

A survey on Australian supply chains during the COVID-19 pandemic and key resilience strategies

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CHRONICLE

ABSTRACT

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COVID-19 pandemic was one of the most severe sources of disruptions that recently threatened the supply chain networks. As such disruptions are inevitable in today's business world, learning lessons from the COVID-19 pandemic can significantly help supply chains prepare for future disruptions. This study aims to investigate how Australian supply chains were affected during the COVID-19 pandemic and provide some key resilience strategies to face disruptions. These strategies can assist SC managers in protecting their networks from possible disruption in future.

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1. Introduction

The COVID-19 pandemic has affected not only people but also enterprises' performance worldwide since its emergence (Habibi et al., 2022). In Australia, it has caused severe problems in many sectors, especially the economy, as almost 72% of enterprises experienced less income during this period (Australian Bureau of Statistics, 2021). This pandemic and its detrimental effects on industry revealed serious gaps within the supply chains (SCs) and helped most businesses and organizations to understand how vital the resilience concept can be. Resilience refers to the ability of an SC network to resist and recover from disruptions and helps businesses to be able to operate normally in even bad situations (Tan et al., 2020). Disruptions are inevitable in today's business world, and resilience planning is the only solution for responding to such catastrophic events (Gholami-Zanjani et al., 2021). It means that it is necessary to investigate the effects of disruptions on businesses to plan for such future disruptions with the obtained knowledge.

This study aims to present some resilience strategies for SC networks based on lessons from the COVID-19 pandemic in Australia. Obviously, the proposed insights help SC managers to widen their horizons regarding resilience and efficiently make the right decisions in case of possible crises in the future. The rest of this study is structured as follows: Section 2 explains how Australian SCs are affected by the COVID-19 pandemic. The key resilience strategies to face disruptions are discussed in Section 3. Finally, the conclusion of this study is covered in Section 4.

2. Australian SCs and COVID-19 pandemic

During the COVID-19 pandemic, some commercial and individual activities were limited to some extent to prevent the spread of this disease. Hence, these actions and changes in the demand pattern caused serious tension in the SCs, and Australia was not immune from such adverse effects. Figure (1) represents the Australian SC disruptions in different sectors during the COVID-19 pandemic (Australian Bureau of Statistics, 2022). In this survey, industries were questioned about any existing SC disruption from January to April 2022, as well as April 2021 and June 2022.

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Fig. 1. Different Australian supply chain sectors affected by COVID-19 pandemic

Fig. 1 shows that at least two in five (40%) companies were struggling with SC disruption from January 2022 to June 2022. However, construction, accommodation and food services experienced fewer issues in April 2021. Retail business was the sectors with the greatest disruption as it has remained the highest since February 2022.

The question that may arise here is to what extent these industries had disrupted. To answer this question, another survey was conducted (Australian Bureau of Statistics, 2022), the results of which are shown in Fig. 2.

