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IMPLICATIONS OF COVID-19 ON CONSUMER BUYING BEHAVIOR

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ABSTRACT

As a worldwide pandemic, the COVID-19 crisis is profoundly affecting the development of the world economy as countries have taken measures like restricting travel and enforcing lockdown. This pandemic has engulfed the world with fear, anxiety, and is anticipated to lead to a significant degree of mental health emergency across the globe. Due to this change in consumer sentiment, it is important to study how this pandemic has influenced Consumer Behavior.

This study was done through primary research. An online questionnaire was floated, and 157 respondents were chosen to fill the questionnaire by using Convenience Sampling. The survey was designed to gauge implications of Covid-19 on change in consumer buying behavior.

The findings show that there exists a relationship between likelihood of consumer spending on products/services and fear due to Covid-19. There exists no relationship between age and the likelihood of spending across different product categories. All age groups are behaving similarly in adopting low touch/digital activities and intent in spending across different product categories. The survey highlights that the consumers are likely to increase spending time or usage on services and activities like OTT platforms, Social Media, Grocery Delivery Apps, Buying online and opting for home delivery, Videoconferencing Apps, online platforms for e-learning, Exercise/Wellness Apps and security protocols in shops like attendants using masks, gloves and barriers, social distancing, regular cleaning and sanitization of shops, no-contact purchasing and regular employee health checks are essential protocols that generate confidence in consumers about their safety when they visit a shop.

This research will help the organizations by providing them insights towards the changing consumer behavior across different product categories and services which they can utilize to adjust to the new normal.

1. Introduction

On December 31, 2019, a cluster of cases was first reported which had links to the Hunan Seafood Wholesale Market in Wuhan, Hubei Province (Pneumonia of unknown cause – China 2020). On January 5, 2020, WHO announced first Disease Outbreak news of the new virus (Archived: WHO Timeline - COVID-19). Due to person-to-person transmission, the virus had spread to multiple countries, and as of July 12, 2020, the worldwide count of Coronavirus cases were 12,856,050 and the number of deaths at 567,913 (Coronavirus Cases 2020).The Chinese government incorporated multiple containment strategies to fight the spread of the virus. And flatten the curve. These containment strategies are being used all over the world to fight the virus. The strategies included isolating the positively identified cases either in specialized hospital wards or in a monitored self-quarantine at home. Also, the cases which were suspicious were put under home isolation to prevent community transmission. Additional social distancing measures were put in place to prevent transmission which involved partial shutdown of the economy (Report of the WHO-China joint mission on coronavirus disease 2019, 2020). Preventive practices like the use of face masks in public places, clean hygienic practices like regular washing of hands were incorporated. Mandatory curfews were enforced where colleges and schools were closed, organizations had to shut their offices, and people were forced to remain inside their homes.

These mitigation measures have led to huge damage to the world economy caused due to the associated disruption of demand and supply chains. According to the chief of the International Monetary Fund (IMF), Kristalina Georgieva the world could see the worst global economic fallout since the Great Depression in the 1930s, with over 170 countries likely to experience negative per capita GDP growth due to the raging coronavirus pandemic (Shalal, IMF chief says pandemic will unleash worst recession since Great Depression). Further stoking the fear of a prolonged period of depression and job losses.

In many countries due to COVID-19 drastic changes have been observed in people's daily habits (Mckibbin & Fernando, 2020). Social interaction, socialization patterns, learning infrastructure of the students, and work environment have all been affected. These changes have also taken a toll on the mental health of the population. The growing concern among the population regarding the spread of infection has created a panic mode in the community. These apprehensions can give rise to acute stress, anxiety, and depression in vulnerable individuals.

The onset of the COVID-19 pandemic has fundamentally changed the consumer's demands and purchasing behaviors (Guo, 2020). Hence, we need to come up with a study to identify these behavioral trends to help the organizations to pivot their business and marketing strategies to tap and cater to

the consumers. For example, people must maintain social distancing and maintain home quarantine to avoid physical contact hence, organizations must strengthen their online and physical presence. We can also identify with the help of this study how organizations can handle such periods of crisis and provide a measure of flexibility in the operations to help early identification of such social shifts and emerging needs to pivot faster.

