

A STUDY ON IMPACT OF E-COMMERCE ON SUPPLY CHAIN MANAGEMENT

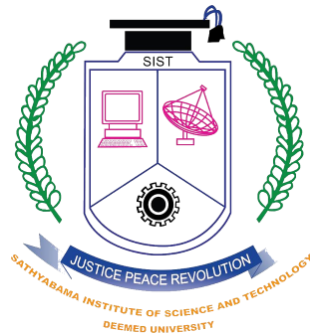
Submitted in partial fulfillment of the requirements for the award of

MASTER OF BUSINESS ADMINISTRATION

By

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**DEPARTMENT OF BUSINESS ADMINISTRATION
SCHOOL OF MANAGEMENT STUDIES**

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

Accredited with grade “A” by NAAC | 12B status by UGC | Approved by AICTE

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SATHYABAMA

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CATEGORY - 1 UNIVERSITY BY UGC**

SCHOOL OF MANAGEMENT STUDIES

BONAFIDE CERTIFICATE

This is to certify that this project report is the Bonafide work of BHUVANESHWARI.M (42410281) who carried out the project entitled “ **A STUDY ON THE IMPACT OF E - COMMERCE ON SUPPLY CHAIN MANAGEMENT**” under my supervision from September 2023 to December 2023 .

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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 efficiently 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 there is a huge impact of e-commerce 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

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.

Most companies principal goal is to maximise profits, regardless of size. It's the same with internet commerce (Kuzic, Fisher, & Scollary, 2002). Standing (2001) enumerated more than ten benefits associated with buying and selling online. Some of these advantages include cutting down on overhead costs, expanding your business's client base, shortening the time it takes to complete tasks, and making life easier for your current customers.

As technology and the internet have progressed, supply chain management (SCM) and online trade have benefited. To maximise the value a business offers its suppliers, buyer, distributors, and other stakeholder in the supply chain is the goal of supply chain management (SCM) supply chains that fully embrace the SCM idea should be much more efficient (Mentzer& John, 2001: Vorst, 2002) because they will be more interconnected, information will be entirely transparent, and value- adding processes will be allocated more effectively.

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 , ecommerce 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 CLASSIFICATION :

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:

E-Commerce Classification

 B2B

 B2C

 B2BC

 C2C

➤ 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 amazon.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:

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

1.1.4Infrastructure 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 Ecommerce 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 enterprise 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 E commerce 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 started 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, Amazon ,Jio mart, homeshop18 etc.

Overall, e-commerce including online retail in India constitutes a small fraction of total 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.

1.1.8Benefits 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

1.3Research Gap:

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

1.4Research 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 brand loyalty?
5. To what extent has ecommerce helped in customer management?

1.5 Objectives:

1. Asses the supply chain value is difference between the final product is worth to the customer and the effort the supply chain expends in filling the customer request.

- 2). Asses the efficiency gains in supply chain operation due to ecommerce integration.
3. Evaluate the changes in inventory management practices with the rise of online sales.
4. Investigate the role of technology adoption in enhancing supply chain responsiveness.

1.6 Study Delimitations :

The study scope deals with the following:

Human delimitations: the people which are using the online product with the useful in the ecommerce.

Place delimitations :questionnaire around the various people in chennai.

Time delimitations: the time absorbed to study accomplishment.

1.7 Study Limitations:

1. Implementing the study on the people that use e-commerce, especially, companies that works .
2. The study is limited to the people which are using the online product with the useful in the ecommerce.
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 people that use e-commerce, especially, companies that work in Chennai city. And it was limited to the general people, 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.

1.9 SCOPE OF THE STUDY:

- ❖ Examine how e commerce impacts relation ship with suppliers
- ❖ Evaluate the environmental impact of e commerce on supply chain management
- ❖ Examine the impact of e commerce inventory levels, demand forecasting, and overall inventory
- ❖ Assess the impact of e commerce on supply chain risk management.

1.10 NEED OF THE STUDY :

- ❖ A study can provide insight into how these technologies can be effectively integrated and leveraged for supply chain improvement.
- ❖ A study can shed light on the compliance challenges and opportunities in supply chain management , ensuring that business adhere to legal and ethical standard.
- ❖ E- commerce driven supply chain may face new types of risks, such as cyber threats and distribution in last mile delivery.

