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The Impact of Coronavirus Pandemic on Supply Chain

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ABSTRACT:

PURPOSE: Business businesses are increasingly focusing on purchasing and offering products and services that have a low environmental impact. However, the coronavirus pandemic is a once-in-a-lifetime occurrence, bringing the supply chain to the attention of the general population.

FINDINGS: At the start of the global outbreak in March, supply chain management faced a big challenge dealing with an unexpected demand for particular products due to government restrictions on travel and production.

PRACTICAL IMPLEMENTATION: To mitigate the impact of Covid -19 on business activities, players in the logistics, transport, and supply chain industries must implement innovative inventory management and distribution measures, as well as form strategic partnerships with players and intermediaries throughout the value chain.

KEYWORD: Covid-19, Pandemic, Social Sustainability, Sustainable Supply Chain Management.

1.1 INTRODUCTION

The study of Supply Chain Management (SCM) methods enhances understanding of how all processes are connected to offer products, services, and information that bring value to customers. Because of the current economic climate and globalization, supply chains are becoming increasingly complicated, making creating, coordinating, and working within them a difficult undertaking. Due to increased environmental and social issues, a shift in focus from the firm to the SC level, as well as alignment of organizational goals with sustainability goals, is required.

1.2 Definition and Evolution OfSupply Chain

The operations required by the organization to deliver goods or services to the consumer are referred to as the supply chain. A supply chain is a focus on the main processes necessary to turn raw materials or component parts into finished products or services within our organization. A supply chain is a network that connects a company's suppliers in order to manufacture and distribute a certain product or service.

1.3 Introduction to Coronavirus

COVID-19 (coronavirus disease of 2019) is an infectious disease. It has expanded globally since its first appearance in China in December 2019, resulting in an ongoing pandemic. Globally, the pandemic has caused severe social and economic devastation, as well as tight social distancing. The COVID-19 pandemic has resulted in a significant loss of human life around the world, and it poses an unprecedented threat to public health, food systems, and the workplace. The pandemic's economic and social effects are devastating: tens of millions of people are at risk of falling into extreme poverty, and the number of people who are undernourished, which is presently estimated to be around 690 million, might rise to 132 million by the end of the year. Strikes, travel restrictions, and one of the world's worst economic downturns since the Great Depression

LITERATURE REVIEW:

Shrivastava is a name given to a person who is (1995) Long-term risks connected with resource consumption, energy utilization and associated costs, product design, pollution, and waste management in a supply chain are reduced.

Beamon is a character in the film Beamon (1999) Green design, resource conservation, harmful material reduction, and product recycling are all part of an extended supply chain that strives to reduce a product's environmental impact across its full life cycle.

Knudsen and Jrgensen (2006) The methods by which businesses manage their social duties across disjointed manufacturing processes that cut across organizational and regional lines. Linton and colleagues (2007) Product design, manufacturing by-products, by-products produced during product usage, product life extension, product end-of-life, and end-of-life recovery operations are all examples of concerns and flows that go beyond the core of supply chain management.

Surveillance (2008) Integration of sustainable development and supply chain management (in which) environmental and social aspects of the supply chain must be considered, avoiding related difficulties while also looking at more sustainable products and processes, is achieved by combining these two concepts.

Muller and Seuring (2008) The management of material, information, and capital flows, as well as cooperation among enterprises along the supply chain, while taking into account goals derived from customer and stakeholder requirements in all three dimensions of sustainability, such as economic, environmental, and social.

wolfwolfwolfwolf (2011) The extent to which a company interacts strategically with its supply chain partners and handles intra- and inter-organization activities cooperatively for long-term sustainability.

Searcy and Ahi (2013) The voluntary integration of economic, environmental, and social considerations with key inter-organizational business systems to efficiently and effectively manage material, information, and capital flows associated with the procurement, production, and distribution of products or services in order to meet stakeholder requirements and improve the organization's profitability, competitiveness, and resilience.

