

CONSUMER'S IMPULSIVE BUYING BEHAVIOR ON E-COMMERCE PLATFORM: AN EXPLORATORY STUDY ON THE INFLUENCE OF EXTERNAL AND INTERNAL FACTORS

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Abstract

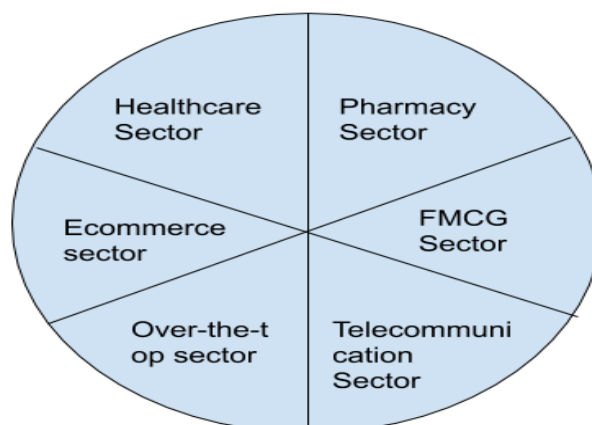
The COVID-19 pandemic has shaken up the world with a rising number of cases. In order to flatten the curve, the government has imposed some practices like social distancing and lockdown which has confined the consumers or citizens in the four walls of their houses. With the current unexpected crisis and the change in consumer behavior, the marketer needs to understand these changes and lay down innovative strategies and make appropriate informed decisions in the way consumers do their shopping for any product or service. This study aims to analyze the data using Quantitative Analysis, Correlation and Factor Analysis to find the correlation between variables and also the factors which indicate the changes in consumer behavior because of COVID-19 and how various sectors were impacted because of the changes in consumers. The sectors selected in this study were as such which showed maximum changes or variations in the consumer buying behavior. These sectors are 1) Healthcare 2) Pharmacy 3) FMCG 4) Telecommunication 5) Over-the-top 6) E-commerce. This study also focuses to help marketers to form appropriate marketing strategies and make informed decisions aiming to sustain in such hard times. The data to conduct the study was collected through a questionnaire survey from 200 respondents residing in Maharashtra state within 16-64 years using Google forms. A sample size of 200 was selected as it is sufficient enough to conduct the study and an acceptable margin for any errors or falls. The findings of the study indicated panic buying among the consumers during crisis time and most of the consumers inclined to spend money on products of the healthcare and pharmacy sector.

Key words: Pandemic, COVID-19, consumer buying behavior, buying preference, factor analysis, correlation.

Introduction

The main purpose of this study is to understand the customer's buying behavior with respect to various sectors in panic situations like the pandemic COVID-19. In such situations it's better to be prepared than to regret later. This paper aims to develop fruitful findings in consumer behavior are to help marketers deal with such crises in the future and be prepared. Whenever such outbreaks occur its natural that there is an unusual buying trend or pattern in the market. While the demand for some product or service increases drastically and for some product or service the demand decreases. Many customers tend to stock up with essential products and medical supplies which often leads to stockout situations, which happened in the USA when citizens stocked up with toilet paper rolls, and many stores run out of them. Hence limiting the supply of essential to customers and assessing the people who are in greater need like the poor and accessing them these basic necessities should be the top priority. To achieve this many marketers shifted their channels to online distribution. Kirana stores that required customers to walk to them made sure that the Kirana store walks to them.

Figure 1: Focus sectors



Theory

The study mainly focuses on six sectors:

Healthcare sector

The government of India and WHO suggested consumers that the elderly people and individuals with a history of cancer, asthma, or any chronic respiratory disease should be more careful about their health. Because of the lockdown and social distancing, access to medical shops is restricted hence, consumers have now shifted more towards Ayurveda and homemade remedies in order to improve their immune system.

Because of the lockdown and the fear of visiting a hospital with COVID19 patients and getting infected with the virus the consumer prefers constant monitoring of blood pressure level, the sugar level of cancer, asthma, diabetic patients to be done at home with the help of readily available healthcare devices. Not only these consumers even the consumers with no history of heart or lung disease prefer constant temperature checks to be more assured of their health status. The popular healthcare devices mainly include BP machines, Glucose monitors, and other medical equipment like a thermometer, weighing machine, etc. The behaviour of consumers towards the healthcare sector might have taken a positive inclination as most of the consumers have now become more health-conscious.

Pharmacy sector

Globally, India is one of the leading countries in generic drug provider. India has an important stand in the global pharmaceuticals sector. More than half of the global demand for various vaccines is met by India. India caters to 40% of generic drug demand in the US, and one-fourth of all medicine in the UK.

As the vaccine for this virus is still under trials, most of the health experts initially relied on boosting patient's immunity in order to cure them, as this was considered to be a respiratory illness. Positive results were shown with this approach. As soon as people got to know about this, consumers attempted to stock up with antibiotics, vitamins, and supplements in order to boost their immunity.

The fast-moving consumer goods sector

The products of this sector are quickly sold are mostly cheap. The products of this sector are considered to be an impulse buy, as the consumers don't usually draft a proper plan or a particular budget in order to purchase them.

