ESG ENHANCING MECHANISM THROUGH THE LENS OF SUPPLY CHAIN POWER: A THEORETICAL FRAMEWORK

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ABSTRACT

Purpose: This study proposes a theoretical framework that explores how mediative and non-mediative supply chain power can enhance ESG integration into supply chain practices and improve sustainable supply chain performance.
Design/methodology/approach: A critical literature review interprets ESG activities within supply chain practices. The combination of supply chain power and stakeholder theory forms the basis for the research model. The appropriate methodological approach is discussed based on the research question and key variables.
Findings: This study establishes a conceptual framework that integrates ESG activities within supply chain practices. We introduce a new theoretical approach to ESG and supply chain integration by combining Stakeholder Theory and Supply Chain Power Theory. This approach offers insights into the underlying mechanisms for effective ESG implementation in supply chain management.
Originality/value: The originality of this study lies in its 1) interpretation of ESG activities within supply chain practices and 2) innovative application of supply chain power concepts to ESG implementation.

Keywords: ESG, SCM, Supply chain power, Sustainable performance, Integration

Introduction

The recent introduction and expansion of Environmental, Social and Governance (ESG) regulations have prompted companies to enhance their ESG practices. ESG seeks to monitor a company's comprehensive activities, aiming to create long term value not only for shareholders but for all stakeholders. The necessity managing the entire supply chain – from the sourcing of materials to final delivery to customers - aligns ESG practices with contemporary supply chain management (SCM) principles. These principles emphasises not only on logistical and technological integration but also environmentally responsible production and long-term sustainability (Truant *et al.*, 2024). This implies that managing and supply chain operations is essential for effective ESG implementation.

Within the domain of SCM, ESG practices are recognized as crucial for several reasons: 1) mitigating ethical risks (Klassen and Vereecke, 2012) 2) enhancing brand reputation and value (Hartmann and Moeller, 2014)3) securing investment opportunities (Eccles *et al.*, 2014), and 4) achieving sustainable performance (Kumar *et al.*, 2012). However, much of the existing research focuses predominantly on external regulations or the factors driving supply chain participant to engage in ESG initiatives. This highlights a notable gap in understanding the internal mechanisms that reinforce ESG practices in supply chain context.

This conceptual paper addresses these gaps by proposing a theoretical framework that extends the concept of supply chain power to ESG practices, encompassing both mediative power (e.g., regulatory pressure) and non-mediative power (e.g., digital influence). Specifically, this paper seeks to: 1) interpret ESG components within SCM practices to establish a conceptual foundation for ESG in the SCM context, 2) provide a rationale for leveraging supply chain power to improve ESG implementation, 3) explore appropriate organizational theories to justify the research model, and 4) outline a methodology to examine the relationship between supply chain power dynamics and ESG practices. This research contributes a robust theoretical framework that guide future empirical studies in the effective integration of ESG.

Conceptual basis

Environment Social and Governance: Achieving ESG through SCM

"Environmental, Social, and Governance (ESG)" is a comprehensive framework designed to assess the sustainability and ethical implications of an organization's operations. Drawing on the work of Whitelock (2015) and the integrated ESG-SCM approach, we define ESG as “a set of activities or processes associated that reflect an organization’s relationship with its ecological surroundings, its interactions with human populations, and its internal systems of governance, all aimed at serving the interests of stockholders and other stakeholders.”

Recent literature emphasizes the growing significance of ESG. This is because stakeholders increasingly demand transparency and responsible corporate behavior. The environmental aspect of ESG focuses on the integration sustainable practices into supply chain management (Carter and Rogers, 2008). This integration may cover both product life cycle and longer-term commitment to green activities (Dang and Chang, 2023). The environmental (E) component is related to sustainable sourcing practices. This prioritises suppliers with low carbon footprints and use of renewable resources (Carter and Easton, 2011). Green logistics also plays a vital role. Firms adopt energy-efficient transportation methods and strategies to reduce emissions throughout the supply chain (Abbasi and Nilsson, 2016). 3PL consumers shown increasing interests to eco-friendly packaging and recyclable materials (Lieb and Lieb, 2010). The social (S) dimension addresses an organization’s relationships with employees, customers, suppliers, and communities. Social factors cover supplier-buyer legitimacy (Ahmed and Shafiq, 2022), and corporate social responsibility (CSR) with labor practices and health/safety standards (Cheng *et al.*, 2014). Ethical supplier relationships and long-term partnerships are also vital (Klassen and Vereecke, 2012). Firms make investment for supplier development through training and knowledge-sharing (Grimm *et al.*, 2016). These practices reflect SCM's commitment to achieve the social objectives. Moreover, such social contribution can build employee loyalty and enhance brand reputation (Fatemi *et al.*, 2018). The governance (G) dimension pertains to the policies and practices that ensure a company's accountability. In the realm of SCM, governance is essential for advancing ESG objectives. Supplier evaluation and compliance with industry standards are governance related examples (Gimenez and Tachizawa, 2012). Moreover, risk management in governance frameworks allows companies to proactively address potential disruptions (Foerstl *et al.*, 2010) This highlights the role of supply chain governance as a critical enabler of ESG success.

