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RESEARCH NOTE

Sustainability in global industrial shipping chains: a positivist perspective of international relations

Beinn Purvis[1] | **Dominique Bonet Fernandez**[2]

[1]Department of Management, BIBS School of Management, Prague, Czech Republic.

[2]Department of Strategy and Management, IPAG Business School, Paris, France.

Correspondence
Corresponding author Beinn Purvis,
Email: beinnpurvis@hotmail.com

Abstract

Purpose – This paper explores supply chain sustainability in the context of global industrial shipping, using positivist theories from International Relations, specifically realism and liberalism, to offer insights on how public and private actors influence the management of sustainable supply chains.
Approach - The paper adopts a theoretical approach, contrasting realist and liberalist perspectives to examine the interplay between states, international organizations, and private actors in managing global supply chains. The analysis focuses on the governance of maritime safety and considers how conflicts, international cooperation, and global governance shape supply chain sustainability.
Results - The analysis reveals that while realism underscores the role of state-centric power dynamics and national interest in maintaining supply chains amidst global conflicts, liberalism highlights the importance of international cooperation and regimes in fostering sustainable and resilient supply chains. The paper illustrates how both perspectives contribute to understanding the broader implications of sustainability in a geopolitical context.
Practical Implications - This research provides a framework for policymakers and businesses to navigate the complexities of sustainable supply chain management in a global context. It highlights the importance of balancing national interests with international cooperation to address environmental, social, and economic sustainability challenges in the industrial shipping sector.
Originality - The study contributes to the literature by integrating International Relations theories into the field of supply chain management. It expands the conceptual understanding of sustainable supply chains by incorporating geopolitical dynamics, offering new insights into how global governance systems and international political factors influence sustainability outcomes.

KEYWORDS
Supply chain sustainability, liberalism, realism, global governance

INTRODUCTION

The sustainability of supply chains has emerged as a key research focus over the past decade (Golicic and Smith 2013), expanding the traditional scope of supply chain management to incorporate environmental and social responsibility considerations (Linton et al. 2007). This has led to studies aimed at enhancing performance and promoting better practices (Silva and Figueiredo 2020). The integration of sustainability into supply chain quality management is now recognized as an emerging field requiring multidimensional approaches to foster more sustainable supply chains (Bastas and Liyanage 2018, Lissillour et al. 2023). Sustainable supply chain management involves integrating social, environmental, and economic goals across supply chain activities, underscoring the importance of relevant resources and capabilities to achieve sustainability objectives (Arora et al. 2020). This evolution necessitates optimizing operations throughout the entire production and post-production process, with an emphasis on sustainability standards across the supply chain (Hofmann et al. 2013). Sustainable supply chain management incorporates environmental, social, and economic dimensions, drawing on various organizational theories to drive sustainability initiatives (Varsei et al. 2014). Stakeholder theory, in particular, has led scholars to view supply chain sustainability as a valuable tool for businesses to reconnect with key stakeholders (Beske and Seuring 2014). Indeed, businesses are only as sustainable as their supply chains, for which they bear social

and environmental responsibility (Krause et al. 2009, **?**). The selection of sustainable suppliers is a crucial aspect of sustainable supply chain management, influenced by economic, social, and environmental factors (Du et al. 2020). In addition to developing and testing models to understand the determinants of sustainable supply chains (Lissillour 2022), scholars are urged "to develop our understanding of the implementation process of SSCM by framing it as transformation/change in organisational practice" (Touboulic and Walker 2015, p. 21). Recent studies have responded to this call from a business perspective (Silva and Figueiredo 2020, Silva et al. 2023), but supply chain sustainability is also managed by states and international organizations (Lissillour et al. 2021). Consequently, scholars have explored the interconnected role of businesses and public authorities in managing sustainable supply chains, discussing both the benefits and risks of private interventions in managing public goods (Lissillour et al. 2019).

This paper aims to connect International Relations (IR) theories with supply chain sustainability by employing the theoretical frameworks of realism and liberalism. Both theories provide significant perspectives for understanding the governance of global supply chains, especially in the face of geopolitical instability and economic interdependence. Realism highlights the state-centric power dynamics and the strategic efforts of nations to ensure the continuity of supply chains amid international conflicts and competitive economic conditions. On the other hand, liberalism emphasizes the importance of cooperative international regimes and multilateral organizations, which promote sustainable and stable supply chains through shared norms and mutual gains. By leveraging these IR theories, the paper illustrates how global governance systems and state actions, shaped by these theoretical foundations, influence the sustainability paths of global supply chains. This approach not only expands the conceptual understanding of supply chain management but also sheds light on how international political factors directly impact supply chain resilience and sustainability.