As soon as the lockdown was announced many people decided to stock up their houses with snacks, condiments, and ready to cook packet food. These products make it easy for consumers working from home, and have senior citizens and children around them to take care of their hunger. The same is the scenario for the bachelors and students who stay alone and are trying to manage in these circumstances. Among all the FMCG products instant food items are considered to be a big hit. As reported by Nestle India Limited, they experienced a jump of 10.7% as consumers stocked up on their instant food items like Maggi noodles and powdered milk.

Telecommunication sector

The telecommunication sector deals with 3 areas: telecommunication equipment, telecommunication services, and wireless communication. With a constant need for data in the current world, the telecom sector is inclined more towards video, text, and data which earlier used to be more about voice. As of 2019, India stands as second-largest mobile phone user base with over 1.17 billion users among which around 661 million are internet users.

With the lockdown and social distancing in action, “Work from Home”, “Remote Working”, “Quarantine” has become the buzzwords. Video conferencing tools are helping the consumers to cope up with their professional as well as personal relations. Be it having a meeting or conducting a classroom on Microsoft Teams or catching up with your friends and families via WhatsApp video call, the telecom sector has been acting as an invisible supporting hand to deal with the sudden shift.

Over-The-Top sector

OTT sector provides streaming video services to its users or viewers via the internet. The OTT platforms not only own the content but also the data that their subscribers or viewers generate through their viewership. They use this combined data and put it through Big Data Analysis to come up with consumer profiles and content suggestions for them. In 2019, the OTT market in India was worth ₹35 billion. Netflix is considered to be dominant in the OTT sector having said that there are many competitors in its way like Amazon Prime, Disney+Hotstar, YouTube, etc.

As most of the cinema halls are shut because of the pandemic most of the people turned to OTT platforms for their entertainment, leading to an increase in viewership for OTT platforms. There has been an increase of 80 percent who are consuming digital content from the time lockdown started. With the movies getting an exclusive release on OTT platforms, this definitely attracted users gaining a surge in viewership and subscription. The coronavirus also inspired new OTT platforms like Eros Now to provide a free subscription to users staying at home.

Ecommerce sector

The Ecommerce Sector deals with electronically buying and selling of products on online services or over the internet. India ranks second in terms of the largest internet user base. Despite being second-largest India's penetration of e-commerce is comparatively low to the United States or France, having said that India is slowly growing with around 6 million new entrants every month.

From tracking or searching the consumer to the complete transaction of the purchase the retail marketing sector finds it difficult to cope with the e-commerce sector, because of which most of the retail stores are shifting their channel from brick to digital. With the lockdown and restrictions imposed most retail trading was halted because of which the e-commerce market got a huge boost in the number of purchases done by their consumers. The e-commerce basket increased by as much as 57% compared to the same period last year.

Objective

1) To identify how COVID-19 has impacted consumers' buying behavior in Healthcare, Pharmacy, FMCG, OTT, Telecommunication and E-commerce sectors.

2) To analyze the relationship between consumer buying behavior and these sectors and help marketers formulate strategies and make an informed decision in such crisis

Literature Survey

The potential impact of a pandemic on the characteristics of global customers, their buying patterns, interconnection links between them and the psychographic behavior. Their study highlighted the change in the consumer behavior in the following areas: supply chain security, piling stock mentality and home delivery, work from home and worker status, political discontent, online transactions, virtual talent replacing travel, the shift from restaurant to home-cooking, social safety and psychographic long terms shifts in beliefs[1]. Consumers' panic buying behavior in a health crisis mostly leads to stockout and supply chain disruptions. The study categorized the factors which influence consumers in panic buying in 4 categories namely: 1) Perception 2) Fear of unknown 3) Coping Behavior and 4) Social psychological factors. Keeping in mind in these factors, the study enlightens the importance of anticipating panic buying and encourages employing optimum methods to prevent scarcity and shortage of products[2]. The changes caused in consumer habits because of the lockdown and social distancing norms. In this paper, he summarized eight significant attributes of coronavirus which had an effect on consumer consumption and behavior and their inclination towards comfort, safety and ecommerce. These eight variables are hoarding, hiked demand, learning more about the digital technology, convenient shopping, diminishing work-life balance, giving more time to friends and family, working on their hobby. He concludes his study suggesting consumers to adapt to the new lifestyle which includes work from home, social distancing and adopting digital technology to modify existing habits[3]. The authors studied the significant impact of marketing information on the marketing mix i.e. product, place, promotion, price on consumer buying & decision making behavior which revealed product and place variables contributed more to the data and had larger impact, whereas promotion and price information had less impact thus, providing a information to organizations and businesses to give more attention to attributes that have major impact on buying decisions[4]. This article talks about the shift in consumers' buying habits in the longer run. The author suggests the need to adopt technology and automation in your business to survive long term. And with the advancements in technology there will be a huge spike in need for more data hence need for telecommunication[5].