2. Literature Review

Although not exactly can we predict when this pandemic will get over, but sooner or later the Covid-19 pandemic will subside. The important question that needs to be answered and has not been covered in any research is how the post-COVID-socio-economic life will look like. We have observed how this pandemic has fundamentally changed the pattern of human life in various parts of the world. Communities and interaction before and after the Covid-19 will never be the same. In many countries, Covid-19 pandemic not only resulted in the emergence of various impacts on the health and economic sectors but also forced drastic changes in people's habits (Mckibbin & Fernando, 2020). We use this to look at these changes in the consumer's behavior due to Covid-19. However, these changing behaviors cannot be seen in isolation and is an interplay between various situational variables (Belk, 1975). These situational variables have been studied in detail in the below sections.

Coronavirus(covid-19)

The World Health Organization (WHO) declared Coronavirus outbreak as a pandemic on March 11, 2020 and as of as of July 12, 2020, the worldwide count of Coronavirus cases were 12,856,050 and the number of deaths at 567,913 (Coronavirus Cases 2020). Since it spreads through contact with infected persons (when they cough or when they sneeze) hence countries around the world have implemented strict health protection measures to control the spread of the outbreak. These measures included following social distancing to enforcing complete lockdown to reduce transmission thereby delaying the peak of the outbreak and spreading the cases over a longer duration to relieve the pressure on the healthcare system of the country (Prem et al., 2020). Such measures have forced the retail outlets, factories, and businesses to remain closed leading to huge economic disruption and a global recession seems inevitable (Fernandes, 2020).Covid-19 has been considered an independent variable because this an unprecedented situation and never seen before where the whole economy of the world is affected. And to counter it spread these norms like social distancing, self-isolation and quarantine have been introduced to reduce its spread which has affected the interaction patterns of the population.

Psychological Factors

Pandemics are looming public wellbeing challenges where dread and frenzy are basic human reactions (Bonneux & Damme, 2006). This kind of global pandemic elicits different reactions from people depending on their cultural

orientations. Media Communication may appear effective to quell such concerns. However, it can also contribute to the panic and result in undesirable responses from the public (Jones, Waters, Holland, Bevins, & Iverson, 2010). Real infectious disease has a psychological effect that becomes “moral panic” that spreads globally and is accompanied by a sense of stigma (Gilman, 2010). The panic leads to panic buying, capitalistic behavior, and xenophobia. People are unwilling to share their resources with other people or families because of the need to secure their individual development (Ramsay, 2005).

A perception of scarcity is strongly associated with panic buying behavior. It has also been observed that stockpiling of essentials upsurges if this perception of scarcity fosters (Arafat et al., 2020). This can be seen as people are hoarding toilet paper, sanitizers, and other household supplies. This hoarding leads to scarcity of essential items and price rise of such items due to supply constraints. A reverse effect of this phenomenon is supply constraints of essential items creating a sense of scarcity in the mind of consumers and leading to hoarding behavior. As social beings, we are constantly influenced by our surroundings and hence measure the ferocity of the crisis by measuring the responses of our encompassing fellow beings. It can also be described as the herd instinct (Wilkens, 2020). When the society around us behaves in a similar fashion then we too are coerced to toe the line. During an emergency or crisis, the primitive part of our brain becomes more prominent and indulges in behaviors that are necessary for our survival (Dodgson, 2020). Such behaviors are purely based on instincts and involve poor rational thinking.

Furthermore, this pandemic has also caused an increase in xenophobic behavior towards Chinese people (Aguilera, 2020). Chinese nationals have been banned from restaurants and many cruise ship operators have declared prohibitions on them from traveling on their cruise ships. Such xenophobic response has been observed in many previous epidemics and pandemics and is a common response when an infection originates from outside of their community (Alecu, 2020).

Psychological estimations of situations rely entirely on the consumer's perceptions of the situation and are an extension of sociological inquisitiveness to understand the present situation (Belk, 1975). The understanding of such psychological factors is especially important as consumers' moods may provide organizations with a complete understanding of the consumers and help them to anticipate their reactions to business strategies. More generally, insights about consumer's thoughts and feelings can provide an insight into consumer behavior (Gardner, 1985). As fear is driving this hence we have measured fear of COVID-19 using the Fear of Covid-19 Scale(FCV-19). And have hypothesized that fear and likelihood of consumption is associated.