This paper suggests contrasting the logistic approach to sustainable supply chain management with an approach derived from political science. To narrow down the analysis, the following section focuses on the issue of maritime safety and how it relates to the main theories of International Relations. What insights can the positivist theories, namely realism and liberalism, provide to better understand the role of states and other actors in the management of maritime safety? This paper is organized into four sections. Following this introduction, the first section provides a review of sustainable global supply chain issues. The second section offers an overview of global governance in international relations. Then, the third section highlights the implications of two main theories used in international relations analysis: realism and liberalism. Finally, the fourth is dedicated to a discussion of the contributions of realist and liberalist theories of international relations to the development of global and sustainable supply chains. We conclude with an account of the contributions of this research together with possible areas of future research.

1 | SUSTAINABLE GLOBAL SUPPLY CHAIN ISSUES

Supply chain sustainability is a critical issue that has gained prominence in recent years due to various challenges faced by supply chains worldwide, including conflicts like the Russian-Ukrainian war and the COVID-19 pandemic. Additionally, supply chain resilience is essential for firms to mitigate risks and ensure uninterrupted service to customers, especially in the face of disruptions caused by conflicts (Braunscheidel and Suresh 2008). Recent events suggest avenues in supply chain sustainability inspired by positivist theories based on realism and liberalism. Wars, such as those in Ukraine and Gaza, can have significant impacts on the sustainability of global supply chains. These conflicts disrupt the flow of goods, create uncertainty, and lead to increased risks for businesses operating in the affected regions (Jagtap et al. 2022). The disruptions caused by wars can result in delays, increased costs, and challenges in sourcing materials and products (Kuts and Makarchuk 2022).

The concept of sustainable supply chain management involves integrating economic, environmental, and social objectives to improve long-term performance and achieve sustainable development (Mursidah and Fauzi 2022). Achieving sustainability in supply chains requires collaborative innovation, agility, and flexibility to adapt to changing circumstances and ensure continued operations (Shan et al. 2020). Furthermore, supply chain digitization, flexibility, and relationships play key roles in driving sustainable development within supply chains (Zhou and Wang 2021). In the context of wars and conflicts, supply chain resilience becomes paramount to ensure the continuity of operations and minimize the impact of disruptions. Building resilience through strong relationships, agile practices, and the adoption of new technologies can help businesses navigate challenges posed by conflicts and other disruptive events (Manathunge et al. 2021). Moreover, supply chain disruptions highlight the importance of supply chain continuity, risk management, and the ability to recover from unforeseen events (Craighead et al. 2007). To address these challenges, businesses need to focus on building resilient supply chains, leveraging technology, fostering collaboration, and integrating sustainability principles across their operations.

The trade tensions between China and the United States, which began in January 2018, have significantly impacted global supply chain sustainability(Blessley and Mudambi 2022). The disruptions in supply chains, increased uncertainty, and changes in global trade dynamics resulting from this conflict have been well-documented (Fan et al. 2022). Specifically, the trade conflict has reshaped China's food imports and has the potential to affect global food supply dynamics (Liu et al. 2020). These disruptions have affected the operating performance of U.S. firms with supplier connections in China, highlighting the challenges faced by businesses due to trade tariffs and supply chain complexities (Fan et al. 2022). The economic conflict has also raised concerns about trade-related environmental impacts, emphasizing the importance of

addressing sustainability issues in supply chains (Lu et al. 2020). Moreover, the conflict has created supply chain disruption risks, challenging businesses to navigate escalating trade barriers and uncertainties (Yingjun and Jiang 2022). As a result, companies have been prompted to reconsider their sourcing strategies and manufacturing locations (Utar et al. 2023), underlining the necessity for supply chain resilience and flexibility in response to geopolitical disruptions (Roscoe et al. 2020). Furthermore, the economic conflict between China and the United States has underscored the significance of balancing short-term profitability with long-term environmental sustainability in supply chain decision-making (Wu and Pagell 2010). The trade actions and increased tariffs implemented as part of the conflict have further highlighted the need for businesses to manage uncertainty arising from geopolitical disruptions and adjust their supply chain strategies accordingly (Walmsley and Minor 2020).

If positivism is arguably the preferred research method in International Relations, this line of research seems to be in contradiction with the reality of social practices in diplomatic circles, as the work of diplomats is "not a matter of mathematical calculation; it is not an exact science; it remains a matter of human skills and judgments" (Watson 1982, p.52). According to practitioners, the practice of diplomacy seems to require more "common sense" and intuition rather than long conceptual reflections or academic training (Nicolson 1964). The everyday action of diplomacy refers primarily to skills and experience that are mastered through practice (Neumann 2005). This focus on practice has led to a practice turn in international relations (Cornut 2015) and supply chain studies (Lissillour and Monod 2024, Lissillour et al. 2023), fed by prior organizational studies on many topics including innovation (Lissillour 2018), artificial intelligence (Lissillour and Monod 2024, Sahut et al. 2023), and resistance to change (Lissillour 2021b). This perspective has also shed additional light on sustainable supply chains in the shipping industry with an analysis of the governance of maritime safety, which emphasized the reasons why some actors are excluded from the negotiation table while others are more influential and how this domination is sustained by the everyday practices of both private and public actors (Lissillour 2022). These studies have shown how a common vision developed in the shipping field, which gives a central role to non-state actors in the management of maritime safety (**?**).