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 strategic alliance and partnership structures. Successful leaders of the future 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.

A, Gunasekarana, E.W.T. Ngaib, Supply chain management (SCM) as a global operation strategy is essential for contemporary business to survive. In an attempt to be more flexible, responsive, and competitive, business are reevaluating their operational strategy, processes, and technologies like the supply chain management (SCM) paradigm and information technology (IT). In order to provide the groundwork for future study, IT application in SCM have been grouped according to relevant criteria and then critically assessed. The result of this evaluation and analysis have informed recommendation for the use of IT to supply chain management , as well as proposals for future research.

Samuel Fosso Wamba, Elisabeth Lefebvre, Ygal Bendavid, and Louis A. Lefebvre. The major purpose of this paper is to analyse RFID technology and the electronic product code (EPC) network and their implications for business- to- business (b2b) ecommerce conducted through mobile devices. Using empirical data gathered from associated businesses in a supply chain, a pilot study examined and assessed many Scenarios integrating the RFID-EPC network. Sarv Devaraj, lee krajewski and jerry C. Wei state. Despite the benefit to connecting with customers and supplier, e-business technologies were found to have no direct on productivity cost, quality, flexibility, and timeless were shown to be unaffected by customer integration, while suppliers integration of e-business technologies with suppliers is directly responsible for the enhanced performance. In addition, there is a reciprocal impact between customer and supplier integration supporting the claim that companies who use e-business technology to achieve both forms of integration greatly outperform theircompetitors.

WHANG,S., and M. E. JOHNSON. The relationship between companies and their customers is changing dramatically as a result of the advent of the internet high transaction costa between partners, restricted access to essential information, and the challenge of maintaining complex interface across department all worked against supply chain integration in the past. The effects of the web on logistics operation are the topics of this essay.

Zillur Rahman (2004) use of internet in supply chain management a study of Indian companies”, industrial management & data system , the advent of the internet and electronic communication has enable companies to be more respective to their customers. However, the users of the same technologies advancements in business - to- business supply chain management are changing the market place itself. Successful supply chain management requires a change from managing individual function to integrating activities into key supply chain process. The advantages are far more than the efforts involved in accessing the final product , a seamless chain that operates fluidly and benefits the entire value chain by speeding up communication between customers and their suppliers, improving service quality, and reducing costs. In this articles, the author discusses how the internet is being used in the management of various areas of supply chain by India companies.

Jaana Auramo, jouni kauremaa kari tanskanen (2005) “ benefits of IT in supply chain management an explorative study of progressive companies international journal of physical distributors & logistics management. Based on the empirical studies five propositions are presented on the use and benefit of IT first successful companies have developed focused e- business solutions for improving customer service elements that are most important in their business, second improved efficiency allows company personnel to focus more on critical business activities third the use of e-business solution improves information quality, fourth e-business solution support solution planning collaborations and improved agility of the supply network finally to gain strategic benefit the use of IT has to be coupled with process redesign.

By this late stage, we can start to expect to see the increasing impact of supply chain synchronization initiatives in major companies, supply chain synchronization is in many ways the “ HOLY GRAIL” of current supply chain thinking. It will require e-commerce to work. It represents a world in which machine – driven making, combined with very, very smart human analysis will be able to synchronize and re- synchronize multi regional (if not global) supply chains on a real- time basis. The potential for this technology is huge however it is not simple. The first live simulators of synchronization were being five years ago- and the technology worked then, the sheer scale of the changing in boundaries that are required suggested that effective implementation by 2008 is still very ambitious.

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 people ” 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 within Chennai . In order to conducted survey questionnaire is given to people 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 60 different people 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 Techniques :

In this study the sample strategy used is Convenience Sampling. The sample size is 60.

3.5 Analytical tools:

Tool for testing the hypothesis(spss)

- Anova
- Correlation

ANOVA TEST :

One way ANOVA (analysis of variance) compares the mean of two or more independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different. One way ANOVA is a parametric test. This test is also known as : one – factor ANOVA.

CORRELATION :

Correlation analysis in research is a statistical method used to measure the strength of the linear relationship between two variable and compute their association.

3.6 STUDY HYPOTHESES:

HYPOTHESIS-1

H0 There is no significance difference between age and how often do you purchase goods online.