Most of the infected COVID-19 patients showed gastrointestinal symptoms and signs because of which the government informed them to keep their toilet clean and disinfected which gave a massive surge in demand for toilet papers and later also led to shortage because of panic buying[6]. As the virus started to spread across U.S and Italy rapidly, the consumers of these countries were ready to stay at home for extended periods because of which they shifted to packaged food rather than opting for vegetables or fruits as packaged food has longer shelf life and stocked up with masks and sanitizers as that was all the initial information they had as a protective measure[7][8]. This article suggests that COVID-19 has given a boost to the healthcare industry and telemedicine in terms of the demand. The article also highlights the importance and need of must-have care delivery options, rising emergency preparedness and workforce safety. rising telemedicine[9]. Malaysia an Asian country its primary source of import and export was from China but because of COVID-19, they faced a major crisis and loss as China went into lockdown when the cases started rising[10]. The paper suggested that the clinical and drug pharmacists have a major role in handling surge demands under pandemics by formulating telehealth strategies swiftly, promoting rational use of medicines with efficient teamwork and proper communication and developing remote pharmacy services[11].

This paper talks about the need and the requirement of value-added pharmacy services during COVID-19. To cope up with the pharmacy demands in many countries, the author suggests introducing "Drive-thru-pharmacy" ensuring pharmacists as well as consumer's protection. With U.A.E launching "drive-thru pharmacy" in Thumbay University hospital, Qatar, Doha, Australia in Discount Drug stores and America in Madigan Army Medical Centre the author suggests many countries to adopt this method with proper guidelines and maximize the benefits that could be gain[12]. The study focused on the development stage of medicine and the purchases done during the pandemic crisis in Germany. Their results showed a significant surge in psychotropic,

neurological and cardiovascular drugs[13]. This paper talks about community pharmacists and their role during the pandemic to encourage preventing, managing and safeguarding drug use of the consumers by supporting pharmaceutical care with an sufficient supply of medications and preventive products for treating virus by using various approaches like patient education, psychological support, dropping out drug, consultation, disease mitigation, isolation guidelines and guidance[14]. This paper talks about the techniques and precaution of supplying drug and management of pharmaceutical services to be included in hospitals and stores for proper management of drugs. Some of the practices include managing man force, managing drug supply and pharmacy care[15].

The authors in this article suggested several emergency responses and preparedness measures to ensure drug supply in the US during the crisis. These measures include medicine supply strategy, ensuring no stockpiling, home delivery, financing essential medicines[16]. This article talks about how the worst-hit countries are handling COVID-19 conditions. The number of rising cases in their country, the criticism they faced, the work on the vaccination, the guidelines and regulations imposed by the government. Some of these countries are United States, Japan, India, Spain, China and Italy[17]. This paper talks about the variation in the eating habits of Italian citizens because of lockdown and the health risks associated to consumers food product choices. Their study showed a growth in consumption of dairy products, spaghetti products, which led to reduction of fresh food products. Because of such habit consumers intake for calcium and vitamin was compromised during quarantine[18]. This study talks about the obesity problem in youth and lifestyle change because of lockdown in Verona, Italy. Their study showed with the increase in fruit intake the consumption in packaged products and drinks significantly spiked. The study concluded that with such lockdown effects there can be a lasting impact on a child's or adolescent's adult obesity level[19]. This paper highlights the difficulties faced by food chain companies in matching supply and demand also the importance of an efficient supply chain in the pandemic. The authors have proposed a truck-drone delivery system to manage disruptions for fulfilling needs. In concern with COVID-19 authors suggest having a backup warehouse and having dedicated supply chain and logistics systems for public distribution networks[20].

This paper discussed the weight variability among the citizens of Europe(Spanish). The study results showed that maximum citizens had no major change in their weight, whereas men and individuals with obese had larger weight deviation while old people showed less variations. The main reason for this variability was unhealthy eating behaviors which include emotional eating, restrictive eating and snacking[21]. The review talks about the domino effect of financial losses on health, healthcare and nutrition because of lockdown. Talking about the health the study showed, because of poor physical activity, there was an increase in hogging of snacks and calorie-dense foods which resulted in an increase of 21% and 23% in carbohydrate level of consumers and frequency of snacking, respectively[22].

Methodology

Data Collection and Sample

The sampling technique used for this study was survey sampling. In this sampling, an online questionnaire (Google form) was floated to all the respondents via email and other social media applications to collect the data. A total of 200 complete questionnaires were received in two weeks of time span.

Out of the total 200 respondents, 51% were male and 49% were female. No large count difference can be notices in this study, which makes it free from being gender bias. Age group of respondents, 78% of the respondents were between 16-24 years of age, 89% of the respondents were between 25-49 years of age and 33% of the respondents were between 50-64 years of age.

For calculating the required sample size, Cochran's formula is used which is:

$$\text{Sample size} = Z^2 pq / e^2$$

Where,

e = margin error

p = estimated proportion of population

q = 1-p

For this study, 95% of confidence level has the z value of 1.96 and 5% plus or minus for precision. After substituting required values the Cochran’s random sample size comes to $((1.96)^2 (0.5) (0.5)) / (0.05)^2 = 385$. As the sample size we are studying is small, we can use the modified sample size formula which is:

$$n = n_0/[1+(n_0-1)/N]$$

Here the population size is 400 that is N = 400 and n₀ value is 385(from the above calculation). Therefore, required sample size for this study should be $385 / (1 + (385-1) / 400) = 196$ or more. The sample size of 200 was taken.

