

A STUDY ON E-COMMERCE LOGISTICS DURING COVID-19

Submitted in partial fulfilment of the requirements for the award of

Master of Business Administration

by

GIRIDHAR R

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SCHOOL OF BUSINESS ADMINISTRATION

SATHYABAMA

**INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)**

**Accredited with Grade "A" by NAAC | 12B Status by UGC | Approved by AICTE
Jeppiaar Nagar, RAJIV GANDHI SALAI, CHENNAI - 600 119**

APRIL – 2021



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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **GIRIDHAR R 39410056** who carried out the project entitled "**A Study on E-commerce Logistics During COVID-19**" under my supervision from January 2021 to March 2021.

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DECLARATION

I **GIRIDHAR R 39410056** hereby declare that the Project Report entitled **A STUDY ON E-COMMERCE LOGISTICS DURING COVID-19** done by me under the guidance of **Dr. DHIVYA SATHISH** is submitted in partial fulfilment of the requirements for the award of Master of Business Administration degree.

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TABLE OF CONTENTS

CHAPTER	TITLE	PAGE NO.
	ABSTRACT	i
	LIST OF TABLES	ii
	LIST OF CHARTS	iv
1	INTRODUCTION	
	1.1 Introduction	1
	1.2 Industry Profile	7
	1.3 Need for the Study	18
	1.4 Scope of the Study	19
	1.5 Objectives of the Study	19
	1.6 Limitations of the Study	19
2	REVIEW OF LITERATURE	
	2.1 Review of Literature	20
3	RESEARCH METHODOLOGY	
	3.1 Research Design	23
	3.2 Sampling Technique	23
	3.3 Sources of Data	23
	3.4 Structure of Questionnaire	23
	3.5 Sample Size	23
	3.6 Period of Study	23
	3.7 Analytical Tools	23
4	DATA ANALYSIS AND INTERPRETATION	
	4.1 Percentage Analysis	24
	4.2 Correlation	49
	4.3 ANOVA	52
	4.4 T-test	54
5	FINDINGS, SUGGESTIONS & CONCLUSION	
	5.1 Findings	57
	5.2 Suggestions	59
	5.3 Conclusion	60
	REFERENCES	61
	BIBLIOGRAPHY	63
	APPENDIX - I (Questionnaire)	
	APPENDIX - II (Article)	

ABSTRACT

The COVID-19 made the impact in E-commerce sector. In India, E-commerce sector is booming. Also, Commerce sector was down due to the pandemic situation and most of commerce are converted into E-commerce. And during COVID-19 most of people in home and some of stocks is not there and it is not safe for his/her health so, people buying a product from E-commerce sites now people like to buy goods from online. Based on the collected data from 112 online respondents during the social distancing period due to Covid-19, this study is about examining the online customer satisfactions towards E-commerce logistics, payment and product. And also examine delivery agent follow safety measurements then meet the customers. The study used SPSS analytical tools such as correlation, ANOVA and Independent T-test. This tool is used and found the customer have satisfied from online shopping. Finally, the result showed that in this pandemic situation most of the customers like to purchase goods from E-commerce.

LIST OF TABLES

TABLE NO.	PARTICULARS	PAGE NO.
4.1.1	Table Showing Gender of The Respondents	24
4.1.2	Table Showing Age of The Respondents	25
4.1.3	Table Showing Occupation of The Respondents	26
4.1.4	Table Showing Marital Status of The Respondents	27
4.1.5	Table Showing Qualification of The Respondents	28
4.1.6	Table Showing Use of Internet Every day of The Respondents	29
4.1.7	Table Showing Most Frequently Buying Site of The Respondents	30
4.1.8	Table Showing Most Frequently Product Site of The Respondents	31
4.1.9	Table Showing Online Shopping Payment Mode of The Respondents	32
4.1.10	Product Tracking in Online Shopping	33
4.1.11	Product Delivery Time in Online Shopping	34
4.1.12	Product Reach at Right Time	35
4.1.13	E-Commerce Shopping Is Better	36
4.1.14	E-Commerce Provided Promise	37
4.1.15	Safety Measures Undertaken by Delivery Boy	38
4.1.16	Online Shopping Is Safe in Pandemic	39
4.1.17	Delivery Charges High During COVID-19	40
4.1.18	Re-Use the Product Packaging in Personal Use	41
4.1.19	Promotional Rewards Influence to Purchase	42
4.1.20	Product Packaging	43
4.1.21	Online Cost Comparing to Offline Shopping	44
4.1.22	Online Membership Takes More Time to Delivery During COVID-19	45
4.1.23	Miss-Time Delivery During Pandemic	46
4.1.24	Cash on Delivery During COVID-19	47
4.1.25	Return Product Delivery at Late Time	48
4.2.1	(Correlation) Frequently Buying Product and Cash on Delivery During COVID-19	49
4.2.2	(Correlation) Online Membership Takes More Time to Delivery and Most Frequently Buying Online Site	50
4.2.3	(Correlation) Online Product Packaging Satisfaction and Frequently Buying Product from Online Site	51
4.3.1	(ANOVA) Payment Mode Preference for Online Shopping and Cash on Delivery During COVID-19	52
4.3.2	(ANOVA) Online Cost Comparing to Offline and Payment Mode Preference for Online Shopping	53

LIST OF TABLES

TABLE NO.	PARTICULARS	PAGE NO.
4.4.1	(T-test) Promotional rewards influence to purchase and Marital Status	54
4.4.2	(T-test) Delivery Charges High and Marital Status	55
4.4.3	(T-test) E-commerce Shopping is Better and Marital Status	56

LIST OF CHARTS

TABLE NO.	PARTICULARS	PAGE NO.
4.1.1	Chart Showing Gender of The Respondents	24
4.1.2	Chart Showing Age of The Respondents	25
4.1.3	Chart Showing Occupation of The Respondents	26
4.1.4	Chart Showing Marital Status of The Respondents	27
4.1.5	Chart Showing Qualification of The Respondents	28
4.1.6	Chart Showing Use of Internet Every day of The Respondents	29
4.1.7	Chart Showing Most Frequently Buying Site of The Respondents	30
4.1.8	Chart Showing Most Frequently Product Site of The Respondents	31
4.1.9	Chart Showing Online Shopping Payment Mode of The Respondents	32
4.1.10	Product Tracking in Online Shopping	33
4.1.11	Product Delivery Time in Online Shopping	34
4.1.12	Product Reach at Right Time	35
4.1.13	E-Commerce Shopping Is Better	36
4.1.14	E-Commerce Provided Promise	37
4.1.15	Safety Measures Undertaken by Delivery Boy	38
4.1.16	Online Shopping Is Safe in Pandemic	39
4.1.17	Delivery Charges High During COVID-19	40
4.1.18	Re-Use the Product Packaging in Personal Use	41
4.1.19	Promotional Rewards Influence to Purchase	42
4.1.20	Product Packaging	43
4.1.21	Online Cost Comparing to Offline Shopping	44
4.1.22	Online Membership Takes More Time to Delivery During COVID-19	45
4.1.23	Miss-Time Delivery During Pandemic	46
4.1.24	Cash on Delivery During COVID-19	47
4.1.25	Return Product Delivery at Late Time	48

CHAPTER - 1

INTRODUCTION

1.1 INTRODUCTION

The SARS-CoV-2 coronavirus pandemic that causes Covid-19 disease also affects logistics processes and chains. For example, if the international SARS-CoV-2 pandemic has been temporarily interrupted due to the Coronavirus pandemic, including intermodal logistics chains, some production processes may be transferred to other countries. This may lead to a situation where international corporations, which have divided their production processes in previous years into stages implemented in factories and factories located in other countries now because of problems related to supply logistics may go back to the concept of concentration of all manufacturing processes in the same countries, in countries where the company has its headquarters or in countries far away from each other significantly shorter distances. This can lead to many factories returning from developing countries to developed countries despite slightly or significantly higher production costs. In this way, the risk of supply, supply logistics, etc. will be significantly reduced. If such international economic processes are carried out on a large scale in the following months and years, then the processes of economic globalization will reverse. In my opinion, the current pandemic Covid-19 can potentially cause the most changes in logistics in the situation of long, complex, intermodal, international logistics supply, and supply chains operating until now. Also, the Covid-19 pandemic has accelerated the digitization of the economy. Currently, in many industries and sectors, more and more companies are developing their activities via the Internet, remotely providing their services, and selling their products under e-commerce. Many companies that did not do this before now switch to remote activities, carried out electronically via the Internet. The importance of Internet marketing, including viral marketing, Real-Time marketing conducted on social media portals is increasing. The development of electronic banking is also increasing, including online and mobile banking. Therefore, traditional logistics can be increasingly replaced by logistic business models in which some or all components of logistics processes are implemented via the Internet. In this situation, the importance of e-logistics is growing.

1.1.1 Logistics

Logistics is used more broadly to refer to the process of coordinating and moving resources – people, materials, inventory, and equipment – from one location to storage at the desired destination. The term logistics originated in the military, referring to the movement of equipment and supplies to troops in the field.

1.1.2 History of Logistics

The three-syllable word ‘Logistics’ originated in the late 19th Century. It was the French term “Logistique” that gained fame through Antoine Henri Jomini’s book “The Art of War”, making way for its English-translated version to become globally popular in the years to come. The denotation of “Logistique” in Jomini’s book referred to the means of supplying a theater of war with soldiers and ammunition. The French used this term throughout the time of World War and later on, it was re-pronounced as ‘Military Logistics’.

Equivalent to the numerous logistics specialists working today, the military officers back then were enunciated as ‘Logistikas’. They shared similar KRA’s, ensuring seamless management of the supply chain, albeit for the soldiers to efficaciously move forward and take charge.

Before the inception of the term ‘logistics’, a related process was used, encapsulating comprehensive supply systems, road transportation, and warehouse. This system was in place long before modernization, specifically during the middle ages, which we have studied in school. At that time, the forts, and the castles used to serve as warehouses, while horse-drawn vehicles and boats used to act as a means of transportation.

The definition of the supply chain consistently evolved from the middle age to the prevailing digital age. However, it is during this transitional phase where logistics dawned and garnered a name for itself.

1.1.3 The evolution from Military to Business Logistics

Considering 'logistics' authoritatively incepted during World War 1 (1914-1918), military logistics was the first to come into the picture. 'Logistikas' were supervising the movement and storage of resources before World War but post-war, the term became widespread as 'Logistics Officers' replaced 'Logistikas'.

Military logistics was primarily concerned with the movement of ammunition and relevant war equipment to the places they were required. It dealt with numerous variables ranging from prediction of the total cost, consumption of materials, and the likely requirements in the future.

Business Logistics, on the other hand, surfaced with the rising complexities in supply trade during the 60s and states having the right item in the right quantity at the right time, right place, the right price, right condition, and ultimately, to the right customer.

As opposed to military logistics, which has remained largely static in its process, business logistics has consistently evolved since its emergence, giving rise to multiple complexities (operating a worldwide supply chain), and likewise, necessary accretion (supply chain logisticians).

1.1.4 Types of Logistics

Logistics, or logistical planning, alludes to the procedure that a business utilizes so as to facilitate its supply chain activities. It incorporates a wide assortment of undertakings and exercises,

For example, overseeing how crude materials or data sources are obtained and shipped to the business, how stock and information sources are put away at the business' offices, and how the stock is moved inside the business and past.

There are six different types of logistics that need to be studied in detail:

- Inbound Logistics.
- Outbound Logistics.
- Third-Party Logistics.
- Fourth Party Logistics.
- Distribution Logistics.
- Reverse logistics.

1.1.4.1 Inbound Logistics

Inbound logistics alludes to the inner logistics errands and exercises that organizations need to finish so as to work. Inbound logistics ordinarily refers to the strategic tasks of organizations that work genuinely upstream. As far as the supply chain is concerned, it includes the relationship with parties that work further upstream than the given business.

Contingent upon the business, the parties that work upstream may change significantly in their particular tasks.

For instance, consider being a car manufacturer. The maker's inbound logistics would involve the sourcing of crude material data sources (sheet metal, glass, wiring, plastics, and so forth.), how to store the materials in preparation for and during the assembly procedure, and how to deal with the flow of produced cars that leave the plant.

1.1.4.2 Outbound Logistics

Outbound logistics allude to the errands and exercises engaged with moving the item to the end client. Such strategic obligations generally apply to players that work moderately downstream, which are normally the last party in the supply chain.

The obligations incorporate the storage of manufactured stock, the transportation of produced merchandise to the retail location, and sometimes, the shipping and handling involved in the process.

1.1.4.3 Third Party Logistics

Third-party logistics can be mistaking for entrepreneurs. Logistics incorporates all pieces of the supply chain that plan, actualize, and control the flow of merchandise and services to meet client prerequisites. Third-party logistics implies that a third-party business is utilized to outsource logistics services.

These services can incorporate all exercises that include the management and the different ways an enterprise moves resources starting with one location then onto the next. They involve tasks, transportation, warehousing, production, and more.

1.1.4.4 Fourth Party Logistics

A 4PL is a fourth-party logistics supplier and it basically makes third party logistics a stride further by overseeing resources, innovation, technology, infrastructure, and even manage external 3PLs to configure, fabricate and give supply chain solutions for organizations.

A 4PL service includes 3PL service as well as Logistics strategy, Freight sourcing strategies, Network analysis, and design, Consultancy, Business planning, Change management, Project management, Inventory planning, and management and also Inbound, outbound, and reverse logistics management.

1.1.4.5 Distribution Logistics

Distribution logistics involves arranging errands, control, and all procedures concerning the flow of goods and information between manufacturing companies and clients. Distribution logistics (otherwise called transport logistics or sale logistics) is the connection or link between market and production.

The zone contains all procedures engaged with the distribution of merchandise – from manufacturing organizations to customers. Customers could be final end-users, wholesalers, distributors, or processors. It ensures that the manufactured goods and services reach the customer safely and quickly.

1.1.4.5 Reverse logistics

Reverse logistics is the set of activities that are directed after the sale of an item to recover worth and end the item's lifecycle. It commonly includes restoring an item to the producer or merchant or sending it on for overhauling, repair, or reusing. It is also called aftermarket supply chain, reseller's aftermarket logistics, or reverse logistics.

Reverse logistics is the sector of supply chains that procedure anything returning inwards through the supply chain or voyaging 'in reverse' through the supply chain. Thus, the name becomes reverse logistics.

1.1.5 Progression of Logistics in eCommerce

The last 50 years revolutionized the logistics industry. Before the Internet, in the year 1970, numerous retail stores were taken over by direct deliveries. Direct deliveries referred to goods getting delivered directly from the suppliers or wholesalers instead of the retailers. This new module of trade warranted a change for retailers.

A decade later, during the early 80s, the retailers began centralizing store deliveries via the creation of their distribution centers. This increased reliability on robust transportation and supply chain management allowed the logistics industry to grow exponentially.

In 1990, the global trade of non-food articles ventured in, allowing retailers to establish their import centers for a hassle-free deliverance of imported goods. The supply chain was already challenging enough until this point when the notion of eCommerce arrived a few years after.

Once eCommerce surfaced, the retailers were compelled for further rework on their distribution system for keeping up with the gradually rising demand of the end-customers.

The idea of making purchases online and getting products delivered to home enticed the end-customers. It was the outcome of their outrageous demand and the impeccable services of logistics providers that eCommerce is now in full swing.

1.2 INDUSTRY PROFILE

1.2.1 *E-commerce Industry:*

E-commerce/E-logistics can be defined as the application of Internet-based technologies to traditional **logistics** processes or Web-based applications and services dealing with the efficient transport, distribution, and storage of products along the supply and demand chain

1.2.1.1 *E-commerce logistics:*

Ecommerce logistics refers to the processes involved in storing and shipping inventory for an online store or marketplace, including inventory management and the picking, packing, and shipping of online orders.

With so many millions of packages shipped across the country on any given day, it's vital that systems are in place to keep them on track and make sure they're delivered to the right place on time.

