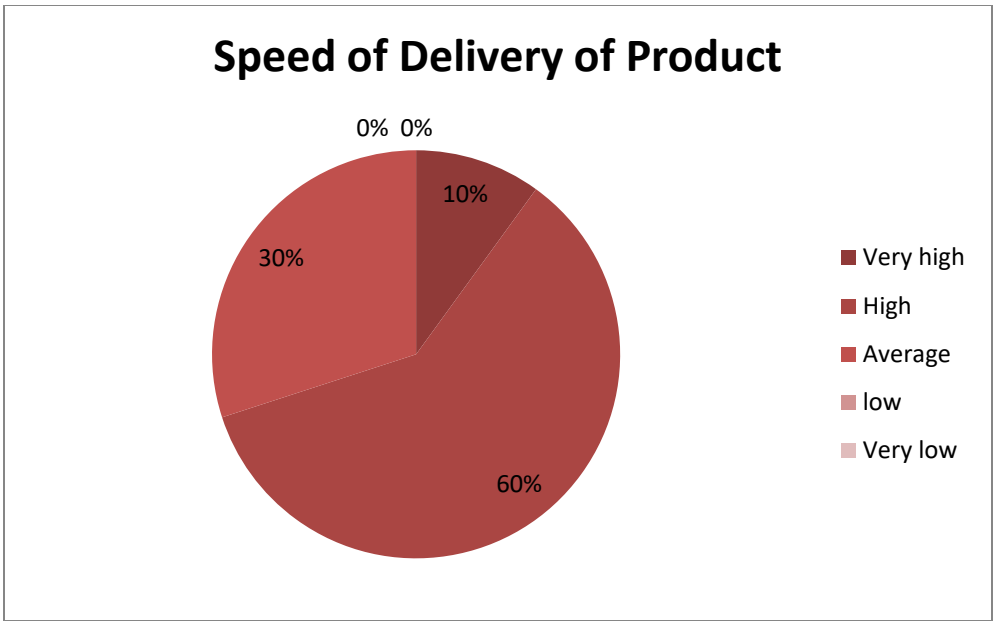


Chart 4.9: Speed of Delivery of the Product

Table 4.10: Price of the Product

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	0	0
2.	High	6	20
3.	Average	17	57
4.	Low	6	20
5.	Very low	1	3
	Total	30	100

Interpretation:

From the responses following information has been derived:

- 20% of the stores believes that price of the product that they have in their store is high.
- 57%believes that the product they have in their store is of average price.
- 20% believes to have the products of low price and 3% believe they have cheapest product.

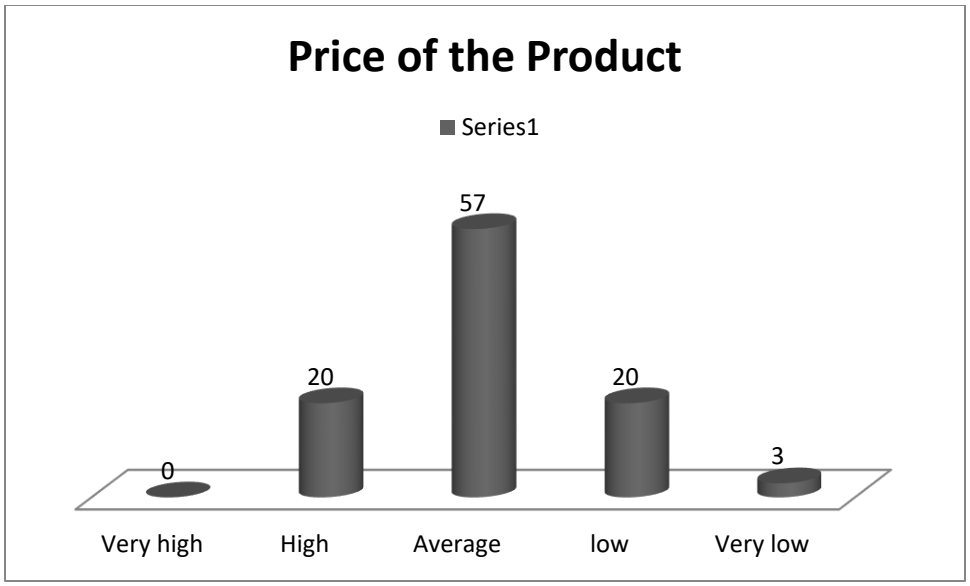


Chart 4.10: Price of the Product

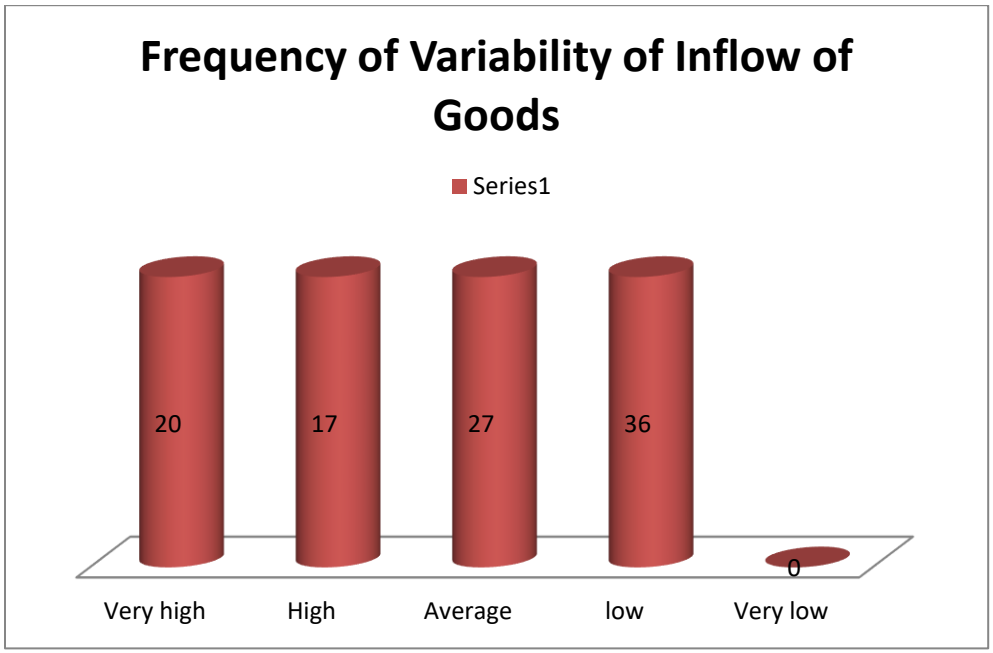
Table 4.11: Frequency of Variability of Inflow of Goods