2 | GLOBAL GOVERNANCE OF MARITIME SAFETY

Sovereign states possess the authority to legislate and enforce laws within their territories, aiming to ensure that industrial actors adhere to minimum safety standards. However, larger industrial actors in the maritime industry often appear to bypass these regulations, suggesting their influence extends beyond state-enforced limitations. The high incidence of maritime accidents indicates that states may lack the capacity to manage maritime safety effectively or regulate the industrial shipping chain. In such a scenario, the question arises: if states are unable to exert sufficient control, does the responsibility for regulating maritime safety fall to international organizations?

In the aftermath of World War II, the United Nations established the International Maritime Organization (IMO) to ensure international maritime safety. The organization was originally founded on March 6, 1948, in Geneva, under the name Inter-Governmental Maritime Consultative Organization (IMCO), following the adoption of the Convention on the Establishment of Inter-Governmental Maritime Consultative Organization. In 1982, it was renamed the International Maritime Organization (IMO). The IMO's mission is to establish a consistent set of international maritime laws, agreed upon by all member states, which account for the diverse interests of various actors involved. By allowing prominent interest groups from across the globe to gain consultative status, the IMO opens up the policy-making process to a wider range of stakeholders, ensuring that these groups can influence decisions while contributing to the enhancement of global maritime safety. However, during the two decades following its creation, the number of maritime casualties rose dramatically, raising legitimate doubts about the IMO's capability to foresee and solve the problems related to maritime safety. While limited cooperation from states is one explanation for the International Maritime Organization's (IMO) lack of influence, another significant factor is the power exerted by actors in the industrial shipping chain. These actors may wield such strong influence that they can bypass international conventions. Thus, if neither states nor international organizations effectively control maritime safety, responsibility for maritime casualties seems to be shared with private actors. But the question arises: which private actors bear this responsibility?

This research is positioned at the intersection of several pivotal academic debates within International Relations, particularly those focusing on statism versus global governance, as categorized by Baumann et al. (2011). The first three key debates in this taxonomy are: Realism vs. Idealism, Realism vs. Pluralism vs. Globalism, plus the Neo-Neo Debate: Neorealism vs. Neoliberalism. These debates explore the extent to which state sovereignty is being challenged by global governance mechanisms and the influence of non-state actors, reflecting evolving dynamics in the international system. Here, issues related to the legitimacy of non-state actors and the gradual loss of sovereignty for states will be addressed. Scholars have researched global governance as a form of inter-state cooperation that aims to provide public services to solve collective problems (Hasenclever et al. 1997). Non-state actors have primarily been studied from a domestic viewpoint, where they are seen as agents with the capacity to lobby the state (Putnam 1988). However, as states increasingly delegate policy-making authority to private sector entities, such as companies and interest groups, a body of research has emerged focused on the formal and informal procedures facilitating this shift in authority (Clapp 1998). These shifts are particularly notable in the context of intergovernmental organizations. In the field of maritime safety, the IMO has established contractual frameworks that allow for cooperation between states and classification societies, facilitating the delegation of statutory duties supported by standardized contracts. While these examples may indicate institutionalized cooperation, they

offer limited insight into the underlying rivalries between various actors. Investigating the beneficiaries of this standardization could shed light on the power struggles inherent in these policy-making processes.

With the rise of globalization, there is a growing commitment to understanding world politics not solely from a state perspective but also from the perspectives of non-state actors such as non-governmental organizations and companies. Substantial research has been dedicated to identifying the success factors of public-private partnerships in which state and non-state actors would arguably combine their strengths and share responsibilities to fulfill a given public mission (Rosenau 2000). Though crucial, such research often overlooks the political processes leading to the creation of these partnerships: why is a particular public service delegated to the private sector while another is not? The promotion of public-private partnerships as an optimal way to address practical problems domestically and increase democratic participation in international organizations (Reinicke et al. 2000) may not be neutral but politically influenced. While this increased democratic participation theoretically allows for greater accountability and legitimacy in global governance, it also exemplifies neoliberal dominance in global governance. Other researchers have focused on the standards set by industries to regulate themselves, along with the hierarchy that emerges when public and private norms conflict. In transnational governance, "conflict and complementarity between public and private standards structure the practice of private regulation" (Bartley 2011). However, such research arguably falls short of fully exploring which actors dominate the creation of these standards and how such dominance is maintained.

