

# SUPPLY CHAIN DISRUPTIONS AFTER THE COVID-19 PANDEMIC DISTRIBUTION CHANNEL CONFLICT IN THE FMCG INDUSTRY

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## **Abstract:**

Store network, the board was tested in various parts of the world in light of the Covid-19 pandemic. Supply ties neglected to give items that became fundamental during the pandemic, for example, hand-sanitizers, cleaning or sterilization items. There were a few factors that impacted the interruption of production network executives during the pandemic. Supply shocks were caused toward the start of the pandemic concerning the accessibility of imported merchandise from China concerning both in-measure items and completed products. Numerous industrial facilities froze during the lockdowns. Summed up, lockdowns all around the world made a shock request since buyers needed to purchase any sort of item and they needed to have a sense of security, despite the fact that supplies of certain items were compromised. A few organizations are expected to adjust their inventory network to the interest. For example, organizations that have been generally in the design business or materials industry, have begun creating hand-sanitizers or face covers. Another significant component is the increment in web-based shopping and home conveyance administrations, which was reflected in the inventory network the executives of these administrations by the organizations that were offering them. This paper examines the principal factors contributing to the disturbance of the production network during the Covid-19 dependent on a writing survey. The paper begins by thinking about the job of storing network hazard board, zeroing in on the functional danger of supply chains as well as on stock ventures of certain items that were vital during the pandemic. Another measurement that was thought about for the examination was the checking of supply chains during the pandemic and its impact on store network the board.

**Keywords:** Fast-moving consumer goods (FMCG), Retail, Post COVID FMCG, COVID-19, Supply chain management, Operations risks, Monitoring, Inventory management.

## **Introduction:**

2020 will be recollected forever, as Coronavirus illness 2019 (COVID-19) has come up as an

occasion that will remain engraved in our minds for quite a while. The illness was first identified in December 2019, in Wuhan, the capital of China's Hubei region, and has since spread internationally across 213+ countries.<sup>2</sup> The Covid episode has been classified as a container pandemic by WHO.<sup>3</sup> With 677,017 passings and over 17.4 million individuals influenced (as of July 31, 2020), this illness has put the whole world under lock down.

The 'Great Shutdown' because of COVID-19 is guessed to lead us to a worldwide downturn, which is dreaded to be more devastating than 'The Great Depression' of 1930.<sup>4</sup> This has blended an unsure circumstance which would have extreme economic repercussions for economies across the world, with joblessness at the top and critical stagnation of consumerism. The downturn is estimated to cause the breakdown of the price of oil, the breakdown of the travel industry, the hospitality industry, the energy industry and a huge down-turn in industrialism in contrast with the earlier decade. Worldwide securities exchanges smashed around 20% to 30% during late February and March 2020, joined by unprecedented and unstable swings because of outrageous uncertainty.<sup>5</sup>

India, the second-most crowded country on the planet, is in high danger. The main instance of the COVID-19 pandemic in India was accounted for in January. The nation went into complete lock-down from 23<sup>rd</sup> March on-wards, with the majority of the industry attempts and organizations under complete closure till date. The Ministry of Health and Family Welfare has affirmed an aggregate of 1,643,416 cases, 1,059,983 recoveries, and 35,807 passings in the nation (as of 31<sup>st</sup> July 2020).

The closure will effectively affect casual specialists, independently employed and those drawn in by MSMEs. In the retail section, malls and different retailers the nation over have diminished hours or shut down completely. Departmental stores and attire shops have been particularly hard hit. A considerable number of these retailers are relied upon not to recuperate, consequently speeding up the impact of the retail end of the world. The travel industry, automobiles, aviation, real estate, dining, and luxury products businesses are practically non-functional. Not at all like different downturns before, this pandemic has cut down the deals in certain areas to nothing. Because of limitations on transportation and assembling ends, the inventory chains are upset, driving interest supply imbalances. Additionally, disturbed food supplies take steps to trigger a food emergency.

Coronavirus brought a clean emergency for the entire populace around the world. Its worldwide effect was compassionate just as business. The current test that the world is looking even with this worldwide emergency is the way to oversee various tasks in the inventory network through the development of connections among providers and basic providers. Firms are needed to reinforce their arrangements despite interruptions.

The current COVID-19 pandemic has uncovered organizations' inventory network shortcomings. In this way, it is necessitated that associations embrace measures and fabricate stronger inventory affixes to confront future dangers and interferences.

In a worldwide setting, firms which have a solid presence universally or direct connections with the most influenced spaces of COVID-19 should think about new danger factors in supply

chains. They should expand on various procedures on the best way to relieve these dangers and foster sufficient plans. Since the beginning of the COVID-19, research on inventory network the board chances has begun to zero in on the COVID-19 emergency and its effects. This paper intends to modify these papers and their commitments. The subsequent area begins with a conventional writing survey, the third segment reconsiders materials and strategies, the fourth segment incorporates the consequences of our exploration. This paper closes with ends and suggestions.

