

INTERNATIONAL JOURNAL OF LAW
MANAGEMENT & HUMANITIES

[ISSN 2581-5369]

Volume 4 | Issue 3

2021

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Impact of Unforeseen Situations on Consumer Behavior in light Covid-19 Pandemic

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ABSTRACT

For the past one- one and half year, the entire world has seen some unprecedented happenings. The onset and eventual spread of Covid-19 pandemic posed grave challenges to our conventional ways of functioning. To do damage controls, nearly all facades and activities of daily life had to switch to other alternatives. For some, the transition was smooth while for others, not so much.

Among the many things that changed due to impact of Covid-19 pandemic where how consumers bought and spent their money. Due to the lockdowns and shutdowns during the pandemic period, production and supply of several commodities was affected. In some cases, due to paranoia, consumers restricted spending as many people lost their jobs.

This research aimed at finding the peculiar aspects that govern consumer behavior in unforeseen situations such as the one we find ourselves in at this very moment. During the pandemic and the lockdown, a lot many things changed and some, permanently. This researched aimed at looking upon the consumer stimuli to these changes, with emphasis on hoarding, supply chain disruptions and panic buying.

The methodology for this research included a perusal of consumer spending trends in various commodity categories, analysis of people looking for alternatives to regular options due to shortages or paranoia and how the demand and supply equation in general changed due to consumer behavior. To substantiate our findings, the researchers also conducted a survey wherein a questionnaire touching upon the aforementioned themes was circulated.

Our research concluded that consumer behavior is bound to change when it encounters unforeseen situations, like the Covid-19 pandemic. The degree of change could vary, depending upon the severability of the danger that consumers perceive. Our analysis and data collection vide means of a survey attested to this fact and showed that while consumer stimuli is more or less inevitable, its impact can be soothed with appropriate actions.

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I. INTRODUCTION

The Covid-19 pandemic has been a defining occurrence for almost every person living on planet earth. Almost everyone has had to bear its brunt and everyone has in one way or another been impacted by this pandemic. It has changed people's outlook, political and physical landscapes, and most importantly, it has changed the way people behave, especially how consumers spend their money.

In this paper, the authors have focused on the same. We have dealt with the factors that have an impact on consumer behavior, especially in wake of such an unforeseen event like the Covid-19 pandemic. The three major topics discussed are supply chain disruption, hoarding by sellers and panic buying among consumers. These three topics are not exclusive and are interrelated in multiple ways. That is, when one of these practices go off of the regular track, it is bound to have some effect on the rest of the two.

All of these phenomenons have been noted earlier as well in extraordinary circumstances such as war and famines. And, in this paper, we have seen them in light of the unprecedented public health emergency that we find ourselves in. We have attempted to trace the reasons that lead up to these three topics and have attempted to study and analyze their impact on consumer behavior and also whether they are justified, even to a small extent.

II. SUPPLY CHAIN DISRUPTION

A Supply Chain Disruption is an unexpected event that stops or slows the normal flow of material³with potentially negative consequences to supply chain members⁴. Other terminology for supply chain disruption include risk diffusion⁵, cascading failure⁶and ripple effect.⁷Supply Chain Disruption can have negative impact on whole Industry. Thus, one failure in the supply chain may lead to other entities failing and may even result in an entire supply chain shutting down.

The disruption caused by the Covid-19 is enormous, it has not also affected us socially but economically too. The disruption this virus has caused has lot of impact on consumers as well

³ Craighead, C. W., J. Blackhurst, M. J. Rungtusanatham, and R. B. Handfield, *The Severity of Supply Chain Disruptions: Design Characteristics and Mitigation Capabilities*, 38(1) DCS SCI 131-156 (2007).

⁴ Chopra, S., and M. S. Sodhi, *Supply-chain Breakdown*, 46(1) MIT SL'N MAN'ENT REV'W 53-61 (2004).

