

THE IMPACT IN SUPPLY CHAIN MANAGEMENT DURING COVID 19 AND AFTER COVID ITS INFLUENCE AND BUSINESS - STARTUPS

AUTHORS:

Dr. Supriya Rai, Associate Professor, Jain (Deemed-to-be University) - Center for Management Studies - Bangalore, INDIA

Deepti Mr, Yashwi Sipani, Praveen Budania, Sabari Thappa - Students, BBA - Jain (Deemed-to-be University) - Center for Management Studies - Bangalore, INDIA

ABSTRACT

Mainly this study was aimed at demonstrating the challenges of small businesses during the corona virus pandemic in developing countries, specifically in Ethiopia. Methodologically, the study deployed secondary data analysis following a descriptive research design. Furthermore, this study was conducted through both qualitative and quantitative research approaches.

The secondary data analysis result shows that many small and large businesses are suffering challenges and this unprecedented coronavirus crisis has caused destruction for many businesses in the globe and it is challenging to survive with reduced revenue, jobs lost and life slowing down and weak marketing performance even difficult to keep a calm head and their business alive.

To support these businesses, the government should use different mechanisms by cooperating with wealthy peoples and other non-governmental organizations. Besides, small business owners should manage expectations and communicate with staff, suppliers, banks, and customers throughout this coronavirus frightening.

Reduce expenses be open to their employees about their finances and keep marketing, use different alternatives to deliver their product, and recover from the crisis.

COVID-19 is a massive health crisis BUT also much more. It is a systemic shock with profound implications, both in the short- and medium- to long-term.

This virus has triggered a substantial short-term economic contraction, shuttered many firms, whether big or small, thrown tens of millions out of work, and has other effects on business activities.

To prevent unemployment, poverty, and food insecurity rates from further skyrocketing during any time, small and medium enterprises around the globe can and should play a crucial role.

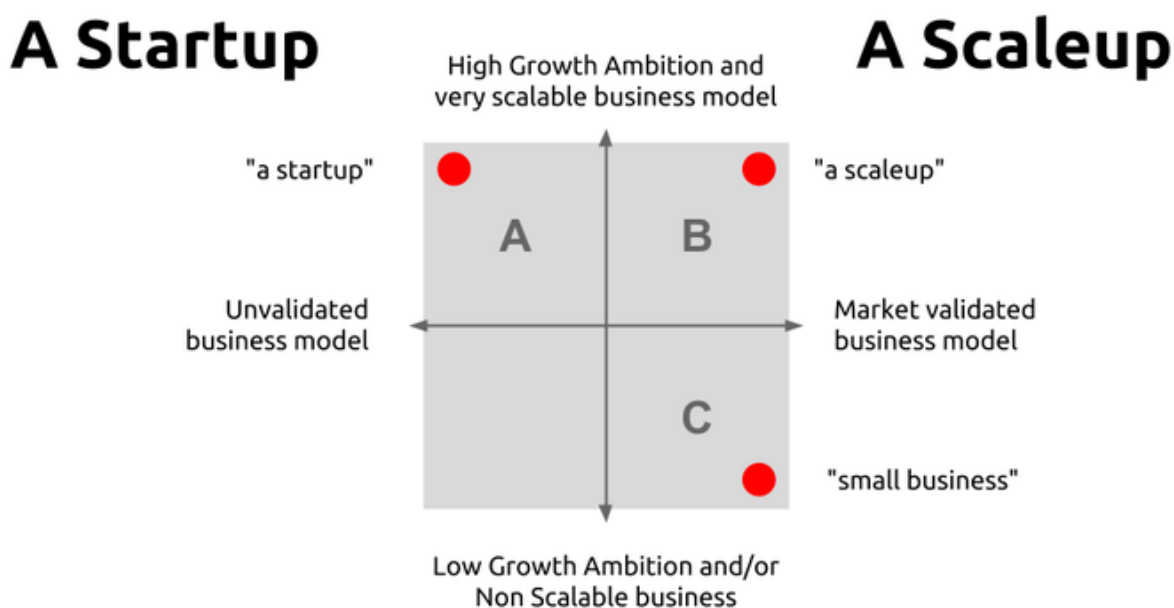
Keywords: Supply chain disruption, Resilience, Sustainability, COVID-19, Literature review, Bibliometric and network analysis

INTRODUCTION

A startup is a venture that is initiated by its founders around an idea or a problem with a potential for significant business opportunity and impact. Often the actual development starts even before that with a search of an idea or a meaningful problem worth solving and building a committed founding team aligned with shared vision to make that vision into reality.

Aim of the initial founder(s) is to establish a committed co-founder team with necessary skills and abilities to be able to validate the initial problem/solution fit and product/market fit, before scaling it to significant company and self sustained business.

So in addition to innovation process itself, from idea to value generating product and business model, startups also need to have a strong and committed founding team and develop both of these together into a real growing business and organization that captures the value being created as a great company.



The novel coronavirus (COVID-19) pandemic has massively disrupted supply chains (SCs) at the global and local scale. The virus—which initially appeared in Wuhan, China, in late 2019—has impacted the economy and social life in almost all countries. By the end of December 2020, according to worldmeters.info, the number of cases had exceeded 80 million and by the end of March 2021, the number has grown to over 128 million.

In many countries, there has also been a second COVID-19 wave with substantially more cases than the first. The economies of most countries have experienced major contractions, and the world SC has slowed down significantly, as indicated by, for example, the major decrease in shipping activities. Many countries have witnessed closures of stores and food chain outlets and a substantial drop in manufacturing activities.

For example, Apple’s assembler, Foxconn, is working below capacity as Apple’s suppliers in Malaysia, South Korea, and Europe have been affected by the government lockdowns and a paucity of parts and supplies from their subsuppliers (Ivanov & Das, 2020). While COVID-19 has had a major negative impact on the global economy, it has also given rise to and highlighted the importance of digitalization. Oldekop et al. (2020) noted that the pandemic has significantly accelerated digitalization across different sectors and has immensely helped in reducing the spread of COVID-19.

