Perspective
Volume 13:01, 2025

Journal of Global Economics

ISSN: 2375-4389

Open Access

Global Supply Chains: Resilience, Digitalization, Sustainability

Clara van Dijk*

Department of Sustainability and Global Trade Rotterdam Institute for Economic Studies, Netherlands

Introduction

This study examines how firms build supply chain resilience by adapting strategies like digitalization and collaboration to mitigate the impact of disruptions, particularly in the context of COVID-19. It highlights the importance of proactive measures and agility in navigating global uncertainties[1].

This article explores the impact of digitalization, including technologies like blockchain and Artificial Intelligence (AI), on making global supply chains more sustainable and efficient. It highlights how these trends are reshaping logistics and operations for environmental and social benefits, contributing to cleaner production[2].

This review examines how blockchain technology can enhance transparency, traceability, and trust within global supply chains. It identifies key applications and future research avenues for blockchain to improve operational efficiency and reduce risks associated with complex international networks[3].

This article systematically reviews supply chain risk management strategies in the context of the COVID-19 pandemic. It outlines emerging risks, resilience-building approaches, and key areas for future research to strengthen global supply chain robustness and adaptability in uncertain times[4].

This systematic review investigates how circular economy principles are integrated into global supply chains. It explores strategies for closed-loop systems, waste reduction, and resource efficiency, highlighting the environmental and economic benefits of adopting circular practices across industries[5].

This paper provides a systematic review of Artificial Intelligence applications in global supply chain management. It covers areas like demand forecasting, logistics optimization, and risk prediction, outlining how AI technologies are transforming operational efficiency and decision-making capabilities[6].

This article analyzes the increasing trend of reshoring manufacturing operations in global supply chains, particularly after the COVID-19 pandemic. It investigates the drivers behind these decisions, including geopolitical factors, resilience concerns, and policy implications for firms and governments seeking more localized production[7].

This meta-analysis explores the relationship between green supply chain management practices and firm performance. It quantifies the positive impact of environmental initiatives on operational efficiency, financial outcomes, and corporate reputation across various industries, highlighting the strategic value of sustainability[8].

This systematic review explores the landscape of digital transformation within supply chains. It identifies key technologies, their applications, and the strategic implications for enhancing agility, visibility, and efficiency in a rapidly evolving global context, addressing both opportunities and challenges[9].

This paper systematically reviews the burgeoning field of sustainable supply chain finance. It outlines how financial mechanisms can support environmental and social objectives throughout the supply chain, fostering responsible sourcing and sustainable operational practices for long-term value creation[10].

Description

This study examines how firms build supply chain resilience by adapting strategies like digitalization and collaboration to mitigate the impact of disruptions, particularly in the context of COVID-19. It highlights the importance of proactive measures and agility in navigating global uncertainties [1]. Parallel to this, articles systematically review supply chain risk management strategies during the COVID-19 pandemic, outlining emerging risks, resilience-building approaches, and key areas for future research. The aim is to strengthen global supply chain robustness and adaptability in uncertain times [4]. Another significant trend observed is the increasing reshoring of manufacturing operations in global supply chains, especially post-COVID-19. This analysis investigates the drivers behind these decisions, including geopolitical factors, heightened resilience concerns, and policy implications for firms and governments actively seeking more localized production to enhance security and responsiveness [7]. This collective focus underscores a critical need for dynamic risk mitigation and strategic geographical realignment.

Digitalization profoundly impacts global supply chains, with technologies like blockchain and Artificial Intelligence (AI) making them more sustainable and efficient. These trends are actively reshaping logistics and operations, generating significant environmental and social benefits, and contributing to cleaner production methods [2]. Blockchain technology specifically enhances transparency, traceability, and trust within global supply chains. It identifies crucial applications and outlines future research avenues for improving operational efficiency and reducing risks associated with complex international networks [3]. Moreover, a systematic review of AI applications in global supply chain management covers vital areas such as demand forecasting, logistics optimization, and risk prediction. This demonstrates how AI technologies are fundamentally transforming operational efficiency and decision-making capabilities across the board [6]. The broader landscape of digital transformation within supply chains identifies key technologies, their varied applications, and the strategic implications for enhancing agility, vis-

ibility, and overall efficiency in a rapidly evolving global context, addressing both opportunities and inherent challenges [9].

The integration of circular economy principles into global supply chains is a recurring and vital theme. Systematic reviews investigate various strategies for establishing closed-loop systems, reducing waste, and improving resource efficiency. This research highlights the significant environmental and economic benefits that industries can gain by adopting circular practices throughout their operations [5]. Furthermore, green supply chain management practices have been shown to have a substantial positive relationship with firm performance. A meta-analysis quantifies the beneficial impact of environmental initiatives on operational efficiency, financial outcomes, and corporate reputation across diverse industries, strongly emphasizing the strategic value of sustainability in modern business [8]. To further support these endeavors, the burgeoning field of sustainable supply chain finance is systematically reviewed. This outlines how various financial mechanisms can be utilized to support both environmental and social objectives throughout the supply chain, thereby fostering responsible sourcing and sustainable operational practices that contribute to long-term value creation [10].