Economic Factors

Covid-19 is not just another public health crisis which we have seen in the past, instead it has engulfed the whole global economy. Serious disruption has already occurred to the economy due to reduced profitability, workforce efficiency, huge death toll, closing down of business , trade disruption, and

halting of various sectors like the travel and tourism industry, motivating the G20 governments to announce fiscal interventions of $8 trillion and massive monetary measures (Kristalina Georgieva, 2020). The International Labor Organization(ILO) warns that 1.6 billion workers in the informal economy, which account for nearly half of the global workforce are in danger of losing their jobs, due sharp decline in working hours globally, caused by the disruption in organizations due to the COVID-19 outbreak (As job losses escalate, nearly half of global workforce at risk of losing livelihoods 2020). The supply disruptions are also setting off profound reduction in aggregate demand, further hampering the possibility of economic recovery (Ramos & Hynes, 2020). For example, in China, the production index in February declined by more than 54% as compared to the previous month (Purchasing Managers Index for February 2020). The sudden halting of the economy triggered by Covid-19 pandemic produces effects which are analogous to those of large scale, extreme, natural disaster (Coronese, Lamperti, Keller, Chiaromonte, & Roventini, 2019).

Consumer facing sectors such as tourism, hospitality, and transportation have suffered significant losses due to reduction in demand due to Covid-19. The International Air Transport Association (IATA) assesses a reduction in airline income arising from traveler carriage of up to $314 billion (IATA Economics' Chart of the Week 2020). Hospitality, travel, transportation, amusement, and manufacturing are among the several sectors in the world that are the worst affected by the COVID-19 pandemic. According to a report that was published on April 11, 2020, advance seasonally adjusted insured unemployment rate in the U.S. had peaked to a record level of 11% . In the paper titled Consumer Sentiment: Its Causes and Effects author finds that the consumers attitudes determined through surveys on consumer sentiment has a major effect on the household purchase of goods. It was also found that consumer sentiment moves with current economic conditions (Throop,1992). According to RBI Consumer Confidence Survey published on June 4, 2020 consumer confidence collapsed in May 2020, with the current situation index (CSI) touching historic low and the one year ahead future expectations index (FEI) also recording a sharp fall, entering the zone of pessimism. Consumer perception on the general economic situation, employment scenario and household income plunged deeper into contraction zone while expectation on general economic situation and employment scenario for the year ahead were also pessimistic. Due to these disruptions caused to the economic activities, consumers have also changed their consumption patterns. Hence intention to consume is a variable of interest in this study.

Consumer Behavior

What is the new normal? The new normal is the adjustment of societal interactions and behaviors to the existing conditions. Unlike the pre-COVID era which seemed to be hygienic and free from disease threats, in the new normal people are faced with the threat of the Covid-19 pandemic. People are anxious about their health and safety. For example, people are now avoiding

going outside their homes, safety precautions like using masks and gloves are being followed. People used to go outside, spend time by meeting others in a restaurant, visiting the gymnasium to keep fit, traveling, and so on. In the new normal era, however, those things are nearly impossible to do. Hence, in this study we will check the hypothesis that significant association exists between different low touch and digital activities.

When assessing a product or service for making a purchase decision, consumers look for specific information to judge the product. The authors of the paper Age and Factors influencing Consumer Behavior studied the impact of age on the perceived importance and interaction of three factors known to influence consumers when purchasing clothes: price, durability, and sustainability (Hervé & Mullet, 2009). They found that younger participants prefer low price and older people preferred suitability as an important criterion when making a purchase decision. Hence, we hypothesized that age and likelihood of spending across product categories would have an interaction and that age and likely adoption of low touch/digital activities would have an interaction.

People in the new normal era must diligently follow protocols like washing their hands, using masks and following social distancing. Being aware of health risks and using precautions from contracting Covid-19 is a new paradigm that we have applied in our daily lives. The same also applies to our social interaction with others, it does not have to be face-to-face and are becoming virtual.

One of the most important criteria in understanding consumers is to understand how they make their choices. As the result of a choice can only be felt in the future, the consumer must deal with uncertainty and risk that accompanies this choice. How consumers perceive risk is another important aspect of consumer behavior that needs to be studied, as risk is often considered to be harmful and hence ,it may produce anxiety in the minds of the consumer, in which case it must be handled by the consumer to alleviate its effects. Both the risk perception in a choice situation and the selection of methods for dealing with the risk will be affected by the individual consumer's level of self-esteem (Taylor, 1974). For example, in the context of the current Covid-19 pandemic the risk of contracting the virus is coaxing the consumers to make changes in the way they make their purchase decisions. As, the perception of risk is alleviated by making purchases through online channels, the consumers are pivoting towards it. There is no dearth of studies to underpin the fact that consumers develop and use risk-reduction strategies in choice situations where they perceive risk. An important study in this area was done by Roselius, he identified that consumers who visualized greater amounts of risk in a particular situation tended to show inclination towards different strategies than did those consumers who perceived less risk in the same situation (Taylor, 1974). The tendency to take risks should also be associated to coping with uncertainty surrounding the world. As riskier a situation is perceived more safety avenues the consumers tilt towards. It has been suggested that individuals may differ in

the cognitive complexity of their perception of the world in which they live (Meertens & Lion, 2008).