The increasing presence of non-state actors on the international political scene illustrates their involvement in an ever-expanding range of sectors and activities. This expansion raises the important question of how to define global governance. Since its emergence in the 1990s, global governance has remained an imprecise concept (Rosenau and Czempiel 1992). The definition provided by the Commission on Global Governance will serve as the foundation for this research:

> "The sum of the many ways individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflicting or diverse interests may be accommodated, and cooperative action may be taken" (on Global Governance 1995).

Such a definition is consistent with the concept of global governance promoted by Thakur and Weiss:

> "The complex of formal and informal institutions, mechanisms, relationships, and processes between and among states, markets, citizens, and organizations, both inter- and non-governmental, through which collective interests on the global plane are articulated, rights and obligations are established, and differences are mediated" (Thakur and Weiss 2006).

These interpretations of global governance align with Bell's (Bell 1995) perspective on the current state of global governance in the realm of maritime safety, where its development "has led to a position where, today, there is no single leader in this area. [...] If we are to ensure ongoing satisfactory standards and the elimination of substandard tonnage, full and proactive co-operation between the various interests will be essential." However, these definitions are not neutral. Is global governance truly shaped around the collective interests of all stakeholders, or rather the interest of a few dominant leaders? In the management of common affairs, are all actors equal in the decision-making process, or do some dominate? Who would benefit most from such a cooperative design of rights and obligations? Does global governance of maritime safety function as a polyarchy (Holsti 2016), or is it more akin to a panarchy (Sewell and Salter 1995)?

The privatization of global governance has become increasingly apparent as globalization has fueled the rise of large transnational companies that have a vested interest in consolidating their influence and participation in transnational arenas such as the United Nations. Meanwhile, neoliberal ideology, which advocates for the involvement of the private sector in global governance, has gained traction. It is now widely recognized "that force is utilized in multilateral institutions to promote [...] privatization [...] over [...] public control" (Bull et al. 2004).

3 | POSITIVIST PERSPECTIVES ON MARITIME SAFETY

Research paradigms are defined by Thomas Kuhn as "universally recognized scientific achievements that, for a time, provide model problems and solutions for a community of practitioners" (Kuhn 1996). Kuhn's concept of paradigm shift suggests that paradigms are historical constructs whose dominance can change over time. In the field of International Relations, such shifts often occur during what are termed the great debates (Baumann et al. 2011). This analysis does not aim to provide a comprehensive review of the research traditions within each theoretical camp. As Wight notes, a "conceptual inquiry is a necessary prerequisite to empirical research" (Wight 2006).

According to Guba and Lincoln (Guba and Lincoln 1994), there are four underlying paradigms for research in the social sciences: positivist, post-positivist, constructivist, and critical. This classification has been applied in various fields of social science, including information systems (Orlikowski and Baroudi 1991) and accounting (Chua 2005). However, this classification is not entirely consistent, as both constructivist and certain critical theories can also be categorized as post-positivist. To streamline this discussion, we will focus on three "kinds of theory": namely, positivist, constructivist, and critical theories. The traditional rationale for theorizing in the field of International Relations, prior to the end of the world wars, focused on studying the causes of wars, based on the assumption that understanding these causes could help prevent future conflicts. During this period, the dominant theories in social science were heavily influenced by positivism. Keohane (Keohane 1988) and his

followers refer to positivism as rationalism due to its commitment to rational choice theory. For the sake of consistency, we will use the term positivism here. Positivism advocates for causal analysis in the natural sciences as the primary method for generating reliable knowledge of international politics (King et al. 1994). A typical positivist methodology seeks to establish causal relationships between large-scale data and hypotheses to identify general patterns in world politics. A foundational assumption guiding positivist research is rational choice, which posits that the behavior of actors is driven by utility maximization.

The positivist school endorses Humean causal assumptions, consistent with the empiricist tradition. Positivists are generally committed to foundationalism, which posits that researchers can determine the truth of a statement by examining the facts (Hansen 2013). A Humean perspective on causality typically emphasizes regular observable patterns of occurrences, aiming to identify efficient causes based on a regularity-deterministic assumption (Kurki 2008). In this context, we will focus on two positivist theories of international politics: realism and liberalism.

4 | REALISM: THE SHORTCOMINGS OF A STATE-CENTRIC PERSPECTIVE ON MARITIME SAFETY

Realism is a classical positivist school of the International Relations academic field, which advocates that the world works according to absolute rules and that states are the main actors on the international scene. The natural environment of a state is that of an anarchic international political system. States deal with international issues on their own through negotiations with other states, in which they defend their national interests. Cooperation may happen in some specific occurrences:

> ”When faced with the possibility of cooperating for mutual gain, states that feel insecure must ask how the gain will be divided. They are compelled to ask not ‘Will both of us gain?’ but ‘Who will gain more?’ If an expected gain is to be divided, say, in the ratio of two to one, one state may use its disproportionate gain to implement a policy intended to damage or destroy the other. Even the prospect of large absolute gains for both parties does not elicit their cooperation so long as each fears how the other will use its increased capabilities” (Waltz 1979, p. 105).