They also emphasized that online work and digitally organized logistics have mitigated the negative impacts of COVID-19. However, the amount of information shared by organizations and governments across various digital platforms poses the threat of privacy violations or even political surveillance.

The pandemic has resulted in a significant slowdown of global economic activities. A report published by the International Monetary Fund (2020) stated that the COVID-19 pandemic has had a more negative impact than anticipated on economic activities in the first half of 2020. By the early 2021, there is no sign that the COVID-19 will disappear soon and thus the negative impact on the global economy will still be substantial for considerable time in the future. The global economy is expected to contract by 5.4% in 2021 (from 4.9% in 2020) despite the various measures established by different countries to fight the pandemic, which have affected businesses and economic activities.

As a consequence of all this, manufacturers worldwide are going to be under greater political and competitive pressures to increase their domestic production, grow employment in their home countries, reduce or even eliminate their dependence on sources that are perceived as risky, and rethink their use of lean manufacturing strategies that involve minimizing the amount of inventory held in their global supply chains.

To investigate supply chain challenges, a two-step procedure was followed. In the first step, relevant articles were identified via the SCOPUS database search engine, using the keywords- "TITLE-ABS-KEY ("COVID-19") OR TITLE-ABS-KEY ("SARS-CoV-2") AND TITLE-ABS-KEY (SUPPLY CHAIN CHALLENGES/ BARRIERS)".

The SCOPUS results initially suggested 17 articles. There are few studies specifically discussing the challenges to the supply chains during COVID-19 pandemic; thus, other relevant articles on supply chain challenges were also investigated, from business magazines, various reports, and World Economic Forum documents.

Several challenges were commonly identified in these reports. Two of the authors of this paper independently reviewed all the articles to finalize the list of challenges to be covered in this study. Several challenges were also commonly identified across these papers. Ten distinct challenges were categorized by considering and collating these challenges.

The COVID-19 pandemic has affected global supply chains at an unprecedented speed and scale. This paper investigates the supply chain challenges that manufacturing organizations have faced due to the COVID-19 outbreak, particularly in emerging economies.

We present a conceptual framework under the dynamic capability theory to analyse challenges and their pertinent mitigation strategies. Ten major challenges are identified based on a literature review, evaluation of several news articles, and discussions with experts. Further, the Grey-Decision-making Trial and Evaluation Laboratory (Grey-DEMATEL) method is applied to analyse the relationships between various supply chain challenges.

Scarcity of Labour (PSL) emerges as the most significant challenge, closely followed by Scarcity of Material (SSM). The results also suggest that Inconsistency of Supply (PIS) is the challenge that correlates the most with other factors. Finally, in this paper we also provide guidelines and strategies for practitioners and scholars to better address supply chain challenges post-COVID-19 outbreak.

The COVID-19 pandemic was a global disruption across trade, finance, health and education systems, businesses and societies like few others in the past 100 years. It is no surprise then that

only 2% of companies who responded to the survey said they were fully prepared for the pandemic. Serious disruptions affected 57%, with 72% reporting a negative effect (17% reported a significant negative effect, and 55% mostly negative).

Often in uncertain economic environments, companies slow their technology investments to a trickle. But during the COVID-19 pandemic, 92% did not halt technology investments. This speaks to the value of a digital supply chain in helping enterprises navigate disruptive forces and respond faster to volatile supply and demand.

There were some clear winners by industry during the pandemic, with 11% reporting positive effects, including increased customer demand (71%) and bringing new products to market (57%). These companies were mostly in the life sciences sector and the positive effects may be largely because the products they produce are essential.

The pandemic also required some life sciences companies to double down on creating essential new products such as COVID-19 tests or vaccines. Other sectors, particularly consumer products, couldn't keep products on the shelves in the early days of the pandemic since toilet paper, canned goods, flour and other staples were in high demand.

The world has recently been severely engulfed by an unprecedented crisis, in the form of the COVID-19/SARS-CoV-2 outbreak (Donthu and Gustafsson, 2020, Verma and Gustafsson, 2020).

The initial cases of the novel coronavirus emerged in Wuhan, in the Hubei province of China, as early as December 2019 (Ivanov & Dolgui, 2020). However, in the subsequent months, the pandemic spread all over the world, affecting billions of people, both directly and indirectly.

It has gained much attention among supply chain scholars (Choi, 2020a, Choi, 2020b, de Sousa Jabbour et al., 2020, Govindan et al., 2020) and practitioners (Business Insider, 2020, Deloitte, 2020, Fortune, 2020) alike. While some sectors witnessed a decline in demand, others saw a sudden spike in demand. Economic activities came to a standstill in many countries such as India, which imposed one of the strictest lockdowns.

The outbreak has affected every aspect of business, particularly global supply chains (Ivanov & Dolgui, 2020). It has caused numerous impacts which are sure to have long-term effects (Govindan et al., 2020), creating serious disruptions in supply chains (Ivanov, 2020a); for instance, 94% of the Fortune 1000 companies have already faced supply chain disruption due to COVID-19 (Fortune, 2020).

The effects of the coronavirus outbreak on global supply chains have emerged in three different sides: supply side, demand side, and logistical side (Mishra et al., 2021, Sharma and Kumar, 2021). Multinational corporations faced a supply-shock, for instance, as the infection spread across India, exports of face masks stopped. Similarly, several companies faced a demand-shock.

An increase in demand for essential products was witnessed, while, on the other hand, concerns arose regarding postponed deliveries, delays in securing merchandise, unanticipated travel disruption, and shortage of labor (due to reverse migration of laborers from cities). Therefore, gaps between supply and demand increased¹.