H1 There is a significance difference between age and how often do you purchase goods online.

HYPOTHESIS-2

H0 There is no significance difference between How often do you purchase goods online and Do you believe that ecommerce has reduce the overall costs in the supply chain.

H1 There is a significance difference between How often do you purchase goods online and Do you believe that ecommerce has reduce the overall costs in the supply chain.

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 technology 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 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 Anova and correlation has been used.

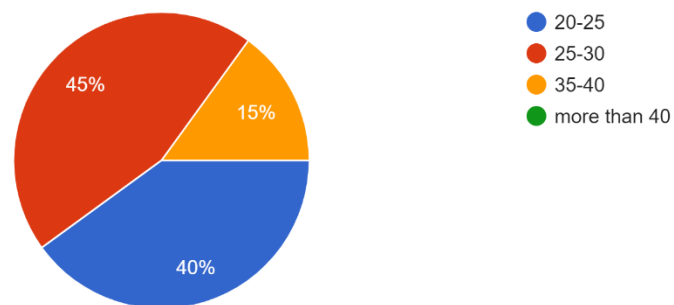
Data analysis has been done keeping in view that it meets the objectives of the research project. All statistical tools used has helped for summarizing the project data and building supporting information required for the project

THE ANALYSIS IS DONE ON THE FOLLOWING BASIS ACCORDING TO THE DATA COLLECTED FROM THE QUESTIONNAIRE:

4.1.1 AGE OF RESPONDENT

S no	Age of the respondent	No of respondents	percentage
1	20-25	24	40%
2	25-30	27	45%
3	30-40	9	15%
4	More than 40	0	0
total		60	100

2). Age
60 responses



interpretation

- ❖ 40% percentage of the respondents are under the age of 20-25
- ❖ 45% percentage of the respondents are under the age of 25-30
- ❖ 15% percentage of the respondents are under the age of 35-40

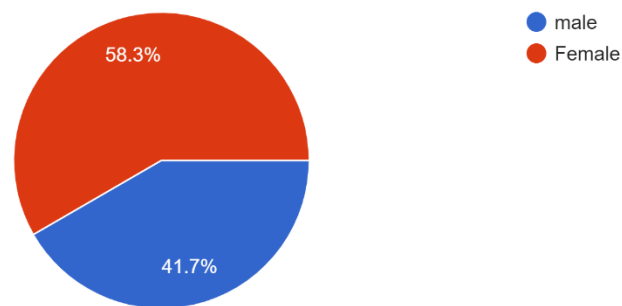
INFERENCE

Majority 45% percentage of the respondents are under the age of 25-30

4.1.2 gender of the respondents

s.no	Gender of respondents	No of respondent	percentage
1	male	25	42%
2	female	35	58%
total		60	100

3). gender
60 responses



Interpretation

- 42% of the respondents are male
- 58% of the respondents are female

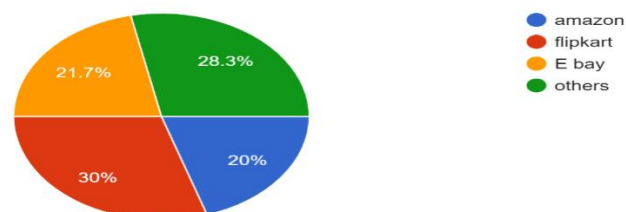
Inference

- Majority 58% of the respondents are female

4.1.3 which ecommerce platform do you most frequently use

S NO	particulars	No of respondents	percentage
1	amazon	12	20%
2	flipkart	18	30%
3	E bay	13	22%
4	others	17	28%
total		60	100

4).which ecommerce platform do you most frequently use
60 responses



Interpretation:

- ❖ 20% of the respondents are using amazon as ecommerce platform
- ❖ 30% of the respondents are using flipkart as ecommerce platform
- ❖ 22% of the respondents are using Ebay as ecommerce platform
- ❖ 28% of the respondents are using other buy product as ecommerce platform

Inference:

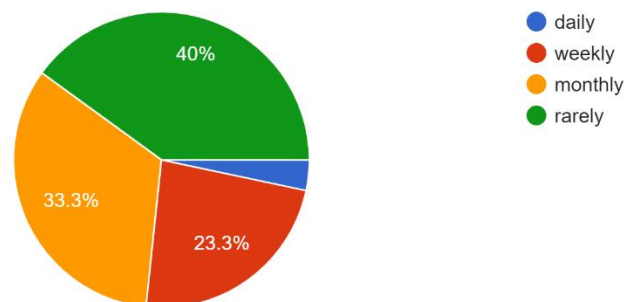
Majority 30% of the respondents are using flipkart as ecommerce platform

4.1.4 How often do you purchase goods online?

S no	Particular	No of respondent	percentage
1	Daily	2	3%
2	weekly	14	23%
3	monthly	20	33%
4	rarely	24	40%
total		60	100

5). How often do you purchase goods online?

60 responses



Interpertation

- ❖ 3% of the respondents are purchasing daily
- ❖ 23% of the respondents are purchasing weekly
- ❖ 33% of the respondents are purchasing monthly
- ❖ 40% of the respondents are purchasing rarely

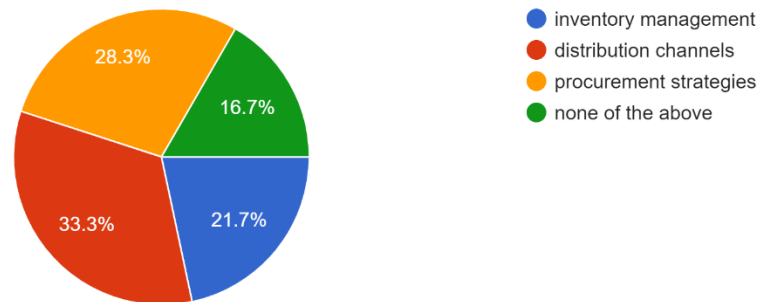
Inferences

Majority 40% of the respondents are purchasing rarely

4.1.5which aspect of supply chain management has been most affected by the rise of e commerce ?

S no	particulars	No of respondents	percentage
1	Inventory management	13	22%
2	Distribution channels	20	33%
3	Procurement strategies	17	28%
4	None of the above	10	17%
total		60	100

6).which aspect of supply chain management has been most affected by the rise of e commerce ?
60 responses



Interpertation

22% of the respondents has been affected by the rise of the inventory management

33% of the respondents has been affected by the rise of the distribution channels

28% of the respondents has been affected by the rise of the procurement strategies

17% of the respondents has been affected by the rise of the none of the above

Inference

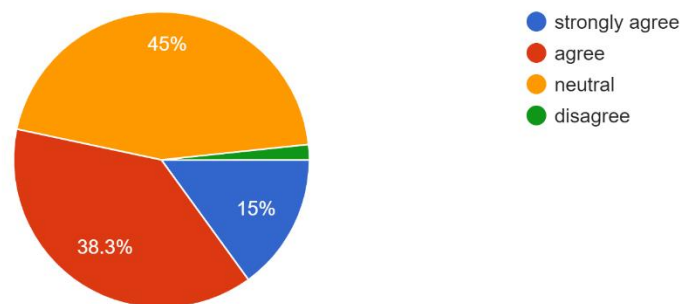
Majority 33% of the respondents has been affected by the rise of the distribution channels

4.1.6 Do you believe that ecommerce has made supply chain more efficient?

Sno	Particular	No of respondents	percentage
1	Strongly agree	9	15%
2	agree	23	38%
3	neutral	27	45%
4	disagree	1	2%
total		60	100

7). Do you believe that ecommerce has made supply chain more efficient?

60 responses



Interpretation

15% of the respondents are strongly agree that ecommerce has supply chain more efficient

38% of the respondents are agree that ecommerce has supply chain more efficient

45% of the respondents are neutral that ecommerce has supply chain more efficient

2% of the respondents are dis agree that ecommerce has supply chain more efficient