Covid-19 brought a drastic change in people's daily habits (Mckibbin & Fernando, 2020). Social interaction, social and learning patterns of students, household consumption, religious rituals and activities, work patterns have all changed; things will be difficult and require adjustments that are completely different from the pre-COVID era. For example, the consumers have been forced to self-isolate themselves due to lockdown and follow social distancing norms due to which they have increased their online activities, in India, there has been a rise of First Time Ecommerce users, who had so far been inhibited to shop online (Halan, 2020). Apps like Bigbasket, Grofers, and Amazon have seen an increase in their usage. A similar change in habit was observed during the SARS crisis in Hong Kong in early 2003 (Forster & Tang, 2005). People took to online grocery shopping during the outbreak and the demand for online shopping was closely related to the spread of the infection, rising when infections rose and slowing when infections declined. Such changes show that post-COVID era consumer behavior is quite different and would depend on psychological factors like fear due to Covis-19 and economic factors affecting consumption patterns which lead to change in consumer behavior. Hence, consumer behavior is the dependent variable.

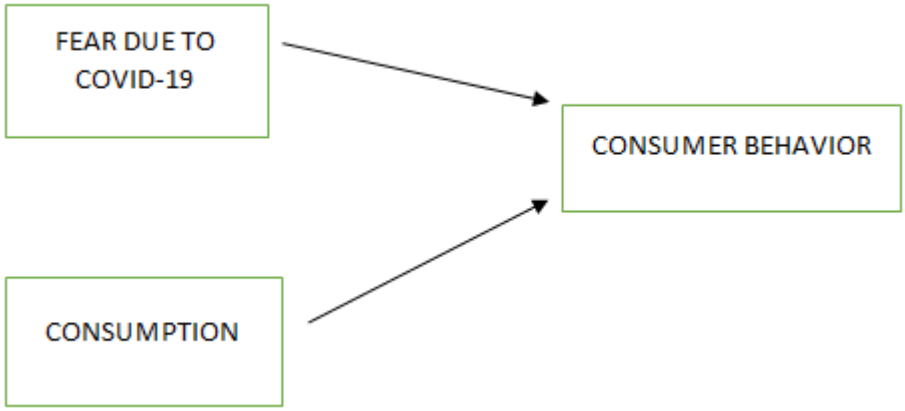

Figure1: Conceptual Framework

3. Research Methodology

The research performed was done based on primary data. The primary data was collected through an online survey. A convenience sampling technique was used to identify 180 respondents to answer 15 questions. However, due to the inaccuracy of the data 23 samples were removed from the study. This sampling method was used as this method is easy to implement and cost effective. The survey was divided into three parts, where the objective of the first part of the survey was to identify the change in consumer behavior due to the Coronavirus pandemic, and questions were asked to identify these changing behavioral trends across product categories and services. The second part of the survey was used to identify consumer sentiments due to the coronavirus pandemic and

the third part of the survey was designed to identify the fear in the minds of the consumer due to Covid-19 using Fear Of Covid-19 Scale(FCV-19S) scale((Ahorsu et al., 2020). The scale contained seven questions. The respondents indicate their level of agreement with the statements using a five-item Likert type scale starting from "Strongly Disagree" to "Strongly Agree". All statistical analysis was done using Minitab software.

4. Results

Measuring Fear-

The demography of the respondents were as follows, 1% respondents were less than 17, 55% of the respondents were in the age group 26-35,6% respondents were in group 36-50,6% respondent were 51 and above.

Fear of Coronavirus-19 Scale (FCV-19S) was used to measure fear due to the Covid-19 Pandemic. The scale contained seven questions and the respondents indicate their level of agreement with the statements using a five-item Likert scale where 1 stands for "Strongly Diasgree" and 5 stands for "Strongly Agree". A total score is calculated by adding up each item score (ranging from 7 to 35).The higher the score, the greater the fear of corororonavirus-19.

Respondents were also asked about their likelihood of increase in consumption across different categories and services and five-item Likert scale was used to measure the results where 1 stands for "Strongly Diasgree" and 5 stands for "Strongly Agree".

Statistical Inferential Analysis

1.0 Testing the association between likelihood of consumption across different product categories/services and Fear

We will perform CHI-SQUARE TEST in Minitab

H0-There is no association between likelihood of spending across different product categories/ services and Fear due to Covid-19

H1-There is an association between likelihood of spending across different product categories/ services and Fear due to Covid-19.