Before the COVID-19 era, supply chain managers generally focused on just-in-time inventory management, which helps to reduce costs and increase efficiency. However, following the COVID-19 outbreak, it has become clear that this approach fails to prepare global supply chains to combat extreme shocks, such as those owing to the COVID-19 pandemic (Govindan et al., 2020).

Furthermore, the way that the coronavirus pandemic has affected global supply chains has only increased the importance of risk management and mitigation strategies. Organizations need to evaluate their supply chain strategies, supply chain designs, and supply chain dependencies to avoid improvised reactions to future natural disasters and prepare themselves to adequately address unexpected disruptions.

Supply chain research in the context of COVID-19 is, by necessity, in its early stages. Few studies have been carried out on a micro level, while those that do exist tend to focus on theoretical attempts to best explain the COVID-19 situation. Some studies suggest future research directions based on a literature review.

However, the supply chain-related challenges that companies presently face due to COVID-19, and its mitigation strategies are largely missing from the current debate on global supply chains.

These challenges have also invoked supply chain managers to rethink their supply chain strategies to avoid such type of disruption in future. COVID-19 pandemic not only disrupted supply chains' operations but also affected the relation between tiers as well firms' policies in networks of interconnected relationships in many ways. For instance, (a) firms are shifting their sourcing strategies from global to local (Choi et al., 2021, Donthu and Gustafsson, 2020), (b) this pandemic might alter power dynamics within supply chains (Craighead et al., 2020), (c) supply chains have to become more resilient (Craighead et al., 2020, Verma and Gustafsson, 2020), and (d) firms are changing their inventory strategy (Sodhi et al., 2021). Thus, it is important to investigate how COVID-19 related disruptions affect interconnected business landscape of supply chains.

What are the key supply chain challenges arising from the COVID-19 pandemic?

How do these challenges influence each other?

What mitigation strategies are suitable to address these supply chain challenges?

How COVID-19 disruptions could affect the supply chains' policies in networks of interconnected relationships in future?

To answer the abovementioned research questions, we present a conceptual framework under the dynamic capability perspective and supply chain resilience.

After identifying supply chain challenges from literature and consulting with experts, this paper follows a Grey Decision-Making Trial and Evaluation Laboratory (Grey-DEMATEL) approach to examine how supply chain challenges are related with each other. Our study is the first comprehensive that examines supply chain challenges during the COVID-19 pandemic in an emerging economy such as India.

This is novel because, to our knowledge, there has been no previous study targeting supply chain challenges that take place in an emerging economy owing to a pandemic as massive as the one caused by the novel coronavirus. Further, supply chains in emerging nations have their own specific characteristics compared to established supply chains in highly developed markets.

Thus, a study of an emerging nation such as India may make a positive contribution towards understanding the nuances of supply chains and their key challenges in the event of a global pandemic.

We discuss mitigation strategies to overcome the identified supply chain challenges due to COVID-19 pandemic with support from the dynamic capability theory. In doing so, we also highlighted how companies should transform their supply chains to withstand any disruptions in the future.

The years 2009 and 2020 are the only two periods in the last 14 years where the number of economies with a drop in business entry was higher than those with an increase.

In 2009, 68% of economies experienced a drop in the number of registered firms. The degree to which the crisis affected new firm creation was highly correlated with measures of crisis severity in the financial sector. The financial crisis had a bigger negative impact on new business creation in economies with high levels of financial development, such as OECD high income economies. The number of affected economies, where the business registration decreased, was higher during the 2009 financial crisis compared to the COVID-19 crisis in 2020.

However, the COVID-19 crisis had a bigger impact on developing countries. Europe and Central Asia experienced the biggest drop in business entry in 2020: the number of newly registered firms dropped in 78% of Europe and Central Asian economies. This is followed by the Middle East and North Africa (75% of economies had a decrease in business entry) and the Latin America and the Caribbean (72% of economies had a decrease).

On the contrary, 55% of OECD high-income economies in 2020 had an increase in business entry, because many of these economies provided considerable support to individuals and businesses to weather the crisis.

Moving Forward

The latest round of the Entrepreneurship Database gives a first snapshot of the relationship between business creation and the recent COVID-19 crisis.

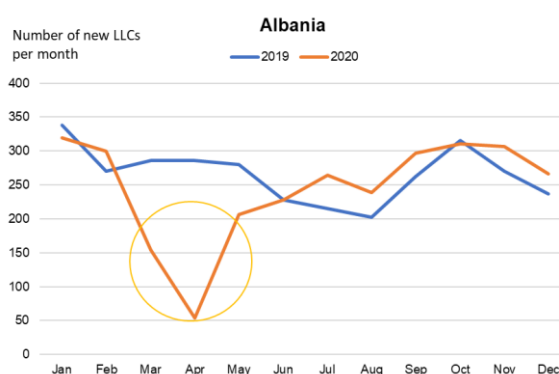
Future editions of the Entrepreneurship Database could shed light on the pace of recovery in new business registrations following the crisis. One key element is access to digital technology, which can strengthen the path to recovery and unleash the potential of aspiring entrepreneurs.

What Was the Situation at the End of 2020?

The Entrepreneurship Database looks at entrepreneurship only in the formal sector and measures new business density - the number of newly registered limited liability firms per calendar year, per 1,000 working-age members of a country's population.

In 2020, the median new business density was the highest at 5.1 in OECD high-income economies (Figure 3). Estonia - with 24.2 new LLCs per 1,000 adults - had the highest new business density rate in the world.

It benefited from its innovative E-residency policy allowing entrepreneurs to start a new business from abroad. It also attracted many British companies, which registered in Estonia to access the European market after Brexit. Other economies included Hong Kong SAR, China (19.2 new LLCs per 1,000 adults) and the United Kingdom (18.1 new LLCs per 1,000 adults).