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	6	20
2.	High	5	17
3.	Average	8	27
4.	Low	11	36
5.	Very low	0	0
	Total	30	100

Interpretation:

From the Analysis of the data it is seen that:

- 20% of the store believe that they have very high variability of the inflow of goods.
- 17% believes to have high variability of inflow of Goods.
- 27% believes to have average variability inflow of goods.
- Remaining 36% believes that they have low variability of inflow of goods to their respective store.



4.11. Frequency of Variability of Inflow of Goods

Table 4.12: Frequency of Variability of outflow of Goods

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	2	7
2.	High	10	33
3.	Average	11	37
4.	Low	7	23
5.	Very low	0	0
	Total	30	100

Interpretation:

From the analysis of the data collected following information has been derived:

- 7% of the store has very high variability of outflow of goods from their stores.
- 33% has high variability of outflow of goods.
- 37% has average variability and 23% has low variability of outflow of goods.

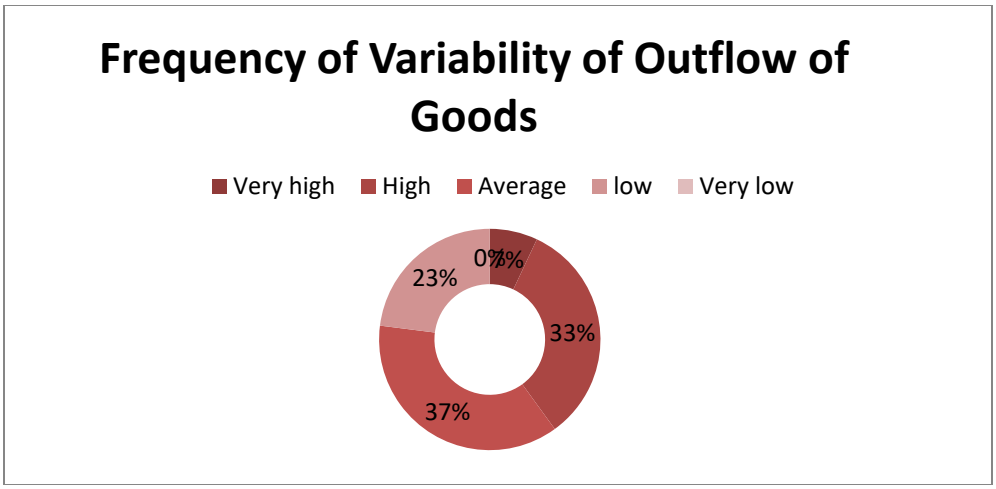


Chart 4.12: Frequency of Variability of Outflow of Goods

Table 4.13: Speed of Overall Flow of Goods

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	4	13
2.	High	8	27
3.	Average	18	60
4.	Low	0	0
5.	Very low	0	0
	Total	30	100

Interpretation:

According to analysis of the responses from the respondent following information has been found:

- 13% of the respondent believe that they have very high flow of product throughout their supply chain.
- 27% believe to have high speed of overall flow of their product.
- Remaining 60% believe to have average speed in overall flow of product.

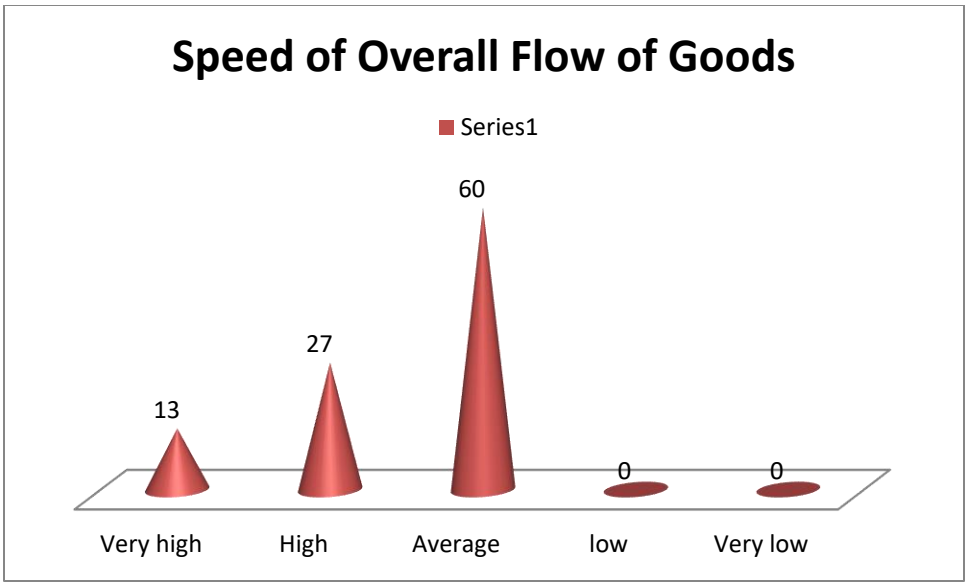


Chart 4.13: Speed of Overall Flow of Goods

Table 4.14. Availability of Product

S NO	Particulars	No. of Respondents	Percentage
1.	Very high	21	70
2.	High	9	30
3.	Average	0	0
4.	Low	0	0
5.	Very low	0	0
	Total	30	100

Interpretation:

On the basis of responses collected from the 30 various respondent following information has been derived:

- It has been seen that 70% of the stores believe to have very high availability of the goods in their stores.
- Remaining 30% believe to have high availability of goods in their stores.

