

COVID 19 IMPACT ON E COMMERCE

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Abstract:

E-commerce is the most considered and preferred way of purchasing all sorts of products and services by the consumers all over world now days. Convenient yet reasonable with lot of variety to choose from all over the world at fingertips is the reason why E-commerce is growing by lips and bounds. But due to covid-19 pandemic E-commerce business are facing challenges of unexpected forms which never existed before. There is certain change in Demand and buying behavior 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. This paper tries to throw light on those impacts.

Introduction:

Covid-19 Pandemic – also known as corona virus pandemic a pneumonia of unknown cause in Wuhan province of China was reported to WHO country office on 31st December 2019 , on 30th January 2020 WHO announced an outbreak of public health emergency of international concern. And on 11th February 2020 WHO announced a name COVID-19 for the new corona virus disease .Corona virus disease (Covid -19) is a very infectious disease most of patient who are getting infected are showing different symptoms in different patients. Some are having symptoms of fever, tiredness, dry cough, runny nose, congestion, sore throat. Aches and pains. Some are asymptomatic; Recovery is seen in almost 83% of patients. About 17 % death has occurred as on date. Deaths are occurring in those which are having low immunity due to varied reasons. In some are due to old age, some are having preexisting chronic illness like cancer, heart disease lungs and kidney disease. As on date 7th may, 4,62,8281 corona cases found out of that 308,654 deaths occurred, 17,59701 cases has recovered.covid-19 has affected about 213 countries n territories around the world.

E-Commerce Business - E-commerce business is taking place when buyer and seller conduct their business transactions with the help of internet. Any anything can be buy or sale by anybody with the help of technology. The term electronic commerce or e-commerce refers to any sort of business transaction that involves the transfer of information through the internet. E-commerce businesses are of following major types like 1) Business-to-Business (B2B) 2) Business-to-Consumer (B2C) 3) Business-to-Government (B2G) 4) Consumer-to-Consumer (C2C) 5) Mobile Commerce (M-Commerce). E-commerce market was going strong due to technological advances and the people were exploring and shopping. E-commerce industry was growing at brisk rate. Countries like India, China, US, UK, Russia, and Europe were the major contributors in growth of E-commerce along with the rest of world.

Covid -19 Global impact on economy with emphasis on E-commerce:-

The world has never witnessed global health crises of this intensity, one that is killing people and spreading human sufferings causing economic and social crisis. Covid-19 pandemic outbreak has affected all segments of population right from the rich to the poor, from prime minister to layman. Covid-19 has pressed the panic button not only in terms of increasing death tolls all over the world but has its impact on population all over the world in terms of health concerns ,stock market falls, job concerns, social concerns and its day to day life routines.

The first quarter of 2020 started with Covid-19 and unrest which may lead to situation of war between US and Iran which showed signs of trends of world economy tilting towards downfall. Global equity market saw steep downfall ever since great depression. Crude oil price entered negative territory for the first time on 20th April due to less demand and abundance of availability. No relief yet Covid-19 pandemic causing lockdowns, shutting downs of business, unemployment's, slow economic growth and inflation. According

to estimates the global economic growth could cut by 2% per month if this situation keeps aggravating. And trade across globe drop by 12% to 32%. UN conference on trade and development states that Covid-19 can cost the global economy close to 2 trillion or more dollars and if economic restrictions are extended without fiscal response. Covid-19 pandemic has disturbed the supply chain and international trade with more than 100 countries closing their national border due to which all forms of businesses are halted. Its impact is seen almost on each sectors but heavily on automobile, tourism industry, aviation, electronic, IT sector and so on. E-commerce industry is also one on victims of covid- 19 as its activities are hampered.

COVID-19 impact to the online sector is more in terms of volumes along with the concerns and anxiety regarding spread of virus. The immergence and prevalence of COVID-19 has significantly transformed consumer buying behavior from the luxury to the basic needs, from leisure to survival stuff. This certain shift in online buying behavior is for the Essential products which are needed most in this lockdown, restrictions and period of uncertainty.

Changes in Revenue across Ecommerce - ecommerce sales are not higher across the board, although some industries are seeing significant step-up. Only essential segment of E- commerce products are one who escaped from this storm, as there was tremendous rise in their sale in lockdown period in those countries where they were allowed to sale.

The pandemic has defined a new category of goods called “new essentials.” New essentials are products which help consumers to feel more comfortable in lockdowns and restriction along with workfrom home conditions. Apart from grocery this includes Health & hygiene, wellness product, office supplies, fitness equipment, cosmetics, home improvement, toys, and hobby-related products.

Health & hygiene and wellness product - like covid-19 protection gears like mask, sanitizers, self hygiene products, baby products, floor cleaners. Health and safety products are the most bought and willbe in demand due to covid 19, there sales is more than production. According to data from Nielsen, items like hygienic and medical mask sales are up by more than 300%; Personal Care saw a 120-130 per cent increase in GMV, largely driven by the sale of sanitizers and hygiene products

Grocery – amongst the most sold product are grocery. Panic buying was seen in initial lockdowns people started buying and piling of pantry product and also for the products which are not available near their neighboring shops was ordered. Sale of essential product will be in demand till this pandemic is over. Grocery saw a steep increase of 110-115 per cent in GMV.

Pharmaceutical product- buying of medicine which can help to prevent corona virus like immunity boosters, some anticipatory medicines, and wellness product are more in demand in online purchase, Medicine which are consumed by chronic sufferers like blood pressure, diabetes, asthma , allergies and so on are among the bulk purchase. And increase of massive 817% of rise in purchase (according to Adobes analysis-Blogs).