The lowest level of entrepreneurship remained in Sub-Saharan Africa and South Asia, where less than 1 new LLC is created per 1,000 adults in 2020. While the new business density numbers were quite consistent across economies in South Asia, there was a wide dispersion in Sub-Saharan Africa. For example, the Democratic Republic of Congo and Liberia had less than 0.1 new LLC per 1,000 adults, Botswana and Cabo Verde had more than 13 new LLCs per 1,000 adults. Several regulatory reforms contributed to remove barriers to entry and help entrepreneurs being formal. In 2019, Cabo Verde introduced a new Commercial Code, simplified the business registration process at the one-stop shop for business start-up and introduced electronic minute books for new companies. In Botswana, the Companies and Intellectual Property Authority launched a mandatory online business registration system in 2019. The electronic system allowed entrepreneurs to reserve a unique company name and register the company electronically. Technology played a key role in helping local entrepreneurs be formal.

REVIEW OF LITERATURE

The novel coronavirus pandemic (COVID-19) has massively disrupted supply chains at the global and local scales resulting in economic slowdown and social issues. To respond to these changes, supply chains need to quickly adapt to the new situation. This paper presents a review of literature that addresses supply chains under disruptions due to COVID-19 pandemic.

Papers are classified based on issues addressed. The major findings or recommendations are discussed. These include the rising importance of safety, digitalisation, localisation, the need to revisit the meaning of efficiency, and the production and distribution of COVID-19 vaccine. We show that most mitigation actions proposed prior to COVID-19 such as redundancy and flexibility are still considered as possible strategies to mitigate supply chain disruptions due to COVID-19, but there are stronger pressures for digitalisation and supply-based localisation.

The research agenda is also outlined at the end of the paper.

Building a new supplier infrastructure in a different country or region will take considerable time and money, as China's experience illustrates. When China first opened its special economic zones in the 1980s, it had almost no indigenous suppliers and had to rely on far-flung global supply chains and on logistics specialists who procured materials from around the world and kitted them for assembly in Chinese factories. Even with the support of government incentives, it took 20 years for the country to build a local base capable of supplying the vast majority of electronic components, auto parts, chemicals, and drug ingredients needed for domestic manufacturing.

Shifting production from China to Southeast Asian countries will necessitate different logistics strategies as well. Unlike China, those locations often do not have the efficient, high-capacity ports that can handle the largest container ships or the direct marine liner services to major markets. That will mean more transshipment through Singapore, Hong Kong, or other hubs and longer transit times to reach markets.

In the long run, though, it would be a mistake to cut China completely out of your supply picture. The country's deep supplier networks, its flexible and able workforce, and its large and efficient ports and transportation infrastructure mean that it will remain a highly competitive source for years to come. And because China has the second-largest economy in the world, it is important that firms maintain a presence to sell in its markets and obtain competitive intelligence.

Hold intermediate inventory or safety stock.

If alternate suppliers are not immediately available, a company should determine how much extra stock to hold in the interim, in what form, and where along the value chain. Of course, safety stock, like any inventory, carries with it the risk of obsolescence and also ties up cash. It runs counter to the popular practice of just-in-time replenishment and lean inventories. But the savings from those practices have to be weighed against all the costs of a disruption, including lost revenues, the higher prices that would have to be paid for materials that are suddenly in short supply, and the time and effort that would be required to secure them.

The COVID-19 pandemic has made a significant impact on various supply chains (SCs). All around the world, the COVID-19 pandemic affects different dimensions of SCs, including but not limited to finance, lead time, demand changes, and production performance. There is an urgent need to respond to this grand challenge.

The catastrophic impact of the COVID-19 pandemic prompted scholars to develop innovative SC disruption management strategies and disseminate them via numerous scientific articles.

However, there is still a lack of systematic literature survey studies that aim to identify promising SC disruption management strategies through the bibliometric, network, and thematic analyses. In order to address this drawback, this study presents a set of up-to-date bibliometric, network, and thematic analyses to identify the influential contributors, main research streams, and disruption management strategies related to the SC performance under the COVID-19 settings.

The conducted analyses reveal that resilience and sustainability are the primary SC topics. Furthermore, the major research themes are found to be food, health-related SCs, and technology-aided tools (e.g., artificial intelligence (AI), internet of things (IoT), and blockchains).

Various disruption management strategies focusing on resilience and sustainability themes are extracted from the most influential studies that were identified as a part of this work. In addition, we draw some managerial insights to ensure a resilient and sustainable supply of critical products in the event of a pandemic, such as personal protective equipment (PPE) and vaccines.

There are now confirmed individuals with COVID-19 in nearly every country of the world, and the WHO has urged affected countries to slow the spread of the virus by imposing containment and suppression measures ranging from strict controls on travel, social gatherings and commercial activities aimed at 'flattening the curve' (that is, decreasing the rate of new infections to avoid overwhelming healthcare systems) to less strict measures designed to shield immunologically compromised individuals, treat victims and achieve 'herd immunity' (that is, a sufficiently large number of recovered and, therefore, immune individuals to prevent the effective spread of the virus).

Differences in the strictness of such policies and the rapidity with which jurisdictions have imposed and relaxed the policies reflect divergent (and perhaps hasty) assessments of both the public health risk of COVID-19 and the social and economic impacts of the different policies.

Using a newly developed economic disaster model we quantitatively assess the short-run supply-chain effects of different containment strategies across countries and industry sectors to inform ongoing efforts to contain COVID-19 and to reveal more generally how pandemic-related economic losses will be distributed along global supply chains.

By applying our model to the simulation of control policies during a pandemic, we can assess the potential impact of different policies on the supply chains and examine the externalities of control measures.

Note that our model is distinct from computable general equilibrium (CGE) models in that it is specifically designed to assess economic impacts in response to disasters that unfold over weeks or months, before production structures and trade networks have time to adjust to new production patterns.