Ecommerce logistics starts with moving inventory from the manufacturer and lasts until it ends up at the end customer's destination. Digital fulfilment is one of the most critical pieces of e-commerce logistics, which includes:

- Inventory management
- Warehousing and storage
- Order fulfilment, or the picking, packing, and shipping orders

The industry witnessed an increase in sales every year and the economy has reached a point where the prevailing mechanism of eCommerce seems inconceivable without dependable logistics services.



Each of these components is a world of complexity unto itself, and keeping them, all running smoothly together is no small task.

Businesses must ensure that they have adequate stock levels in a distribution center close to that customer's location. If they outsource fulfilment, their 3PL must be reliable and capable of fulfilling orders at pace, even during peak and holiday periods.

1.2.1.2 How eCommerce Logistics Works

A logistics company functions in two directions:

- Forward Direction – Distribution and delivery of goods to buyers.
- Reverse Direction – Exchanging or replacement of defective, damaged, or wrong shipments.

Both these processes become easy if logistics are managed and controlled by an eCommerce company.

1.2.1.3 Working in the Forward Direction

- Receiving the order on an eCommerce store
- Providing a payment option
- Preparing inventory
- Packaging the item
- Preparing its invoice
- Dispatching the order
- Handling over the parcel to the courier company

For an eCommerce company logistics in the forward direction involves receiving an online order, arranging for the item, packaging, preparing its invoice, arranging the payment, dispatching, and delivering the item to the customer's doorstep. The time between receiving the order and its distribution depends on the availability of the material and the location of the consignee. For specific locations, a separate delivery charge could be applicable

From the time of dispatch until delivery of a consignment, it is the responsibility of the seller to notify the exact location of a shipment to its respective consignee through tracking SMS or email notifications.

Payment collection is essential for any eCommerce business owner, analogous to a retailer. An online retail company should have multiple payment options for a better customer experience such as debit/ credit cards, bank transfers, and COD (cash on delivery). In a country like India where buyers are more comfortable with dealing with physical money, the COD option is of utmost significance.

Working in Reverse Direction

In spite of the best efforts the possibilities of incorrect or damaged shipments cannot be ruled out. In such situations an efficient reverse logistics is essential. It is the responsibility of logistics to take back these defective or damaged materials and replace them with proper order that satisfies the customer within a reasonable time. A

hassle-free exchange or replacement process goes a long way in building trust between the buyer and an eCommerce company.

1.2.1.3 What are the different types of e-commerce business models?

- B2B Ecommerce
- B2C Ecommerce
- C2C eCommerce
- C2B eCommerce
- Government / Public Administration Ecommerce
- Drop-Shipping
- Wholesaling and Warehousing
- Private Labelling and Manufacturing
- White Labelling
- Subscription eCommerce

1.2.1.3.1 B2B Ecommerce:

It cannot be denied that one business is always a greater customer for another business. The supply chain works on supplying raw materials and resources to other businesses to produce different business goods. A B2B or Business to Business eCommerce model focuses on delivering products from one business and supplying to another. They then use it as raw materials and resources as a fuel to operate for their business.

However, this niche business model is most common among service providers and especially in the IT sector. However, addressing the rapid development of the reviewing and feedback structure over the internet and business being judged by their unmatched presence over the internet, suppliers of raw materials and manufacturing



products have paved their way through the internet as well. So to maintain their competitive edge and pull over their unique value proposition, it is crucial to develop a sustaining digital platform for any brand.

B2B eCommerce further branches into three categories,

- Volume Products
- Subscription Products
- Configuration Products

Much awaited, 40% B2B eCommerce utilized pricing algorithms, demand planning, and other such factors to collaborate mark up the pricing for their products in the market. The industry is projected to cross \$1.1 million by 2020. The upcoming trends in the model have allowed businesses to come up with better strategic alignment to showcase their product and rise as the highest trading platform.

Business integrating and partnering up with prominent platforms has been a breakthrough since 2017. Companies like Uber integrating with Facebook Messenger gained huge recognition driving additional traffic to both the businesses. Such conversational commerce, smart personalization of shopping experience, cart-to-cash schemes seem well facilitating the wheels of B2B eCommerce.

1.2.1.3.2 B2C Ecommerce:

Here we come down to our next major eCommerce business model based on the supplier and consumer forms. The B2C or Business to Customer eCommerce business model is the traditional retail model where you as a customer shop through a digital platform of the brand or store. This is exactly what most people know and comprehends eCommerce to be.



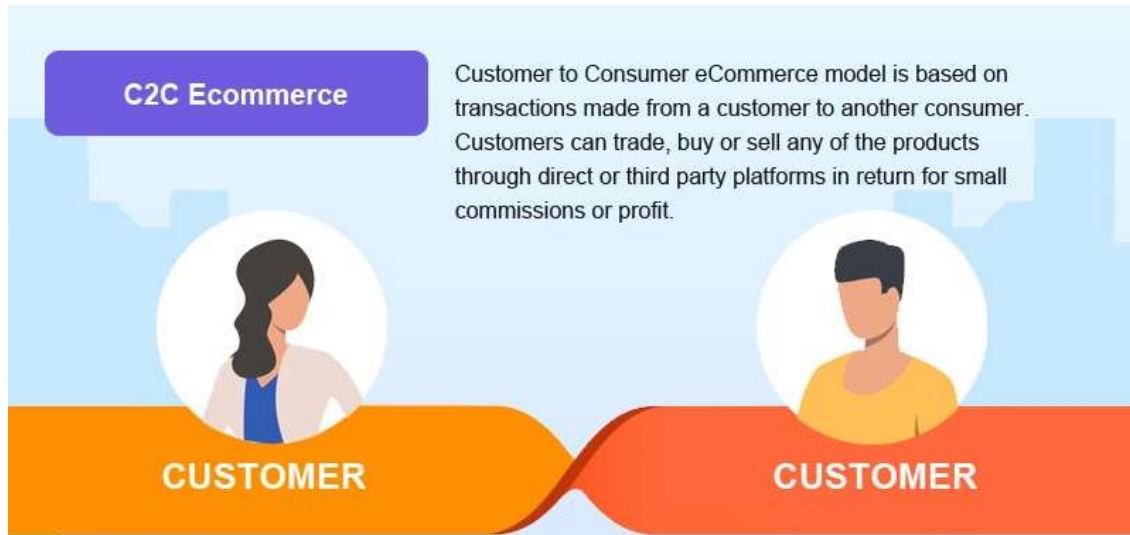
In simpler terms, B2C business models encompass all the transactions made between a company and the end-users of the product. Brands like Flipkart, Amazon, Snapdeal, Alibaba, Walmart, etc have their roots deeper in reaching their target audience across the globe and deliver to their needs.

However, it would be vague to say that the existing giants are always the toughest competition. The emerging digital market trades success for the most innovative and advanced users of technology. It is more likely to drive in your target audience with a unique selling proposition.

According to the recent surveys, B2C eCommerce retails stores will comply with about 21.9% of the total retail stores in the US alone. Considered to be the fastest-growing shopping experience and trends, eCommerce platforms selling a range of products to their end-users is soon to reach \$28 billion industry in the coming year.

1.2.1.3.3 C2C eCommerce:

The idea of C2C is quite different from our usual understanding of eCommerce business models. A C2C or Customer to Customer or Customer to Consumer eCommerce model is based on transactions made from a customer to another consumer. Now, this transaction can be in many ways. Customers can trade, buy or sell any of the products through direct or third-party platforms in return for small commissions or profit.



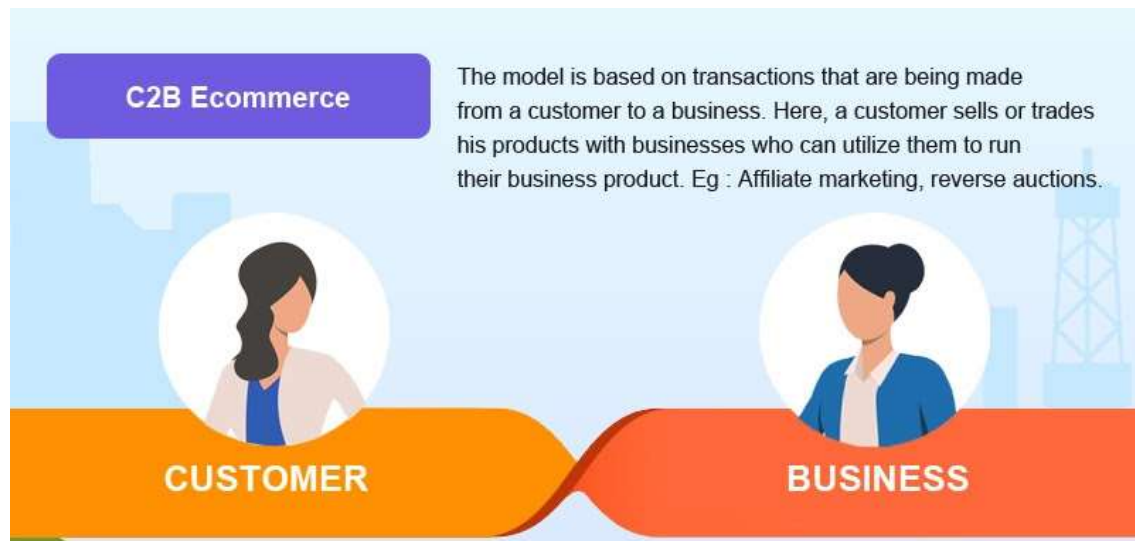
But don't let this confuse with in terms of Affiliate marketing. The concept may seem similar but most of the major attributes are different. Most of the time it is the third party that takes care of the orders, sales, and all transactions that are being made. eBay, Etsy, or Craigslist are well-known platforms facilitating the C2C eCommerce business model.

However, the basic concept of the C2C business model was to reduce the additional cost customers pay while trading goods via any third-party platform. Normally, the C2C business way can be seen through auctions or classified sections in the newspaper. In all such cases, a consumer sells or trades a product to another customer.

1.2.1.3.4 C2B eCommerce:

A Prevelantly rising eCommerce business model, C2B eCommerce is yet to reach the views of the common people. The model is based on transactions that are being made from a customer to a business. Here, a customer sells or trades his products with businesses who can utilize them to run their business product. Affiliate marketing,

reverse auctions, and Google AdSense fall into this category of eCommerce business model.

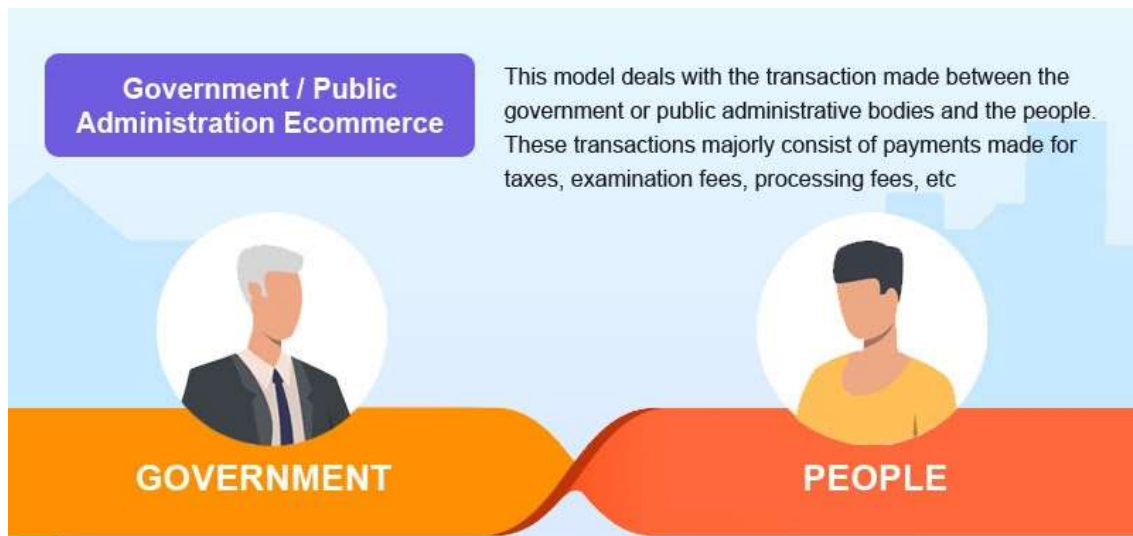


This unique relationship between the consumers and business is well relished through a bi-directional usage of the internet to reach out to each other. This model is a complete reversal of what we knew as the traditional eCommerce business model and the customer approaches business with a product that indicates the value to the company and in return gets paid for the item.

With different forms of C2B deals that are being made up, customers can also come to promote a brand's product through social media or blogging platforms in return for an agreed price. Moreover, with the recent development in the field of data analytics and business intelligence, this model of eCommerce business serves greater potential that can be curated along with a unique value proposition

1.2.1.3.5 Government / Public Administration Ecommerce:

Apart from the basic eCommerce transactions that are made between businesses and consumers, there is yet another form of eCommerce business model that deals with the transaction made between the government or public administrative bodies and the people.



These transactions majorly consist of payments made for taxes, examination fees, processing fees, etc. Though not directly involved in selling or buying consumer goods, this category of eCommerce business model is already a huge network facilitating daily government payoffs through official portals.

It wasn't much before that the government has started adhering to the perks of advanced technology. Almost every service provided by the government has a digital presence and most of them do include options for online transactions. They are safe, fast, and reliable e-Governance has been a trend, whose benefits are leveraged by both parties in the transaction making it easier for the government to keep a detailed record of every data they need.

eCommerce has blazed the trail for businesses over the internet. The idea has today branched into several categories that need to be classified into different segments.

Apart from these major business segmentation models, eCommerce businesses can also be classified based on their revenue models. Here is the list of 5 types of e-commerce business models based on the way revenues are generated through an eCommerce platform.

1.2.1.3.6 Drop-Shipping:

Drop-shipping can be tagged as the simplest form of e-commerce business model. Here you just need to set up a digital storefront for safer and reliable financial transactions from the customers, while the supplier takes care of the rest. The idea is of a middleman providing an efficient payment gateway as a bridge between the

remote supplier or customer. Once placed, the orders are then managed and handled by the supplier.



Now, how does freeing off from managing inventory and warehousing stock feels like? If it feels good to be just the middleman for monetary transactions, never forget the major caveat that remains. In case the supplier is slow or is unable to deliver the right product to the customer, you take a hit in terms of decreasing your brand image. You being at the front of conversing with the customer, the responsibility of better customer service remains up to you. It is generally recommended to go with print on demand to tackle such inevitable situations.

1.2.1.3.7 Wholesaling and Warehousing:

If you can manage the bulk of financial support to start an eCommerce business, wholesaling and warehousing can be of great potential. It will be your responsibility to manage the inventory, keep track of the orders, track shipping information and get yourself a warehouse space. Now the way of earning revenue is through partnering up with sellers and merchants.

As an example, Dollar Days, an online wholesaler has managed to offer a massive catalogue of products that are sold to both the general public and also retailers. All goes to their strategic expertise towards providing both case price and piece prices. Warehousing and wholesaling is a great option to deal with handling the mass volume of products and advanced technologies, supply chain management, inventory management, etc. can be the only way to maintain a proper and sustainable chain of business.

1.2.1.3.8 Private Labelling and Manufacturing:

Entering a market with a new product can be challenging. While the changing market demand can be the best situation to launch a new product idea, a budget can always stand as a concern. Making an entire business stand on a single product development doesn't always come feasible. Private labelling and manufacturing business model come in when an offsite manufacturing company sends out the blueprints and guidelines for the product to a third party or contracted manufacturer who then manufactures the final product as per the specifications.

The seller has the choice of selecting over the eCommerce platform from where to sell the product from or it can sell it to a different company who will then send the final product to the end-users branding on his name. Yes, you are right. This closely relates to on-demand manufacturing that brings an added advantage. That being said, this business model allows to launch your product through the eCommerce platforms at a much lower investment and can be best suited for initial starts while you have plans to expand the business facilities later.

