

A Strategic Perspective of Supply Chain Resilience: The Impact of Environmental Disruptions on Corporate Strategy

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Abstract

This research aims to show literature that discusses the concept of future supply chain strategies after companies have been disrupted by the environment in the form of the COVID-19 pandemic. Data collection was carried out using the Open Knowledge Maps application, to collect literature related to the environment, strategy and resilience of the company's supply chain in rebuilding the company after its performance was negatively impacted by COVID-19. The research results show that by using the keyword Knowlegde Map of supply chain future strategies, 100 pieces of literature were initially selected that discussed supply chain strategies published after COVID-19 (2021 until now) and were limited by the words "strategy" and "resilience" So 2 articles were produced that could represent the research objectives. The first article discusses the challenges for any strategy to be implemented as intended given the dynamic nature of the organizational environment in which it was formulated. The second article discusses automation, innovative sourcing, technical skills, and supplier relationship management are the key competencies and skills. In addition, networking, goal orientation, creativity, salesmanship, organizational insight, and governance are prerequisites for performing the competencies. The novelty obtained from this research is to reduce the impacts of the subsequent disruptions, companies should implement specific strategic changes and increase complementary skills and competences levels.

Keywords: COVID-19, Complimentary and Competence Skills, Environment, Strategic Changes, Resilience.

INTRODUCTION

The business world has been significantly impacted by the swift transformations occurring in the global economy over the last two decades. At times, economic actors have failed to foresee these changes, resulting in adverse consequences for operational efficiency, including that of supply chains. Such as the 1997 Asian debt crisis (Radelet & Sachs, 1998), the 2008 global financial crisis (Allen & Carletti, 2010), the 2010 recession in Greece and the 2016 recession in Nigeria (Rady, 2012). Over the past decade, natural disasters have also been able to disrupt the supply chains of global companies and cause financial losses (Park et al., 2013; Pettit et al., 2013). In 2011, Japan experienced an earthquake, tsunami and nuclear crisis that disrupted

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supply chains. Catastrophic floods disrupted the supply chains of computer manufacturers in Thailand during the same year. Chopra and Sodhi (2014) also discussed the Japanese automaker's supply chain disruptions experienced by its Thai factory. Ho et al. (2015) argue that to control and minimize the negative impacts caused by these risks, supply chain risk management is necessary. Unlike the previous global recession, the cause of the current 2020 global recession is something new in modern history, the Covid-19 pandemic. Brown (2020) contends that the Covid-19 pandemic is an ecological problem and not a natural disaster, economic crisis, or conventional public health crisis. Social distancing has been encouraged as a result of the coronavirus's spread, which has impeded economic activities and caused the closure of business centers, corporate offices, and financial markets.

The Covid-19 pandemic has significantly impacted the economy and has entered a critical phase. COVID-19 is not a singular obstacle rather, it persists in its evolution until eradication is achieved (Ozili & Arun, 2020). Araz et al. (2020) stated that the coronavirus outbreak has affected the global supply chain. The global economy has been disrupted and more than 94% of the top 1,000 companies have been negatively impacted by the outbreak (Fortune, 2020). The International Monetary Fund (IMF) said the global economy is under pressure and is expected to experience a recession in the second and third quarters of 2020, and will begin to recover in the fourth quarter. Environmental turbulence for companies providing 3PL logistics services still provides prospective business opportunities. Turmoil can be attributed to the COVID-19 pandemic due to the complexity of the problems it generates and the unpredictability and uncertainty that have disrupted the majority of the business world. These dynamics and complexity parameters are an indication of turbulence (Johnson et al., 1989). Logistics service companies that were heavily impacted were manufacturing logistics, while services only experienced this at the beginning of the pandemic and were then able to adapt to new conditions and environments (new normal). The new normal era requires the use of information technology in operational services, such as warehouse management systems, transportation management systems, etc. Companies providing logistics services must also be able to collaborate well with fellow 3PL logistics service providers, retailers and government agencies