Shevchenko and Pagell (2014) The design, coordination, control, and organization of a supply chain to make it truly sustainable with the minimum expectation of achieving economic viability while ensuring no harm to the environment or social systems over a long period of time is known as sustainable supply chain.

Environmental issues are the primary focus of SSCM study, but social issues are overlooked not only in empirical research. but also in the realm of analytical modeling.

SUPPLY CHAIN MANAGEMENT AND SUPPLY CHAIN MANAGEMENT CONCEPT:

The SCM team can conduct the following processes flawlessly:

• Planning — Creating effective long- and short-term supply chain strategies is the goal of the planning phase. Supply chain leaders must establish integrated supply chain strategies from the architecture of the supply chain network to the prediction of consumer demand.

• Procurement - the purchasing of essential raw materials, components, and items is the emphasis of the procurement process. You're probably used to buying things as a consumer!

• Manufacturing, conversion, and assembly of materials into completed goods or parts for other products are all part of the manufacturing process. Supply chain managers assist with manufacturing and ensuring that critical materials are on hand when needed.

• Distribution - the move process coordinates the logistical movement of commodities along the supply chain. Transportation businesses, third-party

logistics organizations, and others ensure that items get at their destination quickly and safely.

• Customer Interface - the demand process concentrates around all difficulties relating to organizing customer encounters, meeting their demands, and flawlessly delivering orders.

SEVEN PRINCILPLES OF SCM

• Principle 1: Segment customers based on their service demands and adjust the supply chain to profitably serve these segments.
• Principle 2: Tailor the logistics network to the needs of specific client segments in terms of service and profitability.
• Principle 3: Pay attention to market signals and adjust demand planning across the supply chain as needed to ensure consistent predictions and effective resource use.
• Principle 4: Bring the product closer to the customer and speed up communication throughout the supply chain.
• Principle 5: Strategically manage sources of supply to lower the total cost of ownership of goods and services.
• Principle 6: Create a supply chain-wide technology plan that allows for many levels of decision-making and a clear perspective of product, service, and information flow.
• Principle 7: Use channel-spanning performance measurements to assess the group's overall success in effectively and efficiently reaching the end user.

CURRENT RESEARCH IN THE FIELD

There are no comparable comparisons and most recent and ongoing studies in this sector because the coronavirus pandemic was the first pandemic of this magnitude we encountered and was not predicted in the general population. Many academics are presently examining many issues that have been influenced by the epidemic, and there will be numerous papers in the months ahead dealing with the virus's effects. It is important to note that the literature evaluation is inherently preliminary and selective due to the fast-paced nature of the field at the time this study was published. Studies on sustainable SC during and after the coronavirus pandemic focus on the subject of SC localization, general behavioural changes, and the prospect of a shift toward more sustainability, as well as social sustainability challenges. This raises new research questions about the future of just-in-time methods, industrial structures, and storage, as well as the energy and waste losses associated with excess inventory.

MPACTS OF COVID-19 ON SUPPLY CHAIN

The COVID-19 epidemic isn't the first time a tragedy has wreaked havoc on GSCs. Other natural disasters, such as Japan's 2011 mega-earthquake, China's 2003 SARS outbreak, and Indonesia's 2004 tsunami, have resulted in parts and product shortages. It's worth noting that the output recovers in a matter of weeks after these tragedies. COVID-19, on the other hand, will have a distinct influence than any preceding events due to its scale and magnitude. Most natural disasters, such as earthquakes, tsunamis, nuclear or radiation mishaps, and conflicts, are confined to specific geographic areas and last for only a few hours or days. The COVID-19 virus, on the other hand, spread around the world within four months of its first outbreak, putting billions of people under lockdown and absolute confinement, as well as contributing to the partial or complete shutdown of major economic sectors. Furthermore, there is no way of knowing when this pandemic will be contained; each infected place on the planet is unquestionably a high-risk area for a new outbreak. COVID-19, unlike other natural or man-made disasters or infectious pandemics, not only interrupted local supply chains, but it also had a significant impact on GSCs at every stage, from supply sources to ultimate customers. Businesses are interconnected through complex networks of GSCs, as demonstrated by COVID-19, in which the actors at the upstream of a supply chain are severely impacted by the almost "erratic" behavior of downstream actors, primarily large companies, who face disruptions and very sharp variations in demand. For upstream actors, primarily small and medium-sized businesses, the well-known bullwhip impact is disastrous.

