

# **Towards Resilient Supply Chain Practices: The Role of Digital Supply Chain Technologies**

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## **Abstract**

The COVID-19 pandemic revealed significant vulnerabilities in global supply chains, including delayed digital adoption, fragmented infrastructure, and an overreliance on historical data-driven algorithms. These challenges highlighted the need for resilience and adaptability in supply chain operations, particularly through the strategic integration of digital technologies. This study investigates how digital supply chain technologies contribute to building resilience within manufacturing firms, using the Task-Technology Fit (TTF) model as a theoretical framework. The research explores the alignment between digital tools and operational requirements, emphasizing the critical role of system thinking, IT competencies, and contextualized technology deployment. A survey of manufacturing firms was conducted to empirically test the relationship between adoption of digital technology and supply chain resilience. The findings indicate that resilience is significantly enhanced when digital technologies are effectively matched with specific operational tasks. Moreover, organizational preparedness and the judicious use of emerging technologies were found to play pivotal roles in improving supply chain performance. This study contributes to both theory and practice by demonstrating that supply chain resilience depends not only on the adoption of digital innovations but also on their strategic alignment with operational needs.

## **Keywords**

Resilient, Supply Chain Practices, Digital Supply Chain Technologies, Covid-19.