



The Development of Supply Chain Strategies in Post-Covid-19 Pandemic: the New Mindset for Flexibility and Resilience

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The Development of Supply Chain Strategies in Post-Covid-19 Pandemic: the New Mindset for Flexibility and Resilience

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1. Introduction

Covid-19 brought bitter lessons as it revealed the fragility of global supply chain (SC) (Solé et al., 2021; Moosavi et al., 2022). The traditional mindset prioritizing profit and efficiency, illustrated by centralized SC, just-in-time, and single-sourcing strategies once dominated for reducing cost and enhancing competitiveness, has become a hindrance factor for global SC recovery (Kumar Paul et al., 2021). Sarkis (2020) stated it is unlikely for global SC to resume its pre-Covid-19 status if these strategies remain. In addition, the traditional mindset also procrastinates SC 4.0 transition, which is highlighted by increasing visibility and transparency (Rehman et al., 2023). Thus, a new mindset needs adopting when developing new SC strategies.

Therefore, the purpose of this study is to answer questions (1) *“How have supply chain strategies (SCS) changed after Covid-19?”* (2) *“What is the right mindset for supply chain management (SCM)?”* and (3) *“What are the driving forces for the SCS transition?”*

2. Methodology

The literature review method was applied to systematize SC-related studies. Although the research on SCM dates back to the 1980s, the authors mainly focus on SCS-related research from 2020 to 2023, the corresponding time when the global SC adapts against Covid-19.

3. The Mindset Transition

Steady economic development from the late 20th century has brought intense rivalry among corporations, which fostered a profit-oriented mindset, and formed traditional SCS (Panwar et al., 2022). Nevertheless, these strategies have made global SC less resilient and flexible, so it cannot take proactive responses when Covid-19 emerged (Raj et al., 2022).

Strategies aiming for resilience and flexibility had already been devised before Covid-19 arose (López-Castro & Solano-Charris, 2021), but not widely applied due to the traditional mindset as they require high investment and operational costs (Pimenta et al., 2022). However, considerable loss from Covid-19 has motivated corporations to prioritize resilience and flexibility over short-term profit for SCS transition.

4. The SCS Transition

From Centralized to Decentralized

Centralized SC is a traditional model, featuring one central facility to serve different markets (Cui & Idota, 2018). Despite limiting operation costs and regional benefits optimization, it makes global SC more fragile against disruptions (Rezaei et al., 2021, Ye et al., 2022). For decentralized SC, operations are spread over a network of facilities dispersed throughout different regions (Erkoc et al., 2022). Despite high investment, it enhances flexibility as each market operates independently and helps the others whenever problems arise (Tliche et al., 2020).

From Single-sourcing to Diversified Supply-base

Single-sourcing is widely adopted to exploit economies of scale and enhance material standardization (Sawik, 2014). However, global SC would depend on one supplier and increase SC's vulnerability if the selected supplier cannot operate properly (Namdar et al., 2017). Since Covid-19 outbreak, corporations have switched to diversify supply-base strategy and establish supplier development plans to bolster their SC flexibility (Tliche et al., 2020).

From Just-in-time to Just-in-case

Since the 1970s, just-in-time has become a dominant strategy for waste reduction and process optimization (Kannan, 2005). However, with minimal safety stock, any unexpected events can quickly stop SC process (Ye et al., 2022). Therefore, corporations could hardly react when Covid-19 arose (Panwar et al., 2022). Meanwhile, just-in-case mainly prioritizes operational continuity rather than waste and inefficiencies elimination. This requires keeping sufficient inventories as a precautionary measure against SC uncertainties (Choi et al., 2023). Therefore, balancing just-in-time and just-in-case can effectively harmonize efficiency and resilience (Coslett, 2022, Truesdell et al., 2022).

Challenges in SCS Transition

First, this necessitates considerable investment and time as well as operational expenses (Milewski, 2022). Therefore, other challenges include finding appropriate suppliers, supplier development, new facility alignment as well as communication and transparency (Preindl et al., 2020).

5. Driving Forces for the SCS Transition

SC 4.0

SC 4.0 is highlighted by disruptive technologies, which help sense and solve problems before they spread (Frederico, 2021, Choi et al., 2021), but has not been widely applied (Raja Santhi & Muthuswamy, 2022). They also update SC performance, increase visibility and transparency when applying decentralized or diversified supply-base strategies (Syed Abdul Rehman et al., 2023).