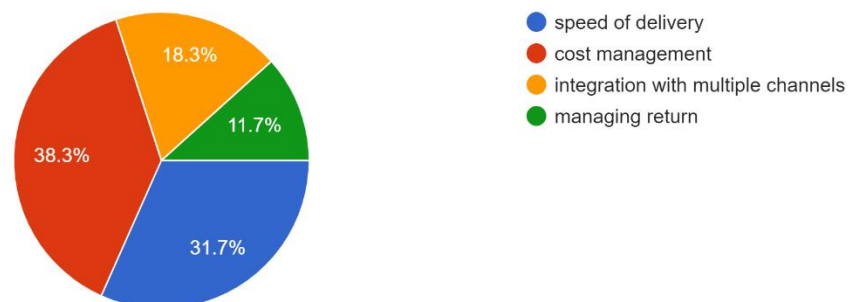
Inference

Majority 45% of the respondents are neutral that ecommerce has supply chain more efficient

4.1.7 which challenge do you think is most critical for supply chain managers in the era of e commerce

Sno	Particular	No of respondents	percentage
1	Speed of delivery	19	32%
2	Cost management	23	38%
3	Integration with multiple channels	11	18%
4	Managing return	7	12%
total		60	100

8).which challenge do you think is most critical for supply chain managers in the era of e commerce
60 responses



Interpertation

32% of the respondents think that speed of delivery for supply chain management in the era of ecommerce

38% of the respondents think that cost management for supply chain management in the era of ecommerce

18% of the respondents think that integration with multiplechannels for supply chain management in the era of ecommerce

12% of the respondents think that managing return for supply chain management in the era of ecommerce

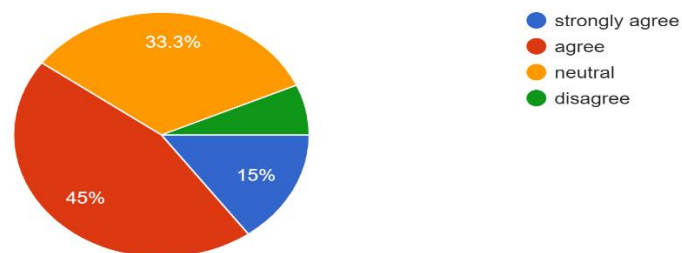
Inference

Majority 38% of the respondents think that cost management for supply chain management in the era of ecommerce

4.1.8 .Has e commerce influenced your preception of brand loyalty?

Sno	particular	No of respondents	percentage
1	Strongly agree	9	15%
2	agree	27	45%
3	neutral	20	33%
4	disagree	4	7%
total		60	100

9).Has e commerce influenced your preception of brand loyalty?
60 responses



Interpertation

15% of the respondents are strongly agree that ecommerce has influenced your preception of brand loyalty

45% of the respondents are agree that ecommerce has influenced your preception of brand loyalty

33% of the respondents are neutral that ecommerce has influenced your preception of brand loyalty

7% of the respondents are disagree that ecommerce has influenced your preception of brand loyalty

Inference

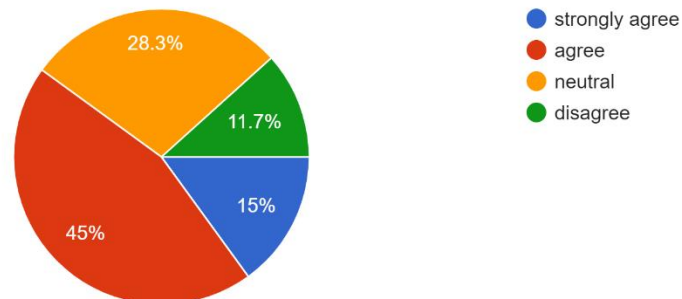
Majority 45% of the respondents are agree that ecommerce has influenced your preception of brand loyalty

4.1. 9 Has e commerce influenced your purchasing decisions in the past year?

Sno	particular	No of respondents	percentage
1	Strongly agree	9	15%
2	agree	27	45%
3	neutral	17	28%
4	disagree	7	12%
total		60	100

10).Has e commerce influenced your purchasing decisions in the past year?