States do not depend on international organizations to ensure their survival and integrity. In fact, international organizations are often viewed as epiphenomenal, lacking enforcement power or authority (Gruber 2000). According to rational choice theory, if regimes and international institutions exist, they are rationally employed and designed by states to protect their own interests. Keohane argues that ”international institutions exist largely because they facilitate self-interested cooperation by reducing uncertainty, thus stabilizing expectations” (Keohane 1993, p. 288).

In the maritime sector, states act rationally in their capacity as flag states and coastal states. Flag states register commercial ships under their domestic law. They are responsible for implementing and enforcing international laws over the ships that fly their flag. A coastal state has a coastline with at least one port to receive foreign ships. States compete to increase their ”maritime power,” which:

> ”refers primarily to the performance of national shipping firms, including the size and technological sophistication of the national-flag fleet and its influence in international shipping cartels. The best indicators of power are carrying capacity and the ability to compete in international freight markets without subsidies or governmental cargo reservation. Maritime power, however, derives ultimately from national power, which includes the direct and indirect participation of nationally owned firms in world trade. National power also includes financial resources and shipbuilding capacity” (Cafruny 1985, p. 86).

In the field of maritime safety, states are responsible for ensuring the inspection and certification of ships to confirm compliance with international safety standards. As flag states, they exert significant control over their national fleet through domestic regulation of shipping companies. This domestic regulation is the primary means to ensure that the industry adheres to maritime safety regulations, as “transforming these universally accepted goals and rules into a binding legal obligation is each state’s sovereign privilege” (Alderton and Winchester 2002). This principle is exemplified by the Law of Shipping Convention, Article 91-1, which states that states are free to establish the conditions under which they register ships under their flag.

According to realism, the responsibility for the high number of maritime disasters rests solely with states. States are often willing to overlook international maritime safety for relative gains, such as enhancing their national assets with additional resources, which results in other states being left with fewer resources and at a competitive disadvantage. In this context, it can be argued that states attract international tonnage by relinquishing their sovereign right to oversee the safety of ships, thereby making their registry more attractive to foreign shipowners. Alderton and Winchester note that this situation has led to the understanding that “where the nation-state is the bulwark of international regulation, sovereignty is for sale in the context of ship registration, and the State enjoys privileges” (Alderton and Winchester 2002), including economic income and development prospects. From a realist perspective, the supranational level of the United Nations does not provide a relevant platform to manage state affairs, as only states are sovereign. In fact, the specialized agency at the United Nations, whose mission is to manage maritime safety, lacks the mandate to control flag states’ implementation of international rules, and even less to impose their enforcement. This failure of the International Maritime Organization to oversee flag states’ implementation of international instruments is illustrated by the 2000 International Commission on Shipping’s statement:

"There were constant demands for nations registering ships to be held more accountable in performance of their responsibilities. A major concern was the inability of a significant number of registers to provide adequate legal and administrative infrastructure to meet their obligations in international law, in particular the United Nations Convention on the Law of the Sea, 1982. [...] A general consensus is that there are sufficient regulations to do the job, the problem is their lack of implementation. Major reasons stated for the failure to implement the necessary measures were the lack of competent personnel and financial resources, and a lack of political will in many cases. [...] There was a widespread view throughout the Commission's inquiry that the IMO's work on flag State performance has been largely ineffective" (International Commission on Shipping 2000).

According to the theory of hegemonic stability (Keohane 1980), a hegemon would create and reinforce a set of rules accepted by all, as it "single-handedly dominates the rules and arrangements [...] (of) international political and economic relations" (Goldstein 2005, p. 83). According to Cafruny, the nature of conflicts in the shipping regime supports this theory:

"That general theory anticipates an American need to redefine strategy and to restructure the international political economy in terms of the short-term national interest. Actions of the United States are explicable not as 'policy failures' but rather in terms of the contradictions inherent in the hegemonic organization of the international political economy. In bulk and tanker shipping, the United States organized a maritime infrastructure designed to provide maximal control over raw materials" (Cafruny 1985, p. 117).

Such a system may have shown some accuracy in the postwar international political economy context and until the end of the 1980s, as Cafruny's work has shown. But in today's reality, such a supreme legislative entity seems not to exist, although some states are historically more influential on the ocean than others.

The different types of realism are committed to state-centrism and do not provide the right framework to analyze the contribution of the private sector to public maritime safety, nor do they seem adequate to analyze governance that occurs beyond the state level. Realism and neo-realism differ substantially, notably in how they value historicizing. In opposition to classical realism, neo-realism promotes an ahistorical view of International Relations with a stronger focus on positivism—classical realist scholars' emphasis on normative questions left room for a stronger neo-realist emphasis on international structure.