MAJOR SUPPLY CHAIN DISRUPTIONS

The COVID-19 pandemic has had a significant impact on GSC pipelines, from raw material supply to product delivery, and disruptions have been reported at all stages of the supply chain. GSC interruptions occurred across the board. In general, products are divided into two categories: utilitarian and inventive. In normal times, supply and demand for functional items are stable. However, due to fluctuating demand and availability, some items, such as masks, have evolved from functional to innovative. During the epidemic, GSCs become known for their quick reaction to clients and great earnings. On the one hand, addressing COVID-19-related disruptions in the GSCs of all product groups is critical. Due to the limited space available, only the GSCs of products that are manufactured and consumed globally and contribute the most to the global economy are chosen for further investigation. Because of the lockdown in many cities, the limited supply of human resources, raw materials, and consumables forced practically all sectors to shut down or suspend operations. Customer expectations for COVID-19 prevention, on the other hand, were increasing. Masks were in high demand, but electronics were fading out of favor. Due to large-scale travel restrictions and border closures, international logistics for maritime, aviation, and terrestrial routes encountered delays, postponements, cancellations, and obstacles.

ANALYSIS OF INDUSTRY DISRUPTIONS AND MITIGATION PLANS.

7.1. Disruption in GSC Layers That Isn't Visible

A GSC is a multitier system with multiple lower-tier suppliers who are vital to the overall supply system's success. For example, a car company may have over 900 tier-1 suppliers, each with an average of more than 500 tier-2 suppliers. Only a few companies, according to the literature, were able to keep track of their suppliers at the tier-2 or higher levels. The GSCs' visibility is reduced by these expanded networks, which favors sluggish reactions to unforeseen injury.

7.2. Mitigation Strategies for Time-Constrained Situations

The timing of the first occurrence, as well as the lockdown of a city or a country, are indicators of an approaching GSC disruption risk for businesses. At both the global and local levels, decision-makers must be vigilant and sensitive to the COVID-19 outbreak's milestones. As a result, the timing of the first case and the first lockdown in a country is critical for businesses since it determines how much time they have to prepare for increasingly restrictive restrictions. The initial lockdown, which can be imposed in a city, a state, or the entire country, serves as a warning of impending problems. Whether a full lockdown is implemented, as in Wuhan, or a partial lockdown, as in South Korea, the logistics and mobility of personnel are subjected to unanticipated limits. The absolute response time (ART) is defined as the time between the first coronavirus case and the imposition of government-imposed limitations.

CONCLUSIONS

It is impossible to predict how global disasters, like as the COVID-19 pandemic, would develop. Firms may, however, establish robust and resilient supply chain systems and readiness plans to mitigate the potential repercussions. The efficacy of emergency preparedness and response is strongly reliant on a thorough understanding of COVID-19's impact on GSCs. This article examines the influence of COVID-19's three distinct characteristics: a longer duration, a greater area, and a broader scope. The industries that have been disproportionately impacted by the disruptions are described and analyzed across the GSC spectrum, from supply sources to ultimate customers. Managerial perspectives on the lack of awareness of interruptions in GSCs, response time windows, and industry solutions to the COVID-19 are discussed. In the event of a disruption, this epidemic drives businesses to rethink their GSCs and improve efficiency and agility. By stressing visibility and reaction to interruptions in complex GSCs, a set of contingent-based continuity strategies is presented to aid organizations in better equipping themselves to reduce risks.

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