

Impact of Pandemic (2020) Disorders on Indian Consumers' Perception: Importance, Thinking and Consumption of Grocery Products

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Abstract

Unprecedented social disorder created by COVID-19 has caused great concern to Indian households of different income segments in terms of income losses, in terms of prioritizing procurement of various products and in terms of managing the consumption. This may be reflected in the resulting consumer perception about the importance of various product categories, their assessment of consumption and the amount of thinking they might have put into various product categories. This study tries to assess the relative importance a general consumer assigns to various categories of products related to his daily uses in the Lockdown phase and tries to estimate the level of consumption and amount of thinking during the three phases of Lockdown, Unlock and Festive Future. The study may indicate the coping mechanism of the general consumer.

Keywords: Consumer Perception, Pandemic, COVID-19, Grocery, Consumer Behavior

Introduction

Consumers are understood to be very sensitive about various stimuli and can become very cautious at the time of social disorders caused by events like global pandemic. A negative atmosphere of any pandemic can affect the consumption practices of a large group of consumers. Any disruption caused by a global scale pandemic will force the consumer to rethink his consumption habits as the disorder will affect him economically, socially and mentally. Forbes indicated that though the world has seen many major disturbances earlier like 11/9 (2001), Iraq war (2003), the global financial crisis (2008) etc.,

their impact was limited to few regions while this global pandemic has far reaching collective impact felt by the whole world. In reality there is no comparison to any future events as the world is in a very unique state due to this global level disruption.

Creating an understanding of impact on consumer behavior during these epidemic led social disorders is important from the economic and managerial perspective and marketers, policy experts and practitioners can better prepare themselves for any such eventuality coming out of an epidemic. While macro economic data may be available with economists, policy experts and practitioners based on fuel consumption, electricity production, manufacturing index etc. a micro level individual consumer's response can only be known through understanding the individual consumers. The severe restriction in movement of people and goods, shutting of malls-markets and shops, seizure of supply lines, uncertain information, has put consumers under tremendous stress and strict restraint. Rather than using conventional assumptions about consumers' response to global social disorders it would be prudent to approach the consumer and understand his coping mechanism, changes in practices and perceptions.

As an epidemic or similar global social disorder is rarely occurring phenomenon, the relevant research work regarding consumers' response is difficult to find. Not only consumers evolve, but technology, communication channels, supply chain and services advance within the longtime available between the two consecutive global pandemic disorders leading to requirements of fresh perspective about consumption behaviors.

In this exploratory study we try to understand the coping mechanism, changes in consumer practices and various

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perceptions formed during various phases of social disorders related to COVID-19 global pandemic and try to capture empirical evidences related to the impact of global pandemic disorder on the consumption and buying practices of a general consumer. Using Google form based data collection tools, the consumers' responses were solicited to create an insight about consumer behavior, stocking habits, price perceptions and future expectations.

Background and Literature Review

Outbreak of COVID-19

Times of India (June'20) has reported that while the first confirmed case of Corona Virus infection in India was recorded on January'20 in Kerala, the Scientists estimated that COVID-19 may have entered India in November-December'19. Outbreak of COVID-19 in India was effectively taken into administrative consideration in mid-march 2020 and a country wise sudden, swift and severe lockdown was imposed in the last week of March'20. The lockdown was later extended four more times as the virus was not showing any sign of being contained and the number of cases of COVID-19 infection kept rising. The government was severely criticized by many agencies for freezing all economic activities in lockdown and causing an uncalled for trauma to its citizens and also affecting the necessary goods availability to a billion and more people. Table 1 shows the various phases of lockdown, unlock and festive future.

Table 1: The Phases: Lockdown, Unlocks and Festive Future

Phases	Phases	Dates	Open
Lock-down	1	25 th March to 14 th Apr'20	Nationwide lockdown, All Factories, Offices, shops, markets and services suspended. Pharmacy opened
	2	15 th Apr to 3 rd May'20	Certain relaxation, Grocery opened, Vegetable & Fruit vendors allowed.
	3	4 th May to 17 th May'20	3 zones creation based on severity of virus spread
	4	18 th May to 31 st May'20	Additional relaxations, states were given a larger say, containment and buffer zones