5 | LIBERALISM: THE INCLUSION OF INTERGOVERNMENTAL ACTORS IN THE GLOBALIZED ERA

In contrast to realism, liberalist theory posits that states stand to gain significantly from free trade and international cooperation. Such cooperation enables states to achieve common goals and national interests despite the anarchic environment of international relations. Research indicates that cooperation is crucial for advancing individual state self-interests, particularly through frameworks like game theory and the Prisoner's Dilemma (Axelrod and Keohane 1985). International organizations serve as platforms for states to align their preferences; liberalists contend that "even if [...] anarchy constrains the willingness of states to cooperate, states nevertheless can work together, especially with the assistance of international institutions" (Grieco 1988).

Flag states and coastal states engage as members of the International Maritime Organization (IMO), where they negotiate common regulations to enhance maritime safety. Liberalism asserts that states and international organizations are the primary architects of rules and norms, sidelining the influence of non-state actors. Among the mid-level theories derived from liberalism, functionalism effectively explains the emergence of international organizations as responses to states' functional needs (Mitrany 1994). Institutionalism examines international organizations from a problem-solving perspective, with a particular focus on the IMO as the leading authority in maritime safety (Cox and Jacobson 1974), and the interactions of these technocrats with their counterparts from member states constitute global governance. These interactions contribute to the management of the maritime safety regime and are central to this research study. The goal of these studies may be to understand what institutional arrangements and processes would be most apt to achieve the goals of their institution (Koremenos et al. 2001).

The institutionalists focus on Bretton-Woods international organizations, created at a time when globalization had not yet altered the nature of world politics. Growing interdependence implies that economic activities are less nationally isolated than before (Keohane 1984). The environment in which technocrats comprehend their institutions has been significantly transformed by this new setting. Moreover, new challenges, such as maritime safety, test the capacity of states to address them. Consequently, according to Held and Koenig-Archibugi (2003), the private sector has become more influential, as it offers new approaches and capabilities to tackle global issues. Thus, institutionalism appears inadequate in reflecting the reality of global governance since it overlooks the role of non-state actors in policymaking and implementation.

The international organizations central to institutionalism are neoliberal institutions emphasizing market liberalism (Griffin 2006) and most elements of the Washington Consensus (Williamson 1994). While the core of institutionalism is arguably very political, practitioners often do not perceive neo-liberalism as a political program (Griffin 2006). Consequently, institutionalism adopts a problem-solving approach to global

governance (Cox and Sinclair 1996), and its neoliberal foundations are rarely subjected to critical scrutiny. This positioning makes institutionalism a conservative theory of global governance that preserves the status quo. A third noteworthy mid-level theory is that of international regimes, which assumes that:

> "Regimes are deliberately constructed, partial international orders on either a regional or a global scale, which are intended to remove specific issue areas of international politics from the sphere of self-help behaviour. By creating shared expectations about appropriate behaviour and by upgrading the level of transparency in the issue area, regimes help states (and other actors) to cooperate with a view to reaping joint gains in the form of additional welfare or security" (Hasenclever et al. 2000, p. 3).

Unlike functionalism and institutionalism, regime theorists introduce "other actors," such as NGOs, as eventual contributors to the efforts related to the development of conventions and to enhance transparency. The public goods theory argues that global governance institutions can create common rules that bring absolute gains to the members of the international community. Indeed, these public goods, or "human-made global commons" (Kaul 2000), are developed for the benefit of the whole community. The United Nations would provide for a judicial body, namely the International Court of Justice, to solve shipping problems occurring among states. However, in reality, the International Court of Justice's verdicts "are purely advisory" (Stopford 2009, p. 656).

Institutionalism is based on a conception of global governance narrowed down to the interactions of intergovernmental organizations and states; consequently, states remain the main actors in realism (Slaughter 2004). The limited level of analysis of institutionalism has been engaged by scholars such as Young, who found that non-state actors can enhance the effectiveness of regimes (Young 1997). The work of Thomas Weiss (Weiss 2014) also indicates the need for specialized organizations to cope with the lack of effectiveness of the United Nations system. Consequently, there seems to be a necessity to widen the scope of actors in the study of global governance.

For institutionalists, authority is based on knowledge and law. Information is a key source of influence: quantitative data and scientific support are their central sources of knowledge. According to Sinclair, in addition to information, the authority of the technocrats is also "backed by law," as international law provides a way of "promoting and enacting global governance" (Sinclair 2012, p. 39).