1.2.1.3.9 White Labelling:

Focusing on the current market trend can never go offbeat for any business niche. White labelling e-commerce business models illustrate selling of an already successful product but with a different white-label, and package design. In simpler terms, you can sell an eCommerce product under your brand name and gain your part of the profit.

Now the responsibilities do ensure that you manage your customer relationships, product development, supply chain, and distribution channel and most importantly at your own labelled price. Though the beauty of this kind of business is that you can outsource most of the business operations to contractors and manage the entire digital face of the business on your own.

Now when handled with the right strategic expertise, white labelling is driven to bring you results. However, this model limits its profit-earning capabilities to the demand in the market. If demand falls, stocks of the products can end up piling up in the warehouse. So, it would be wise to select the product based on its shelf-life and market expectancy.

1.2.1.3.10 Subscription eCommerce:

You must have heard of Dollar Shave Club and Blue Apron meal kits? In a subscription e-Commerce model, a customer pays to subscribe to a business to receive a product on a recurring basis. Most of the time, these are tailored products that are delivered to subscribers based on their usage. Dollar Shave Club and Blue Apron meal kits are some of the famous names blazing the trail for this business model.



The current market revenue for subscription eCommerce has jumped up with a 100% rise since its inception in the eCommerce industry. The current market projection shows a huge potential for such a business where customer satisfaction and service are listed as a top priority. This strong growth has invited many prominent businesses like Walmart (Beauty Box), Sephora, and P&G. This business form becomes a reliable source for revenue where customers are easy to retain and approached for any upgraded subscription.

1.3 NEED FOR THE STUDY

E-commerce logistics refer transportation of goods move from one place to another place those products are tracking and giving accurate data to customers and the level of customer satisfaction also gathered from those who are to buying goods from online shopping. During COVID-19, E-commerce sites getting more customers and orders because of this pandemic situation. This study measures the customer satisfaction about the product and delivery time during COVID-19. And also finds out the some effective suggestions to implement that on E-commerce.

1.4 SCOPE OF THE STUDY

This study focuses on finding out the customer satisfaction from E-commerce. This study find out the most frequently usage online site and payment mode. This study also finds out the satisfaction about the product packaging and time of delivery during COVID-19. Further, this study comes up with the suggestions that helps to make effective the E-commerce.

1.5 OBJECTIVES OF THE STUDY

1.5.1 Primary Objective

- To Analyze the effectiveness on E-Commerce Logistics during COVID-19

1.5.2 Secondary Objective

- To examine the delivery time that impacts customers during COVID-19.
- To identify product damage in transportation process
- To compare transportation cost and satisfaction level of customers during COVID-19
- Examine the effect of COVID-19 on the online purchasing behavior on consumers.

1.6 LIMITATIONS OF THE STUDY

- The study is restricted to the online customers those using online sites in Tamil Nadu.
- In this study, most of people prefer Cost on Delivery but during COVID-19 this is not safety.
- Due to covid restriction, most of product delivery cost is high.
- Some of the respondents did not take time to fill the questionnaire

CHAPTER - 2

REVIEW OF LITERATURE

2.1 REVIEW OF LITERATURE

Anam Bhatti, Hamza Akram, Ahmed Usman Khan (2020), In this research paper Corona virus impact the consumer shopping and they changed to online shopping. In this Paper they did research about consuming, pandemic period E-commerce purchase is increasing. E-Retailer gives product in cost effective so it's well-connected actions in upcoming years.

Brian Rongqing Han, Tianshu Sun, Leon Yang Chu and Lixia Wu (2020), This paper examines the impact of COVID-19 on e-commerce sales. The effect of COVID-19 on behaviours of the buyers and sellers on the platform, the effect of government containment policies, as well as the operational drivers underlying the observed impact. First, we document a systematic decrease in e-commerce sales by 22% during the COVID-19. The evidence from Alibaba in the recovery phase can help retailers and policymakers design better strategies, and put more emphasis and investment in logistics.

Damoska Sekuloska J (2019), This research paper study about the logistic transformation, Competitiveness today doesn't depend only on price but also on customer service and delivery time. The main aim of the paper is to show that the right logistics service provider in the modern supply chain can help companies to gain and maintain competitiveness and especially by using different modern digital tools in doing business.

Gunasekaran A (2007), In this paper, a case study of e-logistics is used to illustrate the implications of information technology, in particular the Internet, World Wide Web (WWW), and electronic data interchange (EDI), on the performance of the logistics value chain. A framework based on the literature survey and case study is proposed to help companies develop an e-logistics system to improve their competitiveness.

Helin Öven & Melissa Hicintuka (2020), In this Research paper study to gain more knowledge on how international e-commerce firms are responding to the pandemic and the study will explore and conduct a deeper understanding on the e-commerce firms experience through a data collection.

Komal Sharma (2020), This research paper study about E-commerce is a business model that lets firms and individuals buy and sell products and services over the internet. It examines the growth of e-commerce due to covid-19 pandemic and that e-commerce became substitute source of traditional marketing or not with the help of secondary data taken from authorized websites.

Liang-Jie Zhang, Pooja Yadav, and Jun-Jang Jeng (2019), This research paper study about the resulting need for greater, faster, and more flexible communications, the interaction between the e-logistics processes and business process manager that orchestrates e-logistics processes in an e-business solution will be described in this paper. A transportation planning in the purchase order management process of a B2B solution is used as an example to illustrate the usage of ELPIF by encapsulating United Parcel Service (UPS) on-line XML Tools as Web Services.

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Lobel Trong & Thuy Tran (2021), In this research they took examine the effect of the perceived effectiveness of e-commerce platforms (PEEP), quantitative survey and analysis. Implications for managers and theory are also discussed.

M, A. S. R., & Kannappan, S. (2020), In this research paper study about which has affected fast-fashion brands and the e-commerce industry will boom and those fast-fashion brands, which are already in the e-commerce platform. Fast-fashions have to follow the art of rethinking to replan and reimplement new strategies to revamp the business.

MRS. Kranti Shashikant Patil (2020), In this research paper study about impacts of E-commerce business. There is certain change in Demand and buying behaviour of consumer all of a sudden. Lockdowns and restriction posed by the government in order to control covid-19 spread resulted into nightmare for E-commerce business.

Pere Llorach-Massanab & M. Blanca Ronceroa (2021), In this research paper they studied online purchasing and E-commerce packaging production and use, have grown steadily in recent years, and so has their environmental impact as a result and they give solution to control the environmental impacts of packaging.

Pourya Pourhejazy (2020), In this research paper they mention in COVID-19 Situation a greater number of people active in internet shopping and they mention it will rise in upcoming five years and make customer satisfaction, timely response to the online customers. Including influence the inventory destruction decisions as one of the alternatives for managing excess inventory.

Rakesh Kumar, R.S. Mishra (2020), In this research paper study about a set of questionnaires is designed which addressed four pertinent themes focusing on product classification including export product, import product, elective product, and emergency product. The questionnaire consisted of ten multiple-choice questions including three open-ended questions are asked and distributed online in interest groups using various social media platforms and gather the information. Valid responses were represented as categorical data and presented in percentages.

CHAPTER - 3

RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

In this study, Descriptive Research Design is used in research topic.

3.2 SAMPLING TECHNIQUE

The method of sampling adopted to conduct survey is Convenience Sampling Method. The area of research is concentrated on E-commerce Industry in Tamil Nadu.

3.3 SOURCES OF DATA

3.3.1 Primary Data

The primary data for this study is collected through questionnaire consisting of multiple-choice questions.

3.3.2 Secondary Data

The secondary data is collected by referring by websites, journals, articles and research paper.

3.4 STRUCTURE OF QUESTIONNAIRE

Multiple choice questions and Likert's scale questions.

3.5 SAMPLE SIZE

Sample Size of 112 online customers those purchasing products from Online sites in Tamil Nadu.

3.6 PERIOD OF STUDY

The period of study is carried out from January 2021 to March 2021 which is three months of study.

3.7 ANALYTICAL TOOLS

- Percentage Analysis.
- Correlation.
- ANOVA.
- Independent T-test.

CHAPTER-4

DATA ANALYSIS AND INTERPRETATION

4.1 PERCENTAGE ANALYSIS:

TABLE 4.1.1

TABLE SHOWING GENDER OF THE RESPONDENTS

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Male	86	77%
Female	26	23%
Total	112	100.00%

Source: Primary data

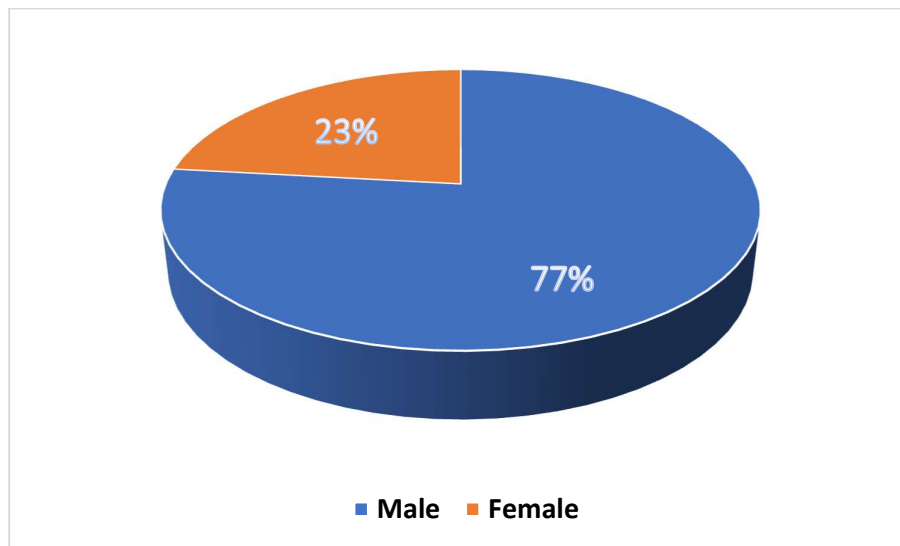


CHART NO 4.1.1: CHART SHOWING GENDER OF THE RESPONDENTS

INTERPRETATION:

From the above table it is interpreted that 77% of the respondents are males and 23% of the respondents are females.

INFERENCE:

Majority of 77% respondents are Male.

TABLE 4.1.2

TABLE SHOWING AGE OF THE RESPONDENTS

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Below 20 Years	8	7.14%
20-40 Years	91	81.25%
40-50 Years	10	8.93%
Above 50 Years	3	2.68%
Total	112	100.00%

Source: Primary data

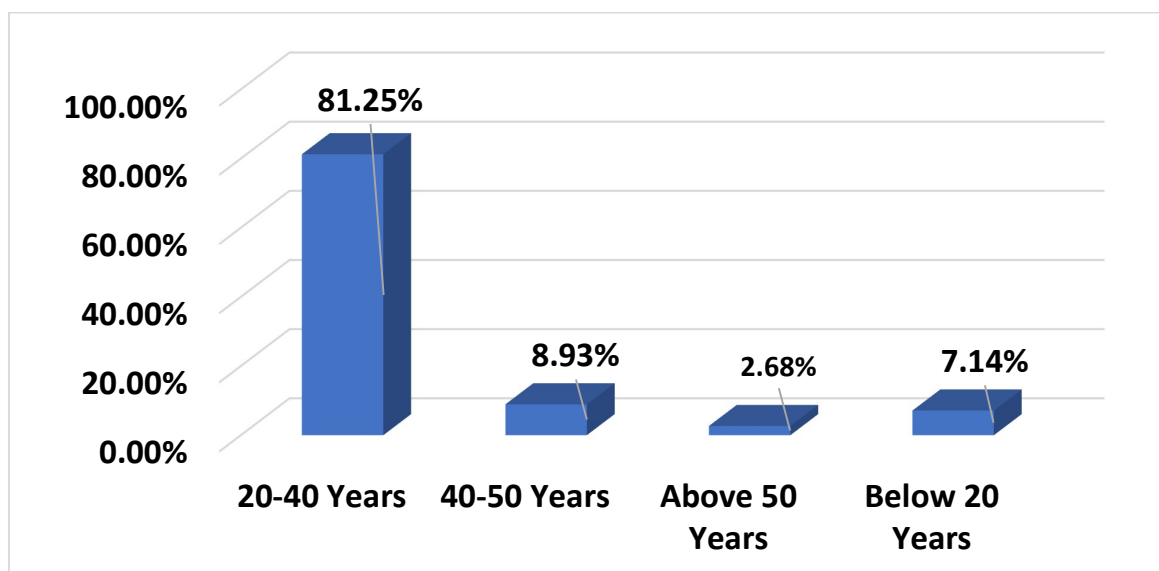


CHART NO 4.1.2: CHART SHOWING AGE OF RESPONDENTS

INTERPRETATION:

From the above table it is interpreted that 81.25% of the respondents are between 20-40 years, 8.93% of the respondents are between 40 to 50 years, 2.68% of the respondents are between Above 50 years ,7.14% of the respondents are Below 20 years.

INFERENCE:

Majority of 81.25% respondents are between 20-40 years.

TABLE 4.1.3

TABLE SHOWING OCCUPATION OF THE RESPONDENTS

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Student	33	29.46%
Employee	33	29.46%
Self-Employee	19	16.96%
Government Employee	6	5.36%
Others	21	18.75%
Total	112	100.00%

Source: Primary data

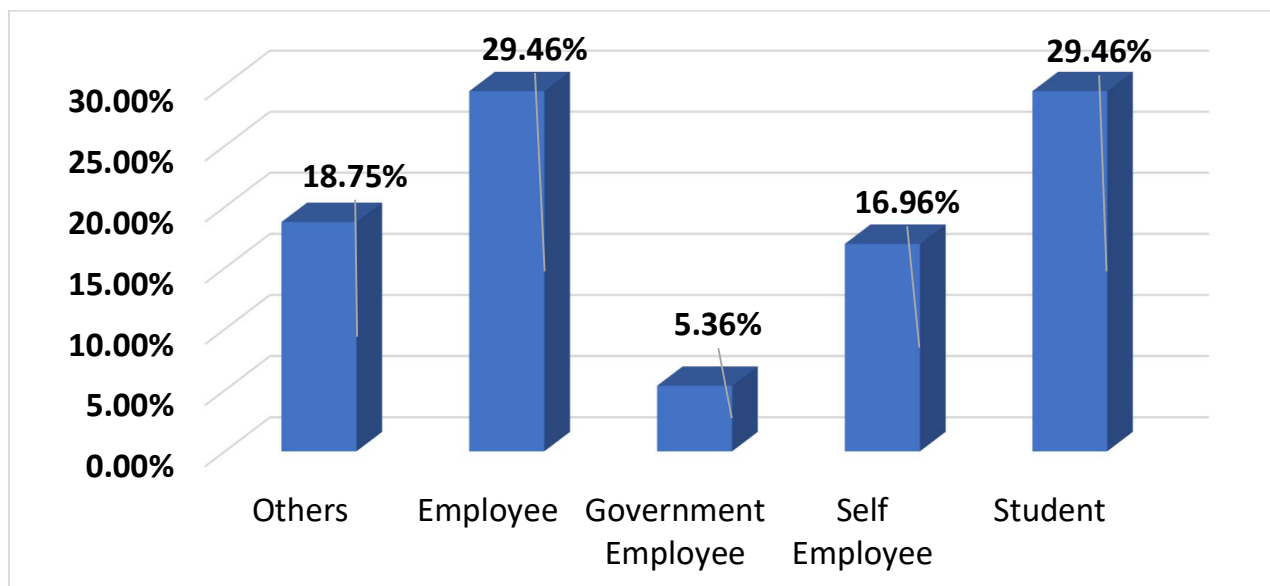


CHART NO 4.1.3: CHART SHOWING OCCUPATION OF RESPONDENTS

INTERPRETATION:

From the above table it is interpreted that 29.46% are Student respondents, 29.46% are Employee respondents, 16.96% are Self Employee respondents, 5.36% are Government Employee respondents and 18.75% are from Other's respondents.