⁵ Basole, R., and M. Bellamy, *Supply Network Structure, Visibility, and Risk Diffusion: A Computational Approach*, 45(4) DCS SCI JOUR 753-789 (2014).

⁶ Hearnshaw, E., and M. Wilson, *A Complex Network Approach to Supply Chain Network Theory*, 33(4) INT'NL JOUR. OF OPERATION & PRODUCTION MANAGEMENT 442-469 (2013).

⁷ Ivanov, D., B. Sokolov, and A. Dolgui, *The Ripple Effect in Supply Chains: Trade-off 'Efficiency-Flexibility-Resilience' in Disruption Management*, 52(7) INT'NL JOUR. OF PRODUCTION RESEARCH 2154-2172 (2014).

as other areas too it has drastically affected consumer behavior and their preferences in times of Covid-19. Customers have been cautioned while purchasing products, as lockdown was imposed to mitigate the spread of covid-19 global demand for products increased, and supply chain of the products was at halt. Production halts, movement restriction of people and goods, border closures, logistical constraints as well as the slowdown of trade and business activities are fall outs of the Covid-19 lockdown measures. The Disruption caused in supply chain and logistics is leading to depletion of inventory levels at retailers. There are various reasons for the supply chain disruptions it is covid-19 induced lockdown but this lockdown which has severely impaired the supply chain is main resounding reason, Lockdown as it was imposed in India from 21st march for 21 days had led to many difficulties. The lockdown fundamentally influences the supply chain as workers remain absent from the work due to travel restrictions imposed by the respective government, this also led to decrease in employee's productivity and it had an negative impact on business too. As there were restrictions imposed, even customers or buyers did not go to any place such as super markets and restaurants or retail stores to buy products. Customers choose not to go to place but instead preferred to home deliver the product. The lockdown led to the impact on consumer behavior as they started stocking goods which had long shelf life.

Another Significant reason for supply chain disruption was lack of laborers availability as lockdown was announced in march 2020 many laborers decided to return to their home leading to the mass exodus of laborers from one place to another. Farmers were not left with any other option but to dump their perishable goods which they had grown as travel restrictions were announced by the government they were left with no option either to sell them at a less price or to dump them. The prolonged Impact of lockdown on food industry, health care Etc. was detrimental. The essential items such as medicines, food etc., were very much needed and the lockdown had impacted its supply chain. This supply chain disruption led to the revenue loss and demand and supply of the sector got uneven. The lockdown impacted the supply chain in particular food industry as the manufacturing activity coupled with social distancing norms etc. were followed which led to overall redundancy in the manufacturing activity. Even agriculture production was decreased as there was uneven demand and supply in the market, which led to the decrease in income availability. The lockdown can hinder the most where the supply chain is complex, fragile and as the case of India is the food supply chain of India is complex, In particular developing countries faces the problem most. Talking about the health care sector affected by supply chain disruption, PPE and masks and sanitizers were the essential commodities in pandemic. India marked shortage of ventilators and other ingredients needed

for manufacturing of medicine which were due to be exported from china. There is a monopoly in purchasing process of PPE kits in India by a single-owned government agency. Disruption in food supply chain is evitable as government has been strict about the lockdown and vegetables and fruits etc. were not available easily. The logistics was totally in blacked out. Consumers and supply chain react with each other in times of crisis. Consumers reacts in way of hoarding or by purchasing goods online thus this affects supply chain even consumer behavior is volatile, purchasing power and etc. changes with times in times of war, pandemic etc.