Phases	Phases	Dates	Open
Unlock	1	1 st June to 30 th June'20	Lockdown only in containment area, Phased relaxation of services, offices opened
	2	1 st July to 31 st July'20	Lockdown only in the containment area, Night curfews continue, Inter- and intrastate travel was permitted.
	3	1 st Aug to 31 st Aug'20	night curfews relaxed and gymnasiums and yoga centres allowed to reopen, Educational institutions to be kept shut Within state and between state travel and transportation is allowed
	4	1 st Sept to 30 th Sept'20	Lockdown in containment zone, Metro Rail was allowed, Marriage functions & funeral rites were allowed with limited people
Festive Future		1 st Oct to 31 st Dec'20	Indian festivals like Durga Puja & Diwali and Christmas like major festivals to be celebrated

Source: Created from the information available online

The various phases of lockdown and unlocks have thrown tremendous challenges to a general consumer who seemed to struggle to get the required goods and services for his requirement on the one hand and sustaining his monthly income on the other. A CMIE (July'20) study has claimed that about 84% of Indian households see a loss of income during lockdown and found a very sharp and broad negative impact on household income. People in the lower and middle segments of the income distribution were affected more brutally the study added.

A Statista (Aug'20) report suggested that about more than 40% respondents in study indicated having felt mild to severe stress during the period of lockdown in India while a majority about 60% felt no stress. Financial express (May 20) reported after speaking to various marketing experts that the forced lockdown to fight COVID-19 has changed buyers' buying choices, as consumers are spending more on products related to health and hygiene, adjusting to inadequate availability of goods, and choosing home deliveries rather than visiting stores.

Related Literature

Jung et al. (2016) studied the impact of epidemic led disorder in Korea on consumer spending and used scanner panel data of debit and credit card transactions. They found that the epidemic led disorder caused considerable disruption of consumer expenditures but interestingly the disruption was not widespread across all categories. Also they have noticed substantial decrease in expenditure in traditional shopping channels and seen consumers preferring e-commerce to avoid the risk of epidemic.

Bloom and Mahal (1995) in a study to evaluate the economic effect of the AIDS epidemic in across fifty one emerging and industrial nations compared the changes in the occurrence of AIDS and the proportion of growth of GDP per capita. The study found that the AIDS epidemic has had an minor influence on the growth rate of per capita income. They further indicated that the minor influence of AIDS on income per capita is qualitatively comparable to an paltry outcome on pays of the Black Death in England and France during the Middle Ages and an inconsequential result on output per capita of influenza in India during 1918-1919.

Mehta et al. (2020) in their article on the shopper behavior during COVID-19 disturbances and in the following lockdown phase and attempted to a meta analysis of various relevant literature and consultancy reports, indicated about the transformation in consumer behaviour and also suggested that the consumer behavior models may change and take a different form after the pandemic situation. They suggested the need for the business firms to understand these transformed models to survive in the post COVID-19 scenario and indicated that this crisis has uncovered the materialism in consumer behavior which was not need driven and also highlighted the challenges of trade dependence for essential goods and market complexities.

Laato et al. (2020) established in their investigation a solid linkage between a resolve to self-quarantine and intent to undertake uncommon procurements and indicated that the stated shopper behavior was found to be directly connected to expected time spent in self quarantine. Their study discovered that being exposed to online information led to bigger information burden and assumed intensity of the condition had substantial influences on consumers' intent to undertake uncommon acquisitions and willingly

self-quarantine. Their investigation outcome showed that the unfamiliar shopping actions witnessed in March 2020 worldwide were related to isolation measures. In difference to their hypothesizing neither being exposed to information available on internet nor information burden had a statistically important effect on how intently respondents viewed the state of epidemic.

Sheth (2020) articulated that there is a forced transformation and disruption in consumer habit of purchasing as well as shopping as buyers are required to improve and embrace novel practices. He expected that the consumer will return to old ways of shopping as situations become normal but there are also strong chances that consumers will be evolved as they might have discovered more useful, inexpensive and comfortable substitutes. He suggested that novel ways will moreover be developed by technological progresses, shifting demographics and inventive methods.

Laguna et al. (2020) observed variations in popularity of food related searches during the lockdown period as people avoided going to restaurants while compared to health related searches the searches for recipe and delivery soared. A change in shopping habits has been observed for Spanish consumers. It is also noted that concern in food products like Fruits, Bread, Flour, Chicken and Milk, and the related preparation of food, and storing increased. Changes in lifestyle for not being able to go outdoors for shopping or exercising has also caused concern about mood and body weight and it has led to decreased buying for non-perishable prepared meals as being perceived harmful and also due to extra time available for food preparation etc. Decreased consumption was also observed of the fresh food items like fish and seafood which are greatly consumed in usual times while fresh vegetables being perceived healthy were purchased more.