### **Literature Review:**

Store network executives are characterized as various firms that work together to work on their functional proficiency. The various entertainers in a store network are fabricated, providers, stockrooms, retailers, and the actual clients. The production network board depends on essential decisions, just as in functional decisions, influencing the tasks of firms [1]. It incorporates components of advertising, finance, and new product advancement. Supply fasteners should be formed by numerous providers and different clients. Generally, one organization can have a place with one production network or with various inventory chains. They have an extraordinary effect on associations, particularly through the components of value and sourcing [2]. Cooperation is made conceivable through an incredible assortment of alternatives to joining providers and retailers by presenting sufficient innovation, which has had an extraordinary effect on the inventory network board and particularly in changing various activities in a store network. Inventory network executives influence business execution in the long haul.

Supply chains are generally founded on three head elements, which are task board procedures (a mix of all hierarchical capacities like showcasing, money, and assembling); incorporated coordination administrations and vital elements that incorporate conveyance times and costs [3]. The presentation of the clients in the store network assists with understanding the requirements of the client and the progression of data. It permits the organizations to work on the creation and data stream. The principle point of the store network is to recognize the vital exercises that are expected to change crude materials into items through added esteem in each phase of the interaction.

There are various perspectives on supply chains. The cycle perspective on the production network depends on the way that supply chains can be partitioned into two cycles. One cycle is performed between two progressive phases of the production network [4]. There are various parts of the cycle perspective on the inventory network. For example, the client request, which is made by the client request appearance, the client request section, client request satisfaction, and client request getting. The recharging cycle is made by the retail request trigger, the retail request section, the retail request satisfaction and the retail request. The assembling cycle is made up of the request appearance, creation booking, assembling, delivering, and getting. The obtainment cycle is made up of the segment request appearance, creation planning, assembling, delivering, and getting. The cycle perspective on stock administration characterizes the cycles and the proprietors of each interaction of the store network with the board. Every one of the members in

the stock. The supply chain should add these components to the value creation cycles, like quality, cost, time, innovation, and congruity of supply.

Distinctive hypothetical viewpoints can be applied to the store network executives. The asset-based hypothesis proposes that supply chain substantial and immaterial assets might influence inventory network executives. Worth creation in the production network occurs through cooperation and associations propose new methodologies on the best way to procure new assets. As indicated by the exchange cost hypothesis, there is an arrangement of intra-authoritative level rules to obtain assets and theoretical assets. The key decision hypothesis assesses how associations should work and what systems can be distinguished to spot partners. The Office hypothesis proposes a powerful perspective on the partners. Institutional hypothesis centers around outside pressure on hierarchical execution. The Framework gives a predominant perspective on the capacity of activities. The Systems administration hypothesis depicts more developed instruments for past systemsadministration.

A few variables influence the proficiency of a production network, like the dangers and vulnerability, the attention to the customer, the help of the executives, vital buying and upper hand, data and correspondence techniques, construction of inventory networks, connections among purchasers and merchants, coordination combination and the consequences of providers and customers. As indicated by this structure, providers and customers ought to incorporate their connections to expand the presentation of the store network [5].

Production network chances are a significant component for associations as they can cause various results, for example, deferring, hindering, and lessening the quality of the data that streams in the store network. A Hazard is a blend of results and the probability that an occasion can occur. There are various strides in distinguishing hazard in the production network that incorporate various advances, like the recognizable proof of hazard, the assessment of dangers, the execution and checking of the remedy process [6]. To moderate dangers, there ought to be adaptability. The danger of the stockpile chains can be depicted as a section hazard for the production network that is related to the disappointment of individual providers and to providing markets that create weakness in the buying measures [7].

Another danger that can be recognized in the inventory network is the quality that is influenced by the intricacy of the stock and it makes it extremely challenging to guarantee the principles of value. In a similar time, providers have different providers that comprise an extra factor of frailty. These quality issues are joined with inborn quality issues like crude materials/fixings/creation/coordination and packaging [8]. Stock danger is an extremely unpredictable danger related to production network board and this intricacy heightens with the adjustment of the size of the inventory network. At the point when supply chains expand in size, the stock increments and firms can deal with issues of stock danger the board. It is important to see how much stock is required in better places and at various minutes to assess demand and security levels for the stock [9]. Catastrophic events are events that can have significant ramifications for organizations. It is hard to figure out what piece of the planet has more openness to catastrophic events and why it is difficult to foresee these calamities and

their impact on coordination. The affordable factor is a significant factor that decides the store network board. A prudent change can bring about a change in interest zones. The prudent factor figures out where the elements of creation are and where crude materials are situated, for instance. The misfortunes during transport are another factor that decides the dangers of the inventory network, and it can bring about affordable misfortunes, deferrals and protection issues. Dispatching another item is a factor that decides the dangers of the store network and the postponements of dispatching another item can bring about regrettable ramifications for the production network. Such deferrals on the inventory network can adversely affect the dispatch of another item. Network safety assaults can contrarily affect store network boards, alter the dates, requests and registers. As components concerning the political circumstances of a province can affect adversely the production network board, along with protected innovation issues and customs that can create setbacks for the activities.

Functional danger in supply fastens is associated with occasions that limit ordinary streams and day by-day exercises. This functional danger is associated with interior disappointments in the store network just as with outside disappointments [10]. Functional dangers are not exclusive to the store network, they are for any action.