There must be efforts to alter the change in supply chain ecosystem. Efforts must be made to ensure that employees and customers are not burdened and their wellbeing must be maintained. Flexible working hours and work from home can be option. Retail operations and outlook have responded to the pandemic induced lockdown by not focusing on the image of store rather they have ensured safety measures in the store as there can be directional movement of customers also making online payment option accessible to the consumers are some steps. Home delivery was mostly preferred by consumers as they had to minimize the risk exposure, so supply chain organizations have to adopt and hire new employees for this task and who are trained in this specific picking up of order and delivering it to others. *Whether it is a big manufacturer or a small one, the basic theory of supply chain management over the past three decades focused on two goals. The first objective was to find a supplier who offered the best combination of price, reliability and quality to the original equipment manufacturer. The second requirement was to work out the most efficient logistics so that the bare minimum raw material inventory could be maintained.*⁸ Some Industries got the nod of working at lower capacity than the usual, these industries were classified as “Essential Products” Industry which mainly included Pharmaceutical and Food Enterprises but operating inputs and components were needed to be sourced from India which did not led to working of factories. The ‘Just in Time’ inventory concept means that stocking up fewer amounts of raw materials and minimum quantity of components. This concept is useful for effective cash flow because inventory idly ties up lot of cash; this concept is useful in supply chain disruption as any disruption in supply chain would bring manufacturing to halt.

Two Important theories plays an important role in supply chain disruption, first, ‘Systematic Risk Theory’ and second is ‘Normal Accident Theory’, and *Economist John Maynard*

⁸ Prosenjit Datta, *Coronavirus and the supply chain*, The New Indian Express (Apr. 8, 2021, 9:30AM), <https://www.newindianexpress.com/>.

*Keynes has observed that the shift in the economy from one state to another due to an initial shock followed by a series of contagion was an integral component of systemic risk*⁹

The Bullwhip effect

*The Bullwhip effect is a phenomenon where demand variability is amplified upstream in the supply chain.*¹⁰ An increase in demand leads to an increase in production. The bullwhip effect won't be applicable in the current Covid-19 induced lockdown as there is lack of increase in visibility of demand.

*A supplier risk assessment is basically an audit of a vendor's processes, policies, and financial health to determine how much risk it poses to the contracting organization.*¹¹

The Ability of the suppliers to supply goods to the market must be understood in tune with the risk and ability of supplier, the ability to supply material with right quality standards and timelessness

Thus, looking at the black swan event such as Covid-19 which affected the whole world, every sector and every industry. The supply chain disruption caused due to Covid-19 and government's restriction to mitigate the virus was taken for well-being of the nation but in turned it affected the logistics and inventory of the industries. Industries have responded in their way retails have resorted to online mechanism and every other industry has responded to their methods. Supply chain disruption occurred globally it affected all sector, but post Covid-19 induced lockdown some measures are being taken to enhance and run back supply chain back to normal.

III. PANIC BUYING

In economics, we tend to believe that a consumer is rational and, if not, he will still mostly act in a rational manner. Despite this, panic buying, a transgressing consumer behavior is not very uncommon. Such behavior is noticed more in unforeseen situations, where consumers to an extent justifiably 'panic'. Panic buying is defined as a phenomenon of mass purchasing that typically occurs either just before or just after some sort of disaster¹². This rapid increase is many a times fueled by paranoia among the consumers about commodities running short in supply. Across the world, in anticipation of curfews and shortages, we saw shelves laying bare

⁹ Keynes, J. M, *General Theory of Employment, Interest and Money*.

¹⁰ Ralf W. Seifert, *Does the Bullwhip Still Strike*, IMD (Apr. 8, 2021, 10:45PM), <https://www.imd.org/>.