The positioning of institutionalism as a short-term problem-solving theory tends to reject critical considerations of the foundational aspects of neoliberal institutions. As a result, normative inquiries into long-term solutions for deeper structural problems do not align with the objectives of institutionalism. Nevertheless, international organizations have bureaucracies that cultivate their own distinct identities and agendas, which may differ from those of the member states (Barnett and Finnemore 2004). Consequently, their positioning, internal processes, and protocols warrant examination in the study of global governance.

The necessity to keep up to date with a growing flow of information and rapid technological progress makes it increasingly difficult for technocrats to keep pace with globalization. In line with Young (1997) and Weiss (2014), it is argued here that the rise in global governance of non-state actors as agents possessing different types of capital and competencies may gradually undermine the legitimacy of liberalist theories to provide understanding for all aspects of global governance as it is today (Fulconis et al. 2020, Fulconis and Lissillour 2021b).

6 | CONTRIBUTIONS OF INTERNATIONAL RELATIONS THEORIES TO THE DEVELOPMENT OF A SUSTAINABLE SUPPLY CHAIN

Both realist and liberalist theories provide specific claims and promote specific patterns of international relations. From an International Relations perspective, realist and liberalist viewpoints can provide valuable insights into supply chain sustainability in a context in which:

> "sustainability stretches the concept of supply chain management to look at optimizing operations from a broader perspective—the entire production system and post-production stewardship as opposed to just the production of a specific product" (Jayaraman et al. 2007).

A shared focus of both realism and liberalism is the primacy of the state as the central unit of analysis. This state-centric approach inherently fails to account for the role of transnational actors in world politics. If we consider the social sphere where global politics unfold as consisting solely of approximately 200 political units, we risk oversimplifying the complex realities at play. While such simplifications facilitate the development of more manageable analytical tools, which can be beneficial in certain research areas, they do not adequately capture the intricacies of today's international society.

Both theories analyzed above share a common assumption of individualism and materialism. The individualist commitment assumes that actors have permanent interests that are exogenous and supposed to be material. Indeed, preferred state interests arguably change from one paradigm to another; security first and foremost for the realist, whereas the liberalist can accommodate other primary goals such as wealth. The international system imposes structural constraints on their behavior and choices, which follow a logic of consequence (Weingast 1995). Materialism is the understanding that these structural constraints on the actors depend on the distribution of material assets, such as technology, resources, power, etc. Ideas and culture were considered as mere residual variables (Goldstein and Keohane 1993). These preferences allow the positivist theoretical framework to adopt rational choice to explain how agents maximize their interests according to a fixed set of preferences under given structural constraints. Agents consciously and intellectually deliberate before taking rational actions. Consequently,

TABLE 1 Research Issues Inspired by International Relations Theories

Theory	Research Theme	Specific Issues	Potential Research Questions
Realism	Impact of Conflicts on Supply Chains	Disruptions from wars (e.g., Ukraine, Gaza)	How do wars and conflicts disrupt global supply chains?
		Increased risks and uncertainties	What are the risks and uncertainties businesses face in conflict zones?
		Supply chain resilience	How can firms build resilience to withstand disruptions caused by conflicts?
	Sustainability Challenges in Conflict Zones	Environmental, social, and economic impacts	How do conflicts impact the sustainability objectives of supply chains?
		Risk Management and Continuity Planning	What risk management strategies are effective in maintaining supply chain continuity during conflicts?
		Technological Adaptation	How can technology be leveraged to enhance supply chain resilience in conflict-affected areas?
		Collaboration and Agility	How do collaborative practices and agility contribute to sustainable supply chain management in the face of conflicts?
Liberalism	Trade Conflicts and Supply Chain Sustainability	Impact of US-China trade tensions on global supply chains	How have US-China trade tensions affected the sustainability of global supply chains?
		Changes in global trade dynamics	How do trade conflicts reshape global trade dynamics and supply chain operations?
	Environmental Sustainability	Trade-related environmental impacts	What are the environmental impacts of trade conflicts on supply chains?
	Supply Chain Flexibility and Resilience	Adjusting sourcing strategies and manufacturing locations	How can businesses adjust their sourcing strategies and manufacturing locations to mitigate the impacts of trade conflicts?
	Economic and Environmental Balance	Balancing profitability with environmental sustainability	How can companies balance short-term profitability with long-term environmental sustainability in supply chain decision-making?
	Policy and Regulation	Managing uncertainty due to geopolitical disruptions	What policies and regulations can help businesses manage uncertainties arising from geopolitical disruptions?
	Trade Barriers and Supply Chain Complexity	Navigating trade barriers and complexities	How do escalating trade barriers and supply chain complexities influence business operations and sustainability efforts?

TABLE 1 Source: author's personal elaboration

agents' actions are intentional. Rational choice theory leads researchers to analyze political action by focusing on reflexive knowledge. Reflexivity refers here to both the fact that researchers place emphasis on what agents think about the topic and that researchers position themselves from their chosen conceptual and theoretical perspectives when relating to the data (Beaulieu et al. 2024). The result is that researchers tend to think about what interviewees think about, which creates a significant distance between the empirical reality, namely the practical social actions carried out by the agents, and the actual research materials.