INFERENCE:

Majority of 29.46% respondents are Students and Employee.

TABLE 4.1.4

TABLE SHOWING MARITAL STATUS OF THE RESPONDENTS

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Married	33	29.46
Unmarried	79	70.54
Total	112	100.00

Source: Primary data

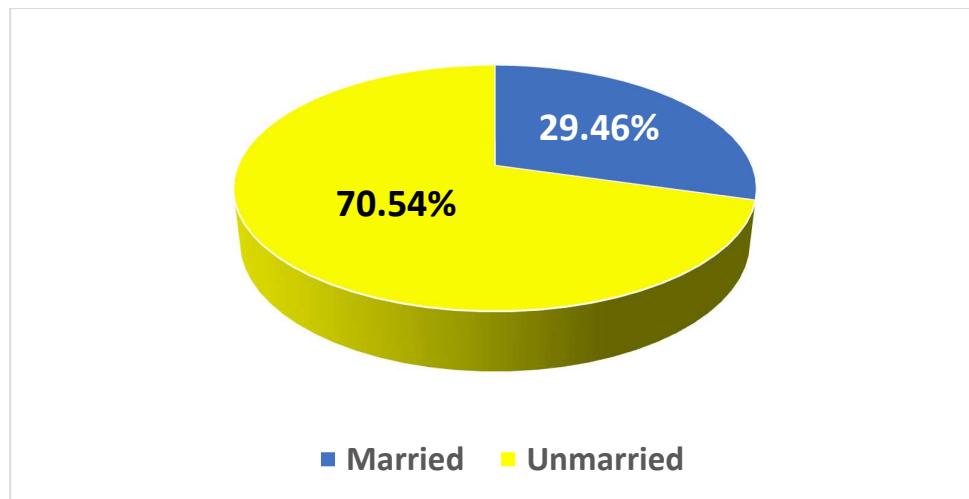


CHART NO 4.1.4: CHART SHOWING MARITAL STATUS OF RESPONDENTS

INTERPRETATION:

From the above table it is interpreted that 29.46% are Married respondents and 70.54% are Unmarried respondents.

INFERENCE:

Majority of 70.54% respondents are Unmarried.

TABLE 4.1.5

TABLE SHOWING QUALIFICATION OF THE RESPONDENTS

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
School Level	3	2.68
Diploma	14	12.50
U. G	73	65.18
P. G	21	18.75
Others	1	0.89
Total	112	100.00

Source: Primary data

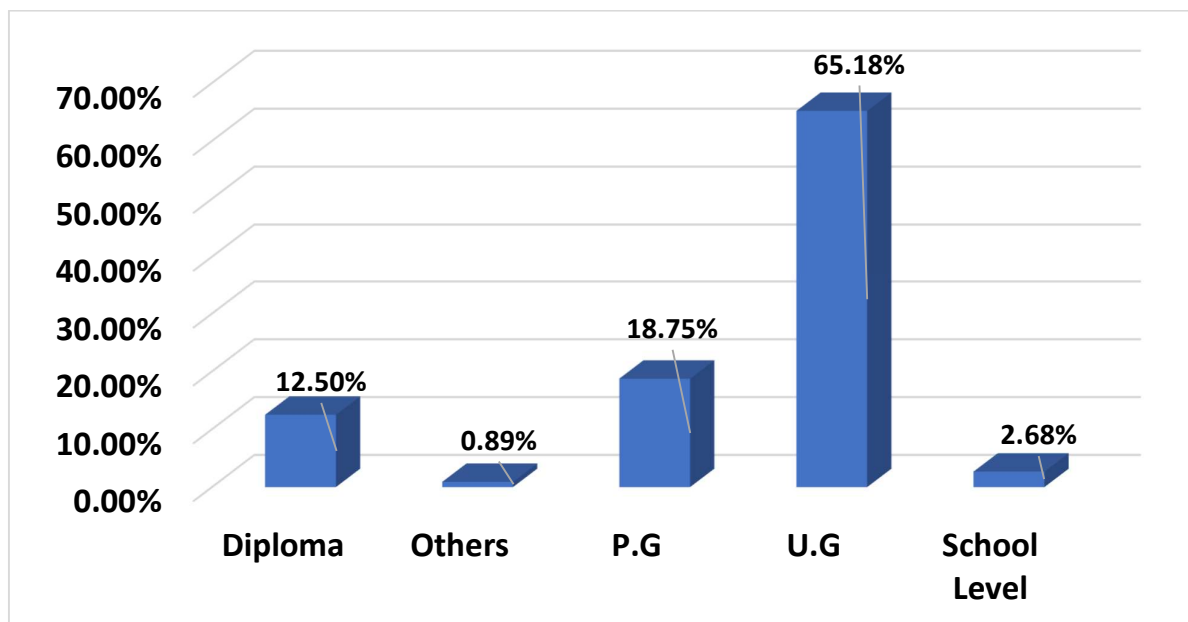


CHART NO 4.1.5: CHART SHOWING QUALIFICATION OF RESPONDENTS

INTERPRETATION:

From the above table it is interpreted that 2.68% are School Level respondents, 12.50% are Diploma respondents, 65.18% are U.G respondents, 18.75% are P.G respondents and 0.89% are from Other's respondents.

INFERENCE:

Majority of 65.18% respondents are U.G.

TABLE 4.1.6

TABLE SHOWING USE OF INTERNET EVERYDAY

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Less than one hour	1	0.89
1-2 hours	2	1.79
2-3 hours	18	16.07
3-4 hours	35	31.25
More than 4 hours	56	50.00
Total	112	100.00

Source: Primary data

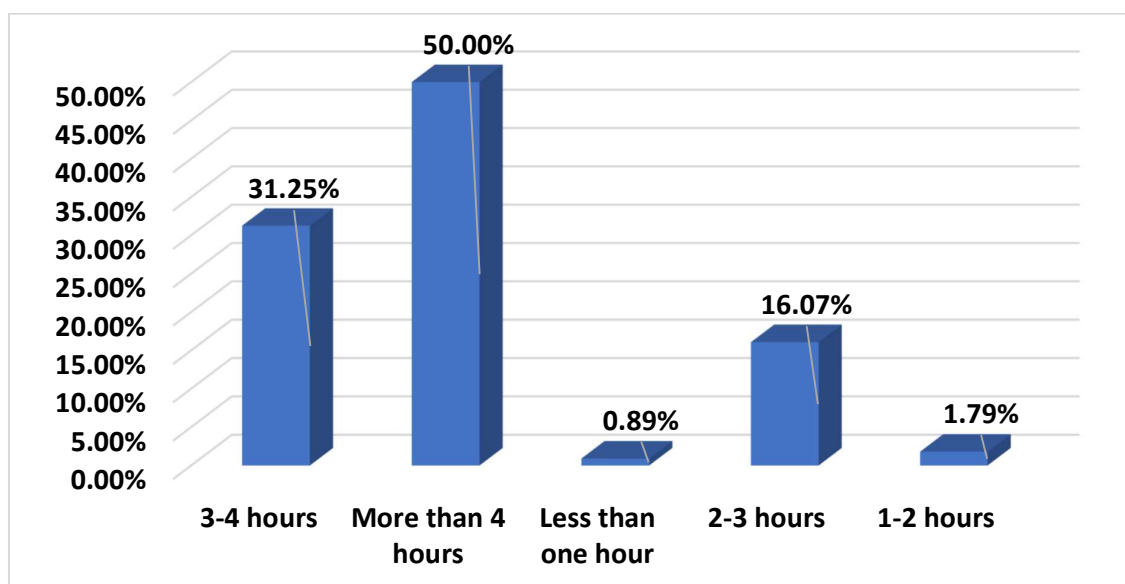


CHART NO 4.1.6: CHART SHOWING USE OF INTERNET EVERYDAY'S RESPONDENTS

INTERPRETATION:

From the above table it is interpreted that 31.25% are 3-4 hours respondents, 50.00% are More than 4 hours respondents, 0.89% are Less than one-hour respondents, 16.07% are 2-3 hours respondents and 1.79% are from 1-2 hours respondents.

INFERENCE:

Majority of 50.00% respondents are More than 4 hours.

TABLE 4.1.7

TABLE SHOWING MOST FREQUENTLY BUYING ONLINE SITE

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Amazon	110	98.21
Flipkart	85	75.89
Paytm mall	19	16.96
Swiggy	27	24.11
Zomato	27	24.11
Myntra	19	16.96
Snapdeal	10	8.93
Tatacliq	2	1.79
Ajio	9	8.04
Others	1	0.89

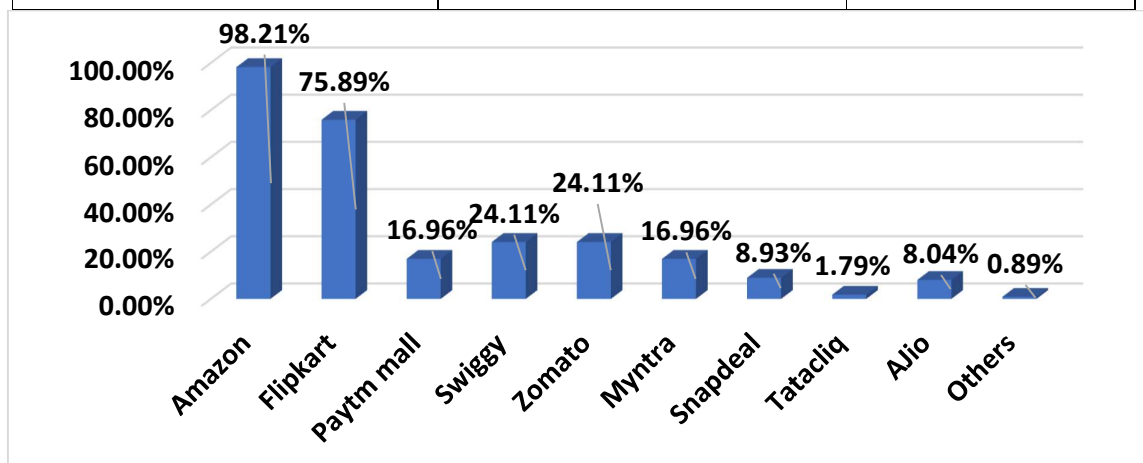


CHART NO 4.1.7: CHART SHOWING MOST FREQUENTLY BUYING

INTERPRETATION:

From the above table it is interpreted that 98.21% are Amazon respondents, 75.89% are Flipkart respondents, 16.96% are Paytm mall respondents, 24.11% are Swiggy respondents, 24.11% are Zomato respondents, 16.96% are Myntra respondents, 8.93% are Snapdeal respondents, 1.79% are Tatacliq respondents, 8.04% are Ajio respondents, 0.89% are Others.

INFERENCE:

Majority of 98.21% respondents are Amazon.

TABLE 4.1.8

TABLE SHOWING FREQUENTLY BUYING PRODUCT

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Grocery	67	59.82
Food	36	32.14
Electronic Goods	101	90.18
Clothes	51	45.54
Furniture	25	22.32
Toys	29	25.89
Others	8	7.14

Source: Primary data

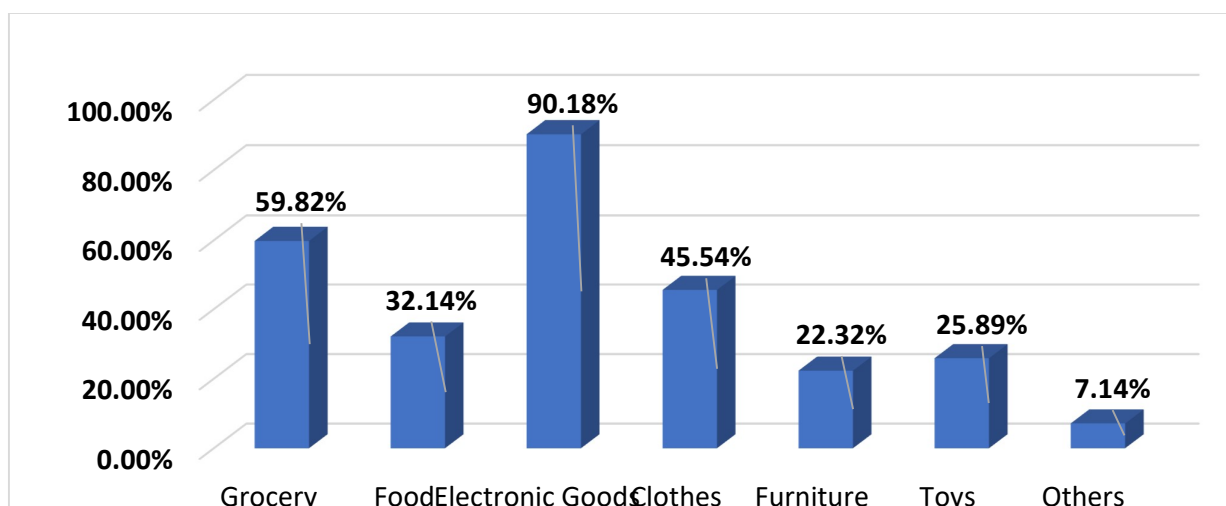


CHART NO 4.1.8: CHART SHOWING FREQUENTLY BUYING PRODUCT IN ONLINE

INTERPRETATION:

From the above table it is interpreted that 59.82% are Grocery respondents, 32.14% are Food respondents, 90.18% are Electronic good respondents, 45.54% are Cloth's respondents, 25.89% are Toy's respondents, 7.14% Others and 22.32% are from Furniture respondents.

INFERENCE:

Majority of 90.18% respondents are Electronic good.

TABLE 4.1.9

TABLE SHOWING ONLINE SHOPPING PAYMENT MODE

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Cash on Delivery	41	36.61
UPI	37	33.04
Debit Card	28	25.00
Credit Card	1	0.89
Others	5	4.46
Total	112	100

Source: Primary data

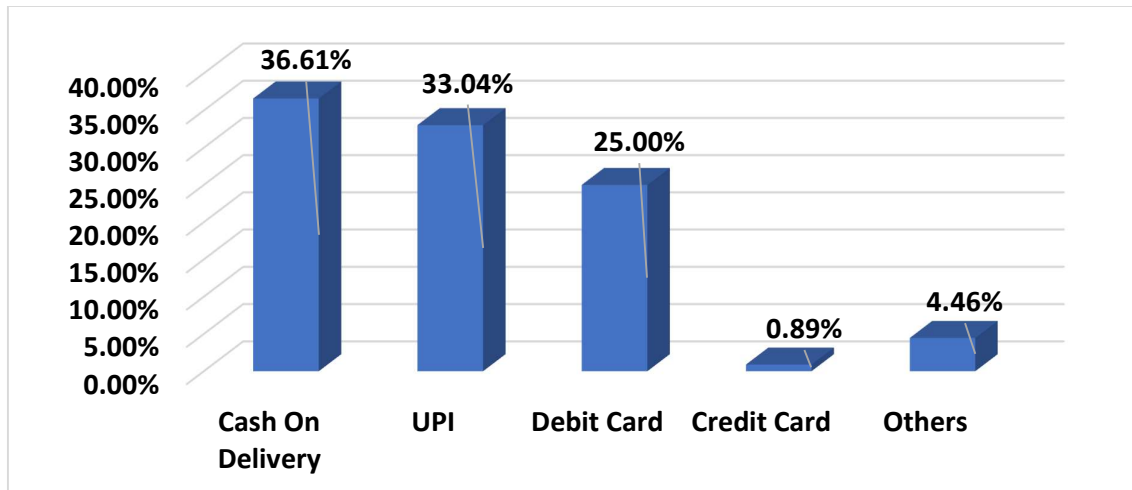


CHART NO 4.1.9: CHART SHOWING ONLINE SHOPPING PAYMENT MODE

INTERPRETATION:

From the above table it is interpreted that 36.61% are Cash on Delivery respondents, 33.04% are UPI respondents, 25.00% are Debit Card respondents, 0.89% are Credit Card respondents, 4.46% are from Other's respondents.