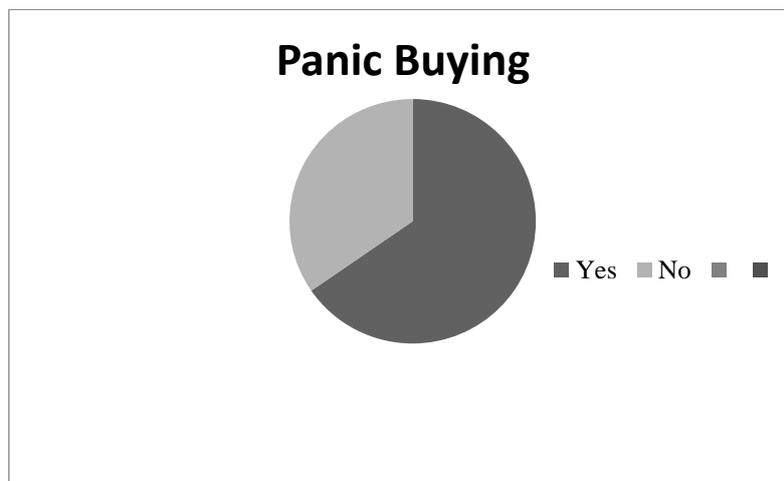
¹¹ CVMSOLUTIONS, <https://blog.cvmsolutions.com/what-is-a-supplier-risk-assessment> (last visited Apr. 9, 2021).

¹² CORPORATE FINANCE INSTITUTE, <https://corporatefinanceinstitute.com/resources/knowledge/other/panic-buying/> (last visited April 6, 2021).

as consumers began buying more than what they usually did. This shot up demand immensely and also led to an increase in price, in addition to other things such as hoarding and black marketing, discussed in more detail in this paper at a later stage.

Panic buying occurs and is present among consumers during various other disasters. It has been noted as an erratic behavior many a times in the past, such as a war or an impending change in price, impactful enough to pursue consumers to buy excessively. This was precisely the case with the Covid-19 pandemic. Due to the lockdown and how the global supply chains were disrupted during the lockdown, most of the channels of supply couldn't attend to the huge demand of goods caused by panic buying. This was also because of the fact that manufacturing has a much higher volume and frequency of transaction than the supply chain usually dealt with.

The statistics related to purchase of commodities and the increase in demand, during the lockdown period attest to how prevalent and commonplace panic buying became. In the survey conducted to supplement the contents of this paper (enclosed in the appendix), it was found that 65.4% people of the sample space indulged in panic buying.



(FIGURE- I)

In the responses do a question asking the respondents whether they bought goods more than they required during the lockdown, 68 respondents admitted to have done so. In addition to this data, other data obtained to other sources, also showed a spike in demand of various goods, especially those which came to the limelight due to the threat to public health, such as, sanitizers, disinfectants, multivitamins, soap and other essentials such as wheat and edible oils. In India, in less than a week of the announcement of the nationwide lockdown, stock outages caused due to panic buying increased in dramatic fashion. This was the situation with all commodities deemed essential during the lockdown as, on average 90.34 stock outages of rice

were reported on March 25, 2020 as opposed to 53.9 just two days back, on March 23, 2020. Liquid soap outages became a commonplace and majorly began from March 20, 2020 at 86.77 stock outages of liquid soaps and reached the first lockdown week peak on March 25, 2020 at 89.71. similarly scenario was seen in the case of multivitamins, seen as preventive medication by the consumers, as stock outages during the early lockdown period were recorded at 83.1 on March 25, 2020, while three days back a small value of 30.42 was reported.¹³

In addition to these physical marketplaces, the situation of ecommerce websites delivering groceries and other essentials wasn't very encouraging either. As per reports¹⁴, Grofers, an online marketplace for groceries, during the lockdown period, posted a 45% increase in number of orders and 18% increase in order value, over regular days. Similarly, for rival firm BigBasket, revenue and app traffic doubled two weeks into the lockdown period. Such response and high demand from the consumers put immense pressure on supply chains and made restocking and timely deliveries extremely difficult.

All of this was attributed to panic buying and the concerns of the consumers regarding supply. As per a study of available material and consumer sentiment, this erratic show of human behavior to buy more than what is needed is justified, to an extent at least. It can only be justified to an extent as many a time, due to dissemination of fake news and rumors, people begin stockpiling even when the authorities and producers assure them that there will not be any shortages. This behavior of the consumers has been noted in the past such as the instances when consumers began stockpiling salt over rumors of India running out of it.