Finally, this theoretical discussion on maritime safety appears to overlook key actors such as classification societies, which are essential to the technical management of this issue (Fulconis and Lissillour 2021a). A sociological analysis of inter-organizational dynamics in shipping must consider shipping companies, maritime insurers, and shipyards (Fulconis et al. 2021). Moreover, the realist and liberalist frameworks discussed above do not adequately address the rising influence of transnational private actors in global governance (Lissillour 2017).

Realism may examine power dynamics and self-interest among nations in shaping sustainable supply chains, while liberalism could highlight cooperation and mutual benefits among stakeholders at national and international levels. These perspectives could enhance the current stakeholder and resource-based views guiding supply chain management research (Linton et al. 2007).Table 1 suggests research issues inspired by this discussion.

CONCLUSION

In addition to the issues addressed above, the COVID-19 pandemic has underscored the vulnerabilities in global supply chains, emphasizing the importance of resilience and sustainability in supply chain operations (Kumar et al. 2020). Antecedents and outcomes of supply chain resilience, viewed through a sustainability lens, can offer valuable insights for mitigating disruptions and improving operational performance (Pu et al. 2023). Understanding the role of network structural properties (Lissillour et al. 2023) in achieving supply chain sustainability objectives is essential for firms to efficiently manage their supply chains sustainably (Alinaghian et al. 2020).

From a theoretical perspective, the institutional perspective described earlier may benefit from a shift toward institutional logic (Lissillour 2021a, Lissillour and Bonet Fernandez 2020), thus allowing for a micro-analysis of the conflicts between camps in global governance. A cultural analysis of these conflicts may lead to a sociological understanding of the difference in beliefs, values, and assumptions between coalitions in global governance. Concerning shipping issues, the IMO has prompted the creation of the World Maritime University, which may be an opportunity to engage the management literature on corporate universities (Lissillour and Rodríguez-Escobar 2020) to better understand the potential of this university in shaping a more sustainable maritime supply chain. This paper has discussed the implications of a realist and liberalist perspective on a sustainable supply chain issue. Future research may discuss the implications of constructivist and critical theories of international relations.

The integration of realism and liberalism into the study of supply chain sustainability has revealed the profound impact of international relations theories on practical supply chain strategies. Realism highlights the competitive and protective strategies states employ to safeguard their supply chains, reflecting the theory's emphasis on survival and relative gains in an anarchic world. Liberalism, on the other hand, illustrates how states and businesses can leverage international cooperation and institutional frameworks to enhance supply chain sustainability, aligning with liberal ideals of mutual benefits and global governance. This theoretical exploration not only enriches our understanding of supply chain management in a globalized context but also sets the stage for future research to explore the dynamic interplay between state policies, corporate strategies, and international regimes. As the world grows increasingly interconnected, the insights from realism and liberalism can guide policymakers and business leaders in crafting approaches that ensure supply chain resilience, sustainability, and ethical governance in the face of global challenges.

In conclusion, analyzing supply chain sustainability through the lens of International Relations theories can provide a fresh perspective on how nations and stakeholders collaborate to promote environmentally and socially responsible supply chains. By integrating insights from realism, liberalism, and sustainability principles, future research can explore innovative approaches to enhance supply chain sustainability globally. Our research underlines the importance of the institutional environment (political will, legal rules, customs, infrastructure) for the development of global, sustainable supply chains. The case of global industrial shipping chains offers a field of application for theories derived from International Relations. Although this preliminary work requires

sectoral observations, our conceptual contribution represents a promising avenue for the implementation of sustainable supply chains on a global scale.

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FINANCIAL DISCLOSURE

None reported.

CONFLICT OF INTEREST

The authors declare no potential conflict of interests.

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AUTHOR BIOGRAPHY

Beinn Purvis is a master's student at The University of Birmingham pursuing a degree in Translation Studies. He works as a Copy Editor for the journal *Integrative Conservation*, based at the Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences. He is also an Associate Researcher at BIBS School of Management, Prague, Czech Republic. His research interests are International Business and Administration, and his work has been published in international journals, such as Management Research Quarterly.

Dominique Bonet Fernandez is a Full Professor of Strategy and Management at IPAG Business School. She is a researcher affiliated to CRET-LOG of Aix-Marseilles University. Her work focuses on relationships between actors in supply chains and their development. In 2017, she was co-author of two books: 'Circular economy and sustainable territories: what principles and tools?' which was edited at the 'Presses Universitaires de Provence' and 'Social Entrepreneurship in the Non-Profit and Profit Sectors, Theoretical and Empirical Perspectives' edited at Springer.