Functional dangers might allude to chances that are identified with weakness factors, for example, the frailty concerning the interests of the shoppers, instability of the chain and uncertainty about the dangers. The disturbance chances in a store network are related to outer causes, like catastrophic events or financial emergencies. Take into thought how hazard is consumed and alleviated as well as how frameworks adjust and change.

To deal with dangers, there are a few stages to be followed, like the identification of dangers, the assessment of dangers, the administration of dangers, and the observing of dangers.

Various impacts of the COVID-19 pandemic should influence the store network. One of these impacts is the interruption of supply chain from the COVID-19 and the impact of a catastrophic event that may have a drawn-out impact on organizations. Large numbers of the difficulties came about because of the COVID-19 emergency center and the impact of the jumble between supply and demand [11].

The impacts of COVID-19 on supply chains can be assembled as follows: request floods, labor issues, and obsolete stock. These impacts are probably going to impact shopper interest and purchaser trust in the inventory chains.

This paper centers around an investigation of the present status of the writing on COVID-19 impact on the production network, particularly according to a point of view of functional danger. In this paper, we initially inspect the macroeconomic impact of COVID-19 on the Indian economy. We then, at that point, continued on to dissect the interest and supply interruptions because of COVID-19 in two significant areas of our economy – retail, and Fast Moving Consumer Goods (FMCG). Using this investigation, the examination depicts the business sectors of tomorrow – the difficulties and potential methodologies for the organizations to confront them.

### **Procedure or Materials & Methods**

This paper uses auxiliary information to continue with a top-to-bottom survey on the impact of COVID-19 on supply chains. The normal wellsprings of optional information are government records, accomplices and NGOs, scholarly foundations, and web sites. Writing surveys is fundamental to assist analysts with recognizing what has been explored and composed already on the point. Just as deciding the degree to which a particular exploration region uncovers any interpretable patterns or examples. Writing surveys can total exact discoveries and it can assist with creating new hypotheses and structures [12].

A writing survey can not just comprise a segment of an exploration paper, but it very well may be an article itself which presents the writing in a specific field of examination without breaking down essential information.

Audit articles, when they are led appropriately, can give amazing sources to specialists in various fields.

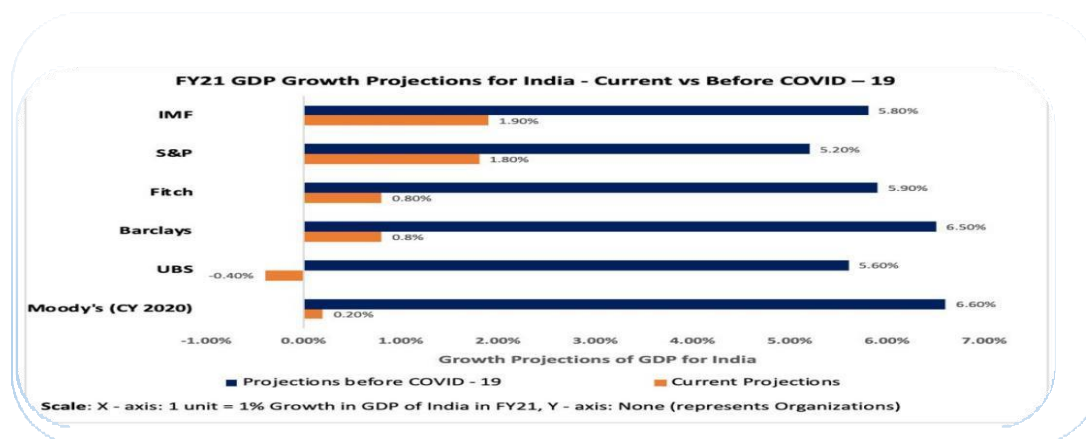
The kind of survey that is given by this article is an expressive and planned writing audit, which is fundamentally utilized for the assurance of whether a group of information on a specific examination subject uncovers any interpretable example or pattern concerning prior recommendations, hypotheses, philosophies, or discoveries [13].

articles were looked at in the information bases Pro-quest and Google Scholar with the watchword "Store network COVID-19 dangers". Six distributions were discovered to be applicable and the outcomes are introduced in the outcomes segment.

### **Macroeconomics of COVID-19: Economic Impact on India**

The Coronavirus showed up in India when we were combating the easing back utilization of our homegrown blemish ket.2019 saw occasions like the US-China exchange war and Brexit. monetary weakness previously had a dull shadow on our worldwide economy and its effect on our GDP was evident.<sup>7</sup> COVID-19 came at an unacceptable time and added supply-side disturbances too, alongside the easing back of homegrown and worldwide utilization/request. While various areas lost their interest or began seeing zero interest, areas like FMCG and pharmaceuticals saw expanded interest, yet couldn't satisfy them because of the inventory side interruptions in sourcing crude materials and coordination/dissemination challenges. The recuperation situation is hard to foresee, thinking about that Indians are conserva-tive spenders and, along these lines, a potential further drop in popularity. This supposition is obvious with examiners definitely decreasing the 2020 viewpoint for gross homegrown product (GDP) development of the Indian economy, as seen in Figure 1.