	Chi-Square	DF	P-Value
Pearson	189.859	155	0.030
Likelihood Ratio	203.140	155	0.006

Table 1: CHI-SQUARE TEST

Chi-Square Test was conducted for each of the questions in FCV-19S scale and except the first question which is "I am most afraid of Covid-19" the rest of the questions of the scale had no relationship with likelihood of consumption across different product categories.

Chi-Square Test conducted for 5% Level Of Significance and 95% Confidence Interval shows in table 1 that the p-value is 0.030 which is less than the 5% Level Of Significance. Hence, we accept the Alternate Hypothesis i.e. "There is relationship between likelihood of consumption across different product categories and Fear."

To gain deeper insight we conducted principal component analysis on the correlations of the FCV-19S scale seven items. Maximum Likelihood method was chosen and Factors were divided into 3 components. Varimax rotation was used to clarify the relationship among factors. As shown in table 2.The first factor seemed to reflect physiological responses to the COVID-19 with items 3,4,5, 6, and 7 most highly correlated. The second factor tends to represent generalized emotional responses to the COVID-19 with item 1 most highly associated. The third factor tends to represent anxiousness related to Covid-19 with item 2 most highly associated. The three varimax factors accounted for about 95.1%, of the total variance.

Variable	Factor1	Factor2	Factor3	Communality
I am most afraid of COVID-19	0.301	0.913	-0.276	1.000
It makes me uncomfortable to think about Covid	0.512	0.387	-0.767	1.000
My hands become clammy when I think about Covid	0.795	0.352	-0.494	1.000
I am afraid of losing my life because of Covid-19	0.814	0.212	-0.427	0.889
When watching news and stories I become nervous	0.770	0.562	-0.199	0.948
I cannot sleep because I'm worrying about Covid-19	0.851	0.310	-0.324	0.925
My heart races or palpitates when I think about getting Covid-19	0.761	0.418	-0.379	0.897
Variance	3.5418	1.7382	1.3793	6.6593
% Var	0.506	0.248	0.197	0.951

Table 2 : Rotated Factor loadings and communalities

From the above results we can observe that generalized emotional responses to COVID-19 and likelihood of consumption of products or services are associated. This fear response is what has played a role in change of consumer behavior due to the pandemic.

Consumer Behavior

By measuring the fear response due to Covid-19 and its relation with Consumption we have identified a change in consumer behavior due to this pandemic.However, to identify precisely what the change is we have conducted the below studies.

Respondents in the survey were asked how likely you are to spend more in the below Product/Service categories and the scale was from 1 to 5 where 1 stands for Strongly Disagree and 5 stands for Strongly Agree. 54.43% respondents Strongly Agree that they are likely to increase the spending on Groceries, 24.68% Strongly Agree that they are going to increase spending on Snacks,

79.75% Strongly Disagree that they are going to increase spending on Tobacco Products, 28.48% Strongly Disagree for increasing spending on Takeouts/Deliveries, 52.53% Strongly Disagree for spending on Alcohol, 48.73% Strongly Disagree for spending on Restaurants, 31.65% Strongly Disagree for spending on Footwear,33.54% Strongly Disagree for spending on Apparels, 73.42% Strongly Disagree for spending on Jewelry,30.38% Strongly Agree for spending on Household Supplies, 25.95% are neutral for spending on Personal-Care Products, 29.75% are neutral for spending on Skincare-Makeup, 36.08% Strongly Disagree for spending on Furnishing And Appliances, 28.48% Somewhat Disagree for spending on Home Entertainment, 44.94% Strongly Disagree for spending on Outside Entertainment, 30.38% are neutral for spending on Books, 29.75% are neutral for spending on Consumer Electronics, 69.62% Strongly Disagree for spending on Pet Care Services, 25.95% Somewhat Agree for spending on Fitness And Wellness, 27.85% are neutral for spending on Personal-Care Services, 23.42% are neutral for spending on Petrol/Diesel, 66.46% Strongly Disagree are for spending on Vehicle Purchases, 27.85% Strongly Disagree for Travelling By Car, 63.92% Strongly Disagree for spending on Vacations, 72.78% Strongly Disagree for Pilgrimage Visits, 77.5% Strongly Disagree for spending on International Flights, 44.14% Strongly Disagree for spending on Domestic Flights, 61.39% Strongly Disagree for spending on Hotel/Resort Stays, 37.34% Strongly Disagree for spending on Hospital Visits, 27.85% Strongly Agree for spending on Health Insurance.