Measures

The questionnaire for this study was divided in two sections: Statements based on variables and Respondent’s demographic profile. These variables were such chosen which help in to understand consumer’s behavior and their preferences. First six variables were about the consumer’s likeliness of purchasing more products from each sector i.e. Healthcare, Pharmacy, FMCG, Telecommunication, Over-the-top, E-commerce because of COVID-19. The other three variables were about collecting consumer’s preferences i.e. prefer safety over price, prefer home delivery, prefer transportation because of COVID-19. A Likert scale between 1 – Strongly Disagree to 5 – Strongly Agree was used to collect their response.

The demographic data of the respondents was converted to ordinal data for the analysis purpose. This demographic data included respondents’ gender, age and occupation. The responses collected were in string format hence, for analysis purpose the data was converted into ordinal data. The following table shows the variable and its ordinal data representation.

Table 1: Coding methodology for string data

Variable\ Ordinal data	1	2	3	4
Gender	Male	Female		
Age	16-24 years	25-49 years	50-64 years	
Occupation	Student	Working_Professional	Self_Employed	Unemployed

Data Preprocessing

The data collected was stored in .csv format and was run through Python to check for any missing values using Numpy package. No missing values were detected. Table 2 shows the Python output of the collected response.

Table 2: Number of missing values for all the variables

```
In [11]: np.sum(df.isnull())
Out[11]: Age 0
Gender 0
Occupation 0
Likely_purchase_Healthcare_products 0
Likely_purchase_Pharmacy_products 0
Likely_purchase_FMCG_products 0
Likely_purchase_Telecommunication_services 0
Likely_purchase_OTT_services 0
Likely_purchase_through_Ecommerce 0
Likely_prefer_Safety_over_price 0
Likely_prefer_Homedelivery 0
Likely_prefer_transportation 0
dtype: int64
```

Data Analysis

It helps to extract important and useful information from your data. This derived knowledge can be used to make informed decisions. The statistical application used for performing various statistical tests was SPSS Version 26.0 for Windows Operating System. The analysis and test performed in this study are Descriptive Statistics, Cronbach’s alpha Reliability test, Correlation Analysis and Factor Analysis.

Data Reliability Test

Cronbach Alpha value is used for determining the internal consistency of the dataset. It’s a simple way to determine whether your dataset is reliable or not. Cronbach’s alpha value of 0.70 and above, 0.80 and above and 0.90 and above are considered to be good, better and best. The dataset is considered to be reliable and accepted if the Cronbach’s alpha value is 0.7 and above. The Cronbach’s alpha value for this study can be seen in Table

Table 3: Data Reliability Test

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.743	.739	9

As the value for this study is above 0.7, the data can be considered to be reliable.

Descriptive Statistics was used to conduct the quantitative analysis for the data. Descriptive are the easiest way to obtain quick summaries of all the variables present in the dataset. Table 4 shows the quantitative statistics for the dataset. From table 4, it can be observed that the variable “Likely_purchase_Healthcare_products” has the highest mean of 4.35. It can be interpreted that most of the respondents are agreeing to the fact that they purchased more Healthcare products than usual because of COVID-19. Also, the variable “Likely_purchase_Pharmacy_products” is second-highest in the list with a mean of 4.01 indicating after the outbreak consumers shifted more towards purchasing pharmacy products.

Table 4: Data Reliability Test

	N		Mean	Minimum	Maximum
	Valid	Missing			
Likely_purchase_Healthcare_products	200	0	4.35	1	5
Likely_purchase_Pharmacy_products	200	0	4.01	1	5
Likely_purchase_FMCG_products	200	0	3.29	1	5
Likely_purchase_Telecommunication_services	200	0	3.37	1	5
Likely_purchase_OTT_services	200	0	3.66	1	5
Likely_purchase_through_Ecommerce	200	0	3.85	1	5
Likely_prefer_Safety_over_price	200	0	3.5250	1.00	5.00
Likely_prefer_Homedelivery	200	0	3.3850	1.00	5.00
Likely_prefer_transportation	200	0	2.2350	1.00	5.00

Correlation Test

A correlation matrix is used to analyze any linear quantitative relationship between two variables. For this study bivariate Pearson Correlation was used which produces a coefficient, r , which measures how strong the linear relationship among the pairs of variables in the dataset. The range of this correlation lies from -1 to +1. A correlation of -1 indicates perfect negative correlation, 0 indicates no relation at all and, +1 indicates perfect positive correlation. The table also provided the significance value. This is the p-value associated with the correlation. The note in the footer explains the significant level for the correlation.

In table 6, you can see that the correlation is produced for all the attributes with two-tailed significance tests. The correlation values of Likely_prefer_transportation and Likely_prefer_Homedelivery shows a negative relationship between them, and these variables can be considered to be significant with a correlation value of 0.754. As the value is greater than 0.7 it can be stated that there is a strong relationship between these variables. Similarly, variables with a correlation value between 0.5 and 0.7 are considered to have a moderate correlation.

