



Call for Papers

Special Issue of Foundations of Computing and Decision Sciences

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Special Issue:

“Recent advances on supply chain network design”

Deadline for Submissions: 31 August 2022

1. AIMS AND SCOPE

Discussions of the resiliency, sustainability, and agility of supply chains are important in the research and management of supply chains in these difficult times, considering the ongoing pandemic of COVID-19 [1]. Ivanov [2] proposed that a viable supply chain is characterized by resiliency, sustainability, and agility in its network design. Resiliency is essential because disruption and demand fluctuations are forced upon SCs, and the effects of these for many managerial supply chains are unknown. In addition, applying novel technology in the supply chain, such as blockchain, Internet-of-Things (IoT), and artificial intelligence (AI) as agility tools can assist and enable the transition to lean production. We, as researchers, should propose methods using a mathematical modeling approach to improve the current situation and mitigate the crisis. There is great fluctuation of demand, and given that customers are preferentially shifting to e-commerce, many supply chains that lack e-commerce are destined to fail. In addition to resiliency and agility, we should pay more attention to the sustainability and greenness of a supply chain in terms of its network design or production planning. In the strategic, tactical, and operational decisions, we should consider the environmental impact, energy consumption, and social impact [3,4]. Carbon emissions, carbon trading, and waste management are effective solutions to decrease the environmental impact. Using renewable and clean energy is one strategy to apply viable management [5]. In this complex situation, given the pressure on people, we have to retain and maintain human resources that represent the best solution to ensure the welfare and suitability of the supply chain. In addition, applying new technologies such as blockchain technology and running smart contracts require modeling to demonstrate the advantages of the new technology [7,8]. This Special Issue (SI) aims to investigate management of resiliency and sustainability in supply chains. We are thus seeking contributions from authors presenting novel mathematical models toward ensuring resiliency, sustainability, and agility in supply chains.

Topics of interest include but are not limited to:

- Recent advances in supply chain network design
- Viable supply chain studies based on a mathematical modelling approach [7,8]
- Resilient supply chain studies based on a mathematical modelling approach
- Sustainable supply chain studies based on a mathematical modelling approach
- Robust supply chain studies based on a mathematical modelling approach
- Agile and lean supply chain studies based on a mathematical modelling approach
- Resilience and sustainable supply chain studies based on a mathematical modelling approach
- Use of renewable energy for supply chain studies based on a mathematical modelling approach [3,6]

- Use of novel technologies such as blockchain, Internet-of-Things (IoT)
- Artificial intelligence (AI) for viable supply chains combined with a mathematical modelling approach
- Applicable of 3D printing for viable supply chains with a mathematical modelling approach
- Novel inventory management in supply chains

[1] Lotfi, R.; Mehrjerdi, Y.Z.; Pishvae, M.S.; Sadeghieh, A.; Weber, G.-W. A robust optimization model for sustainable and resilient closed-loop supply chain network design considering conditional value at risk. *Numer. Algebra Control Optim.* 2021, 11, 221.

[2] Ivanov, D. Viable supply chain model: integrating agility, resilience and sustainability perspectives—lessons from and thinking beyond the COVID-19 pandemic. *Ann. Oper. Res.* 2020, 1–21.

[3] Zare Mehrjerdi, Y.; Lotfi, R. Development of a mathematical model for sustainable closed-loop supply chain with efficiency and resilience systematic framework. *Int. J. Supply Oper. Manag.* 2019, 6, 360–388.

[4] Lotfi, R.; Mardani, N.; Weber, G.W. Robust bi-level programming for renewable energy location. *Int. J. Energy Res.* 2021, 45, 7521–7534.

[5] Lotfi, R.; Yadegari, Z.; Hosseini, S.H.; Khameneh, A.H.; Tirkolae, E.B.; Weber, G.-W. A robust time-cost-quality-energy-environment trade-off with resource-constrained in project management: A case study for a bridge construction project. *J. Ind. Manag. Optim.* 2020, doi:10.3934/jimo.2020158.

[6] Lotfi, R.; Kargar, B.; Hoseini, S.H.; Nazari, S.; Safavi, S.; Weber, G.W. Resilience and sustainable supply chain network design by considering renewable energy. *Int. J. Energy Res.* doi:10.1002/er.6943.

[7] Lotfi, R., Safavi, S., Gharehbaghi, A., Ghaboulian Zare, S., Hazrati, R., & Weber, G. W. (2021). Viable Supply Chain Network Design by considering Blockchain Technology and Cryptocurrency. *Mathematical Problems in Engineering*, 2021.

[8] Lotfi, R., Kargar, B., Gharehbaghi, A., & Weber, G. W. (2021). Viable medical waste chain network design by considering risk and robustness. *Environmental Science and Pollution Research*, 1-16.

3. Submission Instructions:

The special issue is planned to be published during 2022, the assignment of accepted papers to the given volume (and its date) depends on the finishing the reviewing and revision process. Submissions should follow the journal's style and guidelines presented here: <http://fcds.cs.put.poznan.pl/FCDS/Submissions.aspx>.

Manuscript submission must be made by e-mail to the following address that authors should mention in their letter to the Editorial Office that the manuscript is submitted to this “Special Issue”: fcds@cs.put.poznan.pl.

4. IMPORTANT DATES

31 August 2022	Submission deadline
31 October 2022	Notification of the first round review
31 December 2022	Revised submission due for guidance only
31 January 2023	Final notice of acceptance/reject

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