INFERENCE:

Majority of 36.61% respondents are Cash on Delivery.

TABLE 4.1.10

TABLE SHOWING PRODUCT TRACKING IN ONLINE SHOPPING

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Strongly Agree	70	62.50
Agree	31	27.68
Neutral	9	8.04
Disagree	1	0.89
Strongly Disagree	1	0.89
Total	112	100

Source: Primary data

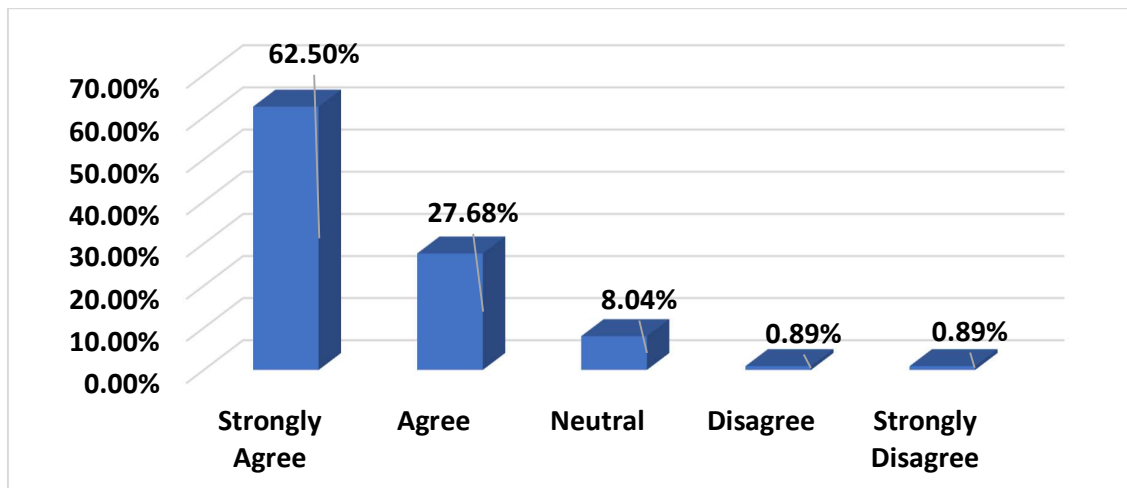


CHART NO 4.1.10: CHART SHOWING PRODUCT TRACKING IN ONLINE SHOPPING

INTERPRETATION:

From the above table it is interpreted that 62.50% are Strongly Agree respondents, 27.68% are Agree respondents, 8.04% are Neutral respondents, 0.89% are Disagree respondents, 0.89% are from Strongly Disagree respondents.

INFERENCE:

Majority of 62.50% respondents are Strongly Agree.

TABLE 4.1.11

TABLE SHOWING PRODUCT DELIVERY TIME IN ONLINE SHOPPING

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Highly Satisfied	36	32.14
Satisfied	47	41.96
Neutral	22	19.64
Dissatisfied	2	01.79
Highly Dissatisfied	0	0.00
Total	112	100

Source: Primary data

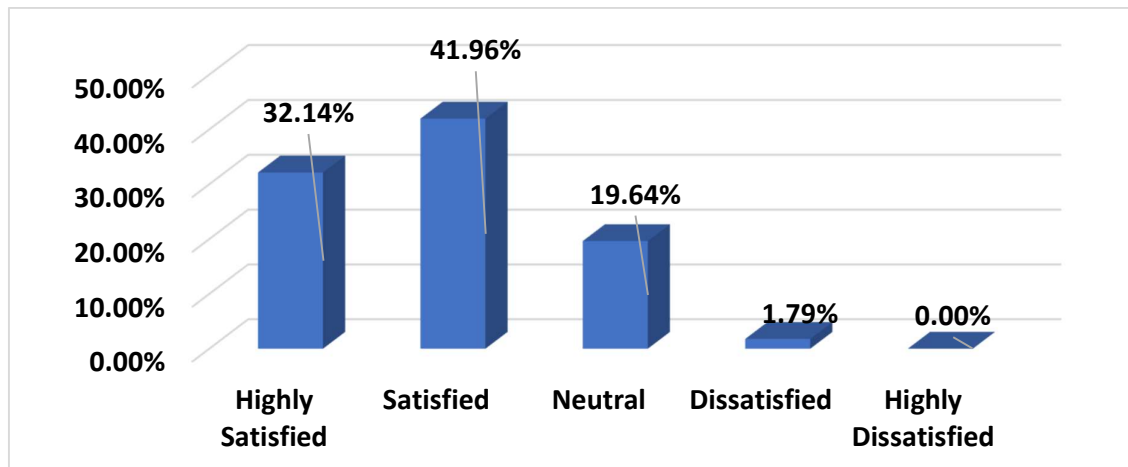


CHART NO 4.1.11: CHART SHOWING PRODUCT DELIVERY TIME IN ONLINE SHOPPING

INTERPRETATION:

From the above table it is interpreted that 32.14% are Highly Satisfied respondents, 41.96% are Satisfied respondents, 19.64% are Neutral respondents, 1.79% are Disagree respondents, 0.00% are from Highly Dissatisfied respondents.

INFERENCE:

Majority of 41.96% respondents are Satisfied.

TABLE 4.1.12

TABLE SHOWING PRODUCT REACH AT RIGHT TIME

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Strongly Agree	13	11.61%
Agree	42	37.50%
Neutral	31	27.68%
Disagree	21	18.75%
Strongly Disagree	5	4.46%
Total	112	100%

Source: Primary data

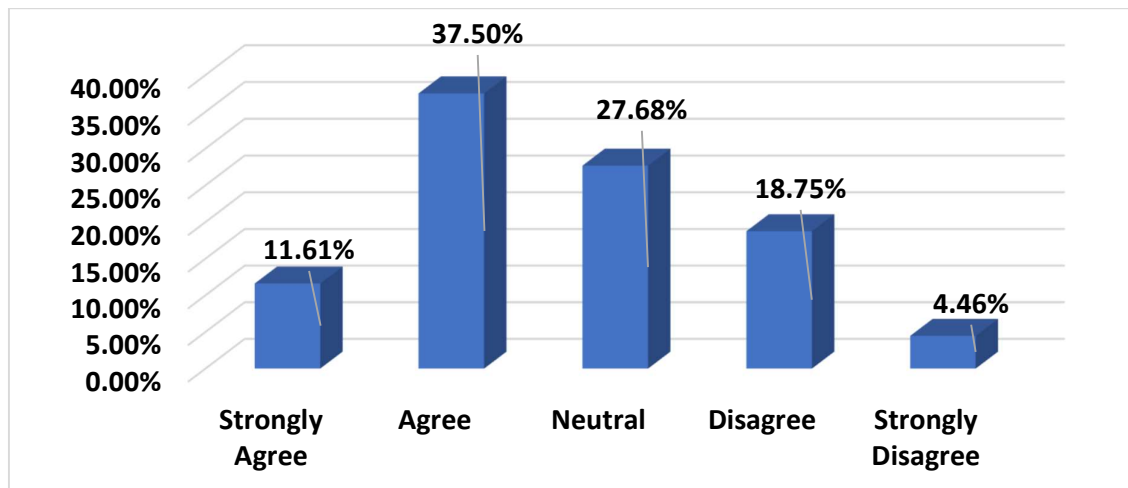


CHART NO 4.1.12: CHART SHOWING PRODUCT REACH AT RIGHT TIME DURING COVID-19

INTERPRETATION:

From the above table it is interpreted that 11.61% are Strongly Agree respondents, 37.50% are Agree respondents, 27.68% are Neutral respondents, 18.75% are Disagree respondents, 4.46% are from Strongly Disagree respondents.

INFERENCE:

Majority of 37.50% respondents are Agree.

TABLE 4.1.13

TABLE SHOWING E-COMMERCE SHOPPING IS BETTER

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Strongly Agree	63	56.25
Agree	32	28.57
Neutral	10	8.93
Disagree	3	2.68
Strongly Disagree	4	3.57
Total	112	100

Source: Primary data

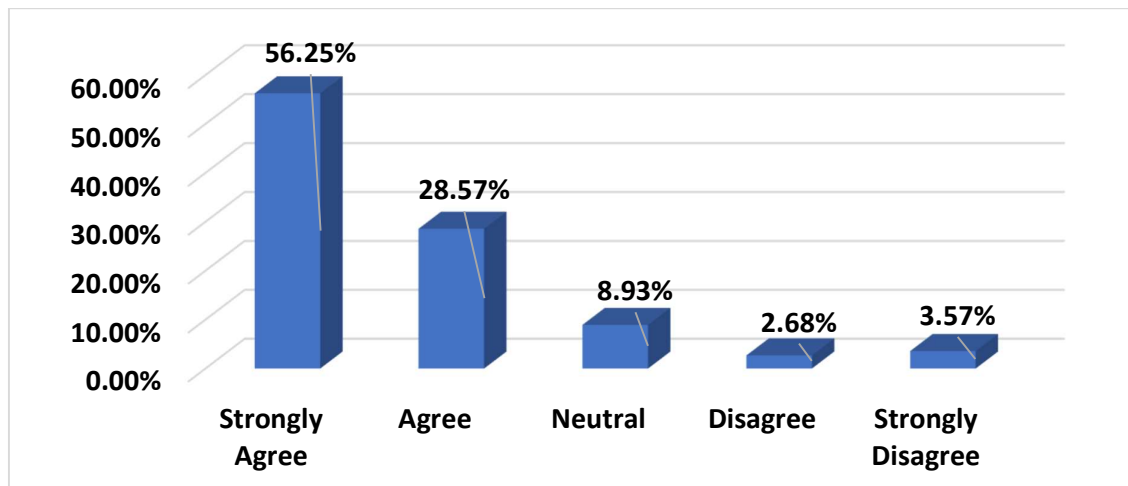


CHART NO 4.1.13: CHART SHOWING E-COMMERCE SHOPPING IS BETTER DURING COVID-19

INTERPRETATION:

From the above table it is interpreted that 56.25% are Strongly Agree respondents, 28.57% are Agree respondents, 8.93% are Neutral respondents, 2.68% are Disagree respondents, 3.57% are from Strongly Disagree respondents.

INFERENCE:

Majority of 56.25% respondents are Strongly Agree.

TABLE 4.1.14

TABLE SHOWING E-COMMERCE SERVICE PROVIDED PROMISE

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Strongly Agree	9	8.04
Agree	48	42.86
Neutral	48	42.86
Disagree	5	4.46
Strongly Disagree	2	1.79
Total	112	100

Source: Primary data

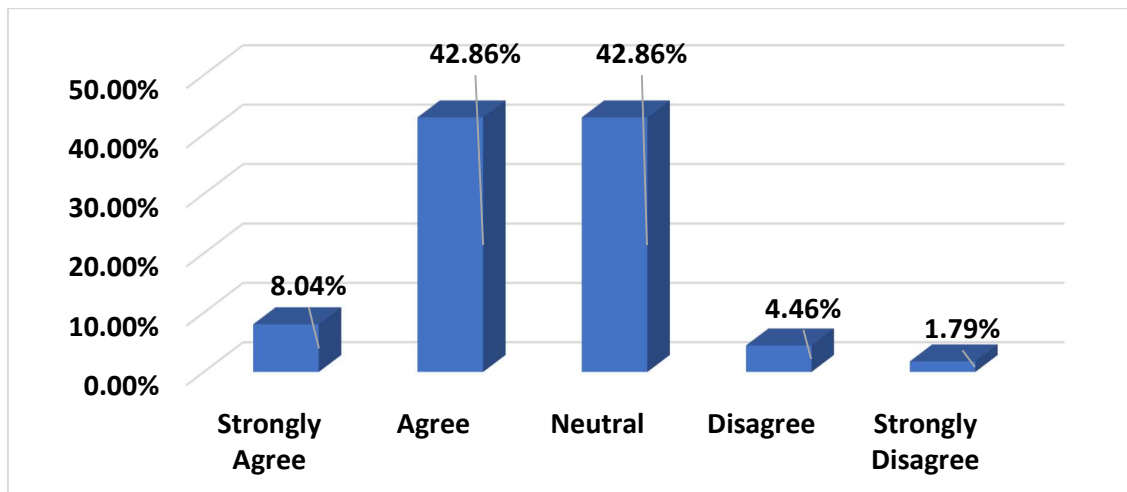


CHART NO 4.1.14: CHART SHOWING E-COMMERCE SHOPPING IS BETTER DURING COVID-19

INTERPRETATION:

From the above table it is interpreted that 8.04% are Strongly Agree respondents, 42.86% are Agree respondents, 42.86% are Neutral respondents, 4.46% are Disagree respondents, 1.79% are from Strongly Disagree respondents.

INFERENCE:

Majority of 42.86% respondents are Agree and Neutral.

TABLE 4.1.15

TABLE SHOWING SAFETY MEASURES UNDERTAKEN BY DELIVERY BOY

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Strongly Agree	36	32.14
Agree	46	41.07
Neutral	8	7.14
Disagree	16	14.29
Strongly Disagree	6	5.36
Total	112	100

Source: Primary data

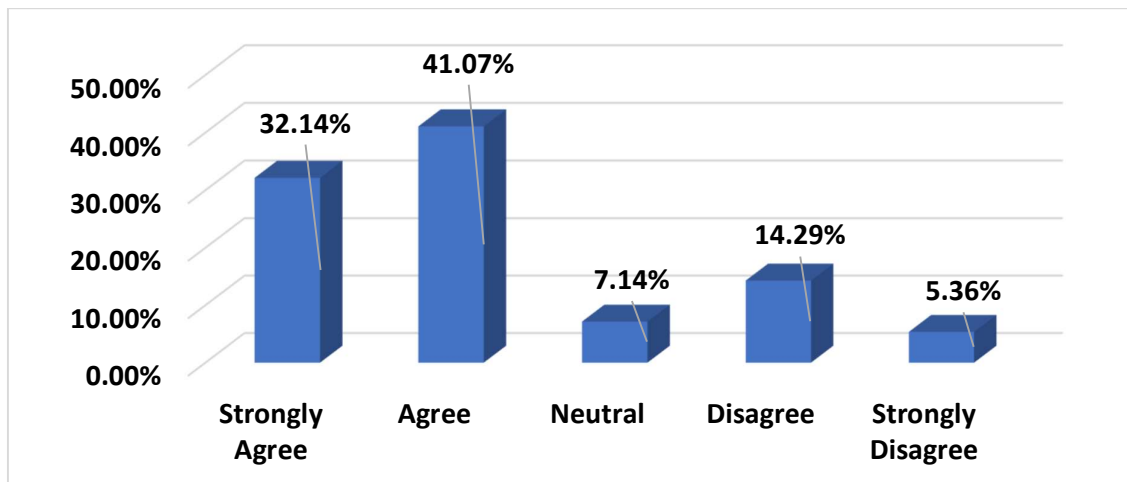


CHART NO 4.1.15: CHART SHOWING SAFETY MEASURES UNDERTAKEN BY DELIVERY BOY

INTERPRETATION:

From the above table it is interpreted that 32.14% are Strongly Agree respondents, 41.07% are Agree respondents, 7.14% are Neutral respondents, 14.29% are Disagree respondents and 5.36% are from Strongly Disagree respondents.

INFERENCE:

Majority of 41.07% respondents are Agree.