60 responses



Interpertation

15% of the respondents are strongly agree that ecommerce influenced your purchasing in the past year

45% of the respondents are agree that ecommerce influenced your purchasing in the past year

28% of the respondents are neutral that ecommerce influenced your purchasing in the past year

12% of the respondents are disagree that ecommerce influenced your purchasing in the past year

Inference

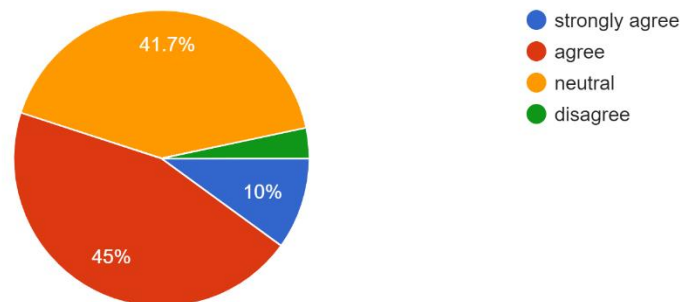
Majority 45% of the respondents are agree that ecommerce influenced your purchasing in the past year

4.2.0 Do you believe that ecommerce has reduce the overall costs in the supply chain :

Sno	particular	No of respondents	percentage
1	Strongly agree	6	10%
2	Agree	27	45%
3	Neutral	25	42%
4	disagree	2	3%
total		60	100

11).Do you believe that ecommerce has reduce the overall costs in the supply chain?

60 responses



Interpertation

10% of the respondents are strongly agree that ecommerce has reduce the overall costs in the supply chain

45% of the respondents are agree that ecommerce has reduce the overall costs in the supply chain

42% of the respondents are neutral that ecommerce has reduce the overall costs in the supply chain

3% of the respondents are disagree that ecommerce has reduce the overall costs in the supply chain

Inference

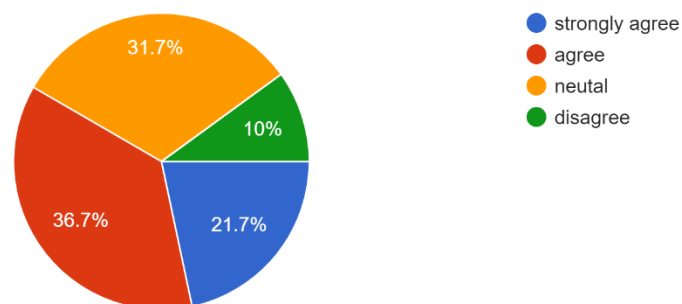
Majority 45% of the respondents are agree that ecommerce has reduce the overall costs in the supply chain

4.2.1 Do you believe that traditional supply chain models are becoming obsolete due to ecommerce:

Sno	particular	No of respondents	percentage
1	Strongly agree	13	22%
2	agree	22	37%
3	neutral	19	32%
4	disagree	6	10%
total		60	100

12).Do you believe that traditional supply chain models are becoming obsolete due to ecommerce?

60 responses



Interpertation

22% of the respondents are strongly agree believe that believe that traditional supply chain models are becoming obsolete due to ecommerce

37% of the respondents are agree believe that believe that traditional supply chain models are becoming obsolete due to ecommerce

32% of the respondents are neutral believe that believe that traditional supply chain models are becoming obsolete due to ecommerce

10% of the respondents are disagree believe that believe that traditional supply chain models are becoming obsolete due to ecommerce

Inference

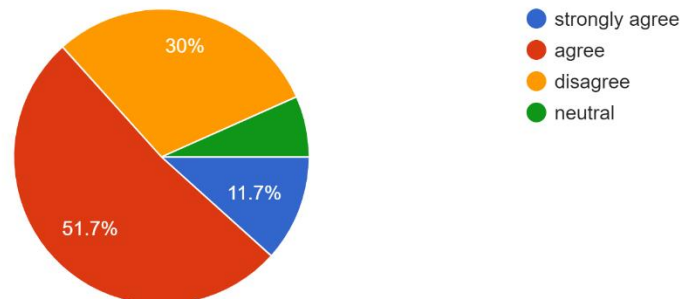
Majority 37% of the respondents are agree believe that believe that traditional supply chain models are becoming obsolete due to ecommerce

4.2.2 Has ecommerce influenced sustainability practices supply chain management?

Sno	particular	No of respondents	percentage
1	Strongly agree	7	12%
2	agree	31	52%
3	Neutral	18	30%
4	disagree	4	7%
total		60	100

13).Has ecommerce influenced sustainability practices supply chain management?