Subscription services – also saw gain in trends, in both revenue and conversion. Streaming services like Amazon, Netflix, and Disney+ are witnessing addition in subscribers in the first quarter of 2020.

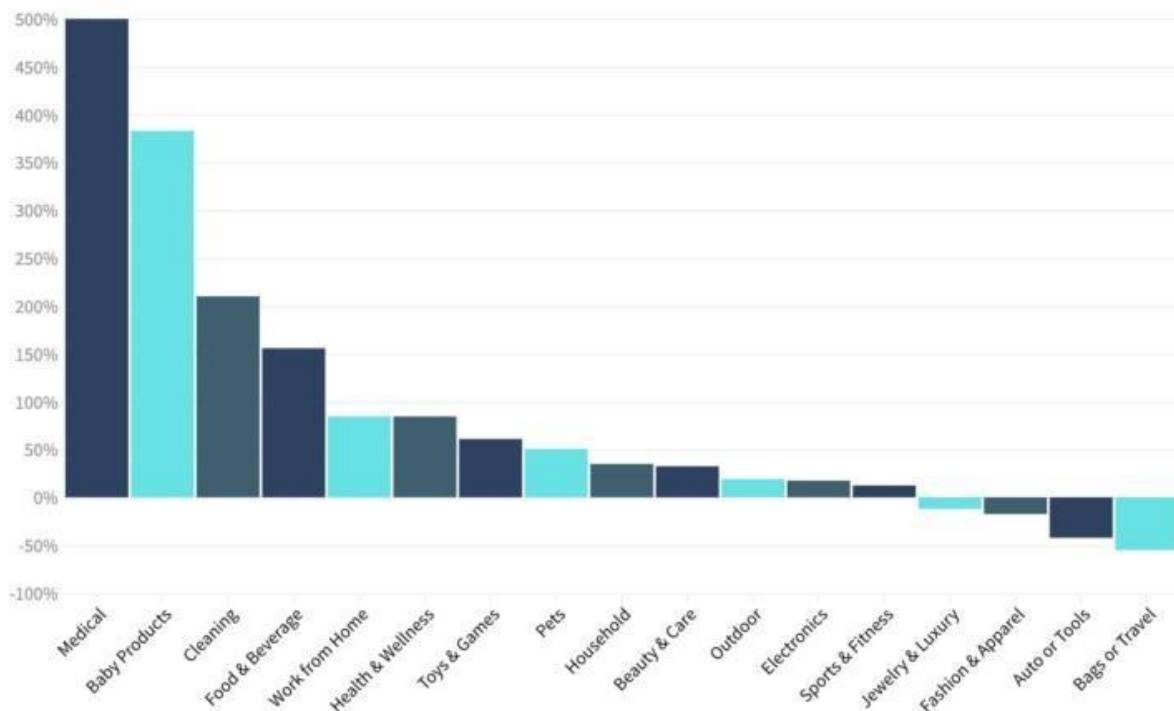
Netflix has gained 15.8m new subscribers during first quarter of 2020, more than double its original 7m target for the period, according to the Financial Times. Out of that from Europe, Middle East, and Africa region 7 million subscriptions originated. While 3.6m came from Asia. As a result, revenues have risen by 28% in the first quarter compared to the same time in 2019, reaching \$5.77bn which is slightly higher than the forecasted \$5.4bn expected by the company.

TikTok – a social media video sharing app – saw a downloads surge in first quarter of 2020, Downloads of TikTok surged by 315m in Q1 2020, making it the most downloaded app ever in any three-month time period, according to analysis from Sensor Tower.

Following chart shows how essential things related to lockdown were ordered in countries where consumer were able to purchase online

Ecommerce Consumer Sales (COVID-19) +28.48%

Aggregated via ShipBob, ShipHero, Attentive, Stackline, CTC, Klaviyo & Adobe



Covid-19 pandemic impact on some E-commerce giants is as follows –

In E-commerce market china is biggest player having volume of 1.94 trillion USD in 2019. More than three times the size of the US market, E-commerce player like Tmall China (Alibaba Group), JD.Com, Kaola by Net Ease (This cross-border ecommerce player) Xiao Hong Shu (RED), “Little Red Book. Despite the Corona virus outbreak, these numbers are expected to grow in 2020.

JD.com sales seen four times rise in daily needs of household thing as compared to last year sales and according to survey by Engine states that online sale has increased up to 10-30% **Alibaba** - E-commerce service provider has struggled to sustain growth rates during an economic slowdown, Still Alibaba dot com has managed to receive orders of medical supplies from many countries more than \$2 billion.

Impact on Amazon – according to most valuable business in universe its international sales, which accounts for all its businesses outside US including India posted an 18% growth to \$ 19.1 billion in the first quarter, while losses more than quadrupled to \$398 million compared to the earlier profit period. And according to company executives in Covid-19 pandemic overall sales has shown growth with revenue rising 26% to \$75.5 billion, but profit has come down to \$2.5 billion which was \$3.6 billion in the same quarter last year. According to Chief Financial Officer (CFO) Brian Olsavsky Amazon has seen the biggest impact of the COVID-19 spread on its business internationally in India, said during its first quarter earnings. In united states of America there is rise in E-commerce earning by 40% according to Listrak reports since they declared a state of emergency. US companies like Amazon, Walmart, Instacart have seen rush of online order due to Covid-19 pandemic has stated in US.