Despite the stress it adds on to the delivery chain mechanisms and the ill effects it has, panic buying seems slightly rational, given the circumstances that consumers found themselves in when the lockdown was announced. Following points are a testament to the same –

1. It wouldn't be wrong to say that nearly all essential became Giffen Goods during the lockdown. That is, people did not have many options to make a choice and demand was not reducing despite the price increase.¹⁵ Due to this, consumers were enticed to buy more than what they needed as they were under the impression of the scenario deteriorating further.

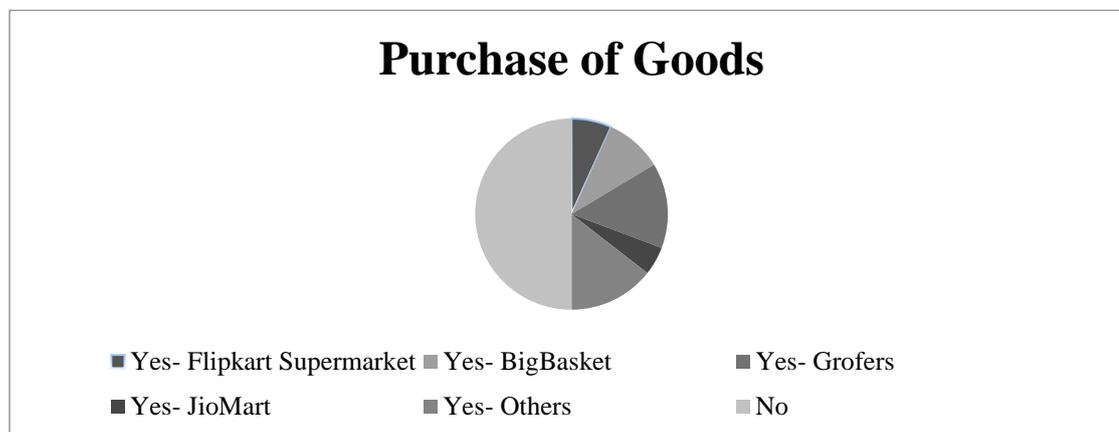
2. Consumers also resorted to panic buying to avoid multiple visits to open markets. As was found from the survey, half of the sample did not purchase goods from online marketplaces

¹³ EUROMONITOR INTERNATIONAL, <https://blog.euromonitor.com/coronavirus-effect-on-indian-fmcg-industries-and-services/> (last visited April 3, 2021).

¹⁴ SCROLL, <https://scroll.in/article/956659/coronavirus-what-indias-panic-buying-frenzy-means-for-online-grocers> (last visited April 6, 2021).

¹⁵ ECONOMICS HELP, <https://www.economicshelp.org/blog/1189/economics/giffen-good/> (last visited April 3, 2021).

and chose to purchase them from physical markets. Hence, these people resorted to panic buying as they rightly believed going out to the physical marketplace is not safe and puts them at risk of contracting the Covid-19 virus. On the other hand, those who chose to purchase goods off of online marketplaces, too resorted to panic buying, impact of which has been already dealt with above.



(FIGURE-II)

3. Fear of shortage too had a role in promoting panic purchases among the consumers. Even though the governments and authorities did make it absolutely clear ¹⁶to the masses that they will not be suffering any disruption in supply, the most immediate visuals of nearby shops and grocery stores facing outages would have greatly influenced people to themselves resort to panic buying. There is always an element of herding ⁶⁹⁰behavior, which involves sequential decision-making. Early reports too pointed towards an impending shortage of essential commodities¹⁷. Consumers to avoid any future shortage brought more goods than required to provide for future needs, in case the goods were short in supply then.