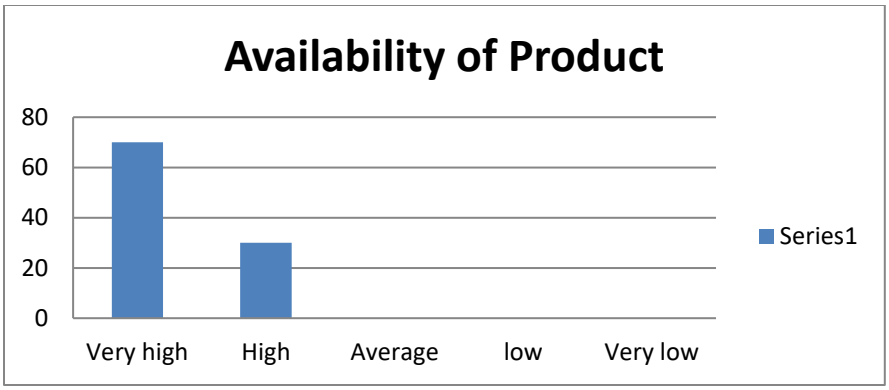


Chart4.14: Availability of Product

Table 4.15. Effective Procurement Method

S NO	Particulars	No. of Respondents	Percentage
1.	Online	26	86
2.	Phone	3	10
3.	In person	1	4
	Total	30	100

Interpretation:

From the responses collected from various 30 stores about effective procurement method it was found that:

- 86% believe that online procurement is best way to procure the Merchandise.
- 10% believed that procuring through phone is best .
- And rest 4% believed in meeting with vendor in person for procurement of merchandise will be best for the store.

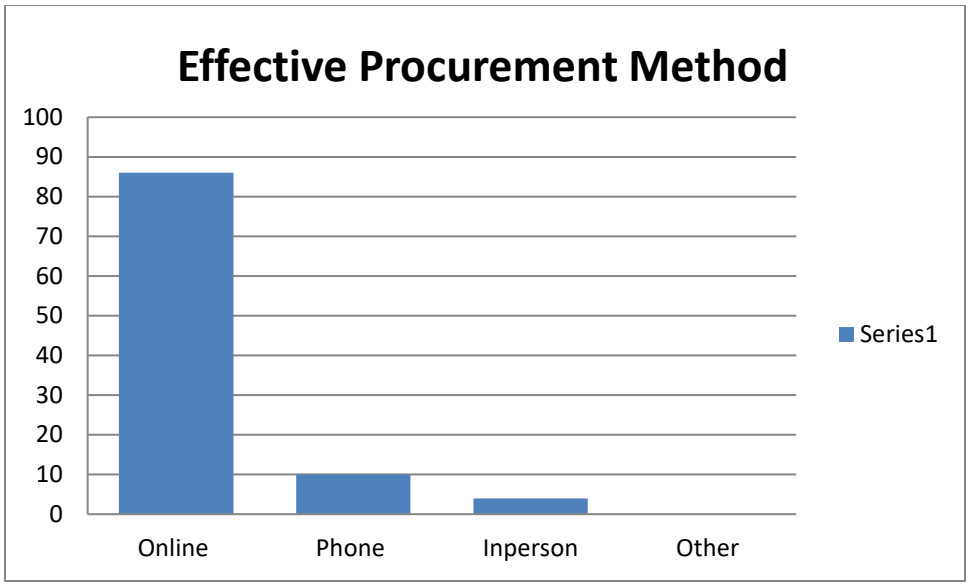


Chart 4.15: Effective Procurement Method

Table: 4.16. Effective Selling Method

S NO	Particulars	No. of Respondents	Percentage
1.	Online	6	23
2.	Phone	5	14
3.	In person	19	63
4.	other	0	0
	Total	30	100

Interpretation:

From the responses collected from various 30 store about the selling method that stores would like to implement following information was found:

- 23% believed online selling as the best method for selling their goods.
- 14% believed in selling through phone.
- And Remaining 63% believed in selling in phone as one of the best way for selling the products.