Impact on Indian E-commerce -Indian E-commerce companies struggled to do their

Online sales due to the lockdown that started from 24th march until May 3rd completely halted their operations as warehouses were closed and forced delivery fleets to stay at home to prevent the spread of

the contagious virus. E-grocers including Big Basket and Grofers, and e-commerce firms Amazon and Flipkart, along with B2B platforms Jumbotail and Udaan stopped deliveries as they are facing operational issues resulted due to manufacturing stoppage, and movement of goods and labour issues.

According to E-commerce firms there was complete stoppage of goods transport to warehouses authorities forced warehouses to shutdown since the third phase of lockdowns E-commerce Indian companies has started gaining some movement in their online sales. And since the third phase of lockdown started orders from orange and green zones are coming. E-commerce companies can see once again rush of orders online even for other product which are from non essential commodity. This comes after these companies started accepting orders for non-essential products in amid the nationwide lockdown.

Flipkart, **snapdeal** and other e-commerce giant Snapdeal is reportedly prioritizing delivery of household goods and essentials.

According to a report E-commerce company snapdeal has received 75% of its orders green and orange zone. In third phase of lockdown. flipcart Senior Vice-President Anil Goteti also said that there is certain surge in demand for product like laptops, mobiles, air conditioners and coolers. Bigbasket – according to vipul parikh co founder of bigbasket they have seen uptick in orders up to 20-30% compared to last month. And it's picking up the pace

Travel and leisure – perhaps the biggest economic loser in India would be travel and tourism industry The major OTAs MakeMy Trip and Yatra have seen their price decline 50 percent last month. Aviation industry, financial, and automobile related all E-commerce activities are most affected due to pandemic. According to CEO of fashion house in India says that sentiments are so poor who will buy fashion category? When people are worried about

Covid-19 pandemic is reason why Indian e-commerce sector lost US\$400 million in a week according to an estimate and road ahead the number of losses is expected to grow to US\$1 billion due to lockdown all over nation. The Indian economy has almost loss over 32,000 crore (US\$4.5 billion) every day during the first 21-days of complete lockdown. 53% of businesses in the country will be reasonably affected due to pandemic.

Literature Review

Online shopping or e-commerce as it is popularly called, is a tool that helps in the buying, selling, and delivering products, information, or services by combining the desires of the firms and its customers in a more optimized and cost-efficient manners through the internet (Ngai et al, 2002, Esmailpour et al 2016). E-commerce draws on technology such as mobile commerce, supply chain management, internet marketing, online transaction processing, electronic data interchange, inventory management systems, and automated data collection systems (Seshadri 2017). The factors which influence the growth of e-commerce in a country are diverse amongst which GDP per capita, an average level of education, online payment portal support, and telecommunication infrastructure are few prominent ones (Gibbs et al, 2002).

The factors which influence the penetration of e-commerce have typically been fragmented. To understand these factors, along with the customer's online behaviour an adaptation of the technology acceptance model (TAM Model) was done. This adapted framework of TAM deals with the action, attitude, and intention of customers to shop online (Monsuwe et al, 2004).

E-commerce has been growing at a fast pace over the last few years but to stay ahead of the competition, it is important to devise strategies keeping in mind the different types of online customers and the various factors that influence customers' online shopping behaviour. There are two different categories of online shoppers: "the problem solver", the one who shops to buy a specific product, and the other group seeking "fun, fantasy, arousal, sensory stimulation and enjoyment" (Hirschman et al, 1982, Babin et al, 1994).

Customers are disappointed with the depth of a merchant's product offering and poor customer services. Customers also reported that their overall online shopping experience was enjoyable, timesaving, and reduced the overall effort when compared with a traditional retail store (Jarvenpaa et al, 1996). Product characteristics like availability, brand name, price, availability of alternatives along with perceived risk which are financial risk, non-delivery risk, etc., influence customer buying decisions (Monsuwe et al, 2004, Hana et al, 2014, Pandey et al, 2019). Convenience and product type available are the two factors which majorly influence online shopping (Chiang et al, 2003). Customer's behaviour changed based on their perception of high-risk and low-risk products. For example, when purchasing computer online uncertainty and risk were more salient than when purchasing books online (Lowengart et al, 2001).

Consumers in developed countries have become accustomed to using the internet and have benefited from using e-commerce, whereas customers in developing countries are used to face-to-face transactions and do not trust the electronic processes involved (Gil-Saura et al, 2020). For example, in Lithuania convenience, simplicity, and better prices had a positive influence whereas privacy concerns and inconvenient delivery negatively influenced customer's online buying behaviour. Customers of the age group 25-35 were more comfortable shopping online.

Developing economies such as India and China have made noticeable progress in recent years because of

modernization and economic reforms. Not just domestic players, international marketers are also attracted to such vast and untapped markets. Therefore, as global competition intensifies and developing countries grow in purchasing power, firms see opportunities for expansion into untapped markets other than metropolitan cities such as tier 2 cities. In India, e-commerce has been growing in popularity by reaching about 120 million users in 2018 and is expected to reach 220 million users by 2025 (www.ibef.org). Retail e-commerce sales in India will climb 31.0% this year to reach \$32.7 billion. This growth has been enabled in part by the e-commerce market leaders in India – Flipkart, Amazon, and Paytm Mall – who have been expanding into a new sector, including grocery. This investment along with India's rising internet and smartphone use, as well as the country's young population and expanding middle class, have contributed to a growing number of digital buyers (emarketer.com).