60 responses



Interpertation

12% of the respondents are strongly agree that ecommerce influenced sustainability practices supply chain management

52% of the respondents are strongly agree that ecommerce influenced sustainability practices supply chain management

30% of the respondents are strongly agree that ecommerce influenced sustainability practices supply chain management

7% of the respondents are strongly agree that ecommerce influenced sustainability practices supply chain management

Inference

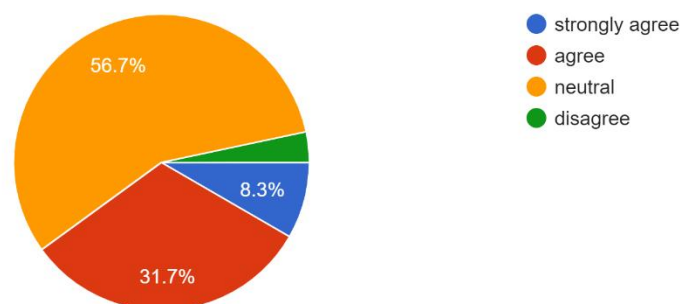
Majority 52% of the respondents are strongly agree that ecommerce influenced sustainability practices supply chain management

4.2.3 Has ecommerce increased the complexity of supply chain logistics?

S NO	Particular	No of respondent	Percentage
1	Strongly agree	5	8%
2	agree	19	32%
3	neutral	34	57%
4	disagree	2	3%
total		60	100

14).Has ecommerce increased the complexity of supply chain logistics?

60 responses



Interpertation

8% of the respondents are strongly agree that ecommerce increased the complexity of supply chain logistics

32% of the respondents are agree that ecommerce increased the complexity of supply chain logistics

57% of the respondents are neutral that ecommerce increased the complexity of supply chain logistics

3% of the respondents are disagree that ecommerce increased the complexity of supply chain logistics

Inference

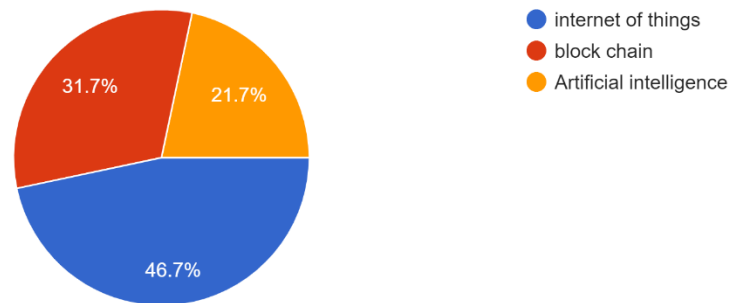
Majority 57% of the respondents are neutral that ecommerce increased the complexity of supply chain logistics

4.2.4 which technology has played the most significant role in bridging ecommerce and supply chain management :

Sno	particular	No of respondents	percentage
1	Internet of things	28	47%
2	Block chain	19	32%
3	Artificial intelligence	13	22%
total		60	100

15).which technology has played the most significant role in bridging ecommerce and supply chain management

60 responses



Interpertation

47% of the respondents use internet of things technology has the most significant role in bridging evommerce and supply chain management

32% of the respondents useblock chain technology has the most significant role in bridging evommerce and supply chain management

22% of the respondents use atrificial intelligence technology has the most significant role in bridging evommerce and supply chain management

Inference

Majority 47% of the respondents use internet of things technology has the most significant role in bridging evommerce and supply chain management

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.

4.2 STATISTICAL ANALYSIS:

TEST 1 (correlation)

H0 There is no significance difference between age and how often do you purchase goods online.

H1 There is a significance difference between age and how often do you purchase goods online.

Correlations			
		2). Age	5). How often do you purchase goods online?
2). Age	Pearson Correlation	1	.096
	Sig. (2-tailed)		.465
	N	60	60
5). How often do you purchase goods online?	Pearson Correlation	.096	1
	Sig. (2-tailed)	.465	
	N	60	60

Interpretation:

The p value is .096 which is lesser than the significance value (0.05) hence alternate hypothesis H1 is accepted and H0 is rejected

Inference :

Therefore there is significant difference between age and how often do you purchase goods online.

TEST 2 (ANOVA)

H0 There is no significance difference between How often do you purchase goods online and Do you believe that ecommerce has reduce the overall costs in the supply chain.

H1 There is a significance difference between How often do you purchase goods online and Do you believe that ecommerce has reduce the overall costs in the supply chain.