2.0 Testing the association between likelihood of consumption across different product categories/services and age

We will perform CHI-SQUARE TEST in Minitab

H0-There is no association between likelihood of spending across different product categories/ services and age

H1-There is an association between likelihood of spending across different product categories/ services and age.

	Chi-Square	DF	P-Value
Pearson	63.625	120	1
Likelihood Ratio	63.168	120	1

Table 3: CHI-SQUARE TEST

Chi-Square Test conducted for 5% Level Of Significance and 95% Confidence Interval shows in table 3 that the p-value is 1 which is greater than the 5% Level of Significance. Hence, we fail to reject the Null Hypothesis i.e. “There is no relationship between likelihood of spending in different product categories and age.”

The respondents were asked whether COVID-19 was the reason for the adoption of online services, 49% responded with a YES , this indicates that the consumers have been pushed to adopt online services by the PANDEMIC and

this can be used by the organizations to adopt ONLINE services in their customer journey touchpoints to be accessible to these customers.

The respondents were asked to answer the question that how likely you are to increase the adoption of below digital and low touch activities where a 5 point scale was used 1 stands for Strongly Disagree and 5 stands for Strongly Agree. 53.75% respondents Strongly Agree that they are going to increase the usage of OTT platforms. 27.50% Strongly Disagree that they will increase their time spent on Playing Online Games. 41.88% Strongly Agree that they are going to increase Social Media usage. 30.63% Strongly Disagree that they are going to increase the usage of Food Delivery Apps. 38.13% Strongly Agree that they are going to increase the usage of Grocery Delivery Apps. 37.50% Strongly Agree that they are going to increase Buying Online and opting Home Delivery. 30.63% Strongly Disagree that they are going to increase buying online and opting in-store pickup. 45% Strongly Agree that they are going to increase the usage of Videoconferencing Apps. 40.63% Strongly Agree that they are going to increase the usage of Online platforms for e-learning. 27.50% Strongly Agree that they are going to increase the usage of Exercise/Wellness Apps. 46.88% Strongly Disagree that they are going to increase the usage of ride-sharing apps.

3.0 Association between age and likelihood of adoption of digital and low touch activities.

We will perform CHI-SQUARE TEST in Minitab

H0-There is no association between likelihood of engaging in digital/low touch activities and age.

H1-There is an association between likelihood of engaging in digital/low touch activities and age.

	Chi-Square	**DF**	**P-Value**
Pearson	54.172	76	0.973
Likelihood Ratio	53.991	76	0.974

Table 4: CHI-SQUARE TEST

Chi-Square Test conducted for 5% Level Of Significance and 95% Confidence Interval shows in table 4 that the p-value is 0.973 which is greater than the 5% Level Of Significance. Hence, we fail to reject the Null Hypothesis i.e. “There is no relationship between likelihood of engaging in digital/low touch activities and age.”

4.Testing the relationship between different digital/low touch activities where change is expected.

We will perform One-Way Anova in Minitab

H0-All means are equal

H1-All means are not equal

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	10	666	66.603	37.59	0.00
Error	1716	3040.2	1.772		
Total	1726	3706.3			

Table 5 Results of ANOVA

Factor	#respondents	Mean	Standard Deviation	95% Confidence Interval
OTT PLATFORMS	157	4.0892	1.2371	(3.8808, 4.2975)
PLAYING ONLINE GAMES	157	3.032	1.583	(2.823, 3.240)
SOCIAL MEDIA	157	3.6561	1.2021	(3.4477, 3.8644)
FOOD DELIVERY	157	2.732	1.461	(2.524, 2.941)
GROCERY DELIVERY	157	3.8153	1.2342	(3.6069, 4.0236)
BUY ONLINE AND OPTING FOR HOME	157	3.688	1.353	(3.480, 3.896)
BUY ONLINE FOR IN-STORE PICKUP	157	2.624	1.443	(2.416, 2.833)
VIDEOCONFERENCING APPS	157	3.9236	1.2276	(3.7152, 4.1319)
ONLINE PLATFORMS FOR E-LEARNING	157	3.9363	1.1912	(3.7280, 4.1447)
EXERCISE/WELLNESS APPS	157	3.382	1.357	(3.174, 3.591)
USE RIDE-SHARING APPS	157	2.089	1.293	(1.881, 2.298)
Pooled StDev = 1.33105				

Table 6: Mean and standard deviation across product categories

We assumed equal variances for the analysis. One-way ANOVA in Table 5 shows results show p value is less than level of significance i.e 0.05, hence H0 is rejected and it is established that "All means are not equal".