The sudden and world wide COVID-19 pandemic has greatly impacted e-commerce, as consumers are preferring not to visit physical stores and order online instead. Some literature on this is available, for example impact of COVID-19 on e-commerce activities has been studied in countries like Pakistan (Bhatti, Akram et al, Nov 2020), Malaysia (Hasanat, Hoque et al, Apr 2020) and India (Nivethitha, Manjula et al, Nov 2020). A study on the impact of COVID-19 with reference to Maslow's theory of hierarchy of needs in Turkey has been presented (DUYGUN and SEN, Jun 2020). The impact of COVID-19 on B2B e-commerce activities has also been studied (Sheth, Jul 2020). But there seems to be not much work done on the impact of COVID-19 on e-commerce in India, which is where this article should fill the gap.

Research Objectives and Hypotheses

Objectives

- To understand the factors that influence consumers' purchasing through e-commerce in India
- To understand the impact of COVID-19 on e-commerce

Formulation of Hypotheses

H1: Discounts and offers have a positive effect on the customer online shopping H2: Seller

and product ratings have a positive impact on purchasing products online

H3: Concerns over privacy and personal information theft have a negative impact on purchasing online H4:

Impact of the bandwidth of the internet on e-commerce services throughout the country

H5: Frequency of buying products online has increased due to the COVID-19 pandemic H6:

Dependency on e-commerce has increased due to the COVID-19 and the lockdown

Methodology

A survey in the form of a questionnaire was developed to gather relevant information from respondents which consisted of three sections. Section 1 consisted of questions to collect respondents' demographic information such as gender, age, primary occupation, and location. Section 2 consisted of questions that covered variables or factors such as offers and discounts, customer service, return policy, etc. which influence customers' purchasing online. Section 3 consisted of questions related to online purchasing before the coronavirus pandemic and during the coronavirus pandemic which is used to compare the impact on the e-commerce industry.

The Google form was sent to 600 randomly selected respondents across the states of India during July and August of 2020 from which 474 responded. Data analysis is done on the sample size of 474.

Demographic Characteristics of the Sample

Based on the survey, male respondents represented 54.6% of the total respondents while female respondents accounted for 45.4%. The majority of the sample was in-between the age groups 18-27 (41.4%). Majority of the data (approximately 66%) was collected from the states Karnataka, Gujarat, Delhi, Maharashtra, and Andhra Pradesh. A majority of the respondents were employees (38.2%) followed by students who participated in survey (25.1%). Based on the survey all the respondents have had the experience of purchasing products or services through various e-commerce applications (Table 1).

	Frequency	Percentage
Gender		
Male	259	54.64
Female	214	45.14
Total	474	100
Age		
Below 18	4	0.84

18-27	196	41.35
28-40	77	16.24
41-55	111	23.41
56 and above	86	18.14
Total	474	100
Primary Occupation		
Student	119	25.10
Employee	181	38.18
Self-employed	63	13.28
Homemaker	45	9.50
Retired	42	8.86
Unemployed	24	5.06
Total	474	100

Table 1: Demographic distribution of the sample

Data Analysis and Interpretation

Factors influencing online shopping

Various factors that influence customer satisfaction towards e-commerce include personal information, credit/debit card details, offers and discounts, fast and reliable delivery, customer service, product range, return policy, and a clear website layout. A chi-squared test was done to understand if satisfaction levels are dependent on the above-mentioned variable. SPSS tool was used to perform the analysis.

The result of the chi-squared test indicates that all the above-mentioned variables have a significant impact on customer satisfaction (Table 2).

Hypothesis	Parameters of Satisfaction	p-values
1	Discounts and offers	0.000
2	Seller and product ratings	0.000
3	Information and data security	0.000

Table 2: Chi-squared test to understand the variables which influence customer satisfaction

Hypothesis 1 – Discounts and offers have a positive effect on the customer online shopping

The level of comfortability of customer shopping online depends on discounts and offers. From Figure 1, we can see that 86% of responses show that offers and discounts are very important. Only 4% have responded that offers and discounts are not important.

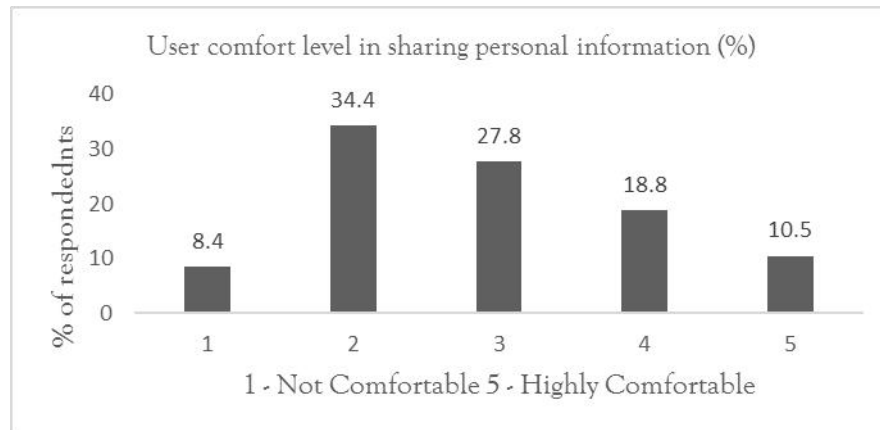
Hypothesis 2 - Seller and product ratings have a positive impact while purchasing products online

From Table 2. it can be seen that customer preference is dependent on seller and product ratings. The research also shows that 85% of the respondents have responded that seller ratings are very important (Figure 2). Also, almost 71% of the responses show product ratings are very important and seller and product ratings have influenced purchasing decisions.