TABLE 4.1.16

TABLE SHOWING ONLINE SHOPPING IS SAFE IN PANDEMIC

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Strongly Agree	61	54.46
Agree	38	33.93
Neutral	7	6.25
Disagree	4	3.57
Strongly Disagree	2	1.79
Total	112	100

Source: Primary data

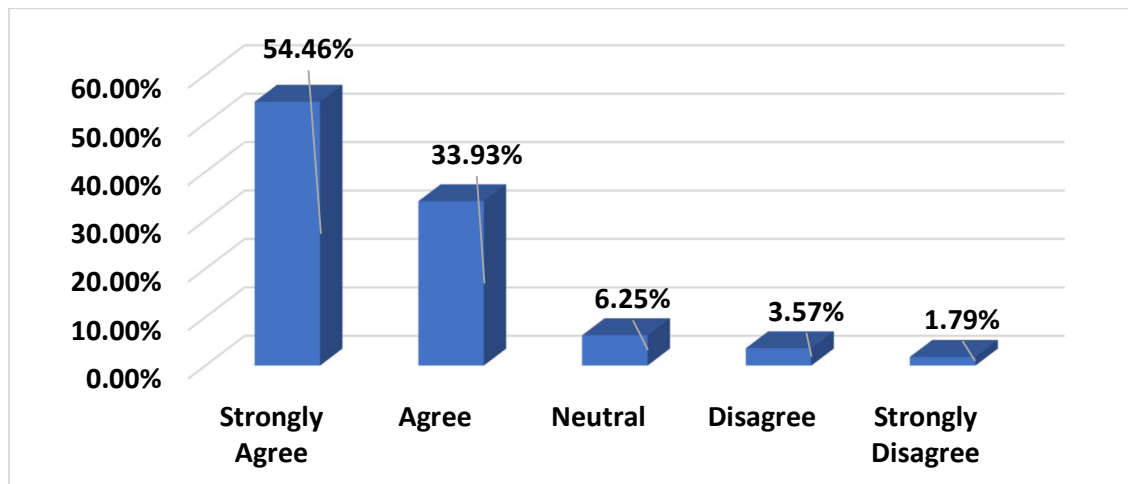


CHART NO 4.1.16: CHART SHOWING ONLINE SHOPPING IS SAFE IN PANDEMIC

INTERPRETATION:

From the above table it is interpreted that 54.46% are Strongly Agree respondents, 33.93% are Agree respondents, 6.25% are Neutral respondents, 3.57% are Disagree respondents and 1.79% are from Strongly Disagree respondents.

INFERENCE:

Majority of 54.46% respondents are Strongly Agree.

TABLE 4.1.17

TABLE SHOWING DELIVERY CHARGES HIGH DURING COVID-19

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Strongly Agree	58	51.79
Agree	38	33.93
Neutral	11	9.82
Disagree	3	2.68
Strongly Disagree	2	1.79
Total	112	100

Source: Primary data

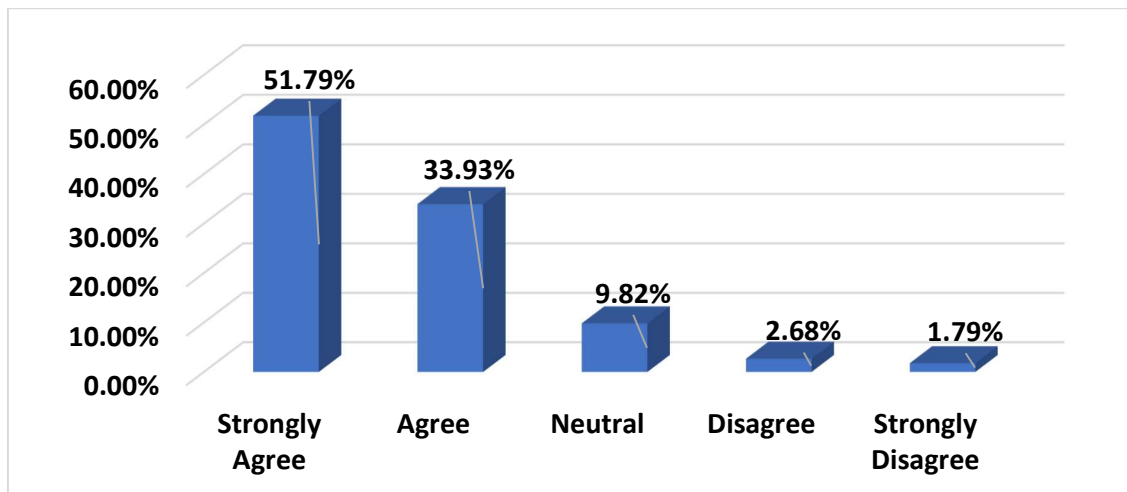


CHART NO 4.1.17: CHART SHOWING DELIVERY CHARGES HIGH DURING COVID-19

INTERPRETATION:

From the above table it is interpreted that 51.79% are Strongly Agree respondents, 33.93% are Agree respondents, 9.82% are Neutral respondents, 2.68% are Disagree respondents and 1.79% are from Strongly Disagree respondents.

INFERENCE:

Majority of 51.79% respondents are Strongly Agree.

TABLE 4.1.18

TABLE SHOWING RE-USE THE PRODUCT PACKAGE IN PERSONAL USE

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Strongly Agree	16	14.29
Agree	47	41.96
Neutral	32	28.57
Disagree	9	8.04
Strongly Disagree	8	7.14
Total	112	100

Source: Primary data

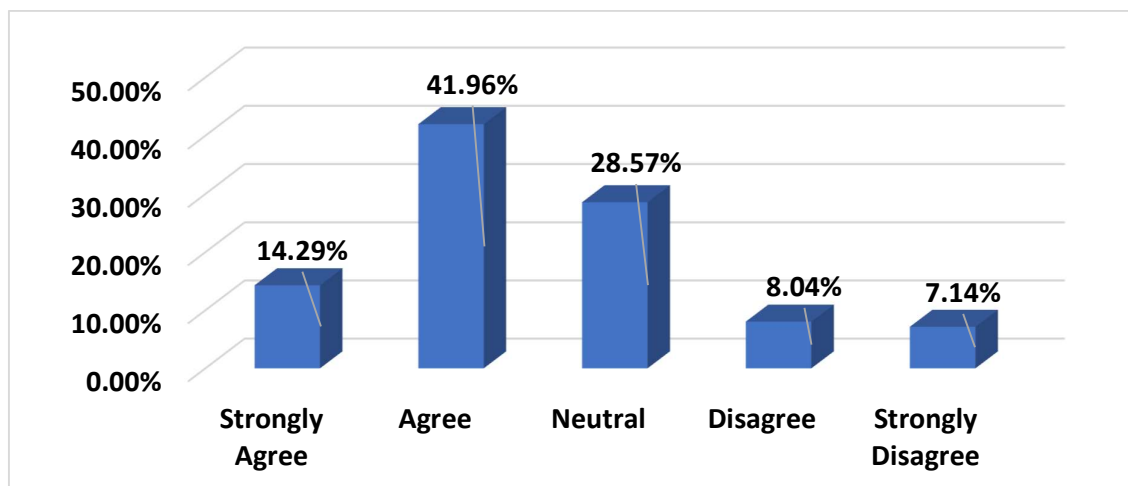


CHART NO 4.1.18: CHART SHOWING RE-USE THE PRODUCT PACKAGE IN PERSONAL USE

INTERPRETATION:

From the above table it is interpreted that 14.29% are Strongly Agree respondents, 41.96% are Agree respondents, 28.57% are Neutral respondents, 8.04% are Disagree respondents and 7.14% are from Strongly Disagree respondents.

INFERENCE:

Majority of 41.96% respondents are Agree.

TABLE 4.1.19

TABLE SHOWING PROMOTIONAL REWARDS INFLUENCE TO PURCHASE

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Strongly Agree	12	10.71
Agree	28	25.00
Neutral	49	43.75
Disagree	12	10.71
Strongly Disagree	11	9.82
Total	112	100

Source: Primary data

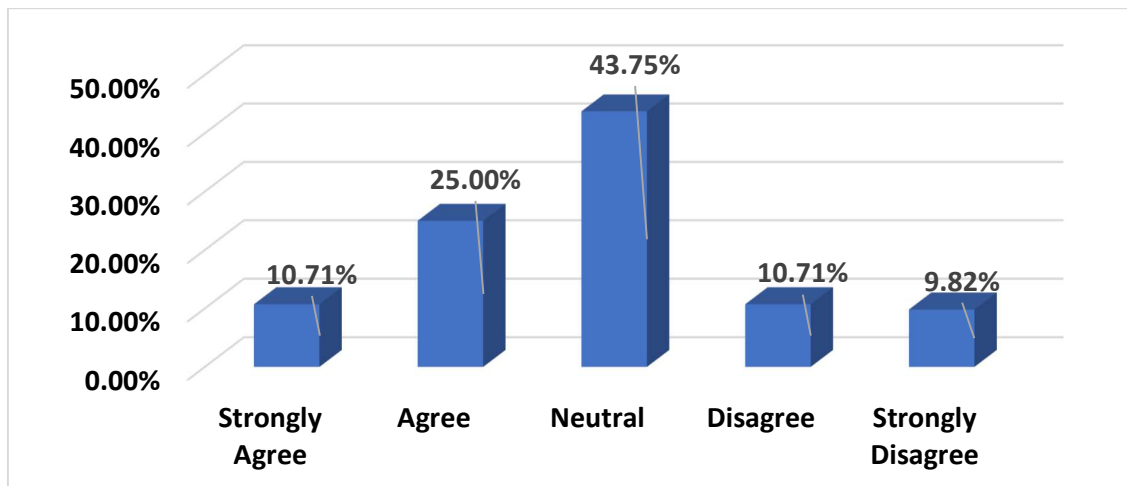


CHART NO 4.1.19: CHART SHOWING PROMOTIONAL REWARDS INFLUENCE TO PURCHASE

INTERPRETATION:

From the above table it is interpreted that 10.71% are Strongly Agree respondents, 25.00% are Agree respondents, 43.75% are Neutral respondents, 10.71% are Disagree respondents and 9.82% are from Strongly Disagree respondents.

INFERENCE:

Majority of 43.75% respondents are Neutral.

TABLE 4.1.20

TABLE SHOWING PRODUCT PACKAGING

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Highly Satisfied	20	17.86
Satisfied	70	62.50
Neutral	18	16.07
Dissatisfied	4	3.57
Highly Dissatisfied	0	0.00
Total	112	100

Source: Primary data

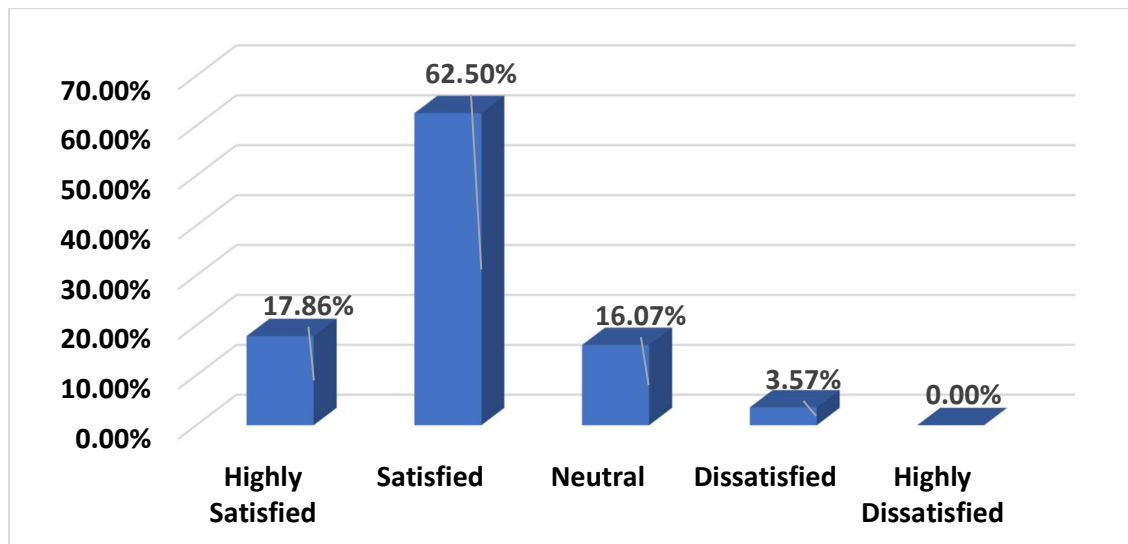


CHART NO 4.1.20: CHART SHOWING PRODUCT PACKAGING

INTERPRETATION:

From the above table it is interpreted that 17.86% are Highly Satisfied respondents, 62.50% are Satisfied respondents, 16.07% are Neutral respondents, 3.57% are Dissatisfied respondents and 0.00% are from Highly Dissatisfied respondents.

INFERENCE:

Majority of 62.50% respondents are Satisfied.

TABLE 4.1.21

TABLE SHOWING ONLINE COST COMPARING TO OFFLINE SHOPPING

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Highly Satisfied	59	52.68
Satisfied	42	37.50
Neutral	6	5.36
Dissatisfied	4	3.57
Highly Dissatisfied	1	0.89
Total	112	100

Source: Primary data

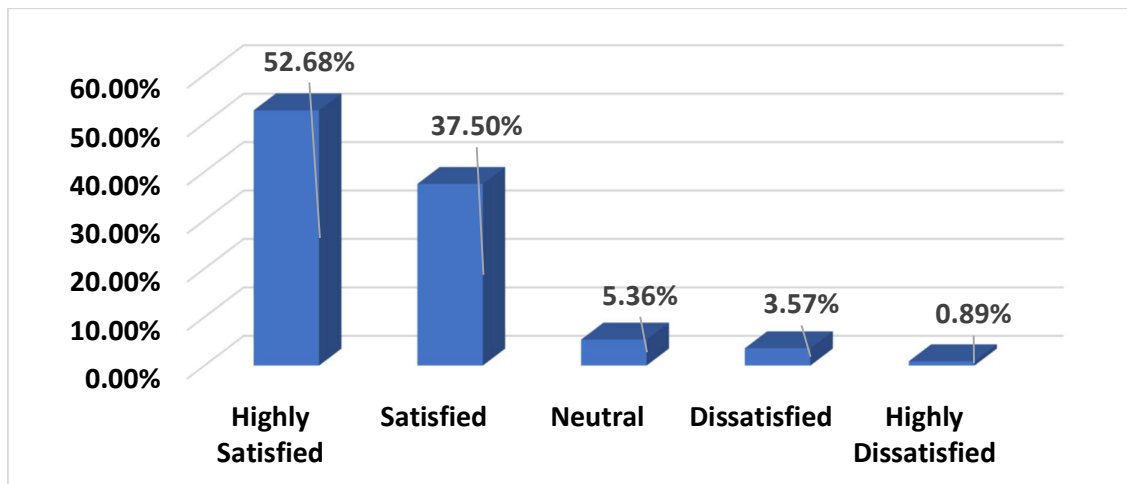


CHART NO 4.1.21: CHART SHOWING ONLINE COST COMPARING TO OFFLINE SHOPPING

INTERPRETATION:

From the above table it is interpreted that 52.68% are Highly Satisfied respondents, 37.50% are Satisfied respondents, 5.36% are Neutral respondents, 3.57% are Dissatisfied respondents and 0.89% are from Highly Dissatisfied respondents.

INFERENCE:

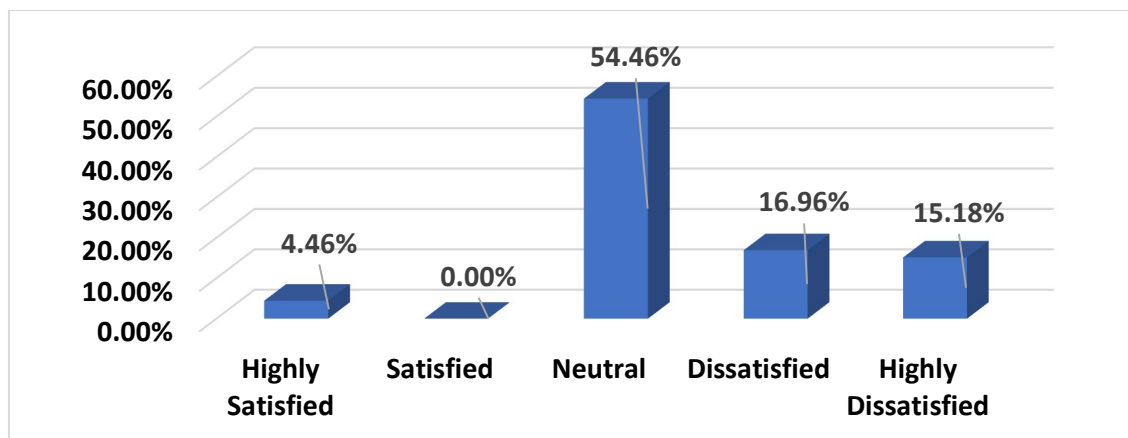
Majority of 52.68% respondents are Highly Satisfied.