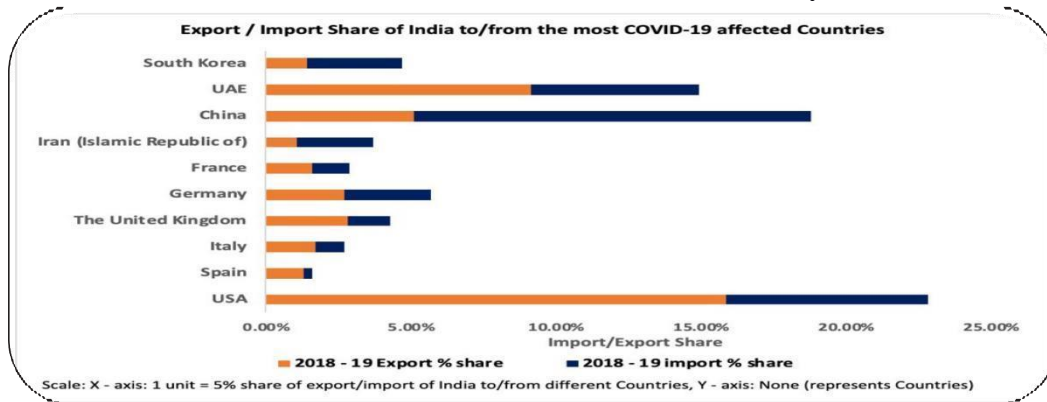
Fig\_1: FY21 GDP Growth Projections for India-current vs Before COVID-19. Data from IMF, S & P, Fitch, Barclays, UBS, Moody's (2020).



India had a lethargic GDP growth in the year 2019, with a growth rate of around 5% in every one of the quarters.<sup>9</sup> Weak monetary organizations, fundamental primary shortcomings because of strategy matters, and issues like joblessness affected the interest side of the economy. While 2019 was a sluggish year, 2020 was viewed as a year that would bring back India's GDP to the development track and a large portion of the standpoints for the FY21 GDP development rate were hopeful between 5.2%-6.6%. Notwithstanding, COVID-19 changed these standpoints. Historically, a downturn has consistently been because of a liquidity crunch brought about by frail monetary organizations. A few financial measures and apparatuses are accessible to the governments to confront these difficulties. Nonetheless, it is likely that this is the first run through throughout the entire existence of global business sectors; we are confronting a downturn because of individuals not having the option to work. Most monetary pointers propose that the absolute greatest economies are very nearly the best genuine downturn in almost 100 years.<sup>10</sup> The injury of monetary business sectors combined with the unexpected stop of every financial movement and the diminished domestic/worldwide interest will prompt numerous difficult issues like high joblessness and, left unchecked, we may be gazing at stagflation or melancholy, something more genuine than recession.<sup>11</sup>

The investigation of the fare and import portion of India to/with the world's most seriously affected nations (that have 67% of the COVID-19 affirmed cases) shows that profoundly influenced nations represented 43% of India's fares and 39% of India's imports in 2018-19 as displayed in Figure 2.13. Our estimations additionally show that these nations represent 59% of the world GDP, which indicates a worldwide monetary stoppage. In 2020, the fare to these nations from India will diminish because of decreased demand, and this would have the extreme effect of COVID-19 on the Indian economy all in all, as the unfamiliar stores of India would fall.

Fig 2: India's export/import share to/from the most infected nations, by percentage, in 2018–19. Data sourced from the Government of India's Ministry of Commerce and Industry.



### Sector-wide Impact

While it is apparent from the past examination that we are staring at a negative to zero development in GDP, the effect of COVID-19 on areas has not been uniform, not normal for a monetary downturn. During an emergency like COVID-19, businesses can be grouped into three containers dependent on market demand and recovery probabilities.

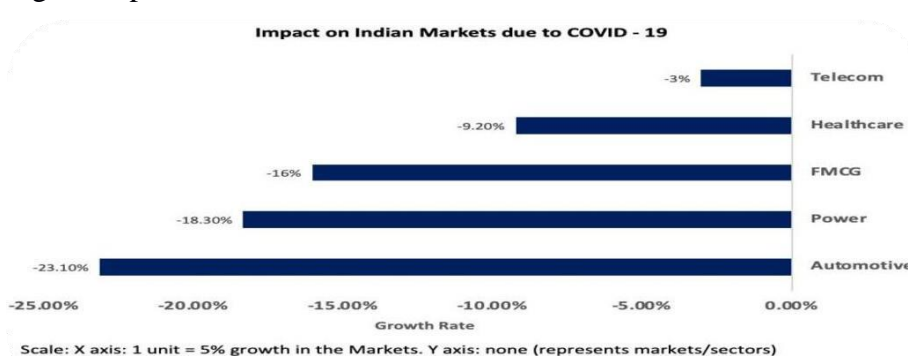
**Steady or Increasing Demand:** Currently, these businesses can't adapt to the interest and will continue to have high demand post-COVID 19. These areas won't see recessionary patterns. Models: fundamental areas like FMCG, E-food merchants, and deuniform focuses.