Figure 1: Importance of discounts and offers



Figure 3: User comfort in sharing personal information



Hypothesis 4 - Impact of the bandwidth of the internet on e-commerce services throughout the country

From the research, it can be seen that 50.6% of customers say that unstable internet connection discourages them from shopping online. Only 17% of the customers say their shopping experience does not get affected due to the lack of stable internet connection (Figure 4). Hence, it can be concluded that 50% customers have reported unstable bandwidth which has impacted their online shopping experience.

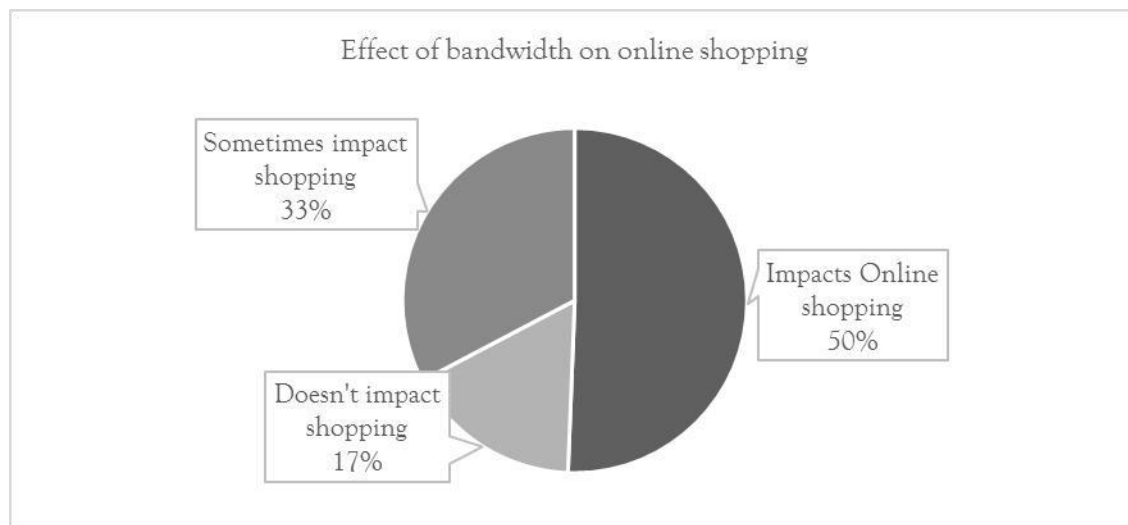


Figure 4: Impact of internet bandwidth on customer satisfaction

Hypothesis 5 – Frequency of buying products online per month from e-commerce has increased due to the COVID-19 pandemic

From the research, it can be seen that the number of online purchases per month increased tremendously during lockdown in India due to COVID-19. From Figure 5, it can be seen that customers with low purchase frequency (0-2 times, 3-4 times) has been reduced by half while customers with higher purchase frequencies (3-4 times, more than 7 times) has increased by three times. This indicates that there has been a significant increase in customer buying frequency from e-commerce during lockdown in India due to COVID-19 pandemic.

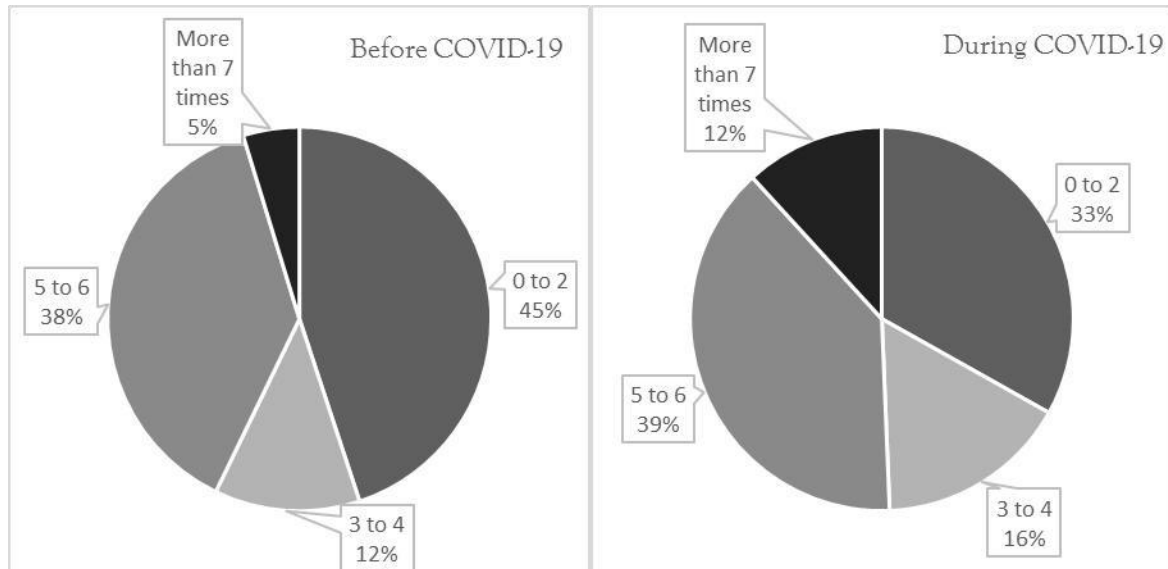


Figure 5: Frequency of purchase before and during COVID-19

Hypothesis 6 - Dependency on e-commerce has increased due to the COVID-19 and the lockdown situation

There seems to be a sharp increase in the average online buying frequency due to COVID-19 (Table 3)

	Average online buying frequency per month
Before COVID-19	2.20
During COVID-19	3.92

Table 3: Increase in online buying frequency due to COVID-19

We corroborated this with a paired sample t-test and found that the p-value is 0.00, confirming that the online buying frequency has indeed increased due to the COVID-19 pandemic.