TABLE 4.1.22

**TABLE SHOWING ONLINE MEMBERSHIP TAKE MORE TIME TO DELIVERY
DURING COVID-19.**

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Highly Satisfied	5	4.46
Satisfied	0	0.00
Neutral	61	54.46
Dissatisfied	19	16.96
Highly Dissatisfied	17	15.18
Total	112	100

Source: Primary data



**CHART NO 4.1.22: CHART SHOWING ONLINE MEMBERSHIP TAKE MORE
TIME TO DELIVERY DURING COVID-19**

INTERPRETATION:

From the above table it is interpreted that 4.46% are Highly Satisfied respondents, 0.00% are Satisfied respondents, 54.46% are Neutral respondents, 16.96% are Dissatisfied respondents and 15.18% are from Highly Dissatisfied respondents.

INFERENCE:

Majority of 54.46% respondents are Neutral.

TABLE 4.1.23

TABLE SHOWING MIS-TIME DELIVERY DURING PANDEMIC.

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Highly Satisfied	4	3.57
Satisfied	18	16.07
Neutral	48	42.86
Dissatisfied	25	22.32
Highly Dissatisfied	17	15.18
Total	112	100

Source: Primary data

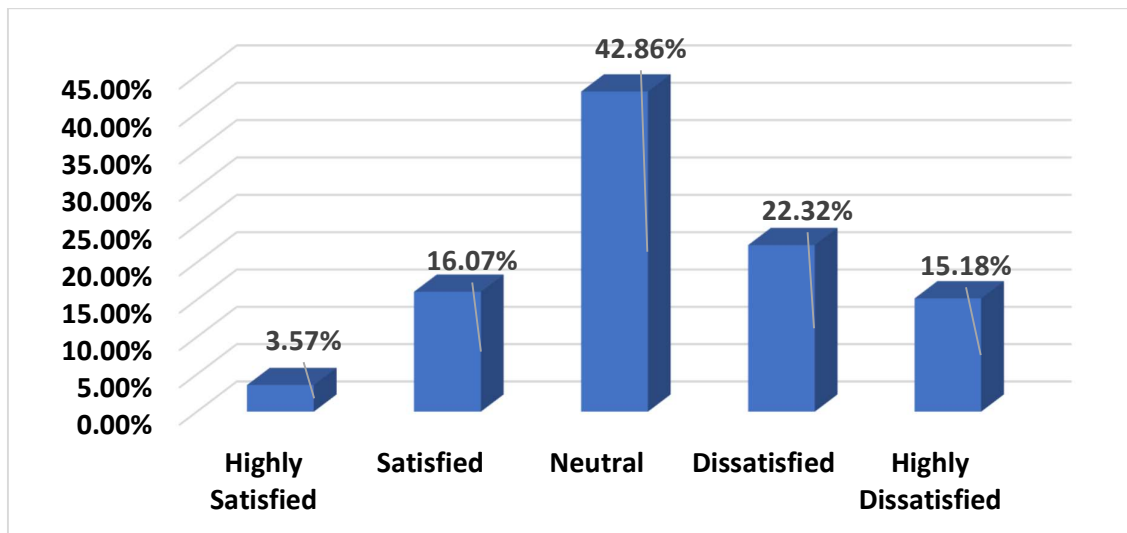


CHART NO 4.1.23: CHART SHOWING MIS-TIME DELIVERY DURING PANDEMIC

INTERPRETATION:

From the above table it is interpreted that 3.57% are Highly Satisfied respondents, 16.07% are Satisfied respondents, 42.86% are Neutral respondents, 22.32% are Dissatisfied respondents and 15.18% are from Highly Dissatisfied respondents.

INFERENCE:

Majority of 42.86% respondents are Neutral.

TABLE 4.1.24

TABLE SHOWING CASH ON DELIVERY DURING COVID-19.

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Highly Satisfied	43	38.39
Satisfied	34	30.36
Neutral	9	8.04
Dissatisfied	17	15.18
Highly Dissatisfied	9	8.04
Total	112	100

Source: Primary data

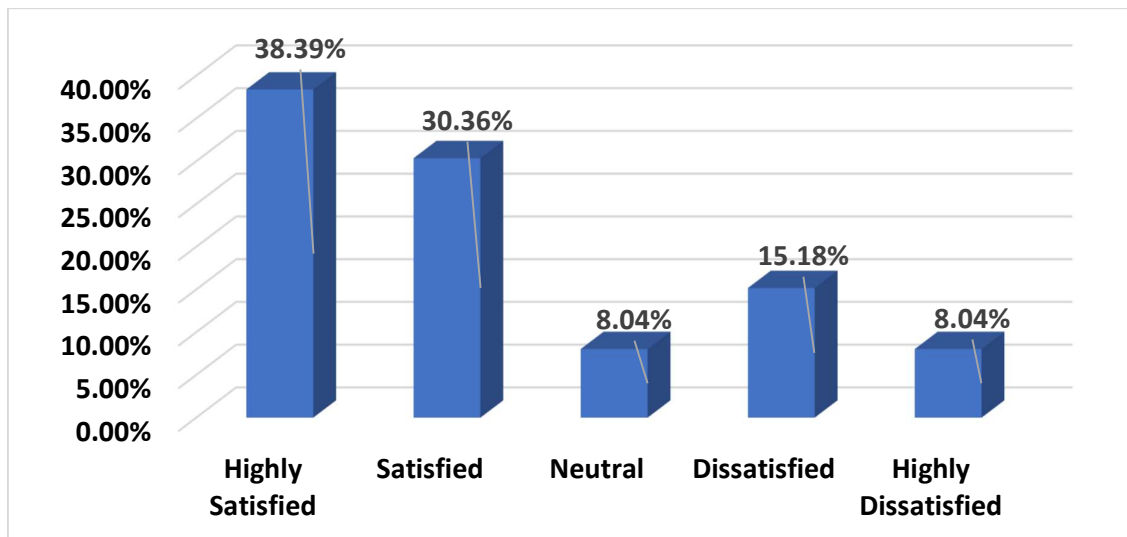


CHART NO 4.1.24: CHART SHOWING CASH ON DELIVERY DURING COVID-19

INTERPRETATION:

From the above table it is interpreted that 38.39% are Highly Satisfied respondents, 30.36% are Satisfied respondents, 8.04% are Neutral respondents, 15.18% are Dissatisfied respondents and 8.04% are from Highly Dissatisfied respondents.

INFERENCE:

Majority of 38.39% respondents are Highly Satisfied.

TABLE 4.1.25

TABLE SHOWING RETURN PRODUCT DELIVERY AT LATE TIME.

PARTICULARS	NO. OF RESPONDENT	PERCENTAGE
Highly Satisfied	4	3.57
Satisfied	18	16.07
Neutral	59	52.68
Dissatisfied	22	19.64
Highly Dissatisfied	9	8.04
Total	112	100

Source: Primary data

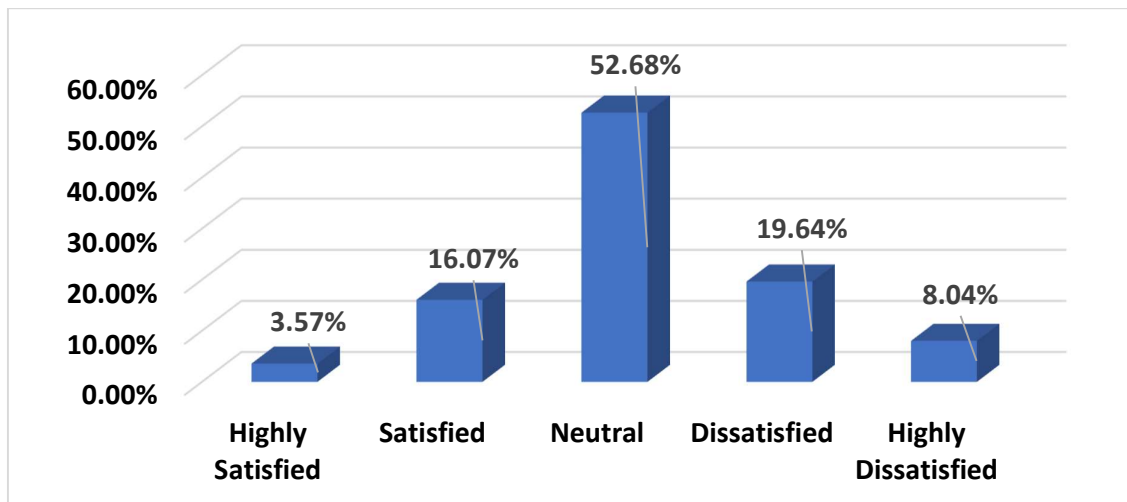


CHART NO 4.1.25: CHART SHOWING RETURN PRODUCT DELIVERY AT LATE TIME

INTERPRETATION:

From the above table it is interpreted that 3.57% are Highly Satisfied respondents, 16.07% are Satisfied respondents, 52.68% are Neutral respondents, 19.64% are Dissatisfied respondents and 8.04% are from Highly Dissatisfied respondents.

INFERENCE:

Majority of 52.68% respondents are Neutral.

4.2 CORRELATION

4.2.1. HYPOTHESIS:

H0 (Null Hypothesis): There is no significant difference between Frequently Buying Product and Cash on Delivery During COVID-19.

H1 (Alternate Hypothesis): There is a significant difference between Frequently Buying Product and Cash on Delivery During COVID-19.

Table 4.2.1: Table Showing Frequently Buying Product and Cash on Delivery During COVID-19.

Correlations				
			Frequently Buying Product	Cash on Delivery During COVID-19
Frequently Buying Product	Pearson Correlation		1	-.273**
	Sig. (2-tailed)			0.004
	N		112	112
Cash on Delivery During COVID-19	Pearson Correlation		-.273**	1
	Sig. (2-tailed)		0.004	
	N		112	112

** . Correlation is significant at the 0.01 level (2-tailed).

Inference:

The p-value is 0.004 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between Frequently Buying Product and Cash on Delivery During COVID-19.

4.2.2. HYPOTHESIS:

H0 (Null Hypothesis): There is no significant difference between Online Membership takes more time to delivery and Most frequently buying online site.

H1 (Alternate Hypothesis): There is a significant difference between Online Membership takes more time to delivery and Most frequently buying online site.

Table 4.2.2: Table Showing Online Membership takes more time to delivery and Most frequently buying online site.

Correlations			
		Online Membership takes more time to delivery	Most frequently buying online site
Online Membership takes more time to delivery	Pearson Correlation	1	-.271**
	Sig. (2-tailed)		0.004
	N	112	112
Most frequently buying online site	Pearson Correlation	-.271**	1
	Sig. (2-tailed)	0.004	
	N	112	112

** . Correlation is significant at the 0.01 level (2-tailed).

Inference:

The p-value is 0.004 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between Online Membership takes more time to delivery and Most frequently buying online site.

4.2.3. HYPOTHESIS:

H0 (Null Hypothesis): There is no significant difference between Online Product packaging satisfaction and Frequently buying product from online site.

H1 (Alternate Hypothesis): There is a significant difference between Online Product packaging satisfaction and Frequently buying product from online site.

Table 4.2.3: Table Showing Online Product packaging satisfaction and Frequently buying product from online site.

Correlations			
		Online Product packaging satisfaction	Frequently buying product from online site
Online Product packaging satisfaction	Pearson Correlation	1	-.267**
	Sig. (2-tailed)		0.004
	N	112	112
Frequently buying product from online site	Pearson Correlation	-.267**	1
	Sig. (2-tailed)	0.004	
	N	112	112

** . Correlation is significant at the 0.01 level (2-tailed).

Inference:

The p-value is 0.004 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between Online Product packaging satisfaction and Frequently buying product from online site

4.3 ANOVA

4.3.1. HYPOTHESIS:

H0 (Null Hypothesis): There is no significant difference between Payment mode preference for Online shopping and Cash on Delivery during COVID-19.

H1 (Alternate Hypothesis): There is a significant difference between Payment mode preference for Online shopping and Cash on Delivery during COVID-19.

Table 4.3.1: Table Showing Payment mode preference for Online shopping and Cash on Delivery during COVID-19.

ANOVA					
Cash on Delivery during COVID-19					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	42.638	6	7.106	4.414	.001
Within Groups	169.041	105	1.610		
Total	211.679	111			

Inference:

The p-value is 0.001 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between Payment mode preference for Online shopping and Cash on Delivery during COVID-19.

4.3.2. HYPOTHESIS:

H0 (Null Hypothesis): There is no significant difference between Online Cost comparing to offline and Payment mode preference for Online shopping.

H1 (Alternate Hypothesis): There is a significant difference between Online Cost comparing to offline and Payment mode preference for Online shopping.

Table 4.3.2: Table Showing Online Cost comparing to offline and Payment mode preference for Online shopping.

ANOVA					
Online Cost comparing to offline					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.546	6	8.306	5.314	.004
Within Groups	123.874	105	3.720		
Total	132.420	111			

Inference:

The p-value is 0.004 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between Online Cost comparing to offline and Payment mode preference for Online shopping.

4.4 T-TEST

4.4.1. HYPOTHESIS:

H0 (Null Hypothesis): There is no significant difference between Promotional rewards influence to purchase and Marital Status.

H1 (Alternate Hypothesis): There is a significant difference between Promotional rewards influence to purchase and Marital Status.

Table 4.4.1: Table Showing Promotional rewards influence to purchase and Marital Status.

Independent Samples Test							
		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2- tailed)	Std. Error Difference
Promotional rewards influence to purchase and Marital Status	Equal variances assumed	.658	0.419	.672	110	0.503	0.257
	Equal variances not assumed			.681	61.860	0.498	0.253

Inference:

The p-value is 0.503 which is greater than the alpha value (0.05), hence null hypothesis (H0) is accepted. Therefore, there is a no significant difference between Promotional rewards influence to purchase and Marital Status.

4.4.2. HYPOTHESIS:

H0 (Null Hypothesis): There is no significant difference between Delivery Charges High and Marital Status.

H1 (Alternate Hypothesis): There is a significant difference between Delivery Charges High and Marital Status.

Table 4.4.2: Table Showing Delivery Charges High and Marital Status.

Independent Samples Test							
		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2- tailed)	Std. Error Difference
Delivery Charges High and	Equal variances assumed	.940	.334	-.146	110	0.884	0.292
Marital Status	Equal variances not assumed			-.142	56.982	0.887	0.299

Inference:

The p-value is 0.884 which is greater than the alpha value (0.05), hence null hypothesis (H0) is accepted. Therefore, there is a no significant difference between Delivery Charges High and Marital Status.

4.4.3. HYPOTHESIS:

H0 (Null Hypothesis): There is no significant difference between E-commerce Shopping is Better and Marital Status.

H1 (Alternate Hypothesis): There is a significant difference between E-commerce Shopping is Better and Marital Status.

Table 4.4.3: Table Showing E-commerce Shopping is Better and Marital Status.

Independent Samples Test							
		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2- tailed)	Std. Error Difference
Delivery Charges High and	Equal variances assumed	4.419	0.038	-.477	110	0.634	0.286
Marital Status	Equal variances not assumed			-.450	53.131	0.654	0.303

Inference:

The p-value is 0.038 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between E-commerce Shopping is Better and Marital Status.