Moreover, the goal of this study is not to predict the true cost of the COVID-19 pandemic, but to identify the most important aspects of disease control (such as strictness, duration and recurrence of lockdowns) and test the sensitivity of these factors as their impacts ripple through global supply chains, supported by several sets of scenarios for containment measures. Thus, in addition to showing how overall damages might change under different policy scenarios, the incidence of damages across sectors and countries may inform the allocation of international aid and economic stimulus.

We modelled four different sets of pandemic scenarios, three of which (36 scenarios in total) represent different spread extents and containment responses to the COVID-19 pandemic and the last of which (3 scenarios in total) assesses both the damages of sustaining some restrictions over a longer period as well as the losses if lockdowns are imposed again next autumn or winter. Spatial spread refers to the global extent of the pandemic—the number of countries affected.

Duration refers to the number of months that lockdown measures are in place. Strictness is measured by the percentage by which labour availability and transportation capacity are reduced relative to pre-pandemic levels. Given that the impacts of lockdown measures on labour availability depend on the characteristics of production, we developed specific impact-to-labour ‘multipliers’ for each sector on the basis of three factors: the level of exposure to the virus (that is, the degree and proximity of in-person interactions), essential or lifeline sectors (such as electricity), and the option of performing work from home (for example, education).

Sector-specific constraints on labour availability are therefore determined by both the strictness of lockdown measures represented in the scenario (for example, 80% strictness will reduce overall transportation capacity by 80%) and the sector-specific multipliers (for example, 0.5 for wheat production as the level of exposure is low and 0.1 for electricity and gas supply as essential activities; see .

Each of the 39 scenarios is based on a different combination of spatial spread, duration and strictness; the results are presented in terms of economic supply-chain effects, measured in absolute terms of loss in value added (for example, billions of US dollars) or relative terms (as a percentage of pre-pandemic value added).

The COVID-19 pandemic has affected global supply chains at an unprecedented speed and scale. The pandemic continues to offer significant challenges for supply chains globally. Even in 2022, national lockdowns slow or even temporarily stop the flow of raw materials and finished goods, disrupting manufacturing as a result.

The executive supply chain surveys indicate that visibility, efficiency and reskilling supply chain workers will be top priorities. These findings are not surprising as cost-optimization in the supply chain will always be a focus, even in the face of building out additional resiliency. Cost reduction has in the past been achieved through lean operations, longer lead times and low-cost labor. But in the future, agility, visibility, automation and upskilled people will be key, which together drive not only cost reductions but better decision-making, and process standardization and excellence across the supply chain and clients eco-system partners.

The future of supply chains is digital and autonomous. The journey to digitized and lights-out operation has begun in earnest. The journey to digitized and lights-out operation has begun in earnest.

COVID-19 has created a most severe impact on supply chains in recent history and caused one of the biggest disruptions in the history of humankind (Ivanov & Dolgui, 2020). Its disruptions have propagated through entire systems of supply chains, with devastating results (de Sousa Jabbour et al., 2020). It has created a ripple effect in several supply chain areas (Govindan et al., 2020). Several studies in the past have suggested that small disruptions in supply chains create ripple effects (Scheibe & Blackhurst, 2018). However, the COVID-19 pandemic has been much more severe than any other previous outbreak, as it has disrupted the supply, demand and logistical sides (Queiroz et al., 2020, Mishra et al., 2021, Sharma and Kumar, 2021).

Companies are facing a plethora of challenges based on their geographical conditions and the varying levels of preparedness and resilience of their supply chains (de Sousa Jabbour et al., 2020). India has been chosen as the geographical region for this study because it is one of the most prominent manufacturing hubs in the world, the second most populous country in the world, and also the third most affected by COVID-19, after the US and Brazil (The Guardian, 2020). Therefore, it is important to investigate the supply chain challenges faced by Indian companies and suggest suitable mitigation strategies.

RESEARCH METHODOLOGY

To carry out this research, a systematic literature review (SLR) was carried out. This has a conventional use, mainly carried out in medical and other sciences. Where, it is defined as follows .

An efficient and effective technique to summarize the findings of existing literature, gauging the consistency in previously reported studies, confirming that tasks are not unique to the current discussion. Previously, a SLR has been taken into consideration by several researchers to map various problems from a SC perspective .

It includes several steps, for instance planning (includes research questions, defining the scope and limiting the subjects under their interdisciplinary nature), searching (contains search protocol, relevancy, database selection, reliability), screening (inclusion and exclusion criterion), and extraction (analysis, reporting major studies, insights on existing literature). 2.1. Planning The basic information articles were taken from a wide range of databases, for example, Scopus, Science Direct, Google Scholar, Wiley, Web of Science, and other international forum's websites. In addition to this, to comply with reliability Scopus indexed journals and Scopus database was selected for data collection. From the rigorous literature survey, incidentally, multiple intersections of various supply chain perceptions of epidemic outbreaks, distributed through the literature, have not previously been rationalized.

The questions were designed in a way that the problem is specified in the form of questions. The answers to the above questions were expected from this research paper. The most important and major support, through this study, will comprise an insight into the research agenda for SCs at the time of disasters or epidemic outbreaks; moreover, a systematic investigation of the literature on epidemic outbreaks and supply chain operations. In addition to this, several open questions and future research avenues were identified that can be explored in the extension of the existing body of knowledge. Searching To comply with objectivity and reliability, the research protocol is provided in . The Scopus database was employed to import potential data. It was used in the literature review works .

All the articles selected were from peer-reviewed journals indexed by Scopus. Keywords were used to find out the most relevant papers, such as “supply chain”, “operations management”, “logistics” as a general protocol for SC and operations management (OM) field delimitation.

Whereas specifically “sustainability ripple effect” and “survivability” were used. The scope of the search was limited by defining Boolean operators (AND, OR, AND NOT) to search in a precise manner.

