
Editorial: Special issue on resilient supply chains through innovative logistics management

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Global logistics and supply chains (SCs) have faced challenges arising from trade wars, environmental issues, climate change, natural disasters, increased fuel costs, and particularly the recent global pandemic. Businesses have focused on increasing their SC resilience to maintain their business continuity under unexpected disruptions. This special issue “Resilient supply chains through innovative logistics management” called for research that explores firms’ innovative business models and strategies to improve logistics process and SC resilience. This special issue focuses on developing innovative business models for logistics and SC management from different businesses, industries and countries, allowing a balanced view between theoretical analysis and practical applications.

This special issue collected independent papers and papers presented at the 10th Asian Logistics Round Table (ALRT) Conference in November 2020, hosted by the Australian Maritime College (AMC), University of Tasmania, Australia. The call for this special issue was at the time when the coronavirus disease 2019 (COVID-19) outbreak had disrupted the global economy, and resilient SCs have drawn very much attention to governments, businesses and general public. The call for submission was opened between 30 October 2020 and 31 January 2021. We received 21 submissions, and 17 papers were reviewed. Of the 17 papers reviewed, 8 were accepted and included in this special issue.

The first paper in this special issue by [Wan *et al.* \(2022\)](#) is entitled “Evaluating recovery strategies for the disruptions in liner shipping networks: a resilience approach”. This paper establishes a novel risk-based resilience framework to measure the effectiveness of different recovery strategies for the disruptions in liner shipping networks (LSNs). Four recovery strategies are proposed to test the rationality and feasibility of the developed indicator in aiding decision-making of LSNs from a resilience perspective. The analysis results reveal that the superiorities of different recovery strategies vary depending on both the structures of LSNs and the specific requirements during recovery. Moreover, optimizing the sequence of ports being recovered will improve the overall recovery efficiency of the investigated LSN. The findings of this paper will help improve managerial understandings of recovery strategies to build more resilient LSNs.

The second paper entitled “Resilient route selection of oversized cargo transport: the case of South Korea–Kazakhstan” by [Lu *et al.* \(2022\)](#) evaluates the suitability of the Arctic route for oversized cargoes from Busan (South Korea) to Balkhash (Kazakhstan). This paper adopts the consistent fuzzy preference relation (CFPR) method to tackle the route selection. With the critical factors and alternative routes obtained from literature review and in-depth interviews of experts of oversized cargo-handling with more than 20 years of working experience, the authors use the CFPR calculation process to identify the weightings for each critical factor to evaluate alternative routes. They suggest that the Northern Sea Route (NSR) could be a suitable route from Busan to Cape Kamenny of the Russian transshipment seaport, where oversized cargoes will be transferred to the river barge at Cape Kamenny, covering 4,913 km from the latter to Balkhash of Kazakhstan via the Ob/Irtysh River. This study equipped stakeholders in route selection for cargoes with strategies and methods to improve transportation efficiently and enhance shipping routes between Asia and the Commonwealth of Independent States (CIS).



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Considering the importance of circular economy, the third paper entitled “Closed supply network modelling for end-of-life ship remanufacturing” by [Chhetri et al. \(2022\)](#) designs and optimises a closed-looped supply chain network (CLSCN) with integrated forward and reverse logistics to model the possibility of remanufacturing end-of-life ships. Existing ship wrecking industry clusters in the Western region of India were used as the case study to apply the proposed model. As ship remanufacturing has valuable benefits for customers, businesses, the environment and society, the authors argue that ship remanufacturing can be used as an intervention to help mitigate the risk of degradation of fragile ecosystems, whilst generating employment opportunities with adequate labour laws to protect basic rights and decent wages for vulnerable workers operating in harsh working conditions. The transitioning to ship remanufacturing is a significant and value-added strategy to enhance sustainability of the ship building industry.

The fourth paper by [Singh et al. \(2022\)](#) is entitled “Modelling inter-firm competitive rivalry in a port logistics cluster: a case study of Melbourne, Australia”. The paper models the effect of spatial clustering on various dimensions of inter-firm competitive rivalry among port logistics firms. It empirically validates Porter’s five forces model in the context of port logistics clusters (PLCs). A total of 379 valid responses were collected through the questionnaire survey to logistics firms directly or indirectly dependent on the Port of Melbourne. Based on the analysis results, the authors argue that the impact on rivalry is significant when port logistics firms are clustered, and this effect is further augmented when they cluster around the port. The growth in global trade and its effect on increased demand for logistics activities has favoured the agglomeration of logistics firms around transport hubs. This study provides empirically grounded evidence for firms to evaluate co-location decision choices and help buyers and sellers to devise business strategies to enhance inter-firm competitive rivalry and bargaining power.