4. Rumours and fake news were spreading like wildfire. The dissemination of information such as closure of retail shops and that supply of a lot many goods will be unavailable yearlong induced consumers to provide for such misfortune situations by resorting to panic buying, in case they occurred. Within a few days of the lockdown, pictures of empty shelves in retail and grocery stores began doing rounds on the internet ¹⁸ and hence, consumers saw it as a red flag and found yet another reason to resort to panic buying.

¹⁶ BUSINESS TODAY, <https://www.businesstoday.in/latest/trends/coronavirus-in-india-live-updates-delhi-mumbai-kerala-us-iran-china-italy-janta-curfew/story/398836.html> (last visited April 2, 2021).

¹⁷ WORLD HEALTH ORGANIZATION, <https://www.who.int/news/item/03-03-2020-shortage-of-personal-protective-equipment-endangering-health-workers-worldwide> (last visited April 2, 2021).

¹⁸ Riya Baibhawi, *People share pictures of empty shelves amid coronavirus outbreak*, REPUBLIC WORLD (April 1, 2021, 6:00 PM). <https://www.republicworld.com/world-news/rest-of-the-world-news/stockpiling-fever-people-share-images-of-empty-shelves-amid-covid-19.html>

The biggest impact of consumers resorting to panic purchases is that even for temporary durations; panic buying adversely affects people more vulnerable to shortages, that is, the ones leaving in areas where supply is anyway short and also the ones with low income. These people are unable to stockpile for the future and have to face worsened chronic outages. Panic buying also triggers a rise in prices, due to inconsistent inventory management and higher cost of logistics, all of this in addition to how consumers flocking in masses poses a threat to public health.

In our opinion, panic buying in a global health crisis like Covid-19 shouldn't be an uncommon occurrence. In wake of danger, people tend to do irrational things. But, to quell the same, we believe that panic buying can be controlled by adequate, timely, and consistent information on the evolving situation with an additional focus on clarifying misinformation or rumors.

IV. HOARDING

During the Covid-19 pandemic induced lockdown, we witnessed acts of hoarding by both the sellers and buyers across the globe. While hoarding or stockpiling by buyers is dealt with in more detail in the next section, this section deals with hoarding by sellers.

As a seller, especially of essentials, the lockdown period was a blessing in disguise. Other than profiteering from this dire situation, many sellers engaged in price gouging as well. All of this, without a doubt is unethical. A statement made by F.Y. Edgeworth provides an explanation for this unethical show of behavior by hoarders, "*the first principle of Economics is that every agent is actuated only by self-interest.*"¹⁹

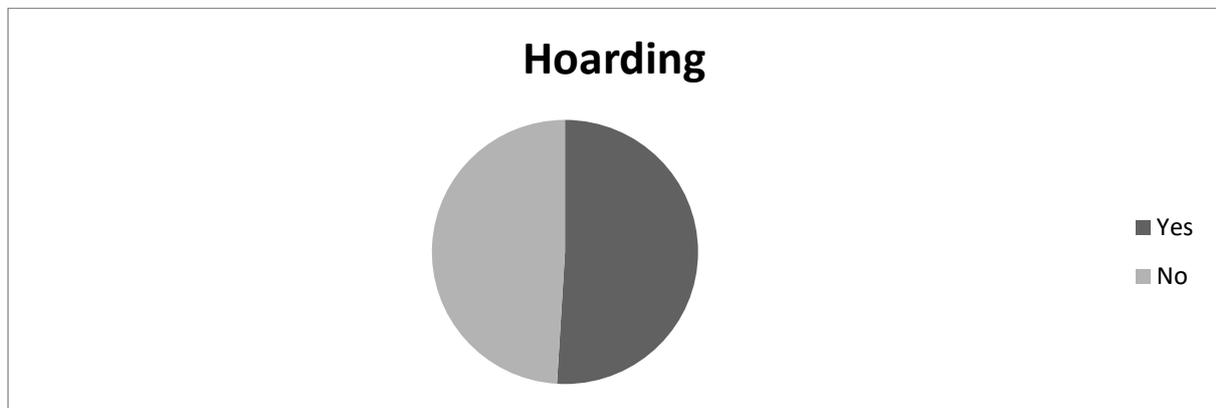
During the lockdown period, hoarding was observed at multiple places across India, and around the world. For instance, within a few months of the lockdown being imposed, only and only in Mysuru, 1277.68 quintals of rice, 880 quintals of cooking oil, 368.50 quintals of other oils, 3.80 a quintals of wheat, 1.2 quintals sugar worth over Rs 35.56 lakh were seized²⁰ from hoarders as authorities led a crackdown against black marketing. This is just a glimpse of the situation regarding hoarding that was prevailing in the country. Going beyond India, in the US, hoarding was witnessed as well. A seller, in custody of 17,700 bottles of sanitizers was not allowed to sell via online marketplace Amazon²¹, due to hoarding and price gouging