CHAPTER - 5

FINDINGS, SUGGESTIONS AND CONCLUSION

5.1 FINDINGS

- It is found that 77% of the majority respondents are Males.
- It is found that 81.25% of the majority respondents are between 20 to 40 years of Age.
- It is found that 29.46% of the majority respondents are Employee & Student.
- Majority respondents of 70.54% are Unmarried.
- It is found that 65.18% of the majority respondents have completed their post graduate degree.
- It is found that 98.21% of the majority respondents are most buying e-commerce site is Amazon that most frequently buying online site.
- Majority of 90.18 % respondents are like to buy electronic goods most of people frequently buy that.
- It is found that 36.61% of the majority respondents are Cash on delivery that online shopping payment mode in this covid time most of E-commerce not recommended that options but most of people want COD.
- It is found that 62.50% of the majority respondents are Strongly Agree that online shopping product packaging is most of people like.
- Majority of 41.96 % respondents are Satisfied that online shopping product delivery time during COVID-19.
- It is found that 37.50% of the majority respondents are Agree that online shopping products reach at the right time during COVID-19 so, there is no delay when the product delivery.
- It is found that 56.25% of the majority respondents are Strongly Agree that E-commerce shopping is better than offline shopping during COVID-19.
- It is found that 42.86% of the majority respondents are Agree and Neutral that E-commerce service providing promise to their customers.
- Majority of 41.07 % respondents are Agree that delivery boy using safety measures during COVID-19 because current days also majority new positive cases happened so, safety measures must to use as a delivery boy.

- It is found that 54.46% of the majority respondents are Strongly Agree toward online shopping is safe during COVID-19 most of internet usage people like to do online shopping.
- Majority of 51.79 % respondents are Strongly Agree that delivery charges high during COVID-19 if it's continuously happens people move to offline shopping.
- Majority of 41.96 % respondents are Neutral because sometimes only they use their package for their personal things.
- It is found that 62.50% of the majority respondents are most of people Satisfied their product packaging.
- It is found that 52.68% of the majority respondents are Highly Satisfied Online shopping cost towards offline shopping.
- Majority of 54.46% respondents are Neutral because most of people not to active any Special account.
- It is found that 42.86% of the majority respondents are Neutral in Mis-time delivery during pandemic.
- Majority of 38.39% respondents are Highly Satisfied during COVID-19 so much of people like to pay on delivery because so much of people not interest to do online transaction.
- Majority of 52.68% respondents are Neutral because most of people not to do return their products.
- The p-value is 0.004 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between Frequently Buying Product and Cash on Delivery During COVID-19.
- The p-value is 0.001 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between Payment mode preference for Online shopping and Cash on Delivery during COVID-19.
- The p-value is 0.503 which is greater than the alpha value (0.05), hence null hypothesis (H0) is accepted. Therefore, there is a no significant difference between Promotional rewards influence to purchase and Marital Status.

5.2. SUGGESTIONS

As a result of this certain suggestions are put forth in order to reduce cost of delivery charge and make it as quick delivery.

- Many of customers have suggested to do reduce the cost of delivery charge.
- Also, many of customer indicate Cash on Delivery payment option but during COVID-19 it's not safety but if goods sell more the e-commerce must to do enable the COD option.
- Most of people using internet more than 4 hours so, if any of people have offline shop to convert to the online shop.
- Online special membership account also asks delivery charge. That charges getting bad view about the E-commerce site.
- Online shopping product tracking is most satisfied till now. Please follow same strategy to satisfy the customers.
- Some of time product automatically cancel due to un supply the product that getting bad view from the customers.
- Some of times only the delivery boy wears the safety measurement that will affect the customers health so, correct that certain suppliers.
- Most of people not use the product package so, if the delivery boy gives the product again to make collect the empty package that will useful for reuse and environment friendly.

5.3 CONCLUSION

The above study concluded that satisfied the customer comparing offline shopping. The study states that during COVID-19, majority of customers using internet at the age of 20-40 years, most of people frequently buying online site is Amazon, most of people frequently product in online shopping is Electronics goods. This study also states that during COVID-19 most like purchase the product from the online shopping. This study also indicated most of customers wants Cash on Delivery currently most of E-commerce unable the option that payment mode. Finally, I conclude that in this study most of customers interest to purchase a product from the E-commerce so, E-commerce site manage the all activity and impress the customers in upcoming days.

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APPENDIX - I (QUESTIONNAIRE)

A STUDY ON E-COMMERCE LOGISTICS DURING COIVD-19

1. Name:_____
2. Gender:
(a) Male (b) Female
3. Age:
(a) Below 20 Years (b) 20-40 Years (c) 40-50 Years
(d) Above 50 Years
4. Marital Status:
(a) Married (b) Unmarried
5. Qualification:
(a) School Level (b) Diploma (c) U.G (d) P.G (e) Others
6. Occupation:
(a) Student (b) Employee (c) Self Employee
(d) Government Employee (e) Others
7. Location: _____
8. How often do you use internet every day?
(a) Less than one hour (b) 1-2 Hours (c) 2-3 Hours
(d) 3-4 Hours (e) More than 4 Hours

9. Which E-Commerce online site do you most frequently buy?

- (a) Amazon (b) Flipkart (c) Paytm mall (d) Tatacliq (e) Snapdeal
(f) Myntra (g) Ajo (h) Swiggy (i) Zomato (j) Others

10. Which Product is most frequently buying in Online Shopping?

- (a) Grocery (b) Food (c) Electronics goods (d) Clothes (e) Furniture
(f) Toys (g) Others

11. Which Payment mode you mostly preferred for Online Shopping?

- (a) Cash on Delivery (b) UPI (c) Debit Card (d) Credit Card (e) Others

12. Do Rating, Is product tracking is good in Online Shopping

(1-Strongly Disagree, 2-Disagree, 3-Neither Agree or Disagree, 4-Agree, 5-Strongly Agree)

	1	2	3	4	5	
Strongly Disagree	☐	☐	☐	☐	☐	Strongly Agree

13. How satisfied with the product delivery time in online shopping.

(1-Highly Dissatisfied, 2-Dissatisfied, 3-Neither Satisfied or Dissatisfied, 4-Satisfied, 5-Highly Satisfied)

	1	2	3	4	5	
Highly Dissatisfied	☐	☐	☐	☐	☐	Highly Satisfied

14. During COVID-19, do you think product bought reach you at right time?

- (a) Strongly Agree (b) Agree (c) Neither Agree or Disagree
(d) Disagree (e) Strongly Disagree

15. E-commerce shopping is better than offline shopping.

- | | | |
|--------------------|-----------------------|-------------------------------|
| (a) Strongly Agree | (b) Agree | (c) Neither Agree or Disagree |
| (d) Disagree | (e) Strongly Disagree | |

16. Are you feel E-commerce services are provided as promised in COVID-19

- | | | |
|--------------------|-----------------------|-------------------------------|
| (a) Strongly Agree | (b) Agree | (c) Neither Agree or Disagree |
| (d) Disagree | (e) Strongly Disagree | |

17. Does safety measures are undertaken by the delivery boy during product delivery in COVID-19.

- | | | |
|--------------------|-----------------------|-------------------------------|
| (a) Strongly Agree | (b) Agree | (c) Neither Agree or Disagree |
| (d) Disagree | (e) Strongly Disagree | |

18. Is Online Shopping safe in pandemic?

- | | | |
|--------------------|-----------------------|-------------------------------|
| (a) Strongly Agree | (b) Agree | (c) Neither Agree or Disagree |
| (d) Disagree | (e) Strongly Disagree | |

19. Is Delivery charges high in COVID-19 situation?

- | | | |
|--------------------|-----------------------|-------------------------------|
| (a) Strongly Agree | (b) Agree | (c) Neither Agree or Disagree |
| (d) Disagree | (e) Strongly Disagree | |

20. I re-use the package to meet my needs in the future.

- | | | |
|--------------------|-----------------------|-------------------------------|
| (a) Strongly Agree | (b) Agree | (c) Neither Agree or Disagree |
| (d) Disagree | (e) Strongly Disagree | |

21. Does promotional rewards of online shopping influence you to purchase in online?

- | | | |
|--------------------|-----------------------|-------------------------------|
| (a) Strongly Agree | (b) Agree | (c) Neither Agree or Disagree |
| (d) Disagree | (e) Strongly Disagree | |

22. Are you satisfied with the product packaging.

- | | | |
|----------------------|-------------------------|-------------|
| (a) Highly Satisfied | (b) Satisfied | (c) Neutral |
| (d) Dissatisfied | (e) Highly Dissatisfied | |

23. Are you satisfied with cost in online shopping when compared to offline shopping.

- (a) Highly Satisfied (b) Satisfied (c) Neutral
(d) Dissatisfied (e) Highly Dissatisfied

24. During COVID-19, online shopping membership also takes time for product delivery. Are you satisfied?

- (a) Highly Satisfied (b) Satisfied (c) Neutral
(d) Dissatisfied (e) Highly Dissatisfied

25. Are you satisfied with your mis-time delivery in pandemic situation?

- (a) Highly Satisfied (b) Satisfied (c) Neutral
(d) Dissatisfied (e) Highly Dissatisfied

26. Are you satisfied with Cash on Delivery during COVID-19?

- (a) Highly Satisfied (b) Satisfied (c) Neutral
(d) Dissatisfied (e) Highly Dissatisfied

27. Does returned product is replaced and delivered at late time. Are you satisfied?

- (a) Highly Satisfied (b) Satisfied (c) Neutral
(d) Dissatisfied (e) Highly Dissatisfied

28. Give any suggestion to make effectiveness on E-Commerce Logistics:

APPENDIX - II (ARTICLE)

A STUDY ON E-COMMERCE LOGISTICS DURING COVID-19

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ABSTRACT

The COVID-19 made the impact in E-commerce sector. In India, E-commerce sector is booming. Also, Commerce sector was down due to the pandemic situation and most of commerce are converted into E-commerce. And during COVID-19 most of people in home and some of stocks is not there and it is not safe for his/her health so, people buying a product from E-commerce sites now people like to buy goods from online. Based on the collected data from 112 online respondents during the social distancing period due to Covid-19, this study is about examining the online customer satisfactions towards E-commerce logistics, payment and product. And also examine delivery agent follow safety measurements then meet the customers. The study used SPSS analytical tools such as correlation, ANOVA and Independent T-test. This tool is used and found the customer have satisfied from online shopping. Finally, the result showed that in this pandemic situation most of the customers like to purchase goods from E-commerce.

Key words: E-commerce, E-logistics, Online Shopping, COVID-19

INTRODUCTION

The coronavirus pandemic is caused by Covid-19 disease affects logistics processes and chains. Example, the pandemic has been temporarily interrupted due to the Coronavirus pandemic, including intermodal logistics chains, some production processes transferred to some other countries. In many industries and sectors, more and more companies are developing their activities through the Internet, remotely providing their services, and selling their products under e-commerce. Many companies did not do this before now switch to remote activities, carried out

electronically through the Internet. The importance of E-marketing, including viral marketing, Real-Time marketing conducted on social media portals are increasing. The development of E-banking is also increasing, including online and mobile banking. Therefore, traditional logistics can be increasingly replaced by logistic business models in which some components of logistics processes are implemented through the Internet. During the COVID-19 situation, the importance of e-logistics is growing.

REVIEW OF LITERATURE

Anam Bhatti, Hamza Akram, Ahmed Usman Khan (2020), In this research paper Corona virus impact the consumer shopping and they changed to online shopping. In this Paper they did research about consuming, pandemic period E-commerce purchase is increasing. E-Retailer gives product in cost effective so it's well-connected actions in upcoming years.

Helin Öven & Melissa Hicintuka (2020), In this Research paper study to gain more knowledge on how international e-commerce firms are responding to the pandemic and the study will explore and conduct a deeper understanding on the e-commerce firms experience through a data collection.

Komal Sharma (2020), This research paper study about E-commerce is a business model that lets firms and individuals buy and sell products and services over the internet. It examines the growth of e-commerce due to covid-19 pandemic and that e-commerce became substitute source of traditional marketing or not with the help of secondary data taken from authorized websites.

Lobel Trong & Thuy Tran (2021), In this research they took examine the effect of the perceived effectiveness of e-commerce platforms (PEEP), quantitative survey and analysis. Implications for managers and theory are also discussed.

Pere Llorach-Massanab & M. Blanca Ronceroa (2021), In this research paper they studied online purchasing and E-commerce packaging production and use, have grown steadily in recent years, and so has their environmental impact as a result and they give solution to control the environmental impacts of packaging.

OBJECTIVES OF THE STUDY

1. To Analyze the effectiveness on E-Commerce Logistics during COVID-19.
2. Examine the effect of COVID-19 on the online purchasing behavior on consumers.

RESEARCH METHODOLOGY

Research Design: In this study, Descriptive Research Design is used in research topic.

Sampling Technique: The method of sampling adopted to conduct survey is Convenience Sampling Method. The area of research is concentrated on E-commerce Industry in Tamil Nadu.

Sources of Data: The primary data for this study is collected through questionnaire consisting of multiple-choice questions. The secondary data is collected by referring by websites, journals, articles and research paper.

Structure of Questionnaire: Multiple choice questions and Likert's scale questions

Sample Size: Sample Size of 112 online customers those purchasing products from Online sites in Tamil Nadu.

Period of Study: The period of study is carried out from January 2021 to March 2021.

Analytical Tools:

- Correlation.
- ANOVA.
- Independent T-test.

CORRELATION

Table Showing Frequently Buying Product and Cash on Delivery During COVID-19.

Correlations			
		Frequently Buying Product	Cash on Delivery During COVID-19
Frequently Buying Product	Pearson Correlation	1	-.273**
	Sig. (2-tailed)		0.004
	N	112	112
Cash on Delivery During COVID-19	Pearson Correlation	-.273**	1
	Sig. (2-tailed)	0.004	
	N	112	112

** . Correlation is significant at the 0.01 level (2-tailed).

Inference:

The p-value is 0.004 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between Frequently Buying Product and Cash on Delivery During COVID-19.

ANOVA**HYPOTHESIS:**

H0 (Null Hypothesis): There is no significant difference between Payment mode preference for Online shopping and Cash on Delivery during COVID-19.

H1 (Alternate Hypothesis): There is a significant difference between Payment mode preference for Online shopping and Cash on Delivery during COVID-19.

Table Showing Payment mode preference for Online shopping and Cash on Delivery during COVID-19.

ANOVA					
Cash on Delivery during COVID-19					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	42.638	6	7.106	4.414	.001
Within Groups	169.041	105	1.610		
Total	211.679	111			

Inference:

The p-value is 0.001 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between Payment mode preference for Online shopping and Cash on Delivery during COVID-19.

T-TEST**HYPOTHESIS:**

H0 (Null Hypothesis): There is no significant difference between Payment mode preference for Online shopping and Cash on Delivery during COVID-19.

H1 (Alternate Hypothesis): There is a significant difference between Payment mode preference for Online shopping and Cash on Delivery during COVID-19.

Table Showing E-commerce Shopping is Better and Marital Status.

Independent Samples Test							
		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2- tailed)	Std. Error Difference
Delivery Charges High and	Equal variances assumed	4.419	0.038	-.477	110	0.634	0.286
Marital Status	Equal variances not assumed			-.450	53.131	0.654	0.303

Inference:

The p-value is 0.038 which is lesser than the alpha value (0.05), hence alternate hypothesis (H1) is accepted. Therefore, there is a significant difference between E-commerce Shopping is Better and Marital Status.

SUGGESTIONS

- Many of customers have suggested to do reduce the cost of delivery charge.
- Many of customer indicate Cash on Delivery payment option but during COVID-19 it's not safety but if you want to sale more product from the e-commerce must to do enable the COD option.

CONCLUSION

The above study concluded that satisfied the customer comparing offline shopping. The study states that during COVID-19, majority of customers using internet at the age of 20-40 years, most of people frequently buying online site is Amazon, most of people frequently product in online shopping is Electronics goods. This study also states that during COVID-19 most like purchase the product from the online shopping. This study also indicated most of customers wants Cash on Delivery currently most of E-commerce unable the option that payment mode. Finally, I conclude that in this study most of customers interest to purchase a product from the E-commerce so, E-commerce site manage the all activity and impress the customers in upcoming days.

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