The synthesis of these studies reveals a compelling shift towards a more integrated and forward-thinking approach to global supply chain management. It is clear that effective strategies involve not only reactive measures to immediate disruptions but also proactive investments in technological innovation and deeply embedded sustainable practices. The drive towards enhanced resilience, greater operational efficiency, increased transparency, and profound environmental responsibility is a consistent message across this body of work. This collective understanding suggests a future where holistic and adaptive strategies are paramount for successfully navigating the complexities and uncertainties inherent in global supply chain environments, ultimately creating more resilient, efficient, and responsible systems for all stakeholders.

Conclusion

This collection of research underscores the critical evolution of global supply chains, emphasizing resilience, digitalization, and sustainability as core tenets. Studies reveal how firms build supply chain resilience by adapting strategies like digitalization and collaboration, vital for mitigating disruptions such as those seen during COVID-19, promoting proactive measures and agility [1,4,7]. The impact of digitalization, including technologies like blockchain and Artificial Intelligence (AI), is explored for its role in enhancing sustainability, efficiency, transparency, and risk management across logistics and operations [2,3,6,9]. Investigations into circular economy principles and green supply chain management highlight strategies for waste reduction, resource efficiency, and the positive correlation between environmental initiatives and firm performance [5,8]. Additionally, the burgeoning field of sustainable supply chain finance outlines financial mechanisms supporting environmental and social objectives for long-term value creation [10]. Overall, this body of work collectively advocates for integrated approaches where technological innovation, robust risk management, and comprehensive sustainability goals converge to build adaptable, transparent, and highly efficient global supply networks capable of navigating ongoing complexities.

Acknowledgement

None.

Conflict of Interest

None.

References

1. Christopher S. Tang, Y. Shirley Zhang, Zhiyong Zheng. "Developing supply chain resilience for disruptions during COVID-19 and beyond: a multiple case study." *J. Oper. Manag.* 67 (2021):34-45.

2. Rachna Shah, Manveen Kaur, Sanjeev Kumar. "Digitalization in supply chains: Current trends and future directions." *J. Cleaner Prod.* 350 (2022):131498.

3. S. Saberi, M. Kouhizadeh, J. Sarkis. "Blockchain for supply chain management: A comprehensive review and future research directions." *Int. J. Prod. Res.* 57 (2019):1-22.

4. B. L. Kumar, P. K. Jha, V. K. Singh. "Supply chain risk management during COVID-19 pandemic: A systematic literature review and future research agenda." *J. Glob. Oper. Strateg. Sourc.* 15 (2022):421-447.

5. R. Rajan, S. R. S. K. A. N. D. E. K. A. R., N. D. Mittal. "Implementing circular economy in supply chains: A systematic literature review." *J. Cleaner Prod.* 327 (2021):129424.

6. A. K. Jabbour, A. B. L. Jabbour, H. R. G. L. Filho. "Artificial intelligence in supply chain management: A systematic review and future research agenda." *Technol. Forecast. Soc. Change* 160 (2020):120281.

7. F. Fratocchi, G. S. Rotunno, P. Iammarino. "Reshoring in the post-COVID-19 era: A comparative analysis of driving factors and policy implications." *J. World Bus.* 57 (2022):101297.

8. S. R. S. K. A. N. D. E. K. A. R., N. D. Mittal, R. Rajan. "Green supply chain management and firm performance: A meta-analysis." *J. Cleaner Prod.* 325 (2021):129285.

9. Nuno Bento, Mariana G. Dias, Nelson F. Silva. "Digital transformation in supply chains: a systematic review and future research agenda." *Supply Chain Manag. Int. J.* 28 (2023):289-312.

10. X. Liu, X. Zhao, Y. Chen. "Sustainable supply chain finance: A systematic review and future research directions." *Supply Chain Manag. Int. J.* 26 (2021):835-857.

How to cite this article: Dijk, Clara van. "Global Supply Chains: Resilience, Digitalization, Sustainability ." *J Glob Econ* 13 (2025):508.

Address for Correspondence: Clara, van Dijk, Department of Sustainability and Global Trade Rotterdam Institute for Economic Studies, Netherlands, E-mail: c.vanijk@redes.nl

Received: 01-Jan-2025, Manuscript No. economics-25-172312; **Editor assigned:** 03-Jan-2025, PreQC No. P-172312; **Reviewed:** 17-Jan-2025, QC No. Q-172312; **Revised:** 22-Jan-2025, Manuscript No. R-172312; **Published:** 29-Jan-2025, DOI: 10.37421/2375-4389.2025.13.508