¹⁹ F.Y. EDGEWORTH, MATHEMATICAL PSYCHICS: AN ESSAY ON THE APPLICATION OF MATHEMATICS TO MORAL SCIENCES 16 (University of Michigan Library 1881).

²⁰ Karthik KK, *Lockdown Woes: Illegal sale, hoarding of PDS grains up in Mysuru*, THE NEW INDIAN EXPRESS (April 2, 2021, 7:00 PM), <https://www.newindianexpress.com/states/karnataka/2020/aug/17/lockdown-woes-illegal-sale-hoarding-of-pds-grains-up-in-mysuru-2184401.html> .

²¹ Jack Nicas, *He has 17,700 bottles of hand sanitizer and nowhere to sell them*, THE NEW YORK TIMES (April 2, 2021, 7:30 PM), <https://www.nytimes.com/2020/03/14/technology/coronavirus-purell-wipes-amazon-sellers.htm>

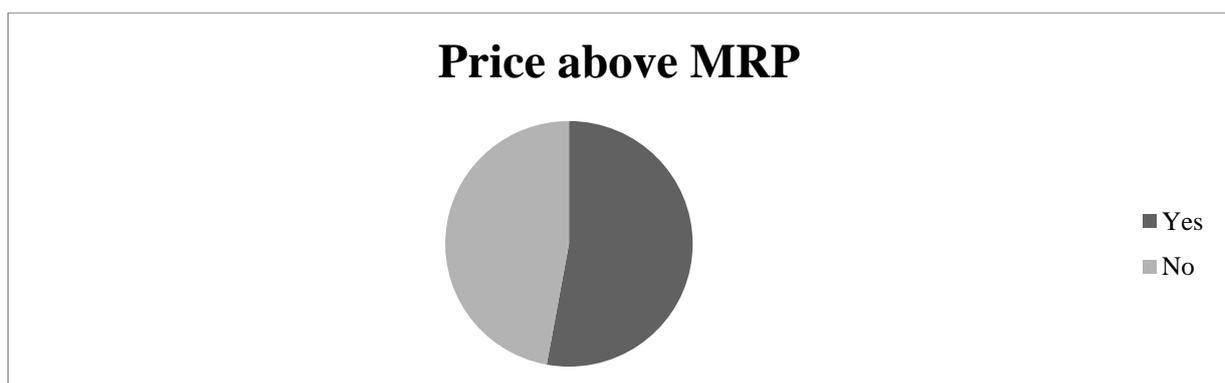
concerns, and rightfully so. In addition to this, the results of the survey conducted for this paper, while the majority did not witness any act of hoarding by sellers, the opinion about this topic was sharply divided. As is evident from the pie chart, 49% of the sample space indeed did witness an act of hoarding by the sellers, which attests to the grave situation this act of the sellers created.