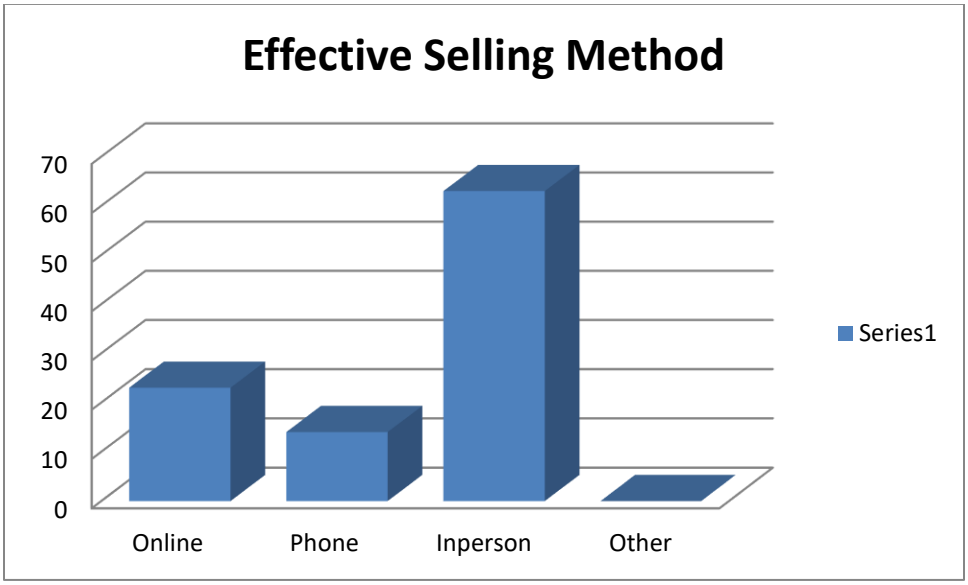


Chart 4.16: Effective Selling Method

Table: 4.17. E-commerce and customer Management

S NO	Particulars	No. of Respondents	Percentage
1.	Yes	16	54
2.	No	14	46
3.	Total	30	100

Interpretation

On the basis of data collected following information has been derived:

- 54% of the respondents believed that E-Commerce helps in customer management.
- And remaining 46% of the respondent believed that ecommerce has no role to play in the customer management at their outlets.

Chart4.17: E-commerce and customer Management

Table: 4. 18. E-Commerce and JIT

S NO	Particulars	No. of Respondents	Percentage
1.	Yes	27	90
2.	No	3	10
3.	Total	30	100

Interpretation

From the analysis of answer collected through questionnaire following information has been found:

- 90% of the respondents believes that E-commerce help in implementing of JIT at their stores.
- And remaining 10% don't consider ecommerce as a major factor which help in implementing JIT.

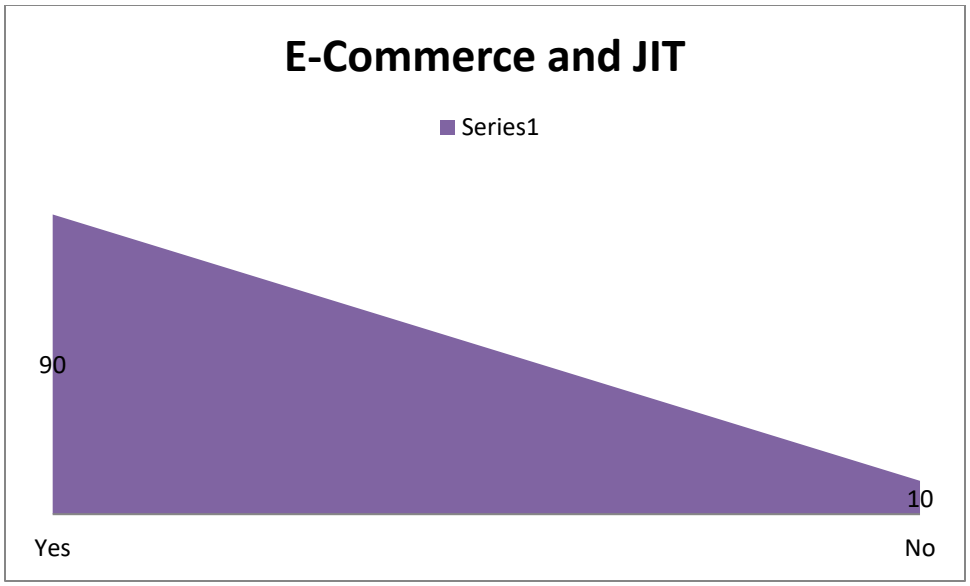


Chart 4.18: E-Commerce and JIT

Table: 4.19. Tracking of Goods

S NO	Particulars	No. of Respondents	Percentage
1.	Online	24	80
2.	Manually	6	20
3.	Total	30	100

Interpretation

On the basis of responses given by various stores following information has been derived:

- 80% of the total respondent track their goods in store through online system.
- And remaining 20% depends on their Sales force at their store for tracking of the goods.