Data Collection

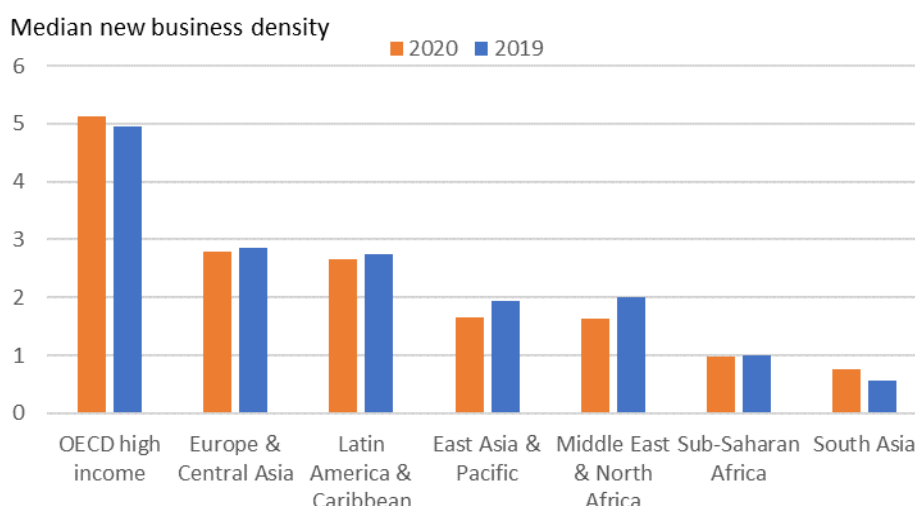
As described above, the first step in text mining is the extraction of a structured dataset. In order to obtain the dataset of our empirical research, an independent and unbiased global database for online newspapers that has the option to search for specific keywords and date ranges is required. This research is limited to newspapers in the English language to be able to easily compare content and use text mining techniques without having to rely on potentially poor translations.

Small businesses are the backbone of any economy, and with the ripple effect of COVID-19 on economies all over the world, their protection has become important more than ever. Since the first case of pandemic surfaced in Ethiopia, the government has been taking various sweeping health and economic measures to mitigate its impact.

Recognized by the government as a driver for economic growth and job creation, small businesses, or more commonly referred here as small and micro enterprises as the lexicon goes, the sector has been growing steadily for the past decade or so.

However, facing the wrath of the coronavirus pandemic, most of these firms face difficulty surviving in the current climate for even above 5 months, Ethiopian press agency

Data Interpretation



In 2020 the number of newly registered firms - limited liability companies (LLCs) - fell in 58% of economies while the number of newly registered firms rose in only 42% of economies, compared to 2019. This finding diverges from previous years, where the number of new firms tended to increase in most economies. Usually, in a given year, the number of new firms increases in about 2/3 of economies, while it slows down in 1/3 of economies.

Do companies need to localize manufacturing?

The COVID-19 pandemic has highlighted the risks and vulnerabilities of global supply chains, leading many companies to consider localizing manufacturing as a way to mitigate risks and ensure supply chain resilience. However, the decision to localize manufacturing is complex and depends on a range of factors, including the specific industry, product type, and customer demands.

Here are some factors that companies should consider when evaluating the need to localize manufacturing:

1. **Supply chain risks:** Companies should assess the risks associated with their supply chains and identify the potential impacts of disruptions. They should also evaluate the availability and reliability of local suppliers and consider the cost implications of localizing production.
2. **Customer demand:** Companies should consider whether there is sufficient demand for locally produced goods and whether customers are willing to pay a premium for locally sourced products.
3. **Regulatory environment:** Companies should evaluate the regulatory environment in the regions where they operate and consider the potential costs and risks associated with compliance.
4. **Labor costs and availability:** Companies should evaluate the labor costs and availability in the regions where they operate and consider whether localizing manufacturing would provide cost savings or increase efficiency.
5. **Environmental impact:** Companies should consider the environmental impact of their supply chains and evaluate whether localizing production would reduce their carbon footprint.

In summary, while the COVID-19 pandemic has highlighted the risks of global supply chains, the decision to localize manufacturing is complex and depends on a range of factors. Companies should evaluate the risks and benefits of localizing production carefully and consider the impact on their supply chain, customers, and the environment.

: An alternative is to move some or all production closer to the end consumer. Localized supply chains can be more resilient and are not as susceptible to trade wars or other global events. This strategy only works if your suppliers are local and their materials are sourced locally too, otherwise global risks will remain in your supply chain.

This strategy will likely increase costs, but it may also appease governments who sometimes apply pressure to manufacture in-country to boost employment and ensure certainty of supply of critical products, such as medical supplies.

What are the long-term changes we're likely to see?

The COVID-19 pandemic has had a significant impact on supply chain management, causing disruptions and challenges across industries worldwide. Some of the long-term changes that are likely to occur in supply chain management as a result of the pandemic and beyond include:

1. **Increased emphasis on resilience:** The pandemic has highlighted the need for supply chains to be resilient and adaptable to unexpected disruptions. Companies will likely focus more on building redundancies and diversifying their supplier networks to mitigate risks and reduce the impact of future disruptions.

2. Greater adoption of technology: Technology has played a critical role in helping companies navigate the challenges posed by the pandemic. Automation, artificial intelligence, and the Internet of Things (IoT) are likely to become even more widespread in supply chain management to improve efficiency, reduce costs, and enhance visibility.

3. Increased focus on sustainability: The pandemic has led to a growing awareness of the importance of sustainability in supply chain management. Companies are likely to prioritize environmentally friendly practices and ethical sourcing, as consumers become more conscious of their impact on the planet.

4. Changes in supply chain structure: The pandemic has exposed vulnerabilities in the traditional linear supply chain model, leading to the development of new, more flexible supply chain structures such as circular supply chains. These structures allow for greater collaboration and circularity, resulting in reduced waste and increased efficiency.

5. Shift towards regionalization: The pandemic has highlighted the risks of relying heavily on global supply chains. Companies may shift towards regionalization to reduce their dependence on distant suppliers and improve their resilience to disruptions.