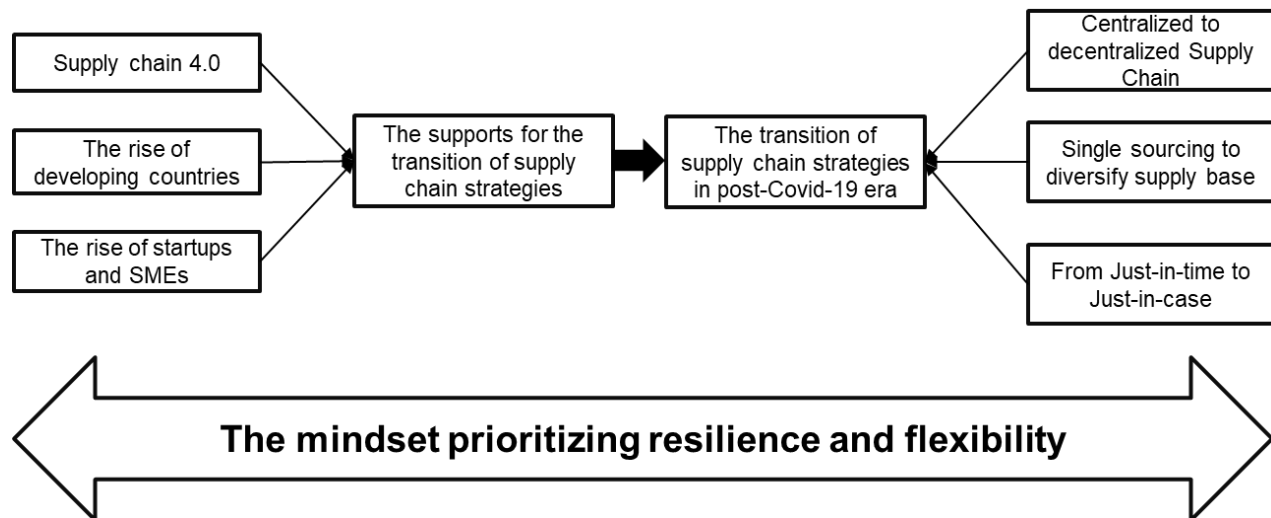
The Rise of Developing Countries

Economic multipolarity has been noticed since the rise of BRICS including developing countries with the common goal for a multipolar and resilient global economy as well as less affected by developed countries (Peters, 2022, Vargas-Hernández, 2023). This helps corporations find alternatives to diversify their supply-base and identify locations for new facilities when each region has an economic powerhouse to become the region's logistics center (Baig et al., 2022, Panwar et al., 2022).

The Rise of Startups and SMEs

The SCS transition and the rise of startups and SMEs have a supportive relationship (Daradkeh & Mansoor, 2023). The global demand to diversify the supply-base has brought opportunities for startups and SMEs to establish relationships with global corporations (Hossain et al., 2022). For global corporations, startups and SMEs not only help diversify their supply-base but also build supplier development plans (Brown et al., 2022, Mota et al., 2022).

The picture below summarizes what was discussed, which is mainly about the SCS transition under the mindset prioritizing resilience and flexibility. Therefore, the new strategies are supported by SC 4.0, the rise of developing countries, and startups and SMEs.



Conclusion

The traditional mindset and SCS have contributed sharply to Covid-19 SC disruption. Therefore, a new mindset that prioritizes resilience and flexibility over immediate profits needs adopting for SCS transition. Despite significant investment and time, it increase resilience and flexibility for global SC, which is essential in the current environment (Kumar Paul et al., 2021).

Theoretically, this paper provides a completed framework for SCS transition after Covid-19. Practically, this research encourages corporations to prioritize flexibility and resilience. Besides, it is recommended that empirical studies should be designed to answer the following questions:

- Q1. How do corporations adapt their SCs through and after Covid-19?
- Q2. How does the new mindset prioritizing resilience and flexibility affect global SC development?
- Q3. What are the most impacting SCS against unexpected situations?
- Q4. What are the effects of decentralized SC for global SC to develop independently?
- Q5. What are the effects of new SCS and SC 4.0, and their integration to improve SC performance after Covid-19?

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