Indonesia's logistics performance in 2023 will decrease by 17 places compared to 2018. This position is far behind other Asian countries such as the Philippines, Malaysia, China and Singapore. Performance like this shows there are inefficiencies in the logistics process and logistics costs. Indonesia's Logistics Performance Index (LPI) also did not achieve optimal results. All of these goals were not achieved because the performance of the current infrastructure was not optimal. Maximum results in service, delivery and logistics performance can be achieved if infrastructure as an input in the supply chain

performs well. Business processes and operations in the pandemic era are different from the normal era, several companies providing 3PL logistics services have participated in managing vaccine shipments from the government by setting up cold storage and cold chains. Furthermore, the pandemic witnessed the bolstering of land transportation and warehousing infrastructure in response to emerging consumer behaviors, specifically the proliferation of online purchasing. The National Logistics Ecosystem (NLE) also encourages cooperation between government and businesses. During the COVID-19 pandemic, National Logistic Ecosystem offers opportunities for collaboration between government and party logistics providers to deliver vaccines, medical equipment and other critical goods, as well as access open and share data through a single platform. NLE as a digital platform is a strategic management approach in the logistics and supply chain sector that aims to unite the logistics community across the supply and demand sectors to achieve harmony in the creative process.

LITERATURE REVIEW

VUCA vs BANI

The coronavirus pandemic has presented enterprises, governments, and healthcare systems with unprecedented challenges. Supply chains and logistics operations have been at the forefront of the crisis, grappling with substantial transportation disruptions, movement restrictions, and extreme fluctuations in supply and demand while striving to maintain critical products' supplies in transit. Cascio described the current condition as Brittle (fragile), Anxious (worrying), Non-linear (not straight), and Incomprehensible (un-understandable) (Saefuddin, 2021). Grabmeier (2020) explains that in facing "brittle" conditions, companies must have capacity and adaptability. Worry or "anxiety" requires humans to have a sense of empathy and concern for others. Non-linear conditions require us to understand that problems are interrelated and require transdisciplinary analytical capabilities. Incomprehensible, which means difficult to understand, requires humans to be willing to open up and be able to grasp and predict the future.

The COVID-19 pandemic serves as an external environmental factor that compels organizations to reassess their existing strategies, policies, and procedures aimed at safeguarding their personnel, clients, and activities both presently and in the aftermath of the crisis. (Scherz & Allen, 2020). COVID-19 disrupts supply chain operations locally and globally in a direct manner (Ivanov, 2020). Ivanov and Dolgui (2020) were suggest conducting more empirical research on supply resilience and supply chain robustness, which are indicators of supply chain performance. Robustness was related to the ability to keep supply chain performance running according to plan even though it affected by disruptions (Simchi-Levi et al., 2018), while resilience is crucial so that supply chain performance can recover from the effects of disruptions (Hosseini et al., 2019).

Strategic Management

Aligning the systems, procedures, and organizational structure with the selected strategy is the focus of strategic implementation. It entails making choices on how to align organizational structure and strategy, giving organizational leadership relevant to the strategy, and keeping an eye on how well the strategy is working to accomplish the goals of the organization.

According to Cunningham, strategic management is how businesses prepare to handle a variety of management-related issues, including problem identification, divergent thinking, significant resources, decision-making, innovation, taking chances, and dealing with uncertainty. Bourgeois defined strategic management as the process by which an organization's management formulates and pursues a purpose by coordinating organizational resources with external possibilities and restrictions.

Environmental Turbulence

Environmental Turbulence is a situation that is subject to continuous change, substantial, uncertain, and unpredictable (Eisenhardt & Martin, 2000; Rosca & Moldoveanu, 2009). The COVID-19 pandemic is a form of environmental turbulence that affects the life and development of organizations. Stigter (2002), states that only flexible organizations are able to respond to environmental turbulence quickly and adequately and remain competitive. Stigner concluded that a turbulent environment is a situation of continuous, substantial, uncertain, and unpredictable change.

Nashirudin (2014) conveyed the dimensions used to measure environmental turbulence, consisting of government regulations, technology, competition, and customers. Sihotang et al., (2016) acquired information regarding a substantial correlation between environmental turbulence and the dynamic capability of the organization. The current environmental unrest, specifically COVID-19, has negatively impacted the sustainability of supply chain management, according to the source. Many businesses are close to insolvency as a result of COVID-19 (Chatterjee, 2021). To cope with a volatile environment, it is necessary to develop an effective emergency supply chain strategy. Because in an environment that has high uncertainty, the usual efficiency-oriented supply chain is not appropriate enough to overcome it (Kareem & Kummitha, 2020).