From the survey, it can be seen that there are a few changes in the type of e-commerce platform and services used before and during COVID-19. From Figure 6, it can be seen that there has been a tremendous increase in using virtual education and OTT platforms. Dependence on digital payment systems has also increased indicating measures to reduce contact with other people and follow social distancing. The food delivery and cab services platforms have been hard hit due to the pandemic.

From Figure 7, it can be seen that the purchase of apparel, books, and electronics has decreased tremendously, whereas the purchase of the essential goods, health and beauty supplements have increased during the lockdown period.

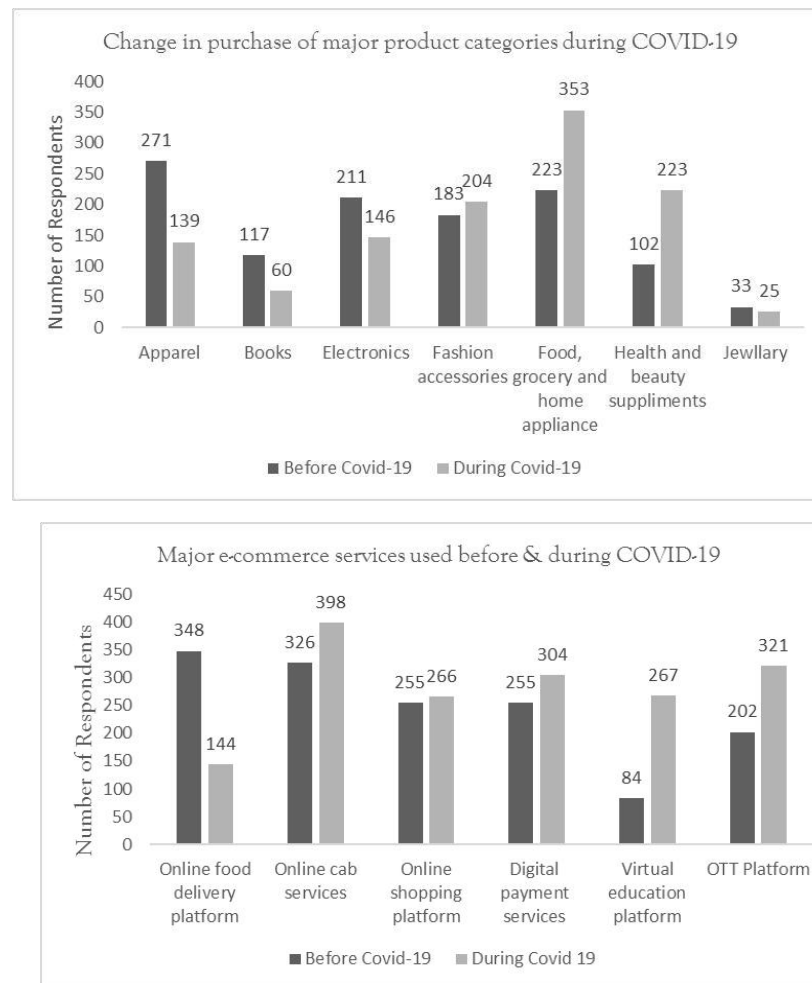


Figure 7: Change in purchase of major product categories during COVID-19.

The survey also indicates approximately 72% of the customers have become familiar using various e-commerce platforms during the pandemic. The survey also indicates that 81.8% of the customers would continue shopping online even after the pandemic is over (Figure 8 and Figure 9).

Hence it can be concluded that the dependence on some of the e-commerce platforms has increased during the pandemic and the shopping on other e-commerce platforms will increase once the pandemic situation is over since a lot of people have become more and more comfortable and familiar using the e-commerce platform during the pandemic.