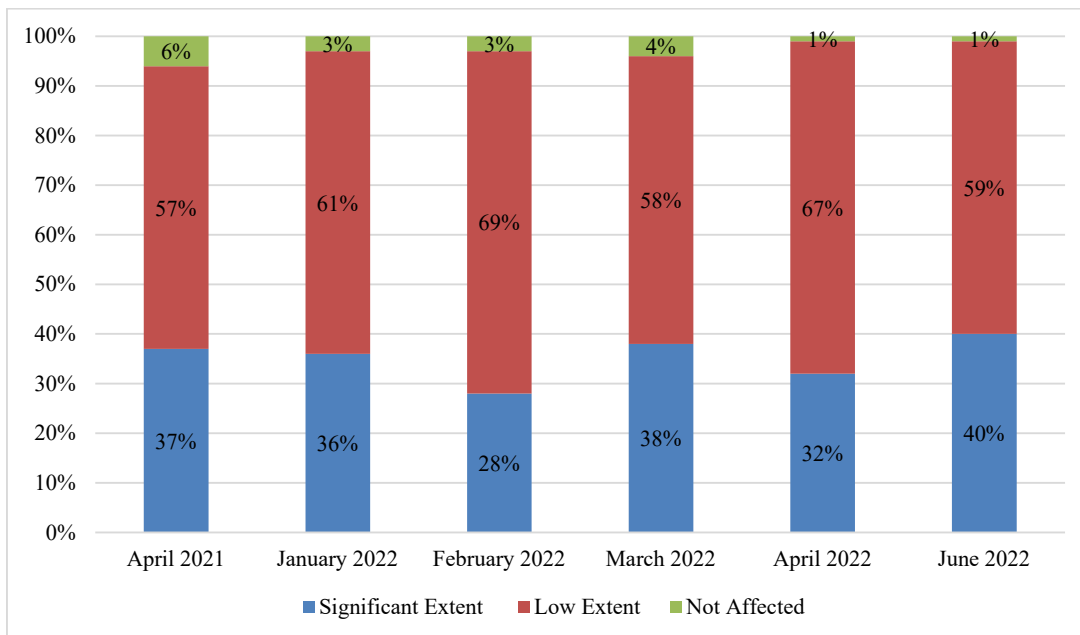


Fig. 2. To what extent Australian supply chains were negatively affected by the COVID-19 pandemic

There might be the expectation that the severity of disruption effects on SC networks has decreased after the pandemic. However, it has not decreased, but the significant extent has increased to touch the 40% in June 2022.

3. Key resilience strategies for supply chains

This section discusses five major strategies that can help businesses ameliorate their resilience during disruption.

- **Creating and developing redundancy:** This strategy includes wisely employing the inventory and spare capacity to be used in case of disruption. During the COVID-19 pandemic, the stock value of some companies fell because of demand fluctuations and failure to satisfy the market demand (Norouzi et al., 2020). As an easy way, additional inventory capacity can increase resilience to face possible disruptions. Having multiple suppliers and extra facilities are other examples of creating redundancy.
- **Portfolio diversification:** It refers to using a wide variety of products/raw materials to lessen reliance on specific products and suppliers (Sato et al., 2017). The COVID-19 pandemic shows that companies with varied raw materials and diversified sourcing channels had better performance to face disruption. Portfolio diversification includes signing agreements with not only public organizations and private businesses but also internal and external companies.
- **Use of information technology (IT):** In today's world, where IT performs a very prominent role in personal and commercial trading, it can benefit businesses with suitable physical and information flows (Gu et al., 2021). The IT facilitates the visibility among entities in SC, helps detect possible threats, and provides the opportunity for collaboration and enjoying the other entities' support.
- **Collaboration and cooptition:** Collaboration is defined as the ability to interact productively and profitably with other SC members (Scholten & Schilder, 2015). Cooptition refers to collaboration with competitors to benefit from synergies (Shekarian & Mellat Parast, 2021). These two policies help businesses be less affected by disruptions and increase recovery speed/level through shared resources.
- **Expanding logistics capabilities:** It means implementing practical solutions to allow the entities to tolerate the adverse effects and quickly recover from disruption. Reducing cycle times and geographic dependencies can increase delivery competence to bring the product closer to the final consumer. Moreover, firms have to enhance their flexibility to adapt to the required changes in the least amount of time. However, this needs assimilating and embracing the risk management culture in the pre-disaster period so that adequate preparation is obtained.

4. Conclusion

Disruptions such as the COVID-19 pandemic threaten human society and the business sector at every single moment. Hence, companies can only survive in the case of employing resilience strategies to deal with such catastrophic events. In the post-COVID era, businesses generally fall within one of two categories: a) businesses that do nothing and hope that such disruption never happens again, b) companies that learn from history and use the gained experience to invest in drawing a new resilience map. The first category takes a perilous risk, and their SCs will be negatively affected with even minimal disruptions. On the other hand, the second category will be the real winners in today's ever-changing environment in the long run. In this study, we discussed the effects of the COVID-19 pandemic on Australian SCs. We also mentioned the critical resilience strategies that can assist SC managers in protecting their networks from possible disruption in future.

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