

Carbon Footprint and the Adoption of Supply Routing Tactics in Multi-Facility Networks

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Abstract

With globalization of business, firms are sourcing, manufacturing, and distributing goods across the globe. These extended supply networks have long replenishment lead-times which often lead to substantial imbalances between the facilities where some facilities have excess inventories while others have lower than desired inventory levels. In this study, we first conduct a series of experiments to provide managerial insights on the deployment of supply routing tactics (diversion, expedite, and transshipment) under different exogenous operating conditions in terms of suppliers, network configurations and product types. Subsequently, we evaluate how incorporating carbon emission concerns would impact the deployment of these tactics.

Keywords

Supply chain, Routing tactics, Carbon footprint and Sustainability.

Biography

Seyed Mehdi Zahraei is currently a senior lecturer in the Logistics and Supply Chain Management Programme at the Singapore University of Social Sciences (SUSS) School of Business. Prior to joining SUSS, he worked as an assistant professor at the Embry-Riddle Aeronautical University (ERAU). Before joining the ERAU, he was a logistics and transportation systems postdoctoral research fellow in the Singapore University of Technology and Design, and supply chain management research fellow at Nanyang Technological University in Singapore. His main research interests are supply chain management, sustainability in logistics and transportation systems, production planning, and freight management, and urban logistics.