Table 5: Correlation matrix

Correlations

	Age	Gender	Occupation	Likely_purchase_H healthcare_products	Likely_purchase_P hairmy_products	Likely_purchase_F MCC_products	Likely_purchase_T eecomunication_ services	Likely_purchase_O rough_Ecommerce	Likely_prefer_Safet y_over_price	Likely_prefer_Hom edelivery	Likely_prefer_Trans portation
Age	Pearson Correlation N 200										
Gender	Pearson Correlation Sig. (2-tailed)	-0.088 .168									
Occupation	Pearson Correlation Sig. (2-tailed)	.470 .000	-0.023 .749								
Likely_purchase_Healthcare_products	Pearson Correlation Sig. (2-tailed)	.478 .000	-0.129 .069	.208 .003							
Likely_purchase_Pharmacy_products	Pearson Correlation Sig. (2-tailed)	.456 .000	-0.082 .251	.256 .000	.537 .000						
Likely_purchase_FinCC_products	Pearson Correlation Sig. (2-tailed)	.051 .476	-0.112 .113	.061 .389	.105 .138	.127 .073					
Likely_purchase_Telecommunication_services	Pearson Correlation Sig. (2-tailed)	-.296 .000	-0.039 .588	-.628 .000	-.138 .051	-.194 .006	-.090 .207				
Likely_purchase_OTT_services	Pearson Correlation Sig. (2-tailed)	-.525 .000	.044 .534	-.315 .000	-.173 .014	-.178 .011	.058 .413	.200 .004			
Likely_purchase_through_Ecommerce	Pearson Correlation Sig. (2-tailed)	.021 .773	.069 .334	-.018 .452	.053 .452	.010 .887	-.043 .541	.052 .463			
Likely_prefer_Safety_over_price	Pearson Correlation Sig. (2-tailed)	.158 .026	-.002 .977	-.034 .633	.069 .334	.117 .100	.198 .005	-.058 .413			
Likely_prefer_Homedelivery	Pearson Correlation Sig. (2-tailed)	.061 .392	-.093 .189	-.129 .069	-.050 .482	-.027 .704	.214 .002	-.265 .000			
Likely_prefer_Transportation	Pearson Correlation Sig. (2-tailed)	-.071 .319	.054 .444	.076 .383	.054 .451	.024 .737	-.174 .004	-.231 .001	-.754 .000		

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

* Correlation is significant at the 0.05 level (2-tailed).

Factor Analysis Test

This test is data reduction technique and help in reducing the number of variables into lesser factors or components by extracting common factors among all variables.

Table 6: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.747
Bartlett's Test of Sphericity	Approx. Chi-Square	202.363
	df	36
	Sig.	.000

For the dataset to extract reliable factors from the dataset the KMO value should be greater than 0.6. Here the KMO value is 0.747 which indicates that the dataset is adequate to extract reliable factors.

Bartlett's test of sphericity:

Null Hypothesis: Correlation for this dataset is not significant

Alternate Hypothesis: Correlation for this dataset is not significant

Here, the p-value for this dataset is less than 0.05, hence correlation is significant and Factor Analysis can be performed.

Table 7: Communalities Table

Variables	Initial	Extraction
Likely_purchase_Healthcare_products	1.000	.635
Likely_purchase_Pharmacy_products	1.000	.590
Likely_purchase_FMCG_products	1.000	.627
Likely_purchase_Telecommunication_services	1.000	.508
Likely_purchase_OTT_services	1.000	.481
Likely_purchase_through_Ecommerce	1.000	.588
Likely_prefer_Safety_over_price	1.000	.352
Likely_prefer_Homedelivery	1.000	.860
Likely_prefer_transportation	1.000	.821

Extraction Method: Principal Component Analysis.

From the table 7, it can be interpreted that the variables “Likely_purchase_Healthcare_products”, “Likely_purchase_FMCG_products”, “Likely_prefer_Homedelivery” and “Likely_prefer_transportation” can be considered to be more important than other variables as their variation values are 63.5%, 62.7%, 86.0% and 82.1% respectively which are higher than other variables.

Table 8: Variance for all variables

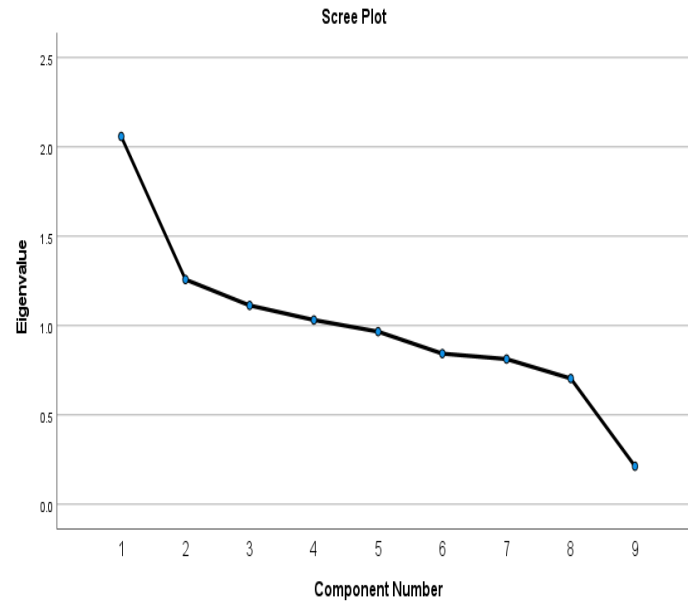
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.059	22.874	22.874	2.059	22.874	22.874
2	1.258	13.978	36.852	1.258	13.978	36.852
3	1.113	12.365	49.217	1.113	12.365	49.217
4	1.031	11.460	60.677	1.031	11.460	60.677
5	.966	10.736	71.413			
6	.843	9.369	80.782			
7	.813	9.030	89.812			
8	.704	7.822	97.634			
9	.213	2.366	100.000			

Extraction Method: Principal Component Analysis.