**Suspended Demand:** These businesses presently have zero demand but will spike and recover the suspended requests post-COVID 19 effect. Recession trends will rely on government financial policies and incomes. Models: Discretionary areas like automotive, apparel, buyer durables, and so forth.

These industries currently have low to zero interest. The interest lost will be permanent and can not be recovered post-COVID 19. Demand will not fully resume to normalcy post-COVID 19, leading to recessionary trends. Service sectors-Travel and tourism, malls and theatres, etc.

Since request and recuperation situations fluctuate in various areas, the effects and techniques for recuperation also vary from sector to area. Figure 3 shows the changing adverse consequences on different sectors of the Indian market due to COVID–19.

Fig 3: Impact on Indian markets due to COVID-19. Data from Bloomberg (2020), Mint (2020)

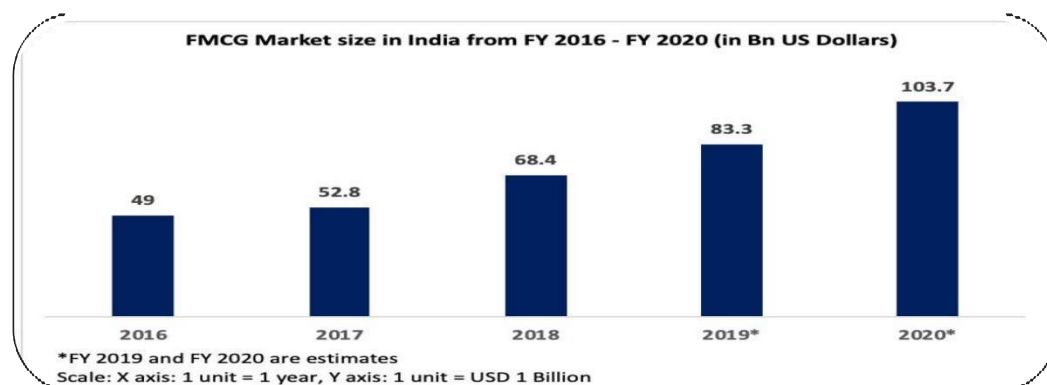




## 15 Demand and Supply Analysis – FMCG

Fast-moving consumer products are the fourth biggest sector in the Indian economy.<sup>16</sup> This market's growth has been generally double-digit, closely related to the Indian economy's GDP growth. Higher macroeconomic statistics imply that customers have more spending power, which translates into better growth for the FMCG industry. This sector also contains the majority of the necessary products, which contributes to its rapid expansion.

Fig 4: FMCG market size in India from FY 2016 to FY 2020 (in billion US dollars). Data from Statista<sup>17</sup>.



It can be seen from figure 4 that FMCG has seen consistent growth from 2016 till date and the eventual fate of this area has been promised to be exceptionally forthcoming too. In any case, CY 2019 has not been very promising for the FMCG sector. According to the statistical surveying firm Nielson, the development eased back down to 9.7% from 13.5% in the year 2018. The development slowed down to 6.6% in the December quarter, the most reduced in the last three years. This development is likewise much lower than the 15.7% growth rate a year ago.<sup>18</sup> Rural deals have consistently been in front of metropolitan deals in the FMCG industry.<sup>19</sup> Rural sales of FMCG saw slow growth in 2019. This can be attributed to the reduced GDP growth rate, The liquidity mash in the business sectors has debilitated the house-hold utilization. Alongside liquidity pressure, consumer spending was likewise powerless because of low occupation expansion, no salary hike, and so on. Adding to every one of these were the floods and dry season in the country, that in a roundabout way, brought about high food inflation, that impacted the consumer.<sup>20</sup>

The FMCG sector was expected to be back on track in 2020. Nielson had predicted a growth rate of 9 – 10% for the FMCG market in the CY 2020 preceding COVID-19. In this manner, it was a splendid year for the FMCG sector.

In any case, with COVID-19 coming into the image, Nielson has sliced the development pace of the FMCG area to 5 – 6% from its earlier 9 – 10%.<sup>21</sup> In the quarter ending March, the FMCG area became 6.3% (counting online business), which is a sharp downward trend compared to the 13.8% growth the sector saw in the same period in CY 2019.<sup>21</sup> An fascinating separation from

this information point is that demand for bundled food categories developed by 7.8% in the March quarter of This pattern brings up the panic purchasing and amassing of food items that occurred in the Indian market toward the end of the March quarter as the country prepared for the lockdown.

In spite of the frenzy purchasing and storing pattern that occurred at the end of the March quarter in the FMCG area, 2020 looks like a desolate year for the area. It is apparent that while the stockpiling pattern would expand deals once, then, at that point, the demand would balance out as the buyers would have enough stock. Also, since COVID-19 has hit the economy the most, money would not flow to customers and, in this manner, buyers would re-sort to moderate spending, which basically translates into a hit on the FMCG area.

The Prompt Impact of COVID-19 on Demand and Supply in the FMCG Industry of India can be summed up in the below points.