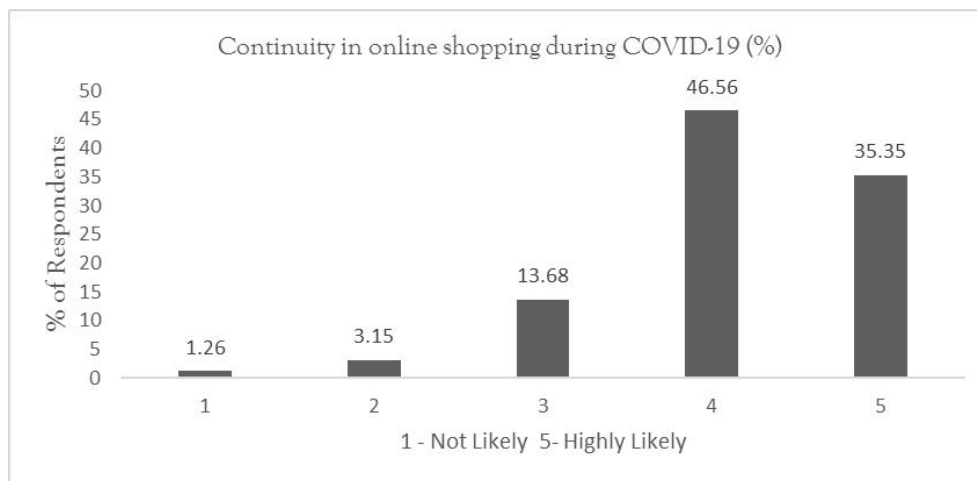


Figure 8: Continuity in online shopping during COVID-19

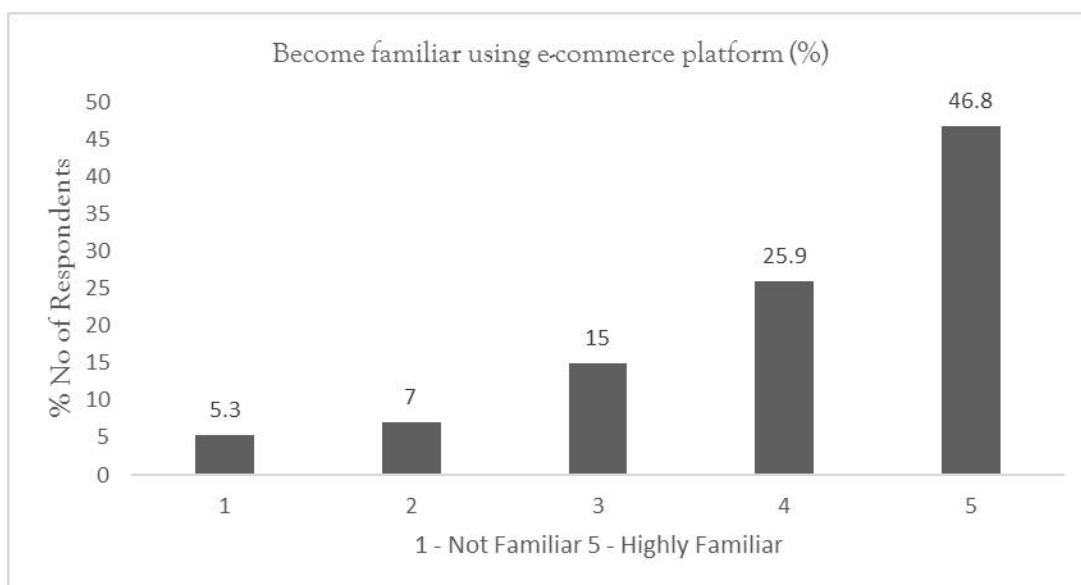


Figure 9: Became familiar using e-commerce

Analysis of the impact of COVID-19 for each demographic factors

An interesting insight from Figure 10 is that a majority of respondents, that is 57% of total responses have increased their usage of e-commerce, while 25% of respondents said that the COVID-19 has not shown any impact on their e-commerce usage (Figure 10). Having said that, there are 18% of people whose purchase frequency got reduced during this pandemic, the major reasons can be slower delivery than usual (which is one of the significant factors that influence the customer to buy online) and the lack of safe delivery options with respect to COVID-19 parameters by e-commerce companies.

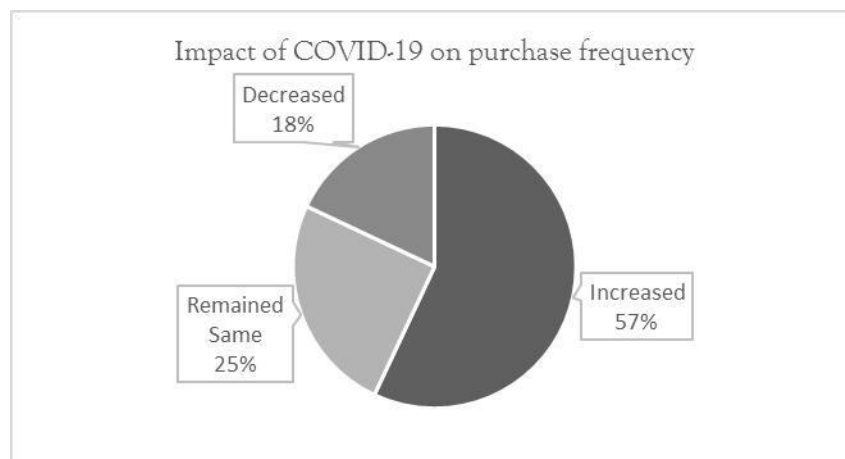


Figure 10: Impact of COVID-19 on purchase frequency

The demographic information captures information on the gender of the respondent and the graph (Figure 11) compares the level of usage of e-commerce services with respect to gender during COVID-19 and pre COVID-19. Most of the male and female respondents have increased their frequency of purchase from e-commerce during this pandemic. Most of the population irrespective of their gender have depended on online shopping for satisfying their everyday needs. This is evident from the graph that the overall dependence of e-commerce has increased or remained the same for most of the population.



Figure 11: Frequency of online shopping with respect to gender

In Figure 12, we have tried to measure the dependence on online shopping based on the age group of respondents (Figure 12). The population of age group 18-27 has almost no change in preference of online shopping due to the pandemic, one of the reasons for this might be that most of the respondents in the age group of 18-27 were already acquainted with online shopping and they continued shopping online during COVID-19. The maximum increase has been for age groups 28-40, 41-55 and 56 and above. Probably the pandemic has left the older groups with no choice other than online shopping, due to their increased vulnerability to COVID-19.