Overall, the COVID-19 pandemic has accelerated existing trends and highlighted the need for companies to be agile, adaptable, and resilient in the face of unexpected disruptions. Supply chain management will continue to evolve and adapt to meet these challenges, resulting in changes that will likely persist long after the pandemic is over.

What can companies learn from this situation?

The COVID-19 pandemic has been a significant disruption to businesses worldwide, but it has also presented a valuable opportunity for companies to learn and adapt. Some of the key lessons that companies can learn from the pandemic include:

1. Importance of resilience: The pandemic has highlighted the need for companies to build resilience and flexibility into their operations. This includes having contingency plans in place to deal with unexpected disruptions, diversifying supply chains, and investing in technology to enhance agility and adaptability.

2. Necessity of digital transformation: The pandemic has accelerated the adoption of digital technologies, such as remote work, e-commerce, and online communication tools. Companies that were able to quickly pivot to digital operations were better equipped to navigate the challenges of the pandemic, and the importance of digital transformation will only continue to grow in the post-pandemic world.

3. Need for effective communication: The pandemic has demonstrated the importance of clear, consistent communication with employees, customers, suppliers, and other stakeholders. Companies that were able to communicate effectively during the crisis were better able to build trust, maintain relationships, and adapt to changing circumstances.

4. Focus on employee health and well-being: The pandemic has highlighted the importance of prioritizing employee health and well-being. Companies that invested in measures such as remote work, enhanced safety protocols, and mental health support were better able to support their employees through the crisis and maintain productivity.

5. Emphasis on sustainability: The pandemic has underscored the importance of sustainability, both in terms of environmental impact and social responsibility. Companies that prioritize sustainability are more likely to be resilient, adaptable, and well-positioned for the future.

What is Safety Stock Inventory Management?

Safety stock is a preventative inventory management practice. The point of safety stock is to hold extra inventory to prevent stockouts from happening. This measure occurs if the consumer demand for a product rises or the supply runs low due to manufacturing difficulties due to a lack of raw materials.

Safety stock serves as a buffer so that stockouts do not occur by enabling you to handle supply and demand. Instead of hanging onto high backup reserves of stored inventory, safety stock is a smaller reserve targeted toward goods with a high turnover rate.

Start-ups have emerged as key drivers of economic growth and job creation, and are often a catalyst for radical innovation. Young firms indeed account for about 20% of employment but create almost half of new jobs on average across OECD countries, and innovation by young firms significantly contributes to aggregate productivity growth, accounting for half of it in the United States.

During the coronavirus (COVID-19) crisis, start-ups have continued to play a critical role for economies. Some innovative young firms have reacted fast and flexibly to the pandemic, and have been critical in helping many countries shift towards fully-digital work, education, and health services, and have provided innovations in medical goods and services.

A few examples include: adapting commercial products (such as snorkelling masks to be used for oxygen provision in hospitals); launching a range of digital health services, including COVID-19 trackers, remote patient monitoring and remote consultations tools; introducing “no-contact” food delivery; and providing artificial intelligence solutions for researchers and scientists, remote working tools, or online learning and entertainment, in some cases provided free of charge.

Will Supply Chain Management Become Fully Automated?

More and more businesses are implementing automation into their operations to help bring in more efficiency and productivity, but that often leaves people wondering where their place may be in a automated future and asking the question: *Will supply chain management be automated?*

Much of modern automation in supply chain management removes roadblocks from human workers and is beneficial to their work as an aid, removing tasks that can be done by robots and leaving tasks that require human intervention and decision making.

In this blog, we'll be talking about how automation is used in supply chains today, asking whether supply chains will be automated in the future, and what the effects will be on current human workforces.

Start-ups face significant challenges during COVID-19

However, most of the existing start-ups face significant challenges, as they are more vulnerable than older incumbents to the shocks brought by COVID-19. They tend to engage in high-risk activities compared with other small and medium-sized firms (SMEs), face constraints in accessing traditional funding, and have a formative relationship at best with suppliers and customers.

At a time marked by significant economic uncertainty and with their revenues affected by containment measures and significant drop in demand, start-ups may become even more financially fragile and will need support for their short-term liquidity needs, critical for their survival.

In many countries, policy responses aimed at shielding the economy from the crisis are already targeting firm's financial fragilities, especially for SMEs. These include measures to sustain short-term liquidity needs, such as loan guarantees, direct lending, grants or subsidies. However, policy responses should take into account the specificities of start-ups with respect to other SMEs.

What are the main challenges related to the supply chain management that your industry is facing?

Supply chain management (SCM) is the process by which supply chain activities are managed to have an advantage over competitors as well as maximize the value of our customers.

It basically represents the efforts by which the supply chain management solutions help to develop and manage supply chain activities in the most efficient way. When we talk about supply chain management, we also pertain to product development, sourcing of materias, production of quality goods and logistics. With an efficient SCM Software you will be able to manage the flow of easily.

As we are in the middle of a pandemic outbreak, it is very difficult to estimate its long-term effects. Although society has been hit by several pandemics in the past, it is difficult to estimate the long-term economic, behavioral, or societal consequences as these aspects have not been studied to a great extent in the past. The limited studies that do exist indicate that the major historical pandemics of the last millennium have typically been associated with subsequent low returns on assets (Jorda, Singh, & Taylor, 2020).

COVID-19 is not only a challenge for existing start-ups but also for the creation of new ones. Indeed, periods of crisis usually correspond to drops in business registrations. Analysis of the most recent data in France confirms that firm creation has dropped by about 25% in March 2020, while early analyses of the latest US Weekly Business Formation Statistics seem to highlight qualitatively similar declines, with sharp short-term contractions exceeding those observed during the Great Recession.