Pathak and Warpade (2020) have observed in their primary study that many customers' behavior changed significantly as they faced various difficulties in procuring goods during lockdown. Note that customers have shown a change in their preferences related to buying grocery items, FMCG products and bakery items as many customers have shifted their buying from organized stores to unorganized and online stores and easy availability, less crowd and following prescribed rules were the main motives behind particular channels. Free home delivery, hygiene and credit availability was found to be weak reasons to prefer a channel for buying.

Stanciu et al. (2020) in their secondary data study noted that in the disturbances and home containment condition a new context of retailing is evolving in the form of online shopping so the marketers are required to understand fears and needs of consumer that creates barrier to distribution and should their distribution channel to create ease for them. They also indicated that those customers that were averse to online shopping due to difficulties in adopting technologies due to preference of fresh products were compelled to adopt new online mode. They suggested based on the Nielson study that those marketers who would be able to persuade consumers by superiority, competence, local products and ability to adopt newer modes of retailing will be back to normal sales faster than others and would create strong customer patronage.

Kumar et al. (2020) in its primary study found that food products sales of a leading Indian multinational company got affected significantly as lockdown progressed. Also noted that the awareness about safety and hygiene related actions taken by the company during lockdown was limited to about half of the respondents approached for the study. Also found that not many respondents were buying the company's products as about 47% respondent indicated using the company's food products and more than half of the respondents were not buying outside packed food products fearing COVID-19.

The Research Objectives

The primary research objectives are as given below:

- To study the felt relative importance of different categories of products like grocery, apparel, cosmetics etc. during the Lockdown related to COVID-19.
- To study the amount of thinking about grocery products of consumers during three phases of Lockdown, Un-lock and Festive Future related to COVID-19.
- To study the consumption of grocery products during three phases of Lockdown, Un-lock and Festive Future related to COVID-19.

Research Hypotheses

The study will be guided under the following hypotheses:

- The consumer felt greater importance of some product categories than the other.
- The level of thinking about availability and procurement of grocery was higher during lockdown.

- The level of consumption about availability and procurement of grocery was higher during lockdown.

Research Methodology

This research has been conceived as an exploratory study to understand consumer dynamics during three mentioned phases which were distinct in themselves based on opening of parts of the market. To understand consumer behavior during this period a primary data study was undertaken with the help of structured e-questionnaire to solicit the response from the consumer. Relevant literatures were reviewed before finalizing information fields to be studied. The concerned population for the study was considered to be very large so a convenience based judgmental sampling method user for the sampling. A sample size of 400 consumers (n=400) were taken with appropriate cross sections of demographic segments into it. The time period for the data collection was 25th August 2020 to 15th September 2020, as by this period a typical consumer has experienced both Lockdown phase, and Unlock phase and has formed some expectation for the third phase of study of festive future. Most of the respondents were from Bhopal (India) and nearby areas.

Grocery products considered here are the daily need items which are required for a family and it includes all the food and non food items. Some of the items can be staples, oils, packed food items like tea, biscuits, breads etc., dry fruits and specific grocery items are the goods which are specific to certain family classes like special sauces and cheese etc. Grocery buying refers to purchasing foodstuff and regular need goods. Foodstuff and grocery goods purchasing contains shopping for grains, pulses, fresh fruits and vegetables, packaged food, personal products and some household goods (Sinha, Mathew & Kansal, 2005). General grocery products considered here are most essential daily need items like floor, oil, sugar, salt, tea leafs etc. while specific grocery products are occasional need items which may not be needed on a daily basis in by a household like cheese cubes, specific sauces, custard powder, some essence etc.

The first hypotheses will be tested using a single factor analysis of variance and tukey krammer post-hoc test. by comparing the generated p-value to 0.05 level of significance and the remaining two hypotheses will be tested using chi-squared test of independence.