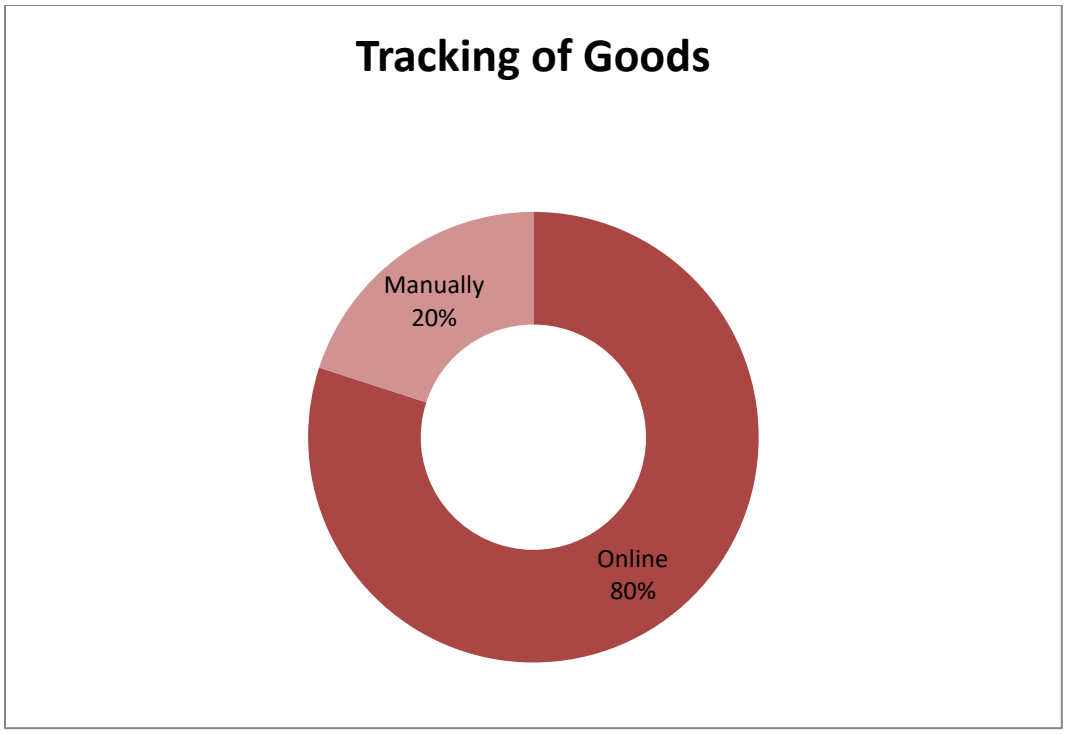


Chart 4.19: **Tracking of Goods**

Table: 4. 20. Technology used in Tracking

S NO	Particulars	No. of Respondents	Percentage
1.	Barcode	27	90
2.	RFID	0	0
3.	Total	30	100

Interpretation

- 90% of the store used online as tracking system for the goods at the store in maintaining inventory. All of them is seen to have implemented Barcode for tracking of their goods at the store. RFID has not been implemented in any of the store because in fractured cost needed would be very high.

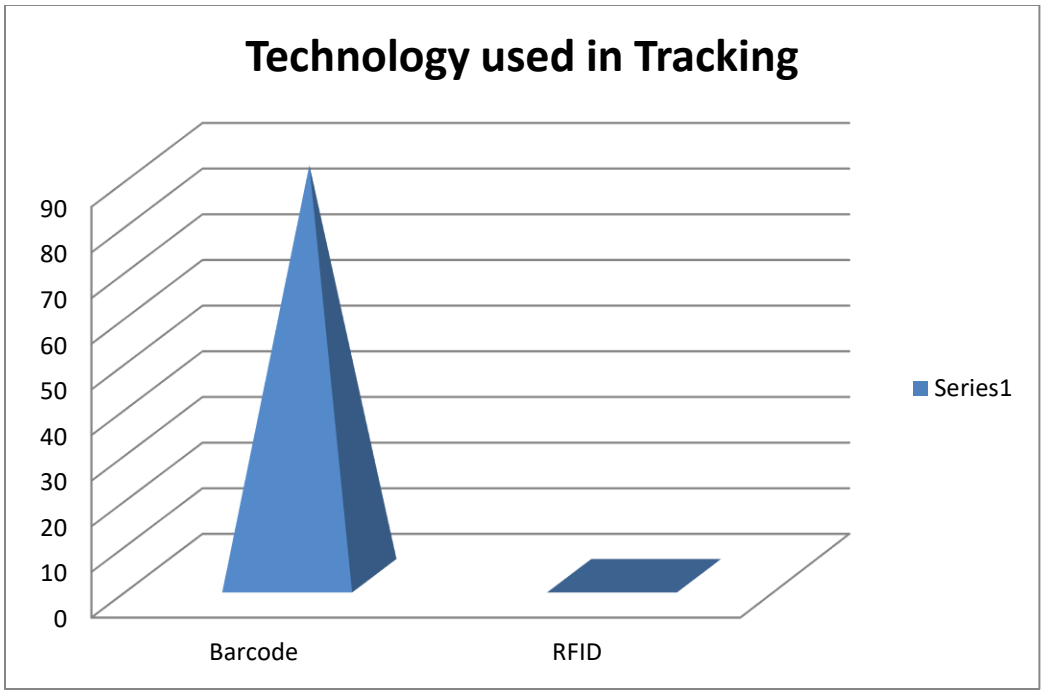


Chart 4.20: Technology used in Tracking

Table:4.21.Online Tracking Increase Speed of Goods Flow.

S NO	Particulars	No. of Respondents	Percentage
1.	Yes	26	86.95
2.	No	4	13.5
3.	Total	30	100

Interpretation:

From the analysis of the responses it has been found that:

- Out of total enterprises which have implanted online tracking system 86% of the store believes that online tracking help to increase the speed of flow of goods.
- And remaining 14% believe that online tracking does not help to increase the speed of flow of goods.

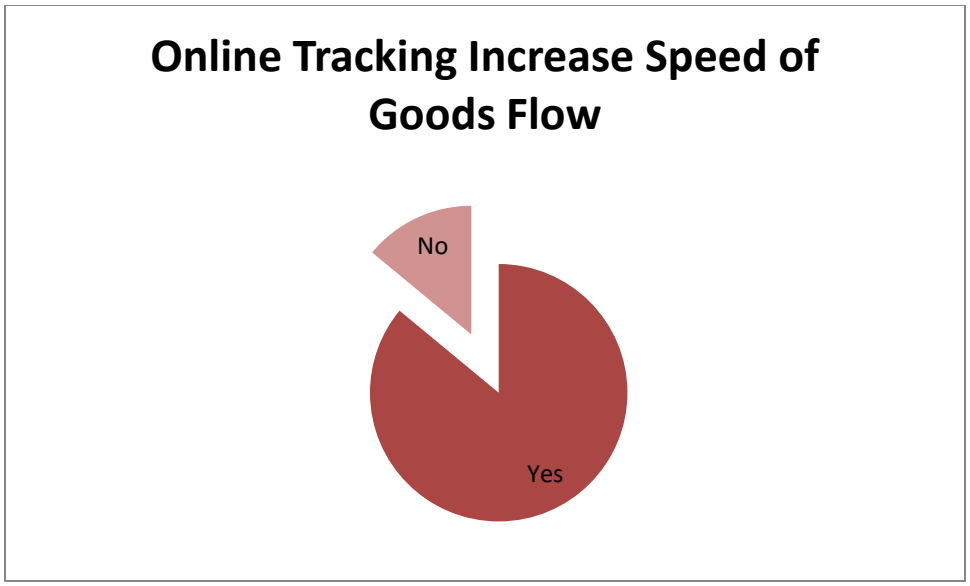


Chart 4.21: Online Tracking Increase Speed of Goods Flow

Table: 4.22. Cost Reduction and E-Commerce

S NO	Particulars	No. of Respondents	Percentage
1.	<30%	13	43.33
2.	30-60%	16	53.33
3.	60-90%	1	3.33
4.	Above 90%	0	0
	Total	30	100