A reduced number of new firms, even in a single year, has sizeable and persistent effects on different social and economic outcomes, including innovation and notably aggregate employment. Simulations based on the OECD DynEmp3 database (Figure 1) show that a 20%

decline in the number of new firms – a drop similar to the one experienced during the global financial crisis – leads to an employment loss of 0.7% of aggregate employment 3 years after the shock, and still of 0.5% 14 years after. Furthermore, a lower number of new firms may further amplify pre-existing long-term declining trends in business dynamism in many countries.

Although the COVID-19 outbreak is, and will continue to be, a significant challenge for the start-up ecosystem, the current crisis may also create short- and longer-run opportunities .

There are relevant opportunities for start-ups in times of crisis

Notwithstanding the significant [economic disruption](#) caused by the COVID-19 crisis, long-term effects on employment and innovation may be mitigated by taking steps now to support existing start-ups and the creation of new firms, limiting the negative effects discussed in the previous section. Recessions are often times of heightened restructuring that may ultimately lead to a stronger and more resilient economy.

In fact, even as the number of new business registrations generally drops during recessions, many successful innovative start-ups or businesses emerged from periods of crisis. Examples include Dropbox, Uber, Airbnb, WhatsApp, Groupon, and Pinterest, which were all founded during or just after the global financial crisis, or Alibaba's Taobao that was founded during the SARS outbreak in the People's Republic of China in 2003.

This confirms that periods of crisis are not only a challenge, but also provide new opportunities for entrepreneurship, where start-ups can help address the constraints created by difficult health or economic conditions, and respond to changing preferences and needs. Relevant examples in the time of COVID-19 are outlined below.

First, there are opportunities for start-ups that introduce (or upscale) radical innovations that can be useful in the short run; today, that could mean innovations in tele-medicine, remote personal care, medical equipment, home delivery, food processing, teleworking, online education, contact tracing. These short-term needs have been targeted by some policy interventions. For example, the [European Commission](#) called on start-ups with technologies related to treating, testing, monitoring or other aspects of the COVID-19 outbreak to apply for fast-track funding under the EIC Accelerator program. These however tend to ultimately address specific activities for which there is immediate demand or need.

These policy interventions should aim at providing right conditions and incentives for innovative start-ups and potential entrepreneurs, and boost their potential and capabilities to grasp them. Reducing barriers to entrepreneurship, such as administrative burdens, providing incentives for start-ups and entrepreneurs, ensuring that funding remains available, and boosting entrepreneurial potential and training could limit the detrimental employment and innovation effects of a missing generation of new firms and help speed up the recovery.

CONCLUSION

Gartner sees the pandemic response in three phases. The duration of each phase will vary by country, industry and enterprise — and even by business unit, product or service. The phases are defined primarily by what's happening at each stage:

Immediate actions focused on keeping people safe and essential business functions operating. This relatively short period is marked by high effort and potentially chaotic activity. More organized/coordinated effort to stabilize operations. Medium duration. Key activities: Create a plan to restore a scalable state; Identify capabilities you need to strengthen, refactor, reopen, rehire, rebudget, resupply.

Extended period marked by strategic, durable execution across the organization. Key activities: Learn to conduct operations processes and workflows in new, repeatable, scalable ways; Use lessons learned and emergent patterns from prior phases to coalesce around a new foundation and way forward.

For some, the pandemic has stressed business and operating models to the point of breaking. Organizations will ultimately reduce or retire those activities permanently. This could include moving some business capabilities out into the ecosystem (e.g., SaaS) or removing a product or service entirely. In some cases, retirement is long overdue.

Some organizations may reset by reinventing themselves for the long term. Likely examples are manufacturers that have switched production facilities to create new product suites, or retailers that have found new ways and new ecosystems in which to reach customers who can't visit their physical locations.

Others could reinvent themselves by refocusing their capacity. Think of government service centers that have been forced to offer their services remotely. They may be able to retire some of their physical centers and instead focus on their newfound digital capabilities. Yet others, such as digitalized parts of an organization, might rescale permanently.

As businesses around the world consider how they can return from the torment inflicted by the coronavirus, Brazil's journey from failure to triumph provides food for thought. In a previous article, McKinsey described five qualities that will be critical for business leaders to find their way to the next normal: resolve, resilience, return, reimagination, and reform. We noted that there would likely be

overlap among these stages, and the order might differ, depending on the business, the sector, and the country.

There are four strategic areas to focus on: recovering revenue, rebuilding operations, rethinking the organization, and accelerating the adoption of digital solutions.

During the current crisis, businesses have worked faster and better than they dreamed possible just a few months ago. Maintaining that sense of possibility will be an enduring source of competitive advantage.

Use data, Internet of Things, and AI to better manage operations. In parallel, companies need to incorporate new data and create new models to enable real-time decision making. In the same way that many risk and financial models had to be rebuilt after the 2008 financial crisis, the use of data and analytics will need to be recalibrated to reflect the post-COVID-19 reality. This will involve rapidly validating models, creating new data sets, and enhancing modeling techniques. Getting this right will enable companies to successfully navigate demand forecasting, asset management, and coping with massive new volumes. For example, one airline developed a new app to manage and maintain its idle fleet and support bringing it back into service; and a North American telecommunications company developed a digital collection model for customers facing hardship.

REFERENCES

<https://www.oecd.org/coronavirus/policy-responses/start-ups-in-the-time-of-covid-19-facing-the-challenges-seizing-the-opportunities-87219267/>

<https://www.gartner.com/smarterwithgartner/reset-your-business-strategy-in-covid-19-recovery>

https://www.ey.com/en_gl/covid-19/twelve-insights-to-help-build-your-business-recovery-roadmap

<https://www.inc.com/alex-chriss/5-ways-to-help-your-business-recover-from-pandemic-losses.html>

<https://www.mckinsey.com/featured-insights/future-of-work/from-surviving-to-thriving-reimagining-the-post-covid-19-return>

https://www.ilo.org/empent/areas/business-helpdesk/WCMS_741005/lang--en/index.htm