From the table 8, it can be interpreted that four variables are retained and these four variables together accounts for 60.677 % of the total variance.

Figure 2: Scree Plot of Eigenvalues vs Component Number



From the scree plot, it is evident that after the fourth component the eigen values of all the component drop below 1. The components who have their eigen values below 1 indicates that they account for smaller amount of total variance. Hence the first four variables contribute to the larger part of total variance.

Table 9: Rotated Component Matrix

Rotated Component Matrix^a				
	Component			
	1	2	3	4
Likely_prefer_Homedelivery	.926			
Likely_prefer_transportation	-.895			
Likely_purchase_FMCG_products		.693		
Likely_purchase_Telecommunication_services		-.595		
Likely_prefer_Safety_over_price		.488		
Likely_purchase_through_Ecommerce			.702	
Likely_purchase_OTT_services			.595	
Likely_purchase_Pharmacy_products				.447
Likely_purchase_Healthcare_products				-.789
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 7 iterations.				

Table 9 represents both correlation between variables and factors and also how variables are weighted for each factor. The low correlation values are removed to read the output easily. These are the factors for which the analyst is most interested in, and name it as a new component or factor.

Component 1- Travel Preferences

Component 2- Daily Essential Preferences

Component 3- Digital Preferences

Component 4- Health Preferences

Results And Discussions

From the table 5, following correlations can be concluded.

- 1) Negative relationship between variables Likely_prefer_transportation and Likely_prefer_Homedelivery
- 2) Negative relationship between variables Likely_purchase_Telecommunication_services and Occupation
- 3) Negative relationship between variables Likely_purchase_OTT_services and Age
- 4) Positive relationship between Age and Likely_purchase_Healthcare_products
- 5) Positive relationship between Likely_purchase_Healthcare_products and Likely_purchase_Pharmacy_products

Figure 3: Transportation Count Vs Home Delivery

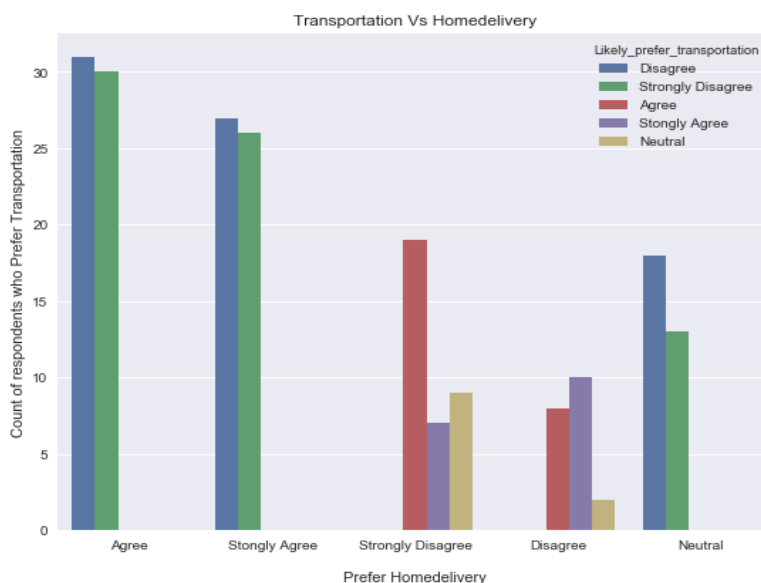


Figure 3 suggests that the respondents who agree and strongly agree to prefer Home delivery they almost disagree to prefer public transportation. This inclines that the fear of going out and purchasing essential goods or any products has become quite a daunting task because of COVID-19 and most of the respondents prefer home delivery than themselves going out. Having said that there are some respondents who prefer transportation over home delivery that is they prefer themselves buying essential goods or any products. These can be the respondents who have Kirana stores, medical shops and essential requirements near their place. By doing this, they are in contact with fewer people which can be a point of concern for these respondents