Data Analysis

Demographic Review of Respondents

Table 2: Gender Wise Distribution

Gender	Number of Respondents
Female	224
Male	199
Grand Total	423

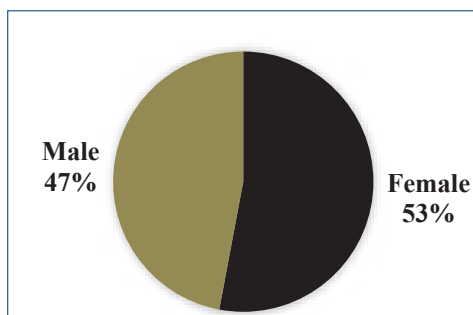


Fig. 1: Distribution of Respondents According to Gender

As grocery is a female controlled category a suitable representation to the female was given in the sample.

Table 3: Distribution of Respondents According to Family Size

Family Size	Number of Families
4 or Less	262
5 - 6	116
7 or More	45
Grand Total	423

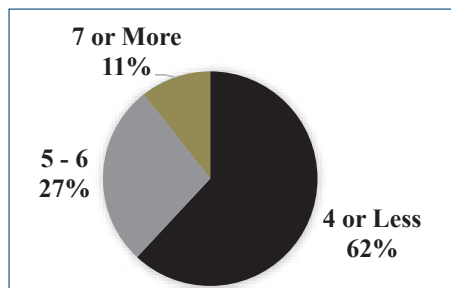


Fig. 2: Distribution of Respondents According to Family Size

Most of the respondents had a family size of less than 4.

Table 4: Monthly Income Wise Distribution

Monthly Household Income	Number of Respondents
40000 or Less	168
41000 - 80000	167
81000 or More	88
Grand Total	423

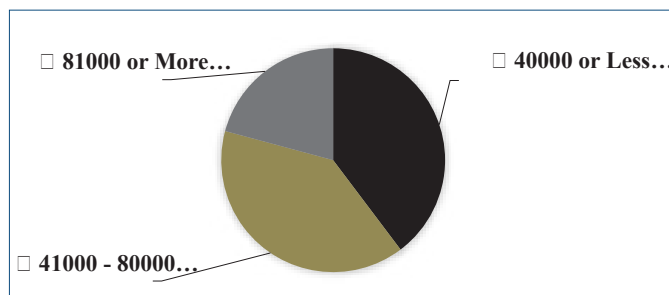


Fig. 3: Distribution of Respondents According to Monthly Household Income

Most of the respondents belong to the Middle or Lower Middle Class.

Descriptive Statistics

Importance Scores of Product Categories

It was of academic interest to understand the importance given by consumers to different products categories during lockdown by understanding the relative importance shown by the respondents. The product categories considered here are Grocery, Cosmetics, Apparel, Health & Immunity Products, Entertainment and Electronics. A sample of 423 respondents indicated the relative importance, on a scale of 1 to 6, they associate with a product category. Here 1 indicated least importance while 6 indicated maximum importance.

The following tables shows the frequency of scores (1 to 6) given to each of the six categories and the mean and standard deviations of the importance scores.

Table 5: Product Category Wise Importance Scores

Importance Rating	Grocery	Health & Immunity Products	Cosmetics	Entertainment Products	Electronics	Apparel
1	46	34	175	74	70	107
2	75	74	126	109	113	135
3	77	93	64	77	81	86
4	30	42	34	80	78	63
5	26	38	17	51	49	24
6	169	142	7	32	32	8

Table 6: Descriptive Statistics for Importance Score

Product Category	Mean Score	Standard Deviation
Grocery	3.998	1.881
Health & Immunity Products	3.95	1.755
Cosmetics	2.085	1.229
Entertainment products	3.05	1.521
Electronics	3.045	1.504
Apparel	2.494	1.275

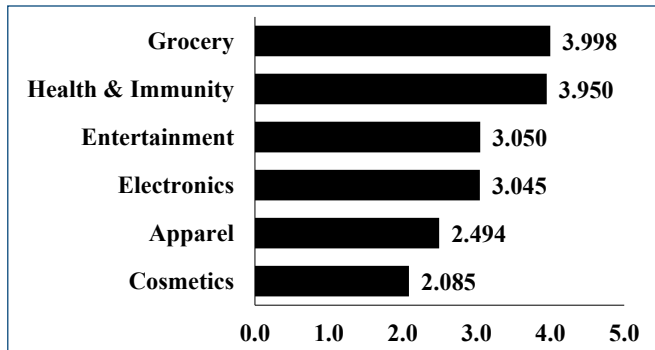


Fig. 4: Mean Importance Scores of Product Categories

Thinking and Consumption of Grocery

Respondents were asked to indicate the level of thinking and consumption on a nominal scale during the three phases i.e. lockdown, unlock and festive future. It must be noted that respondents were asked to indicate expected level of thinking and consumption during the upcoming festive season in India. The two levels were namely, Normal and Higher.