Flexibility Strategy

Flexibility strategy is the ability of the company's manufacturing system to overcome variations in environmental and market conditions and make the system effective (accelerating, efficiency and reducing negative impacts) (Jayant & Ghagra, 2013). As a dynamic capability, flexibility strategy refers to an organization's ability to intentionally generate, augment, or alter its pool of resources (Helfat, 2007). Winter (2003) explains the existence of dynamic capabilities, which are not

ordinary abilities, but higher level (long term) that can be used to expand, and modify, ordinary (short term) abilities. The embodiment of flexibility strategy as a higher capability can be seen in the ability of logistics or manufacturing companies to reconfigure logistics operations capabilities in order to reduce supply chain risks. Companies employ a range of tactics to ensure that operations carry on even in the event of natural disasters or pandemics. Important strategies include building strong relationships with stakeholders for effective communication, investing in state-of-the-art technologies for real-time monitoring and predictive analytics to quickly adapt to changes, and diversifying suppliers to lower the risks associated with relying on a single source (Perego et al., 2011; Cao & Zhang, 2011). Strategically building up essentials to serve as a buffer against disruptions and teaching employees about risk management are two ways to strengthen the supply chain (Kumar et al., 2020; Hohenstein, et al., 2015). National law should facilitate the use of generic strategies to create and maintain a competitive economic advantage.

Resilience Supply Chain

Building robust supply chains has become more crucial for businesses in the face of disruptions like the COVID-19 outbreak. Diversifying suppliers, utilizing cutting-edge technology for in-the-moment monitoring, and keeping strategic inventories of necessities are all methods for bolstering resilience. Businesses that had made investments in digital tools and analytics during the pandemic were better equipped to respond quickly to shifts in supply and demand (Kumar et al., 2020). It has been determined that multi-tier visibility where businesses know about both their direct suppliers and their suppliers' suppliers is a useful tactic for anticipating such disruptions early on (Choi, Rogers, & Vakil, 2020). A more adaptable and responsive supply chain is also a result of human-centric strategies like staff training in supply chain risk management (Ivanov, 2020).

METHODE

This study thoroughly analysed, reviewed and explained each factor in detail from the various previous literature perspectives which is taken by Open Knowledge Maps. This study explored the challenging factors of environmental turbulence such as turbulence changes in the market environment, turbulence of change in the competitive environment, turbulence of changes in the technological environment in industry, and turbulent changes in the government regulatory environment. This research uses a strategic management approach. The process of monitoring and seeking for information regarding the research is known as literature scanning. This research was conducted after the Covid-19 pandemic from early 2021 until present.

RESULTS AND DISCUSSION

Data processing is carried out using the Open Knowledge Maps tool as follows: First stage, by searching for article data on Open Knowledge Maps with the keywords "Supply Chain Future Strategies", "Any" and "Year", 100 recent articles regarding supply chain strategies will appear.