(FIGURE-III)

Coming back to our main research question, hoarding does have an impact on consumer behavior, more so in unforeseen situations like the Covid-19 pandemic. This has a lot to do with how paucity of essential commodities and visuals of dwindling units induces in consumers a fear of being deprived of the goods. This has a lot many ripple effects on price, generation of an underground black market, illegal sales, unethical profiteering and also on supply chain channels.

During a public health disaster of the magnitude of Covid-19, it is crucial for the authorities to eliminate unethical profiteering by means of hoarding. Charging exorbitantly high prices puts the vulnerable people at a disadvantage. Even if keep aside morality for a second, the fact that many people may not be able to afford goods because of a higher than usual selling price is sad and downright wrong. In the survey conducted, nearly half of the respondents witnessed sellers charging prices higher than the MRP.



(FIGURE-IV)

The authorities understand the threat posed by hoarding by sellers and thus implement legal provisions and statutes to avert the same. For instance, the Essential Commodities Act, 1955²² and various ordinances that were passed to prevent hoarding as they provided for stock ceilings and also provided for PDS.

In sum, hoarding has a huge impact of consumer behavior as in addition to the direct hand it has in altering consumer sentiment, it has a lot many ripple effects which in one way or the other affect the same. Sellers, by indulging in hoarding violate not only common law principles but also the humanitarian and moral maxim by tagging a price on human life. It leads to a real-economy shortage of goods. This opportunism helps no one as in the long run, despite the temporary profits that sellers gain, they lose the loyalties of the consumers. As for the consumers, there is no dearth of ill-effects that such superficial shortages created by sellers have on them.

V. CONCLUSION

In the paper, we have shown that the Covid-19 induced pandemic has drastically changed the economic health of countries across the world and, at the micro level, altered consumer behavior immensely. As long as any such change has a positive impact, it is beneficial to the economy but, in the present paper, we saw that there were several negative effects of such a change, a lot of which could have been averted. In the present paper, the authors have attempted to trace the factors leading up to such a change and their impact on the nation's economic health.

While Covid-19 is as unprecedented as an event gets, the situation could have been better if consumers were assured of a lot many things by those in power. Sure, there was irrationality on their part but, as has been demonstrated, it was not without its own reasons.

To sum, we propose the following solutions, in addition to the assurance by authorities –

1. Strict checks on black marketing and illegal sales by swift crackdowns and by legislative initiatives.
2. Quell public anxiety by having clear communication channels. This will eliminate any trouble caused by panic purchasing due to false rumors.

²² Essential Commodities Act, 1955, § 3, No. 10, Acts of Parliament, 1955(India).

3. The media should play a central role in curbing panic buying by spreading awareness about the phenomenon and adopting responsible reporting practices.
4. As for supply chain disruptions, the governments need to understand that globalization comes with its own drawbacks. When borders are shut, interdependent production is bound to be affected and hence, the authorities should provide for such setbacks and have adequate production facilities.

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VII. APPENDIX

Survey Questions –

Sample Size – 104 Respondents

- Q.1 Did you or your families face any shortage of goods during the lockdown period?
- Q.2 Did you or someone you know witness any act of hoarding by the sellers?
- Q.3 Did you or someone you know witness a seller charging an exorbitant price, above the MRP, during the lockdown, due to high demand?
- Q.4 Were you or your family members able to buy essential goods such as food and oils easily during the lockdown period?
- Q.5 Were you or your family members able to buy non- essential goods such as mobile phones and liquor easily during the lockdown period?
- Q.6 Did you or someone you know indulge in ‘Panic Buying’, i.e., you bought goods more than you required in anticipation of shortage, during the lockdown period?
- Q.7 Did you or your family purchase essential food items via online mode, from ecommerce websites? If yes, kindly specify the name.
- Q.8 On a scale of 1-10, please specify how difficult it was for you to obtain goods for household usage during the lockdown?
- Q.9 Did you witness any shortage of essential/non-essential goods during the lockdown?
- Q.10 As an overall general assessment, what was the consumer spending trend of your household during the lockdown period?