The researchers were interested in knowing whether during the lockdown phase the consumers were thinking more about the grocery goods in terms of procurement, stocks etc in comparison to other two phases of unlock and festive future. Thinking more about grocery may indicate the

concern about the timely availability and required quantity of the daily needs during the lockdown period.

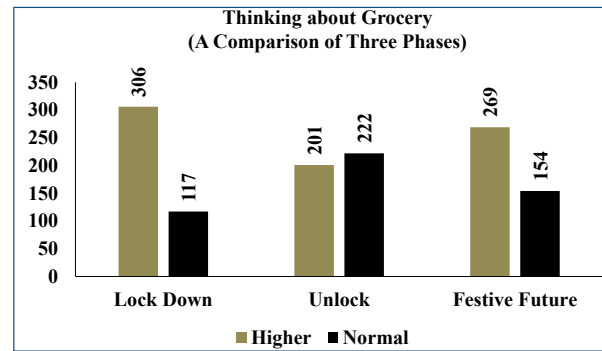


Fig. 5: Respondents Thinking about Grocery

Consumption of Grocery Goods

It was also felt that consumers may resort to different levels of consumption of grocery products during the three phases of our study as they may be in different mental and physical make up during the lockdown, unlock and festive phase. It would certainly be interesting to find out whether consumers consumed substantially different quantities in these phases.

The results are shown in the following bar charts representing the number of respondents indicating each level.

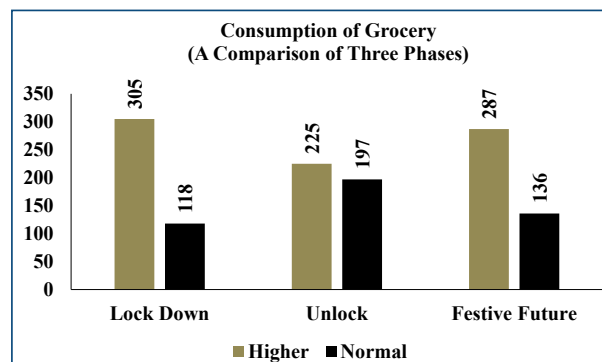


Fig. 6: Consumption of Grocery

Tests of Hypotheses

Test of Hypothesis One

A statistical tool known as single factor analysis of variance (ANOVA), to compare the means of groups of measurement data, was used to compare the mean rating scores given by respondents to the six categories of the products. In a one-way anova, there is one measurement variable and one nominal variable. Multiple observations of the measurement variable are taken for each value of the nominal variable. The collected data consists of rating scores given by a consumer to the importance felt by her/him for each of the six categories of product. In addition to ANOVA, Tukey post hoc test is also applied for multiple comparisons to identify which categories of products differed from each other in terms of importance.

Ho (Null hypothesis): The mean importance scores for all categories of the products are equal. i.e.

$$\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$$

H1 (Alternative hypothesis): The mean importance scores for all categories of the products are not equal.

$$\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$$

The outputs of the ANOVA analysis and Tukey post hoc test are given below.

Table 7: Summary of ANOVA Statistics

Level of Significance = 0.05				
Categories	Count	Sum	Average	Variance
Grocery	423	1691	3.998	3.538
Health & Immunity	423	1671	3.950	3.081
Cosmetics	423	882	2.085	1.509
Entertainment	423	1290	3.050	2.313
Electronics	423	1288	3.045	2.261
Apparel	423	1055	2.494	1.625

Table 8: ANOVA

Source of Variation	SS	df	MS	F	P-Value	F crit
Between Groups	1240.016	5	248.003	103.866	0.00	2.218
Within Groups	6045.731	2532	2.388			
Total	7285.747	2537				

Table 9: Tukey Post Hoc Test (Where Means are not Different)

Comparison	Absolute Difference in the Means
Grocery to Health & Immunity	0.047
Entertainment to Electronics	0.005
Result : Means are not different	