Figure 4: Prefer Telecommunication Vs Occupation

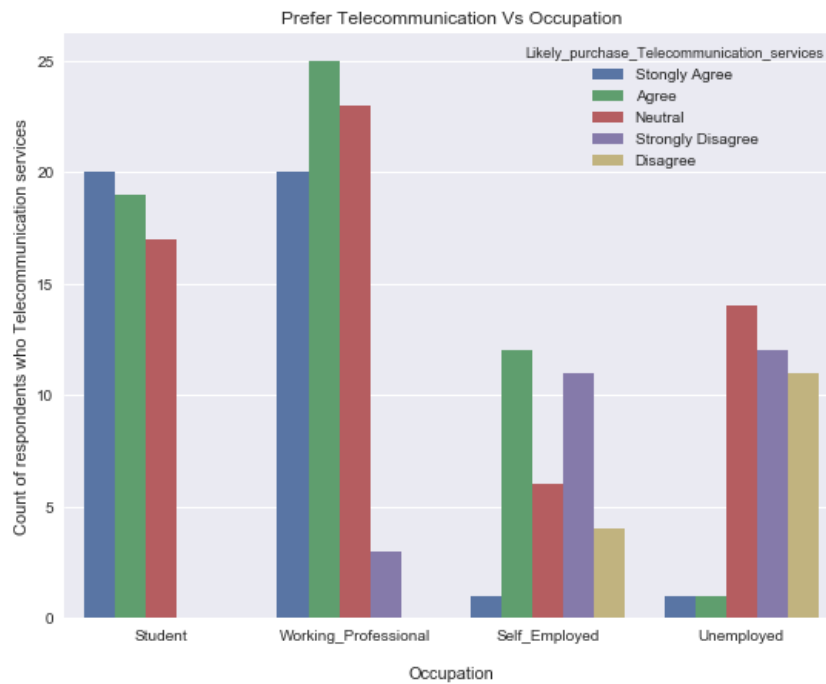
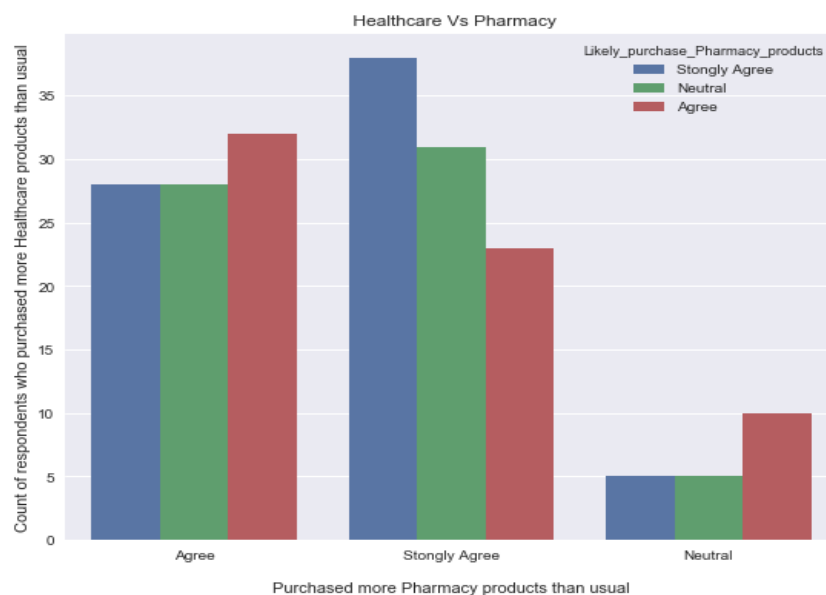


Figure 4 suggests that the respondents who are students and working professionals have either purchased a new telecommunication service or increased their existing plan. This could be because of the shift in the digital world because of this virus. Classroom classes shifting to online classes, conference room meeting shifting to the virtual meeting, data has become a huge part of everyone’s life. Not only students and working professionals even the self-employed and unemployed respondents agree to purchase a new telecommunication service or increased their existing plan. The lockdown which has stopped the live TV, serials or shooting for entertainment OTT platforms have come to rescue. Everyone shifted toward OTT for their entertainment which requires data.

Figure 5: Healthcare Vs Pharmacy



Both the variables “Likely_purchase_Healthcare_products” and “Likely_purchase_Pharmacy_products” have a shown positive relationship between them. From figure 4, it is evident that the respondents have purchased both

the sector(healthcare and pharmacy) products more than usual because of COVID-19. This being the one of a kind virus most of the people had no idea how to deal with this virus. Later with research and WHO guidelines regarding the virus people became more aware and had more knowledge on how to keep themselves safe. Constant checking and monitoring BP, the sugar level of sensitive people that is people who had a history of serious disease and are diabetic patient, became important and instead of going to a doctor, most people started doing these test on their own which gave rise to buying healthcare products.

With recovered corona patients sharing their experience with the treatment people became aware that the doctor and medical experts gave them vitamins and antibiotics in order to boost their immunity. As soon as this information was out people irrespective of being COVID positive or not they purchased more pharmacy product infact more vitamin and supplements to boost immunity.