The fifth paper, entitled “Using importance–performance analysis, goal difficulty and the Kano model to prioritise improvements in the quality of home delivery logistics services” by [Hu et al. \(2022\)](#), discusses the importance and relevant satisfaction levels of service quality attributes from the perspective of customers while also considering the limitations of companies’ resources and capabilities. A three-dimensional model that integrated Kano model, goal difficulty (GD) and importance–performance analysis (IPA) was used for investigating service quality aspects emphasized by customers and prioritizing attributes. The results indicate the three most important attributes, ranked in order of priority for improvement, were the protection of customers’ personal information, delivery of products without damage and reasonable compensation standards for product damage. The authors argue that customer satisfaction can be optimised, and customer dissatisfaction can be reduced by developing reasonable compensation standards for item damage, ensuring that items are delivered intact and protecting the personal information of customers.

The sixth paper by [Dovbischuk \(2022\)](#) is entitled “Innovation-oriented dynamic capabilities of logistics service providers, dynamic resilience and firm performance during the COVID-19 pandemic”. It uses a theoretical framework to investigate the relationships between different innovation-oriented dynamic capabilities, dynamic resilience and firm performance among logistics service providers (LSPs) and in-house logistics departments of industrial companies during the COVID-19 pandemic. The author indicates a range of innovation-oriented capabilities for achieving more dynamic resilience that are bundled in a conceptual framework and are found to be statistically significant for logistics service quality and firm performance. They are the capability to distribute new knowledge, to train employees effectively, to develop cross-functional collaboration within the firm, to develop inter-firm relationships with business partners on a long-term basis as well as to learn from rivals, and to pursue a win–win relationship with them.

The seventh paper entitled “Enhancing healthcare supply chain resilience: decision-making in a fuzzy environment” by [Rehman and Ali \(2022\)](#) prioritizes resilience strategies for healthcare SCs while considering the risks that most severe, probable to occur and have the lengthiest periods of recovery. It proposes a novel multiple-criteria decision-making (MCDM)-based approach for ranking resilience strategies, in light of the most probable, severe and long-lasting risks. The authors indicate that Industry 4.0 (I4.0), multiple sourcing, risk awareness, agility and global diversification of suppliers, markets and operations are the most significant resilience strategies. Particularly, they recommend that SCs should move toward digitalisation and artificial intelligence (AI) that are used not only for monitoring but also for prediction purposes. This will provide an added competitive advantage besides the reduction of human error and tracking issues.

Finally, the eighth paper entitled “Contributions of Industry 4.0 to SC resilience” by [Tortorella et al. \(2022\)](#) conducts a scoping review on the literature to identify the contribution of the integration of I4.0 into SCs with the objective of enhancing SC resilience. The authors indicate that the literature on the design of resilient digital SCs is far outnumbered by works reporting applications of I4.0 ICTs at different SC tier levels. However, digital technologies may play a key role in reducing disruption risks in SCs. They build a conceptual framework for the development of resilient SCs through I4.0 integration and propose three research directions, i.e. empirical validation of the contribution of I4.0 ICTs to SC resilience; exploration of the role of processing-actuation technologies in enhancing restorative capacity; and integration between I4.0 ICTs and omni-channel strategy as a means to resilience development at consumer and retail levels.

These eight papers explore several aspects of logistics management and strategy towards SC resilience for various sectors including shipping, shipbuilding, port, LSP and healthcare. The aspects of logistics management cover recovery strategies for disruption, optimising shipping route selection, remanufacturing of end-of-life ship, co-location of logistics firms at a port, an innovative tool for logistics performance analysis, innovation-oriented dynamic capabilities, resilient strategies for healthcare SCs and application of I4.0. These papers have contributed to the literature of the SC resilience from various logistics management perspectives.

Finally, we would like to thank all the reviewers who provided valuable comments on the submitted manuscripts to improve quality. We appreciate the *International Journal of Logistics Management (IJLM)* for offering us the opportunity to be the guest editors. Our great thanks to the editor-in-chief of the *IJLM* for her endless support and assistance.

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