Interpretation

From the analysis of the collected data following interpretation can be drawn:

- 44% of the respondent believes that cost has been reduced by less than 30% of the initial cost.
- 53% believes that cost of procurement and selling has been reduced by 30-60%
- 3% of the store believe that cost has been decreased by 60-90% for the procurement and selling process after implementation of e-commerce.

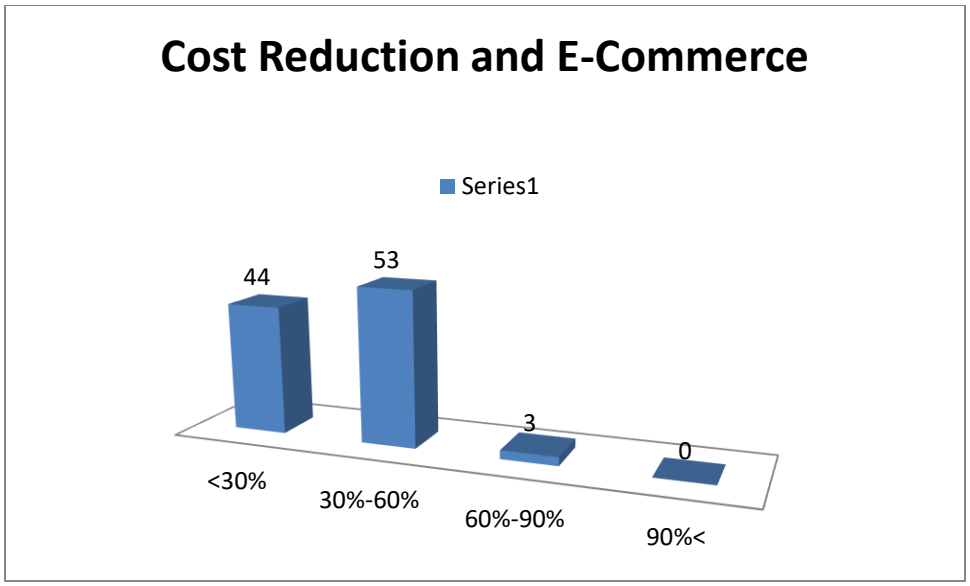


Chart 4.22: Cost Reduction and E-Commerce

Table: 4.23. Speed and E-Commerce

S NO	Particulars	No. of Respondents	Percentage
1.	<30%	16	53.33
2.	30-60%	7	23.33
3.	60-90%	6	20
4.	Above 90%	1	3.33
	Total	30	100

Interpretation

As per the analysis of responses given by the respondent of various stores following interpretation can be derived:

- 53% of the respondent believe that with the implementation of ecommerce speed of flow of product has been increased by less 30%.
- 24% of the respondent believes that speed of flow of product of the product has increased by 30-60%.
- 20% of the respondent believe that speed of flow of the product has been increased by 60-90%.
- 3% of the respondent believe that speed of flow of the product has been increase by more than 90%.

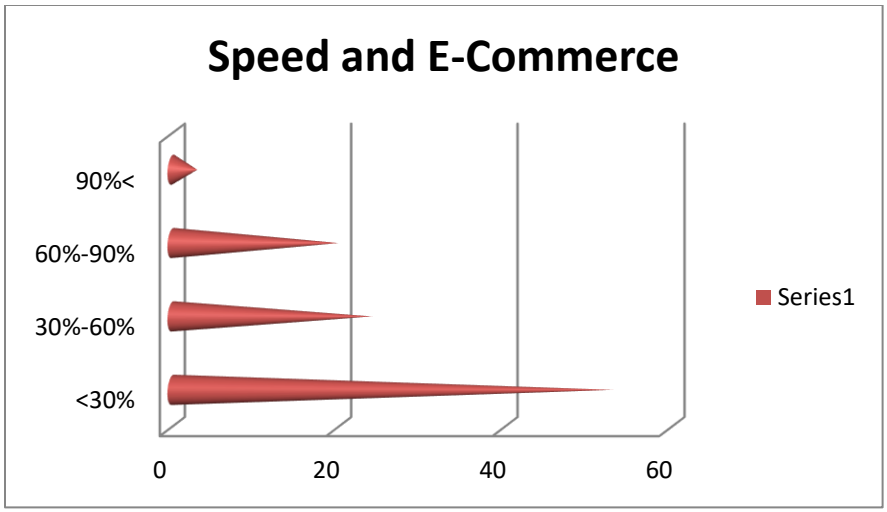


Chart 4.23: Speed and E-Commerce

4.2. HYPOTHESIS TESTING

4.2.1. Research Hypothesis:

A statistical hypothesis is a scientific hypothesis that testable on the basis of observing a process that is modeled via a set of random variables. A statistical hypothesis test is a method of statistical inference used for used for testing a statistical hypothesis.

A test result is called Statistically significant if it has been predicted as unlikely to have occurred by sampling error alone, according to a threshold probability—the significance level. Hypothesis tests are used in determine what outcomes of a study would lead to a rejection of the null hypothesis for a pre-specified level of significance.

Chi-Square Analysis is considered as test statistics.

