

EDITORIAL

Navigating Complexity: Interdisciplinary Approaches to Sustainable Supply Chain Management

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Abstract

This editorial introduces a special issue dedicated to exploring sustainable supply chains through an interdisciplinary lens, incorporating theories from International Relations (IR) to better understand the complexities of global logistics in an era marked by significant geopolitical shifts. As the demand for sustainable business practices grows, this issue highlights innovative research that integrates environmental, social, and economic considerations into supply chain management. The contributions within this issue apply a mix of realist and liberalist IR perspectives to dissect the dynamics of global and local supply chain strategies, focusing on industries such as shipping and the growing influence of artificial intelligence in supply chain practices. By merging theoretical approaches from IR with practical supply chain issues, the articles offer novel insights into how businesses and policymakers can navigate the challenges of sustainability amid global uncertainties. This issue not only advances academic discourse but also proposes actionable frameworks for practitioners aiming to implement robust and responsible supply chain strategies. The overarching message advocates for a concerted effort to align international cooperation with corporate governance to foster sustainable and resilient supply chains worldwide.

KEYWORDS

Sustainable Supply Chains; International Relations Theories; Global Governance; Environmental Sustainability; Social Responsibility; Economic Sustainability; Realism and Liberalism Artificial Intelligence Ethics; Urban Sustainability; Industry 4.0.

This editorial is intended to introduce this special issue on sustainable supply chains. We know that a sustainable supply chain, rather than simply providing a satisfactory service to customers, also strives to have as little impact as possible on the environment, while also implementing socially responsible practices (Lissillour and Silva 2024).

A sustainable supply chain should aim to achieve all three of these objectives (Bonet Fernandez and Lissillour 2023). From a theoretical point of view, we still need to determine the framework within which this chain must be designed to meet these three expectations. In this special issue, we seek to shed light on how supply chains need to be constructed by integrating environmental, social and economic challenges in the context of an unstable geopolitical situation.

To do this, we felt it necessary to mobilize an interdisciplinary body of theory, taking into account international relations (IR) theories in particular (as in the thesis of Lissillour (2017)). The articles in this special

issue apply these IR theories to logic chains, considering realistic data, notably linked to the prospects of globalization and a critical approach to management practices.

The analyses in the contributions below show how corporate governance exerts a strong influence on the resilience and sustainability of global supply chains. To illustrate this, they explore industries such as shipping in particular. Through multidisciplinary work, the authors have been able to incorporate several theoretical approaches and propose cross-cutting methodologies that offer new perspectives for building sustainable supply chains.

So, Beinn Purvis and Dominique Bonet Fernandez in Sustainability in global industrial shipping chains: a positivist perspective of international relations, examines supply chain sustainability in global industrial shipping through the lenses of International Relations theories, particularly realism and liberalism (Purvis and Bonet Fernandez 2024). It contrasts these perspectives to analyze how states, international organizations,

and private actors influence the management of sustainable supply chains. The findings indicate that realism emphasizes state power and national interests, while liberalism highlights the role of international cooperation in enhancing sustainability. This research offers a framework for policymakers and businesses to balance national interests with global collaboration on sustainability challenges. Ultimately, it enriches the supply chain management literature by integrating geopolitical dynamics and international relations insights.

In addition, Valérie Chapuis and Delphine Guégan, in *Empowering the exercise of responsibility in the design, implementation and use of AI-based systems*, addresses the ethical challenges of AI-based systems and calls for a culture of individual and collective responsibility among AI practitioners (Chapuis 2024). It utilizes three theoretical frameworks—Morin (1982)'s complex thinking, Ardoino (2000)'s multi-referential approach, and Yves Clot's clinic of activity—to promote responsible AI management through reflective practices. The authors emphasize that ethical responsibility lies with the individuals involved in AI, advocating for structured methodologies that include training and cultural adaptation. Organizations are encouraged to foster a culture of responsibility through continuous education and ethical discussions. Overall, the article offers a holistic perspective on integrating responsibility into AI design and deployment, aligning technological innovation with societal expectations, thus contributing to the rising field of AI (Wei 2024, Sahut et al. 2023, Lissillour and Monod 2024).

From their point of view, Vavřina and Drdla, in *Governance of social attributes behind ESG concepts in business entities: an empirical evidence based on the benchmarking approach*, discusses the challenges of human resource management failures in both developed and developing economies, linking it to the qualitative and quantitative needs of the workforce as a production factor. It emphasizes the importance of managing labor costs, including social and health insurance, in relation to business competitiveness and sustainability. The text highlights the role of legal requirements in improving employee conditions, which can enhance productivity and economic development. Additionally, it addresses the necessity for businesses to disclose social and environmental risks and opportunities due to current and upcoming EU legislation. Lastly, it mentions the World Benchmarking Alliance, which assesses companies.

Finally, Jean-Claude Lévy and Dominique Bonet Fernandez, in *The Superego of the City: Integrating Psychoanalytic Theory with Sustainable Urbanization in the Age of Industry 4.0*, introduces the concept of the "superego of the city," using Freudian psychoanalytic theory to explore the ethical dimensions of urbanization (Levy and Bonet Fernandez 2024). It examines how cities can preserve cultural identity, foster social cohesion, and promote environmental sustainability amidst rapid changes. The study applies this framework to analyze smart city initiatives, particularly in healthcare waste management, emphasizing the integration of Circular Economy principles with Industry 4.0 technologies. Findings show that aligning technological advancements with

ethical imperatives helps cities achieve their goals. The insights provide urban planners and policymakers with a holistic approach to guide sustainable and culturally resonant urban development.

In this issue, the authors have mobilized an analysis of power dynamics within the organisation, the supply chain, and the global interactions between state and non-state actors and stressed the importance of collaborative and transparent cooperation frameworks. Taken together, the articles of this issue demonstrates the need for more in-depth, program-based research linking global governance mechanisms to sustainable supply chain practices. We suggest that future research further explore the link between governance mechanisms and supply chain sustainability, including Indigenous research from Africa and Asia (Rodriguez-Escobar 2024).

AUTHOR CONTRIBUTIONS

The authors contributed to conceptualization, writing, reviewing, editing and addressing reviewer comments.

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None reported.

CONFLICT OF INTEREST

The authors declare no potential conflict of interests.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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