Figure 6: OTT services Vs Age

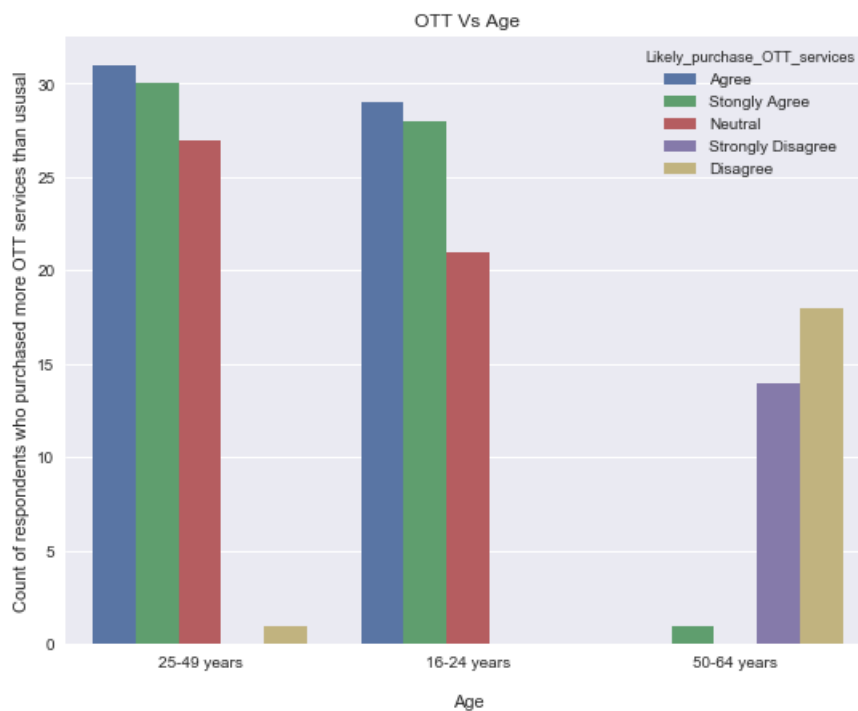


Figure 6 shows that age has a huge impact on people buying OTT services. OTT services can be seen very popular among the age group 16-24 years and 25-49 years. Government norms like social distancing and shutting of clubs and pubs have limited youngsters and teenagers source of enjoyment which is why to pass the lockdown phase and the boredom most people turned to OTT services; whereas the respondents who belong in the age group 50-64 years, most of them disagree to the point that they purchased Ott and are still old-school.

Figure 7: Healthcare product Vs Age

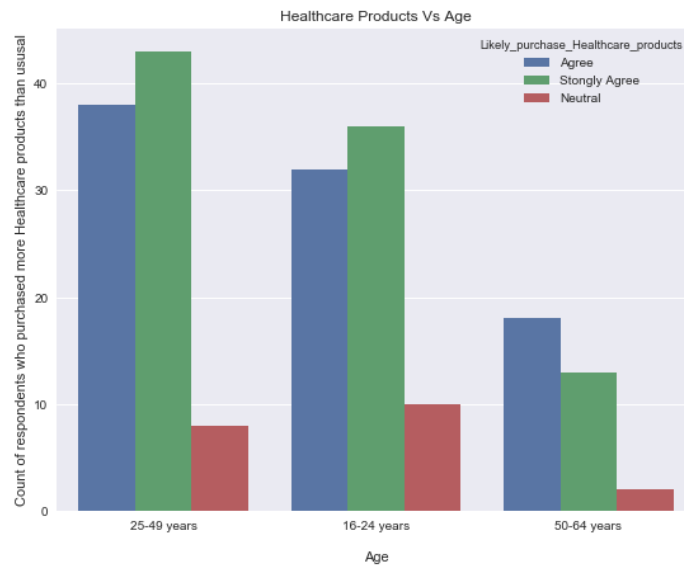


Figure 7 clearly suggests that irrespective of the age group most of the respondents agree or strongly agree to the fact that they likely purchased more healthcare products than usual because of COVID-19. With the virus spreading exponentially and globally all people are concerned about is their health and are ready to buy or are buying healthcare products more than usual because of this pandemic.

Conclusion

The major contribution of this study is to understand consumers' preferences when it comes to health-related crisis or a sudden outbreak of a virus or disease, coronavirus in this case with respect to sectors. The top two sectors which the consumers turned to in such cases are Healthcare and Pharmacy. The consumers who were within an age group of 25-49 years of age were inclined more towards buying of FMCG and telecommunication products. This change can be seen mostly because of the work from home culture which required consumers more data for their work as most of the consumers in this age group are working professional. A huge inclination in telecommunication was also seen in the age group 16-24 which consisted mostly of student, as data requirement increased because of online classes. With no new episodes, no theatres buying in OTT sector increased among the consumes of age group 25-49 years. Consumers who didn't preferred transportation shifted to Ecommerce and vice-versa. Instead of going out consumers with age group of 25-49 years and 50-64 years preferred home delivery whereas consumers with age group 16-24 years preferred going out and buying themselves as study showed that young people are more immune to this virus, they can consider going out and also preferred as lockdown of 3 months might have taken a toll on them.

The consolidated analysis and results direct to the panic buying of the consumers leading to the shortage and disturbance in the supply chain. Thus, there is a need to manage such a panic situation in terms of crisis. As the major demand goes for Healthcare and Pharmacy marketers and the managers have to manage a database to restrict the selling of products of these sectors. Either they can distribute it on a priority basis, like preferring consumers with a history of any deadly disease or elders or small children and also marketing about any alternative if available and the needed precautions to be taken. The four factors which were derived from this study are 1) Travel Preferences 2) Daily Essential Preferences 3) Digital Preferences 4) Health Preferences which are of utmost importance to understand consumers buying behavior. Understanding the requirement in these factors for their consumers can help any marketer to strategize a decision for their business.

Limitations

There are a few limitations to this study. Firstly, the study is limited to the state of Maharashtra only. This can be applied to a similar state as of Maharashtra but when it comes to 2-tier cities there can be differences. Secondly, being a very new virus, the study for the same is very limited. Lastly, this study is restricted to only six sectors, further researchers can widen their study to more sectors.

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