The Chi- Square analysis used to test the statistical significance of the observed association in a cross-tabulation. It determining whether systematic associate exists between the variables. The test is conducted by comparing the cell frequencies that would be expected if no association were present between the variable, given the existing row and the column totals. These expected cell frequencies denoted Fe are then compared to the actual observed frequencies by Fo , found in the cross tabulation to calculate the chi-square statistic. The

greater the discrepancies between the expected and actual frequencies, the largest the value of the statistics.

Testing is done on the basis of responses collected for question number 13 of questionnaires.

Null Hypothesis(H0): E-Commerce is not beneficial for cost reduction in supply chain.

Alternative hypothesis(H1): E-Commerce is beneficial for cost reduction in supply chain.

Table Showing calculation of Cha-Square:

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Parameter	Observed	Expected	o-e	(o-e)^2	[(o-e)^2]/e
Less than 30	12	7.5	4.5	20.25	2.7
30-60	16	7.5	8.5	72.25	9.63
60-90	2	7.5	-5.5	30.25	4.03
90 and above	0	7.5	-7.5	56.25	7.5
Total	30				23.86

The Calculated value of Chi-Square is 23.86

Expected =Number of sample /n

=30/4

=7.5

Interpretation of Testing:

To determine whether a systematic association that exists, the probability of obtaining a value of Chi-square as large as or large than the one calculate from the cross- tabulation is estimated. An important characteristics of the Chi-square statistics is the number of degrees of freedom (df) Associated with it.

Here, degree of freedom (df) = (n-1) = (4-1) = 3

To illustrate, determined level of significant is 5%(0.05) meaning that the finding has a fire percent (0.05) chance of not being true, which converse of 95% chance of being true

So, tabulated value of Chi-square=7.82

From the cross-tabulation given in the above table, the calculated value of chi-square had a value of 23.86 is greater than the tabulated value of 7.82 and lies in the rejected region, hence null hypothesis is rejected.

Since Chi-square calculated value>than the Chi-square tabulated value, Null hypothesis is rejected.

Therefore it can said that E-Commerce is beneficial for cost reduction in supply chain.

Following testing is done on the basis of responses collected for question number 14 of questionnaire.

Null Hypothesis(H0) : E-commerce is not beneficial for increasing speed of supply chain.

Alternative Hypothesis(H1):E-commerce is beneficial for increase speed of supply chain.

Parameter	Observes(o)	Expected(e)	o-e	(o-e)^2	[(o-e)^2]/e
Less than 30	16	7.5	8.5	72.25	9.63
30-60	7	7.5	-0.5	0.25	0.03
60-90	6	7.5	-1.5	2.25.	0.3
90 and above	1	7.5	-6.5	42.25	5.63
Total	30				15.59

The calculate value of Chi-square is 15.59.

Interpretation of Testing:

To determine whether a systematic association that exists, the probability of obtaining a value of Chi-square as large than the one calculate from the cross-tabulation is estimated. An important characteristics of the Chi-square statistics is the number of degrees of freedom (df) associated with it.

Here, degrees of freedom (df) =(n-1) = (4-1) =3

To illustrate determine level of significant level of significant is 5% (0.05) meaning that the finding has percent (0.05) chance of not being true, which is converse of a 95% chance of being true.

So, tabulated value of Chi-square = 7.82.

From the cross tabulation given in the above table, the calculate value of Chi-square had a value of 15.59 is greater than the tabulated value of 7.82, and lies in the rejected region, hence null hypothesis is rejected.

Since the Chi-square calculated value >than the Chi-square tabulated value, Null Hypothesis is rejected.

Therefore it can be said that E-commerce is beneficial for increasing speed of supply chain.

CHAPTER 5

FINDING, SUGGESTIONS AND CONCLUSIONS

5.1. FINDINGS

Project was undertaken with the view of finding how implementation of ecommerce has led to reduction in supply chain cost and increase the speed of the flow of the goods in supply chain. Survey method that has been used is convenience survey. For collecting of data that has been used in this research project both primary and secondary data has been used. Primary data has been collected through questionnaires method and for secondary data various journals, books and previous research paper were taken into consideration. Below given are the observation that has been found through questionnaires survey:

- 96% of the store uses online method for procurement and 10% uses telecommunication for this purpose whereas 8% of the respondent s use both.
- 23.33% of the respondent give preference to online selling, 10% give preference to selling of product through phone and 73.66% of the respondent given preference to selling of their product i.e. selling of product through physical store.
- From the response given it has been found that online method of procurement is the best procurement method.
- Most of the store believes that selling in the person is best way selling product.
- As per the respondent of questionnaire it has been found that 53.33% of the respondent believe that ecommerce has helped them to manage their customer where as 43.67% do not believe that ecommerce has helped in customer management.
- From the respondent of the responses it is clear that ecommerce has helped store to implement JIT at their stores.
- It has been that other than fast food stores all other stores uses online tracking system for their product in stores.
- All the store which have implemented online tracking system use barcode for tracking of products.
- About 67% of the store which has implemented online tracking system believe that online tracking helped them increase their speed.
- From the responses given by various stores it has found that ecommerce has helped to reduce the supply chain cost to extent.
- Ecommerce has also help to increase the efficiency of supply chain.

Apart from the observation that has been discussed on the basis of primary data some one relevant information was found when going through various journal and research paper. It has been found that ecommerce has best been utilized by travel and ticketing companies. IRCTC is seen one of organization which has been able to reach huge number of customer for providing tickets.

It has also been found through hypothesis testing that ecommerce has made supply chain more efficient and responsive. Here efficiency refer to reduction in cost and ecommerce in supply chain.