Panic buying increased the demand in the industry. However, the demand will stabilize soon. Essential products like packaged food, groceries, health and cleanliness items like cleansers, hand-sanitizers, etc., saw unprecedented demand.

FMCG organizations battled to meet the market demand at the frenzy purchasing stage somewhat recently in March and the first half of April, due to disruptions in their inventory network from sourcing crude materials, manufacturing, and last-mile conveyance. With lockdown and travel limitations, organizations are still supportive of during at sub-ideal levels and pushing deals for only fundamental things. The disturbances in assembling and conveyance due to lockdown brought about the evaporation of inventory amongst the retailers, which affected the stock of products available to the buyers.

### **Demand and Supply Analysis – Retail**

Retail is probably the biggest section in the Indian economy. It adds to 40% of India's utilization and employs an estimated 40 – 50 million people.<sup>22</sup> With a consumption of \$1.7 – 1.8 trillion and an expected CAGR of 9 – 11% from 2019 – 2025, the retail portion is a provider for many families. While there is an unmistakable picture of an organized retail section/present day exchange, information focuses are not accessible for the wonderful customary exchange portion, and it is estimated that an enormous number of Indians are reliant upon the retail segment for their livelihood.

Coronavirus essentially affects retail on multiple tiple fronts. In India, with a required lockdown, all retail shops and the entire modern trade were asked to shut down for over 2 months, aside from foundations that sold essential merchandise. Be that as it may, as per a gauge from the Retail Association of India (RAI), just 8% of the retail segment in India sold essential goods.<sup>23</sup> This implies that 92% of the establishments saw zero sales for close to two months.

Table 1: Per cent Deviation of GDP from Baseline

Real GDP	V - shaped U - Shaped L - Shaped					
	2020	2021	2020	2021	2020	2021

ASEAN	-6.1	4.6	-12.2	9.7	-14.7	3.3
China	-4	-3.5	-7.9	7.2	-9.9	2.5
European Union	-5.2	4.1	-10.1	8.4	-12.1	2.9
India	-5.4	4.6	-11.1	9.9	-13.4	3.2
United States	-5	4.8	-8.8	8.6	-10.8	2.9
Japan	-4.4	3.9	-8.1	7.4	-9.5	2.4
Other Asian Countries	-5.8	5.1	-11.4	10.3	-13.4	3.2

Data from WTO (April 2020)

While the information isn't out yet for the lockdown time frame in the Indian retail fragment, we can take a gander at information from China during their lockdown period. China forced lockdown and drastic travel limitations to contain COVID-19 in January, February, and March, and figure 5 demonstrates the drop in retail sales of consumer goods by 20.5% in January and February. The drop can likewise be seen during May – 2003 in China, when SARS – 2003 was at its pinnacle and there were similar restrictions on development. A comparative drop in retail deals of consumer merchandise can be anticipated in India for the months of Q1 2020 and Q2 2020, taking into account that a large portion of the establishments were ordered to be closed.

### **FMCG Recovery Scenario and Market of Tomorrow**

While the general viewpoint for FMCG has been acceptable compared to any remaining areas in the economy, given that the greater part of the fragment falls under the portion of fundamental products, the recuperation situation is required to be V-shaped or U-shaped depending upon the class of merchandise.

The FMCG week by week esteem development rate information for China from Kantar World panel demonstrates the recuperation situations of the FMCG business for various fragments of goods.<sup>31</sup> The outcomes of the examination are summed up beneath,

Categories like individual cleanliness items and home cooking items, bundled food, and so on saw development in China during the COVID-19 lockdown and in the time of recuperation after that. These classes saw development in the said period.

Categories like tissues, pet food, and so forth saw a limited sway, with an increase in popularity and a concise decay. The bend in the road was not steep and getting back to regularity was speedy. These classifications saw the pattern of frenzy purchasing at the outset.

Notwithstanding, these are not items which are devoured every day. Hence, the storage would have brought about a decrease in demand.

Categories that incorporate items like cooking oil, yo-ghurt, bread rolls, dietary enhancements, and clothing cleansers saw a decrease in utilization. However, they rushed to recuperate the lost interest and get back to regularity in China. This portion of FMCG saw a V-molded recovery

from COVID-19.

On the other hand, classes with items like cleanser, skincare, cosmetics, and so forth saw a precarious decrease in popularity during the pinnacle of COVID-19 and are yet to recuperate following a month and a half of the lifting of the lockdown. These are required to see a U – formed recuperation and are relied upon to get back to finishing regularity by the end of Q2 2020.

Comparable patterns are normal in India given the similarity in our utilization design. Various classes of items are required to see distinctive recuperation designs.

While we saw the interest side recuperation situations in the FMCG area because of COVID-19, it is essential that we likewise review the stock side effects. Coronavirus has upset the stock market in two significant ways.

1. Supply chain disturbance – Due to serious limitations on development in India, all hubs of supply chains are being affected, beginning from the sourcing of crude materials, until the last-mile conveyance of the completed merchandise. The serious effect has been on the dispersion area of the store network.
2. Manufacturing closure – Lockdowns in the nation have affected the creation of merchandise and, in any event, when there are grants to proceed with creation, a large portion of the processing plants are working at sub-ideal levels because of work deficiencies and social removing rules.