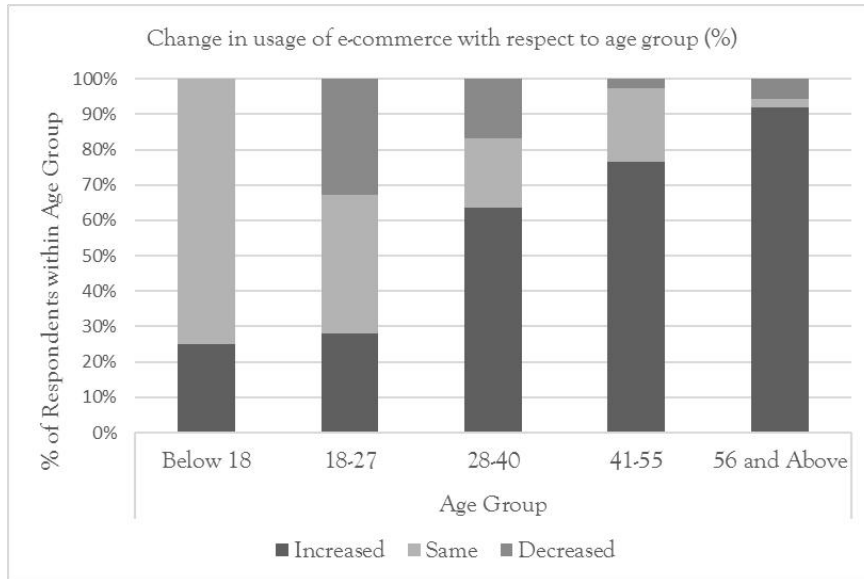


Figure 12: Change in usage of e-commerce with respect to age group

From the below graph, the dependence of e-commerce has increased among the retired, employee, homemaker, and self-employed category of the population (Figure 13). The dependence on e-commerce on average has remained the same for the student category whereas the unemployed shows a decrease in the purchase.

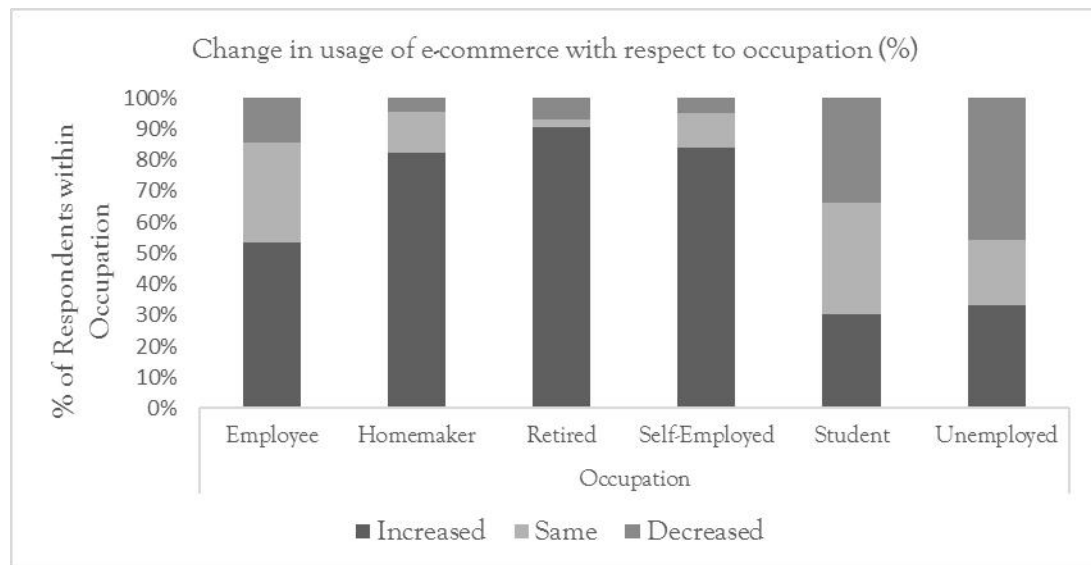


Figure 13: Change in usage of e-commerce with respect to occupation

Summary of the findings

The key findings of the analysis are that discounts and offers have a positive impact on customers online shopping, positive sellers and product ratings will motivate customers to shop online and concerns over information security have negative impact on customer online shopping experience. Additionally, the study shows that COVID-19 have increased the dependency on e-commerce where usage of virtual education platforms and the purchase of e-commerce products like health and beauty products have increased. Customers have become more familiar with e-commerce services and more likely to continue shopping online after lockdown. Furthermore, the analysis explains the impact of COVID-19 with respect to demographics factors where male have increased their shopping online during COVID-19 and a greater number of customers of age group "56 and above" who are retired have started using e-commerce during COVID-19.

LIMITATIONS

In the process of data collection, this paper focused on metropolitan cities where the use of e-commerce is maximum. However, as rural India's per capita GDP has grown at 6.2% CAGR since 2000 (IBEF), there is scope for research on the penetration of e-commerce in remote areas and developing rural India in the future. The paper precisely explains the factors which influence customers to buy products online, e-commerce is equally present in services sector and these are increasing drastically. Factors which impact online services could be a subject of future research. There are various categories in e-commerce products, for example, in the electronics category, there are different products such as laptops, mobiles, home appliances, etc., that may have different buying frequencies. This granularity is not taken into account in this research as each category is different research on its own.

CONCLUSION

E-commerce is the latest phenomenon creating a revolution in the way business is conducted. It can grow at an exponential rate for the coming few years supported by the penetration of smartphones and the internet. Hence, it becomes necessary to understand the various parameters which influence customers' satisfaction towards shopping regularly through these platforms which change regularly with changes in their needs and demands. This paper has identified a few parameters which impact customers' satisfaction towards such services and also analysed the impact of COVID-19 of such services. COVID-19 has provided the opportunity for many e-commerce services to understand the growing needs of its customers and analyse the various growth sectors which they can target and continue to grow further.

Further research can be conducted to analyse the shopping patterns of the customers and clearly understand their attitudes towards various products and services provided by various e-commerce organizations.

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