For further study, Turnkey Pairwise Comparison is done to understand the relationship between adoption in these different digital/low-touch activities

Factor	N	Mean	Grouping				
OTT PLATFORMS	157	4.0892	A				
ONLINE PLATFORMS FOR E-LEARNING	157	3.9363	A				
VIDEOCONFERENCING APPS	157	3.9236	A				
GROCERY DELIVERY	157	3.8153	A	B			
BUY ONLINE AND OPTING FOR HOME DELIVERY	157	3.688	A	B			
SOCIAL MEDIA	157	3.6561	A	B			
EXERCISE/WELLNESS APPS	157	3.382		B	C		
PLAYING ONLINE GAMES	157	3.032			C		
FOOD DELIVERY	157	2.732				D	
BUY ONLINE FOR IN-STORE PICKUP	157	2.624				D	
USE RIDE-SHARING APPS	157	2.089					E

Table 7 Grouping information using Turnkey Method

Above grouping from Table 7 using Turnkey Method, shows that OTT Platforms, Online Platforms for E-Learning, Videoconferencing Apps, Grocery Delivery, Buy Online and opting for home delivery, Social Media are under category A. Exercise/Wellness Apps, Playing Online Games are under category C. Food Delivery, Buy Online For In-Store Pickup are under category D. Using Ride-Sharing Apps are under category E.

The respondents were asked about the security protocols which they considered important while choosing a store to shop-in. 65.61% considered choosing a shop where attendants use masks, gloves, and barriers. 68.15% considered regular cleaning and sanitization of the shop as an important protocol.69.43% respondents considered Social Distancing. 68.15% considered No-contact purchasing. 63.69% considered regular employee health checks as an important security protocol.

Consumer Sentiments

Respondents were asked how optimistic are they about the economic recovery in the next 5-6 months and as is shown in Fig 4, 29% responded that they are neutral, 25% responded that they somewhat agree, 20% responded that they Strongly Agree, 5% responded that they Strongly Disagree.

Respondents were asked how long you think you need to adjust your routines due to COVID-19 and as shown in Fig 5, 31% responded 2months, 30% responded 5+ months, 22% responded 3 months, 17% responded 4 months.
Respondents were asked how long you think that your personal/household finances will be affected due to COVID-19 and as shown in Fig 6, 32% responded 3-5 months, 25% responded less than months, 23% responded 6 to 8 months, 9% responded 9 to 12 months, 11% responded greater than 12 months.
Respondents were asked how long you think that you are going to reduce spending due to COVID-19 and as shown in Fig 7, 42% responded 3-5 months, 29% responded 6-8 months, 12% responded greater than 12 months, 11% responded that they are not going to reduce their spending, 6% responded 9-12 months

5. Discussion

The study intended to analyse, "The effect of fear on Purchase Intentions" and found that there exists relationship between fear and purchasing intentions. The products that can alleviate those concerns of fear can affect the purchasing intention. Hence, we made a hypothesis about fear due to Covid-19 and likelihood of increasing the consumption of products and services. We found there exists a relationship between them. We asked the respondents about security protocols that can alleviate their concerns of fear and we found that security protocols in shops like attendants using masks, gloves and barriers, social distancing, regular cleaning and sanitization of shops, no-contact purchasing and regular employee health checks are essential protocols that generate confidence in consumers about their safety when they visit a shop.
The study analyses relationship between Age and Factors influencing Consumer Behavior. The impact of age on the perceived importance and interaction of three factors known to influence consumers when purchasing clothes: price, durability, and sustainability.
We tested the hypothesis that age and likelihood of spending across product categories would have an interaction. However, the Chi-Square Test performed on the likelihood of spending in different product categories and age revealed that there exists no relationship between age and likelihood of spending in different product categories. This shows that this pandemic has brought a huge change in the consumer buying behavior and they are acting differently in their purchasing behaviors across product categories due to the COVID-19 pandemic. This behavior change could have been produced due to important factors like safety and security, fear and anxiety about the pandemic, economic factors contributing to future uncertainty influencing in a major way their decision-making process.
The testing of hypothesis that age and likely adoption of low touch/digital activities would have an interaction shows that there exists no relationship between age and the adoption of low touch and digital activities. According to the primary research through survey we found that people across all age groups are showing their inclination towards adoption of digital/low-touch activities. The tendency to avoid risk and safety concerns has coerced them into this behavior.