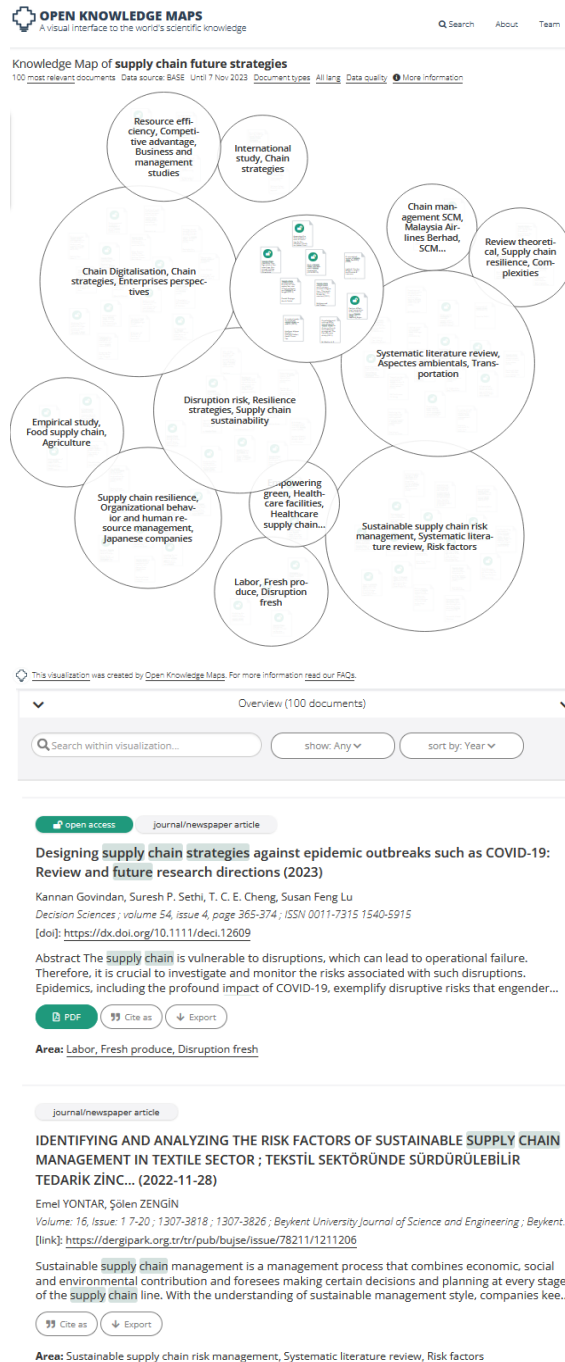
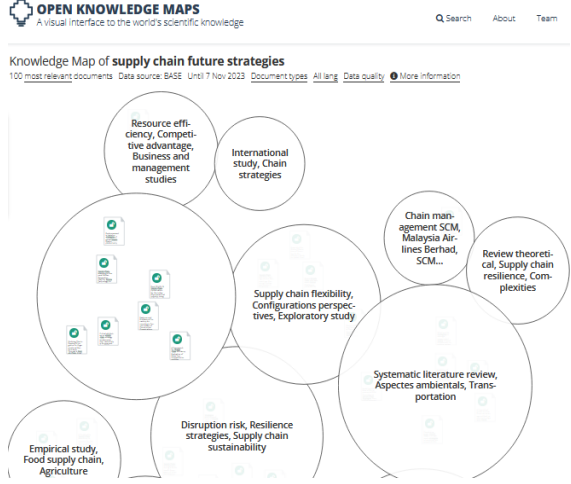
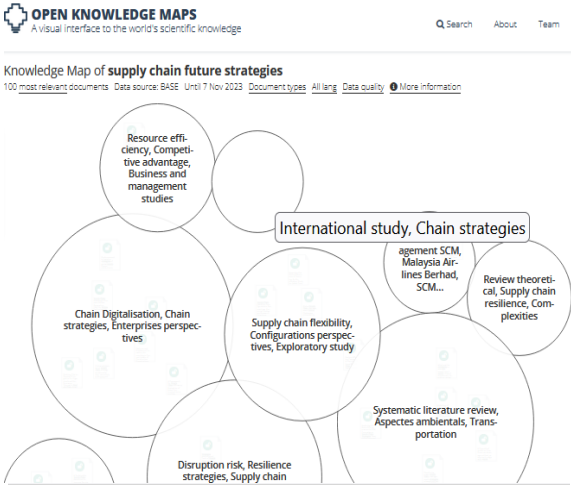


Figure 1. First Stage Visualization

From Figure 1, you can see the formation of 14 areas which store 100 recent articles which can be accessed and which cannot be accessed generally.

Second stage, to facilitate the process of searching for relevant articles, 46 articles were obtained through Open Knowledge Maps

which were "Open Access" and sorted by "Year".



Overview (46 open access documents)

Search within visualization... show: Open Access sort by: Year

open access journal/newspaper article

Resilient Supply Chains in the Face of Disruptions: An In-Depth Study of Strategies Employed by U.S. Companies to Ensure Business Continuity (2023-10-21)

Julia J. Silverman, William P. Eisenhardt, Donald S. Teece
Journal of Strategic Management; Vol. 7 No. 7 (2023); 1 - 10
 [link]: <https://stratfordjournals.org/journals/index.php/journal-of-strategic-management/article/view/1818>

This study retrospectively explores the strategies employed by U.S. companies to ensure business continuity in the face of disruptions within their supply chains. The purpose of this research was to investigate the effectiveness of various resilience strategies adopted by American businesses and ...

PDF Cite as Export

Area: Supply chain resilience, Organizational behavior and human resource management, Japanese co...

open access journal/newspaper article

A Sustainable Supply Chain Revolution to Improve Service and Cost Reduction: An Empirical Study using fsQCA (2023-10-05)

Tanjim Istiaque Chowdhury, Chowdhury Md. Nahian, Rakin Ahmed, Shahriar Reza Khan Rafi, Nazmul Hasan
 [link]: <https://zenodo.org/record/8409728>

: The present-day corporate landscape is evolving toward sustainability, with firms adopting more ecologically and socially accountable procedures. The concept of a sustainable supply chain has emerged as a significant driver of competitive advantage and long-term performance in this settin...

PDF Cite as Export

Area: Empirical study, Food supply chain, Agriculture

Figure 2. Second Stage Visualization

In Figure 2, it can be seen that after selecting an open access journal, the number of areas changed to 10 areas which store 46 of the latest Open Access articles about Supply Chain Future Strategies.