While the subsequent point was an impermanent interruption, the main disturbance of the store network led to many interesting patterns that may get down to business in the FMCG area tomorrow. We will inspect one such pattern in this paper. Traditionally, the FMCG supply chain has had a few layers between the producer and the retailer, who might dis-recognition the items to the customers. With COVID-19, the network was upset and the organizations battled to move merchandise, starting with one level, then onto the next. This brought about two phenomena on the lookout – the Direct to Consumer Model (D2C) and associations with ride-hailing administrations for conveyance. Both of these wonders are interrelated.

However, D2C has not been another model. Many organizations which followed customary production network models had no plans to embrace the D2C model. In D2C, the FMCG organizations would attempt to take out every one of the middle of the road levels between themselves and the purchaser. These levels would have merchants, wholesalers, and so on. The organization would attempt to straightforwardly reach the retailer or the purchaser. This model has its own inborn promotion advantages and detriments.

Coronavirus has sped up this wonder and FMCG organizations are straightforwardly attempting to arrive at the shopper, eliminating every one of the halfway levels. Organizations are collaborating with ride-hailing administrations like Dunzo, Rapido, and so forth for efficient appropriation. A few models are featured in Table 2.

Table 2: Partnerships of FMCG Companies with Last mile/Distribution providers in India

Real GDP	V - shaped		U - Shaped		L - Shaped	
	2020	2021	2020	2021	2020	2021
ASEAN	-6.1	4.6	-12.2	9.7	-14.7	3.3
China	-4	-3.5	-7.9	7.2	-9.9	2.5
European Union	-5.2	4.1	-10.1	8.4	-12.1	2.9
India	-5.4	4.6	-11.1	9.9	-13.4	3.2
United States	-5	4.8	-8.8	8.6	-10.8	2.9
Japan	-4.4	3.9	-8.1	7.4	-9.5	2.4
Other Asian Countries	-5.8	5.1	-11.4	10.3	-13.4	3.2

While these partnerships might be temporary, companies who evaluated the D2C model during COVID-19 may examine this model in post COVID times, and there is a possibility that the market of tomorrow will see different FMCG organizations embracing the D2C production network model and evading the traditional production network model they generally had. This might change the capacity and jobs of merchants and wholesalers in the market.

### Retail Recovery Scenario and Market of Tomorrow

The retail segment is broadly classified into discretionary and non-discretionary sectors. Due to the lockdown, the non-optional retail area is totally closed down and the recovery seems to be bleak for this sector. According to

As indicated by the Retail Association of India, just 7 – 8% of the retail industry is functioning and the rest 92% are shut down.<sup>37</sup>

Like FMCG, different areas inside retail are expected to have diverse recuperation situations. Classes of retail like packaged food and items saw the quickest recovery. Essential retail saw development during the COVID-19 lockdown in India. Categories like home-care saw an increase in demand in the last long time of March, because of the month-end purchasing pattern and the declaration of the lockdown. This class has seen a limited impact and is expected to recover quickly.<sup>38</sup>

Beverages and confectionery saw a complete shut down for a while during the lockdown. Be that as it may, the interest got with the unwinding of the lockdown and we expect this class to see a V-molded recuperation. Notwithstanding, optional retail classes like furnishings, attire, articles of clothing, footwear, and so forth are the most affected by the lockdown with zero deals for a very long time. These classifications will see issues like the expansion of inen-conservative and the liquidity crunch, which may bring about numerous small businesses being wiped out. We expect these categories to see a U-shaped recovery in terms of demand. On the supply side, e-tailor, e-grocery has received significant consideration for fundamental products. Most present day retail giants have restricted online business players for effective fulfillment. As seen from

the above table, a significant example of this being Future Group's Big Bazaar, which cooperated with Rapido and Scootsy for distribution<sup>39</sup>.

For example, Metro has begun direct appropriation to their Kirana partners.<sup>40</sup>

Although e-tail has gotten huge consideration, it is the neighborhood brick and mortar shops or the Kirana shops that emerged as the victors in this situation. However, current retail is tied up with online stages for dispersion, acquisition was a challenge for them and they couldn't fulfill the increasing consumer needs during the lockdown. A significant pattern that was seen in India during the lockdown stage is that individuals began purchasing from their neighborhood Kirana stores. Neighbourhood stores have additionally begun home conveyance in their territory. On the off chance that the little area stores get digitized and focus on client comfort, we expect the pattern of increasing modern exchange entrances to continue, and traditional retail might still hold the ground in India.

Omnichannel fulfilment has been a major trend in the retail industry since the second half of this decade. Nearly all major corporate stores were attempting to reevaluate their distribution model and were trying to find alternate channels to reach clients and to achieve higher consumer loyalty. With COVID-19, omnichannel fulfilment has moved on to survive in the market tomorrow.

an important factor, from being a separating factor as it was previously. In the event that a retailer, be it present day exchange or traditional trade, doesn't consider Omnichannel satisfaction and innovative ways of reaching customers, he will not be able to contend. survive in the market tomorrow.