We also tested the relationship between different digital/low-touch activities where change is expected in the consumption. We used ANOVA to test the relationship and used Turnkey Pairwise Comparison to find the similar groupings. All in category A are likely to increase in the adoption. This is because due to the enforced lockdown platforms for E-Learning were increasingly used to learn new things from the luxury of homes. Also, since schools and colleges are still closed, they are using these platforms to learn. Videoconferencing apps were widely used by the population to work, study, and connect with family members and will be continued in future. Grocery Delivery and buy online and opting for home delivery were used to buy household essential items to avoid going out. All in category C have also seen an increase in adoption. Exercise/wellness apps were being used to stay fit as the Gyms and outdoor parks were closed. Also, to avoid going out and remain staying fit people prefer using such apps in future. Playing online games will also see increase in adoption as people are avoiding going out due to Covid-19 and hence prefer spending their free time playing these games. All the activities in category D and E contain activities like Food Delivery, Buy Online for In-Store Pickup and using Ride-Sharing Apps are going to have a reduction in their adoption as these activities are not considered safe due to the ongoing Covid-19 pandemic. Hence, people are avoiding these activities.

6. Conclusion and Recommendations

Considering the relevance globally of the Indian consumer market, and non-existence of any detailed study about the changing consumer behavior due to Covid-19, this study provides useful insights which the organizations can use to adjust to the new normal.

Our hypothesis of relationship between fear due to Covid-19 and likelihood of increase in consumption across products and categories turned to be true. Hence, organizations need to incorporate these protocols at every step that involve customer interaction to alleviate the safety concerns of the customer. Such measures will increase the confidence in consumers mind and improve the sentiment.

Secondly, this study highlights that the consumers across all age groups are behaving the same when it comes to their likelihood of spending across different product categories or services. As incomes have declined due to the pandemic consumer are spending on essentials and not on discretionary spending. The survey highlights that consumers are likely to increase their spend on groceries, snacks, household supplies and health insurance. The consumers are likely to decrease their spend on tobacco products, Takeouts/deliveries, alcohol, restaurants, footwear, apparels, jewelry, furnishing and appliances, home entertainment, pet care services, vehicle purchases, vacations, pilgrimage visits, International and domestic flights, hotel/resort stays, hospital visits.

Thirdly, the research highlights that age does not have any interaction with the likelihood of adoption of low touch and digital activities. The consumers are tilting towards online services and digital solutions as well as no-contact or reduced-contact channels to get goods and services. The survey highlights that

the consumers are likely to increase spending time or usage on services and activities like OTT platforms, Social Media, Grocery Delivery Apps, Buying online and opting for home delivery, Videoconferencing Apps, online platforms for e-learning, Exercise/Wellness Apps. In the post-covid world order, organizations across various sectors cannot depend primarily on their offline presence. They will have to realign themselves to the new normal of online buying and make their presence felt in the online channels. Hence, organizations need to embrace multichannel ecosystem and converge the operations of their online and brick and mortar stores. The consumers are likely to decrease spending time or usage on services and activities like playing online games, food delivery app, buying online and in-store pickup, and ride-sharing apps.

The questions in survey asked to generate insights about the consumer sentiments highlighted that optimism among the consumers have decreased and most them expect Covid-19 to affect their routines for a long time to come. Also, majority consumers shared that their incomes have declined, and they are reducing their spend. They are spending on essential items and not discretionary categories. This trend will continue unless the economic effects of the pandemic return to normal.

As the spread of the virus is still not contained and the countries continue to struggle to control its spread. This calls for collaborative effort in the form of global investment in vaccine research and development, and its distribution across geographies. Focus should also be given to precautionary measures like capacity development for real-time monitoring of the population and development of contact tracing capabilities. As outbreaks of the virus is not going to subside anytime soon, proactive measures and collaborative actions are required at national and international levels to save lives and to protect economic prosperity.

7. Limitations

The study is exploratory in nature and is by no means an exhaustive study that encompasses the whole Indian population. Hence, to better understand the behavior this study can further be undertaken in rural and urban India with a bigger sample size and representation from smaller towns and cities to make this study comprehensive. Also, this study can be further expanded to incorporate different countries as well to learn about the change in consumer behavior in their region.

The study used demography, psychology, and economic factors for identifying the change in consumer behavior. However, there are other factors like personal, cultural factors, and social factors that affect the consumer behavior. The implications of these factors can further enhance our understanding about the implication of covid-19 pandemic on consumer behavior.

The study does not consider panic buying behavior that is induced during the times of crisis. A perception of scarcity and losing control of your environment is strongly linked with such panic buying behaviors which are formed due to fear, exacerbation of anxiety and insecurity, hence ,further studies are

warranted to explore panic buying behaviors during crisis which could be of great help in dealing with such situations in future (Arafat et al., 2020).

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