Table 10: Tukey Post Hoc Test (Where Means are Different)

Comparison	Absolute Difference in the Means
Cosmetics to Grocery	1.913
Cosmetics to Health & Immunity	1.865
Cosmetics to Entertainment	0.965
Cosmetics to Electronics	0.96
Cosmetics to Apparel	0.409
Grocery to Entertainment	0.948
Grocery to Electronics	0.953
Grocery to Apparel	1.504
Health & Immunity to Entertainment	0.901
Health & Immunity to Electronics	0.905
Health & Immunity to Apparel	1.456
Entertainment to Apparel	0.556
Result: Means are different	

Interpretation

One-way ANOVA output (F(5, 2532) = 103.467, p = 0.00) revealed that the mean importance scores of different categories of products were statistically significantly different. Thus the null hypothesis is rejected.

A Tukey Kramer post hoc test shows that the mean importance scores for Grocery Products and Health & Immunity Products are not significantly different and the mean importance scores for Entertainment and Electronic products are also not significantly different while all other pairs of categories are statistically significantly different from each other.

Thus, grocery and health & immunity products were equally most important for consumers during lockdown; next important products were entertainment and electronics. The apparel and cosmetics were of low importance with cosmetics having lowest importance.

Test of Hypothesis Two

Ho: The level of thinking about grocery is independent of the three phases.

H1: The level of thinking about grocery is not independent of the three phases.

The results of Chi-squared test are given in the Table XI below:

Table 11

Results	
Critical Value of χ^2	5.99
The Level of Significance (α)	0.05
Chi-Square (χ^2) Test Statistic	56.45
<i>p</i> -value	0.00

Interpretation

The level of thinking about grocery is not independent of the three phases as determined chi-squared test ($p = 0.00$). Thus the null hypothesis is rejected.

Test of Hypothesis Three

Ho: The level of consumption of grocery is independent of the three phases.

H1: The level of consumption of grocery is not independent of the three phases.

The results of Chi-squared test are given in the Table 12 below:

Table 12

Results	
Critical Value of χ^2	5.99
The Level of Significance (α)	0.05
Chi-Square (χ^2) Test Statistic	1268.00
<i>p</i> -value	0.00

Interpretation

As determined chi-squared test ($p = 0.00$) the level of consumption of grocery is not independent of the three phases. Thus, the null hypothesis is rejected.

It can be concluded that during the lockdown, the majority of the consumers were thinking about grocery in terms of availability and procurement at the higher or highest level and at the same time the level of consumption was also at the higher or highest level. The consumption was also at the similar levels.

During Unlock, the level of thinking and consumption of grocery is considerably low in comparison to lockdown stage.

Level of thinking and consumption is expected to again rise to the higher levels during the festive future.

Conclusions

It is noted in the analysis that when compared to other product categories the Grocery products were the most important in the Lockdown Phase as indicated by the respondents. The ANOVA test confirmed that consumers have given significantly different importance to various product categories. As Grocery being the daily need essential and being forced down to stay indoors due to lockdown (for them) the most other product categories like Cosmetics, Apparel, Electronics and Entertainment became secondary in comparison to Grocery Products. The other category of products which were also indicated to be most important (second most) was Health and Immunity products. In fact Tukey post hoc test (Multiple Comparisons) found no significant difference between the importance of Grocery Products and Health & Immunity products. This indicates that people were concerned about their food & daily needs and health during the Lockdown phase due to COVID-19. It also comes out that at the time of distress the people don't bother much about Cosmetics, Apparel, Electronics and Entertainment, in fact the Cosmetics Products were indicated to be the least important category of products compared here. As grocery came out to be the most important product category, it was also found that more than two third consumers (72%) were having higher thinking levels for it as they may be concerned about availability of the same. It also indicates that there may be some challenges in procuring grocery products during lockdown which forced them to think more about grocery. Similarly it was also found that the majority of consumer consumed grocery products higher than normal levels indicated that as confined to the boundary of their houses they could not avail the external foods.

Scope for Further Research

There is a scope for studying consumer behaviour related to other categories like Cosmetics, Health Immunity Products, Services, entertainment etc. from the perspective of COVID-19 related disturbances etc. Also the researchers should try to find out the challenges faced by consumers in procuring and stocking these products like grocery, health & immunity, cosmetics etc. during the lockdown phase.

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