

Supply Chain Resilience in Global Uncertainty: Framework, Trends, and the Impact of Digitalization

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Abstract

Following recent disruptions and global economic uncertainty, supply chain resilience is increasingly viewed as a value-creating business function rather than a cost. Recognizing its strategic advantage, industry leaders are considering implementing resilience strategies across supply networks. This paper traces the origins and evolution of supply chain resilience research, identifies key trends in its development, and examines the role of digitalization tools in shaping its future. Based on a systematic review of 36 definitions from peer-reviewed publications, we analyze the concept of supply chain resilience and synthesize these insights into a comprehensive framework that incorporates its dimensions, phases, and development trends. Our research investigates the role of specific digitalization tools in enhancing supply chain resilience in the upcoming years. The findings provide business executives with insights to identify which digitalization tools best align with their resilience objectives, as well as academia with future research directions.

Keywords

Supply chain management, supply chain resilience, resilience, resilience strategies.

Biographies

Denys Yashchuk is a fourth-year student, pursuing a Bachelor's degree in Economics at Taras Shevchenko National University of Kyiv in Ukraine. He conducts a research internship under the Mitacs GRI program at the University of

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Sharfuddin Ahmed Khan is currently an Associate Professor and Associate Program Chair of Industrial Systems Engineering at the University of Regina, Saskatchewan, Canada. Prior to this role, he served as a Lecturer (September 2009 – August 2019) and later as an Assistant Professor (September 2019 – December 2021) at the University of Sharjah, United Arab Emirates. He then joined the University of Regina as an Assistant Professor (January 2022 – June 2025) before being promoted to his current position. Dr. Khan has contributed extensively to top-tier academic journals and Scopus-indexed conferences in areas such as supply chain management, sustainability, and engineering management. His research has been published in renowned journals, including *Business Strategy and the Environment*, *Supply Chain Management: An International Journal*, *IEEE Transactions on Engineering Management*, *Production Planning and Control*, *International Journal of Production Research*, and *Operations Management Research*, among others. He has also authored book chapters and published books with leading academic publishers such as Taylor & Francis and Emerald Publishing. Dr. Khan has successfully secured significant research funding and has supervised and co-supervised numerous graduate students at the master's and doctoral levels. His research continues to make a strong academic impact. A detailed overview of his scholarly work is available on his [Sharfuddin Ahmed Khan - Google Scholar](#).

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