The commitment of the distinctive exploration articles to the production network of the board writing survey can be summed up as follows:

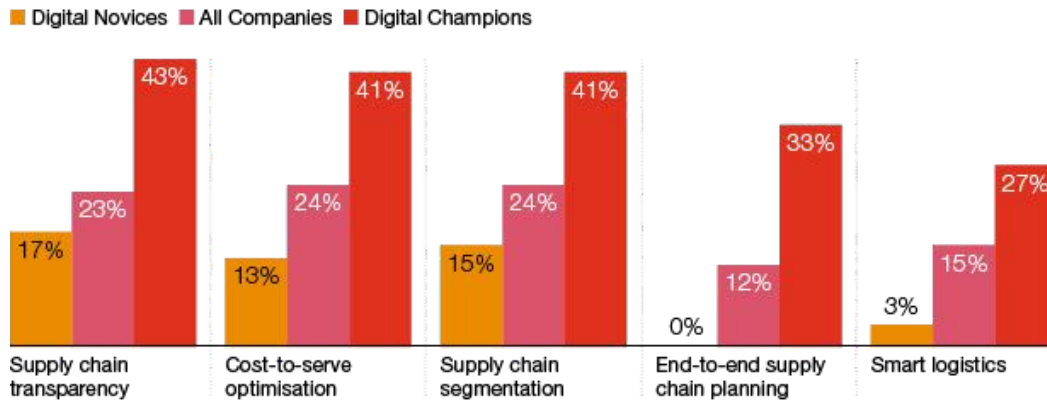
- Supply fasten the board rehearses add to moderating the dangers of COVID-19 [14]
- The fit between activities data handling limits and production network the board improves inventory network the executives' hazard limits [15].
- One area that was affected by the COVID-19 emergency was the fashion business, which caused request interruptions and stock expenses. Moving inventories from parts of the world where the danger was high to different pieces of the world was one effective technique. The improvement of advanced experience was one effective procedure. The issue with the store network board and COVID-19 is that numerous small providers are confronting indebtedness [16]. .
- In the vehicle business, the principal systems to relieve chances were to foster limited stock sources and utilize progress industry 4.0 (I4.0) innovations. In the aircraft business, it was essential to characterize the procedures on flights and between flights. The two areas see that information investigation plays a significant part [17].
- Medical deficiencies have shown the instability of the production network in these areas, particularly in close to home assurance gear toward the start of the emergency.
- In the agribusiness and transportation areas, there is progress in inventory network observing and industry commitment, the proactive advancement of methodologies to manage truancy and

other likely dangers to the store network, and an appraisal of the financial and wellbeing benefits of giving extra open assets to give more prominent admittance to basic food item pickup and conveyance administrations.

Man-made intelligence-driven production network the board (AI driven supply chain management)

### Champions outpace others in using AI to boost capabilities

For which capabilities are you applying AI, machine learning or deep learning?  
(For those reporting 'yes')



Base: 1,601 companies. Source: PwC's Connected and autonomous supply chain ecosystems 2025

Man-made intelligence could be a tremendously amazing gas pedal of key production network abilities, with the possibility of driving proficient dynamic and fabricating frameworks that can independently adjust to evolving conditions. By applying complex AI strategies, for example, AI and regular language preparation, to store network capacities, organizations can expand straightforwardness, further develop and upgrade coordination streams. Computerized Champions are well ahead of the remainder of the examples around here; they're utilizing information and are bound to apply AI to turbocharge key production network decisions. But utilizing AI isn't in every case simple. Organizations need to dominate the difficulties presented by guaranteeing applicable information is produced all through the inventory network. Wisely joining organized and unstructured information gives the establishment for information examination. Information focuses stream from assorted sources and might be produced inside, remotely or from freely accessible information sources. Thus, setting up an information network that can peruse, clean and break down these assorted sources is critical. Utilize AI mindfully and with adequate administration set up, for instance, by thinking about the interpretability and logic of calculations and considering potential predispositions, so AI doesn't turn out to be basically a 'black box.'

### Conclusions:

COVID – 19 has disrupted our lives. The world will never be the equivalent. While the business is anticipating a return to the normal of the pre – COVID world, it is evident to most companies

that another typical is arising and that it is different from what was normal in the past. While we have inspected significant patterns like direct to consumer models in FMCG and omnichannel satisfaction in retail, multiple patterns are arising – both because of changing client assumptions and because of disturbances in the supply chain. Elements in the economy are driving these changes. To survive in the market of tomorrow, in the post COVID world, a firm should be proactive in distinguishing these patterns and must adapt to them. While we may see organizations like Alibaba emerge from these circumstances, current goliaths are additionally at risk of falling from their glory.

This paper broke down the primary hypothetical experiences into store network executives' hazards, zeroing in on the meaning of store network board chances. The writing survey dependent on auxiliary information proposed that various ventures were confronted with supply board difficulties and hazards, and various techniques were taken on to confront disturbances during the COVID-19 emergency. The examination on the production network board in COVID-19 is as yet an emanant research field.

The central commitments were observational as opposed to calculated. There is a need to foster more applied commitments in these hypothetical fields, just as in how hazard relief procedures can impact dynamic.

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