As mentioned earlier in the introduction phase of research paper the objectives of the research is to find out to what extend has ecommerce benefitted supply chain management. So for complying with the objectives two chi-square test were done which shown that implementing ecommerce has helped business establishment to increase their efficiency and responsiveness.

5.2. SUGGESSTION

All the issues raised in the research question has been addressed through this research paper. Despite of trying to solve all the issues raised here still some of improvement for this research paper can be seen. These area of improvement which reader of research project can focus on are as follow:

- This research paper mainly deals with impact of e-commerce on supply chain management of B2B business but the utilization of ecommerce is being increased at massive rate in B2C business so this area can be further taken into consideration for further study.
- This research is based on data collected with the Medavakkam and its surrounding area of Chennai, therefore it may not give the clear picture of whole population so the result may vary if the sample is taken from various geographical area.
- New technologies is being developed every now and then to support supply chain; so the result may vary if some of the technologies brings majors shift in the role of component supply chain.

- Around 90% of the global e-commerce transactions are stated to be in the nature of B2B, leaving meager 10%as B2C ecommerce.
- Ecommerce has largely been implemented in ticketing and booking of hotels than any other form business.
- With the implementation of ecommerce supply chain efficiency and responsiveness can be increased.
- Ecommerce is major tool for successful implementation JIT in any business organization.
- Most of the store gives emphasis for online procurement but when it come to selling of their product they would like customer to visit their physical store.
- Currently, the inventory based consumer e-commerce model alone provides direct employment to approximate 40000 people and is estimated to cross 1 millon direst and 0.5 million indirect jobs by 2020.
- Consumer trust deficit and slow adoption of online payment method such as cash on delivery.

5.3. Conclusions

From the research conducted on the topic “Impact of Ecommerce on Supply Chain Management” following conclusions has been drawn:

Cost of supply chain management will reduce with implementation of e-commerce. This research objective is supported by the testing done during research period which concluded that e-commerce will help to the cost of supply chain.

Speed of flow of goods or services increases in supply chain when E-commerce is implemented. This statement of objective was also proved to be true when parameter regarding speed of delivery of data was tested using statistical testing.
A part from the objective below given are other conclusion that has been drawn from the research project.

- Supply chain can based totally on ecommerce infrastructure if connectivity of internet is of good quality in all regions.
- Ecommerce when integrated with supply chain flexibility can be achieved.
- Ecommerce has helped supply chain to increase efficiency and responsiveness.
- Ecommerce has helped supply chain to increase efficiency and responsiveness.
- Supply chain serviceability has been increased because of implementation of ecommerce.
- Ecommerce will play major role in India GDP by the end 2020.
- Ecommerce has helped the physical outlets in customer management by increase their responsiveness by making availability of products whenever necessary; this has only been because of ecommerce.

Therefore it can concluded that ecommerce has major role to play for increase efficiency and responsiveness of supply chain of any business establishment.

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APPENDIX 1

Abbreviations

B2B	Business to business
B2C	Business to consumer
B2B2C	Business to business to consumer
C2C	Consumer to Consumer
GDP	Gross Domestic Product
SCM	Supply chain Management
E-Commerce	Electronic Commerce
COD	Cash on delivery
Fe	Expected Outcome
Fo	Observed Data

APPENDIX 2

Questionnaire Prepares for Collection of Primary Data

Questionnaire:

1) Introduction

I am pursuing MBA at SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY affiliated with deemed University. As a part of our comprehensive project study, I have prepared a brief questionnaire. I assure you that the information provided by you will be used for academic purposes only and will not be anybody. Your participation in this survey is greatly appreciated.

2) Enterprise information

a) Name of the enterprise:……..

b) Year of operation

[ ]1-5 [ ] 5-10 [ ] 10-15 [ ] more than 15

c) Categories of business

[ ] cloth store [ ] logistic solution [ ] fast food [ ] retail store [ ] travel & tour

[ ] other

3) Method of Rating :

Please rate following on the basis of given criteria:

a) Have your Enterprise implemented Ecommerce?

[ ] Yes [ ] No

b) Preference given to the way of procuring

[ ]Online [ ] By phone [ ] In person [ ] other

c) Preference given to way of selling

[ ]Online [ ] By phone [ ] In person [ ] other

4)Please rate the Enterprise flow of goods by marketing (Tick) in the box Provided.

Parameter	Very High	High	Average	Low	Very Low
Replenishment Cycle.					
Replenishment cost.					
Frequency of placing order to supplier.					
Frequency of selling.					
Cost incurred for flow of goods to customer					
Speed of delivery of product					

5) Please rate the below on the basis of Enterprise operation by marketing (tick)

Parameter	1	2	3	4	5
Price of the product					
Frequency of variability inflow of goods					
Frequency of variability outflow of goods					
Speed of overall Flow of products					
Availability of product in enterprise					

6) What means of Procurement is the best for organization for effective product flow management?

[ ] Online [ ] Phone [ ] In person [ ] other

7)What means of selling is best for organization for effective product flow management ?

[ ] Online [ ] Phone [ ] In person [ ] other

8) Do E-commerce help in the customer management in enterprise outlet?

[ ] Yes

[ ] No

9)How does the enterprise track the flow of product?

[ ] Online

[ ] Manually

10) Do ecommerce help in implementation of JIT in this enterprise?

[ ]Yes

[ ] No

11)Which online tracking system has been used ?

[ ] Barcode

[ ] RFID

12) Does online tracking help to increase velocity of flow of product?

[ ] Yes

[ ] No

13) Ecommerce has helped to reduce the cost of procurement and selling by:

[ ] less than 30% [ ] 30-60% [ ]60-90% [ ] More than 90%

14) E-Commerce has increase the speed of flow of goods by:

[ ] less than 30% [ ] 30-60% [ ]60-90% [ ] More than 90%