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
5). How often do you purchase goods online?	Between Groups	.886	2	.443	.567	.570
	Within Groups	44.514	57	.781		
	Total	45.400	59			
11).Do you believe that ecommerce has reduce the overall costs in the supply chain?	Between Groups	.929	2	.464	.905	.410
	Within Groups	29.255	57	.513		
	Total	30.183	59			

INTERPRETATION:

The p value is 0.570 which is greater than the significance value (0.05) hence null hypothesis H_0 is accepted and H_1 is rejected.

Inference:

There is no significance difference between the How often do you purchase goods online and Do you believe that ecommerce has reduce the overall costs in the supply chain.

CHAPTER- 5
FINDING, SUGGESTION, CONCLUSION

5.1 FINDING :

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 .

- Majority 45% percentage of the respondents are under the age of 25-30
- Majority 58% of the respondents are female
- Majority 30% of the respondents are using flipkart as ecommerce platform
- Majority 40% of the respondents are purchasing rarely
- Majority 33% of the respondents has been affected by the rise of the distribution channels
- Majority 45% of the respondents are neutral that ecommerce has supply chain more efficient
- Majority 38% of the respondents think that cost management for supply chain management in the era of ecommerce
- Majority 45% of the respondents are agree that ecommerce influenced your purchasing in the past year
- Majority 45% of the respondents are agree that ecommerce has reduce the overall costs in the supply chain
- Majority 37% of the respondents are agree believe that believe that traditional supply chain models are becoming obsolete due to ecommerce
- Majority 52% of the respondents are strongly agree that ecommerce influenced sustainability practices supply chain management
- Majority 57% of the respondents are neutral that ecommerce increased the complexity of supply chain logistics
- Majority 47% of the respondents use internet of things technology has the most significant role in bridging evommerce and supply chain management

- ❖ By using correlation for finding the relationship between the age and the how often do you purchase goods online. The value is .096 which is positive, it clearly status that .096 is lesser than 0.05. hence H_0 is rejected and H_1 is accepted.

- ❖ By using Anova for finding the relationship between How often do you purchase goods online and Do you believe that ecommerce has reduce the overall costs in the supply chain. The value is .570 which is positive , it clearly status that .570 is greater than 0.05 hence H_0 is accepted and H_1 is rejected.

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 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 million direct and 0.5 million indirect jobs by 2020.

❖ Consumer trust deficit and slow adoption of online payment method such as cash on delivery.⁶⁰

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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B2B	Business to business
B2C	Business to consumer
C2C	Consumer to coconsumer
GDP	Gross domestic product
SCM	Supply chain management
E- commerce	Electronic commerce
COD	Cash on delivery

Questionnaire

1) Name

2). Age

- 20-25
- 25-30
- 30-40
- More than 40

3). Gender

- Male
- female

4). Which ecommerce platform do you most frequently use

- Amazon
- Flipkart
- Ebay
- others

5). How often do you purchase goods online

- Daily
- Weekly
- Monthly
- Rarely

6). Which aspect of supply chain management has been most affected by the rise of ecommerce ?

- Inventory management
- Distribution channels
- Procurement strategies
- None of the above

7). Do you believe that ecommerce has made supply chain more efficient?

- Strongly agree
- Agree
- Neutral
- Disagree

8).which challenge do you think is most critical for supply chain managers in the era of ecommerce

- Speed of delivery
- Cost management
- Integration with multiple channels
- Managing return

9). Has ecommerce influenced your preception of brand loyalty?

- Strongly agree
- Agree
- Neutral
- Disagree

10). Has ecommerce influenced your purchasing decision past year?

- Strongly agree
- Agree
- Neutral
- Disagree

11).Do you believe that ecommerce has reduce the overall costs in the supply chain?

- Strongly agree
- Agree
- Neutral
- disagree

12). Do you believe that traditional supply chain models are becoming obsolete due to ecommerce

- Strongly agree
- Agree
- Neutral
- disagree

13). Has ecommerce influenced sustainability practices supply chain management?

- Strongly agree
- Agree
- Neutral
- Disagree

14). Has ecommerce increased the complexity of supply chain logistics?

- Strongly agree
- Agree
- Neutral
- disagree

15). Which technology has played the most significant role in bridging ecommerce and supply chain management

- Internet of things
- Block chain
- Artificial intelligence