Third Stage, this stage is to look for specific articles related to strategies that are able to withstand COVID-19 and are valid from 2021 and beyond. To search for it use the search modes "Resilience" and "Strategies".

The image shows a screenshot of the Open Knowledge Maps interface. On the left, a 'Knowledge Map of supply chain future strategies' is displayed as a network of interconnected nodes. The nodes include: 'Resource efficiency, Competitive advantage, Business and management studies', 'International study, Chain strategies', 'Chain management SCM, Malaysia Airlines Berhad, SCM', 'Review theoretical, Supply chain resilience, Complexities', 'Supply chain flexibility, Configurations perspectives, Exploratory study', 'Systematic literature review, Aspects environmental, Transportation', 'Disruption risk, Resilience strategies, Supply chain sustainability', 'Chain Digitalization, Chain strategies, Enterprises perspectives', 'Empirical study, Food supply chain, Agriculture', 'Supply chain resilience, Organizational behavior and human resource management, Japanese companies', 'Empowering green, Healthcare facilities, Healthcare supply chain', 'Sustainable supply chain risk management, Systematic literature review, Risk factors', and 'Labor, Fresh produce, Disruption fresh'. On the right, a search results panel is visible, showing the same article details as in Figure 2, with search filters for 'resilience strategies' and 'open access'.

Figure 3. Third Stage Visualization

Two articles that were pertinent to the search terms were found in the search results. The following are the outcomes of the discussion in the article:

First article. The methods used by US businesses to maintain business continuity in the face of supply chain disruptions are examined in retrospect in this study. The aim of this study was to examine the efficacy of different resilience tactics implemented by US companies and to extract knowledge that can guide supply chain management strategies in the future. The issue this study attempted to address was how supply chains are becoming more susceptible to interruptions from things like natural disasters, pandemics, and geopolitical unrest. Businesses may experience major operational difficulties and financial losses as a result of these disruptions. Enhancing supply chain resilience can be achieved by learning from the past approaches taken by American businesses to these problems. A mixed-methods research approach was used to accomplish these goals. It is challenging for any strategy to be implemented as intended given the dynamic nature of the organizational environment in which it was formulated. The multifaceted nature of strategic fit is one of the main causes of these challenges. The strategists' inability to precisely conceptualize the strategic fit stems from traditional methods of strategy formulation. Organizational and environmental factors influence how a strategic fit is implemented. As a result, a strategic fit's predicted behavior veers off course and falls short of delivering on its distinctive competencies.

Second article. Organizational and environmental factors influence how a strategic fit is implemented. The implementation of these strategic changes requires a certain set of abilities and competencies. Automation, innovative sourcing, technical skills, and supplier relationship management are the key competencies and skills. In addition, networking, goal orientation, creativity, salesmanship, organizational insight, and governance are prerequisites for performing the competencies. To increase supply chain resilience, purchasing and supply chain management should invest in providing their employees with this kind of training. A proposed framework has been put forth to outline the competencies and skills required for the suggested strategic adjustments. The main relationship between the four distinct COVID-19 impacts, the required competencies, and the strategic adjustments. None of the four COVID-19 impacts are directly related to the other strategic adjustments and proficiencies required to build more robust supply chains.

CONCLUSION

Compared to companies with non-resilient supply systems, those with resilient supply chains had a 60% higher chance of recovering from interruptions in less than a week. To create a robust supply chain that can lessen the effects of disruptions, a multimodal strategy including technological investment, supplier diversification, and solid

alliances was essential. Resilient Supply Chains in the Face of Disruptions is a crucial study of the tactics employed by businesses to continue operating even in the face of unforeseen issues (Silverman et al., 2023). Though there are many ways to define resilience, it is typically understood to be the capacity to absorb a disruption. In this instance, supply chains are being disrupted by COVID-19. The current trends of globalization and risk management have not made supply chains more resilient; rather, they have made them more susceptible to disruptions. Previously, a supply chain's primary optimization factor was (cost) efficiency. But there were unmanageable supply and demand shocks during the COVID-19 pandemic. Scarce resources and the sharply rising demand for some products led to supply shortages. The result was a state of disruption in the global logistics and production industry. In order to adapt to shifting demands, businesses should also search for greater flexibility in their supply chains. By putting these precautions in place, supply chain risks will be decreased, boosting resilience. Resilience should be given more weight in supply chain optimization strategies, as opposed to the previous few decades' trend of optimizing supply chains based on (cost) efficiency (Kiers et al., 2022).

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