We argue that the relationship between ESG and SCM can be characterized with complementary, overlapping, and integrated dimensions. Sustainable sourcing is aligned with ESG objectives like environmental and social impacts. Overlaps occur when ESG principles intersect with supply chain practices, particularly in areas like responsible sourcing, waste reduction. Integration refers to the event when companies integrate ESG to their supply chain strategies to create value. Such relationships highlight the importance of supply chain practices in achieving ESG objectives. This also positions supply chain management as a key mechanism for ESG achievement.

However, the multifaceted and dynamic nature of ESG presents challenges in implementing these practices across the supply chain. The interconnectedness of environmental, social, and governance factors requires coordination with multiple stakeholders beyond internal operations (Dai *et al.*, 2024). Moreover, incorporating ESG goals into supply chain operations requires a balanced approach between long-term and short-term performance (Dang and Chang, 2023). Although an integrative ESG framework offers a clear path toward building more sustainable supply chains, its practical implementation may face significant obstacles in terms of control and coordination of complex supply chain networks.

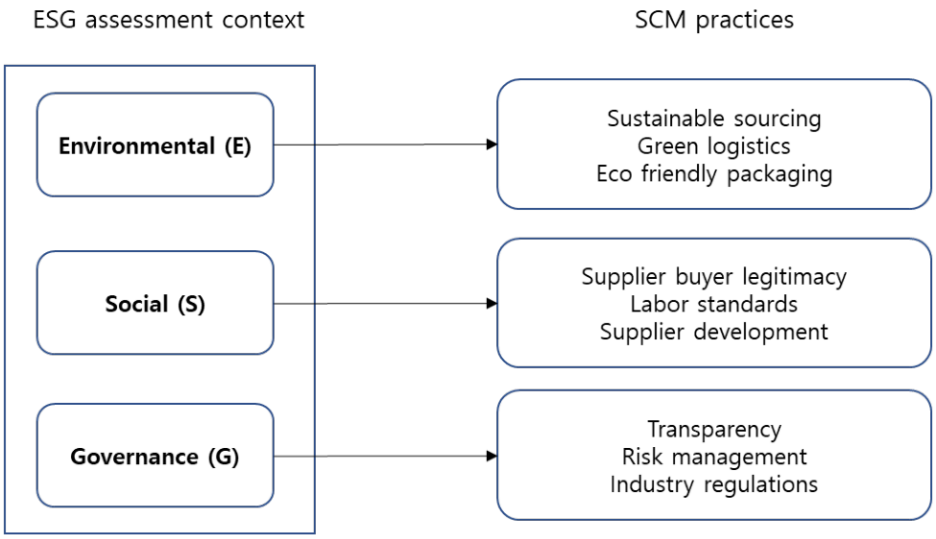

Figure 1: ESG context related to supply chain management practices

The role of supply chain power

Given these challenges, the role of power dynamics within the supply chain becomes crucial in driving the integration of ESG practices. We argue that companies with substantial supply chain power are better positioned to drive the adoption and implementation of ESG standards. Two forms of supply chain power are particularly relevant: mediated and non-mediated power (Reimann and Ketchen, 2017) (Zhang *et al.*, 2020). We interpret that mediated power, which includes regulatory authority and contract-oriented pressure, enables companies to compel suppliers to adhere ESG requirements through formal mechanisms. In contrast, non-mediated power is created by the perception of firms so encompasses firms intention to information and knowledge sharing, capacity-building initiatives that results in voluntary adoption of sustainable practices. Therefore, firms with both mediated and non-mediated forms of power can effectively coordinate their supply chain practices in alignment with ESG objectives. This dual approach – combining formal enforcement with voluntary collaboration – constitutes the theoretical foundation of this research, providing a framework for understanding how supply chain power dynamics can facilitate ESG integration.

Research model development and theoretical background

To provide a rationale for achieving ESG through supply chain management practices, this study employs a combination of organizational theories. In doing so, we explore several organizational theories. Dynamic Capabilities (DC) provides insights into a firm's ability to adapt and reconfigure resources (Teece, 2018). However, its focus on flexible capability in changing environment can overlook the importance of stable and long-term strategies in supply chain relationships. Relational View emphasizes resources sharing for relational rent so often assumes mutual benefit (Dyer and Singh, 1998). This can ignore power imbalances in supply chain relationships. Institutional Theory explains how external pressures, such as regulations and social norms (Liu *et al.*, 2010). However, it focuses on compliance so may overlook internal resource management for ESG implementation. Contingency Theory considers how market conditions affect firm outcomes (Claycomb and Frankwick, 2004), but its context-specific focus may limit supply chain wide applicable strategies.

This study combines Stakeholder Theory (Parmar et al., 2010) and Supply Chain Power Theory (Reimann and Ketchen, 2017) for the research model. Stakeholder Theory can outlines the structure of the supply chain entities as it adds a socio-political layer to discuss a firm's corporate social responsibility. Supply Chain Power Theory can offer a mechanism for controlling stakeholders, particularly those impacted by others in the network.

The model emphasizes ESG integration within the supply chain rather than focusing on specific practices. So, the model has strategic and process integration ESG goals into supply chain practices. Moreover, digital integration is important, as firms use digital tools to monitor and report ESG

practices throughout the network. In sum, our research model proposes that the interplay between supply chain power—both mediated and non-mediated—and ESG supply chain integration leads to improved sustainable performance (Figure 2). It provides a conceptual basis for understanding how ESG objectives can be embedded into supply chain practices. This perspective highlights the importance of leveraging supply chain power and strategic integration to create a coordinated, transparent, and sustainable supply chain performance.

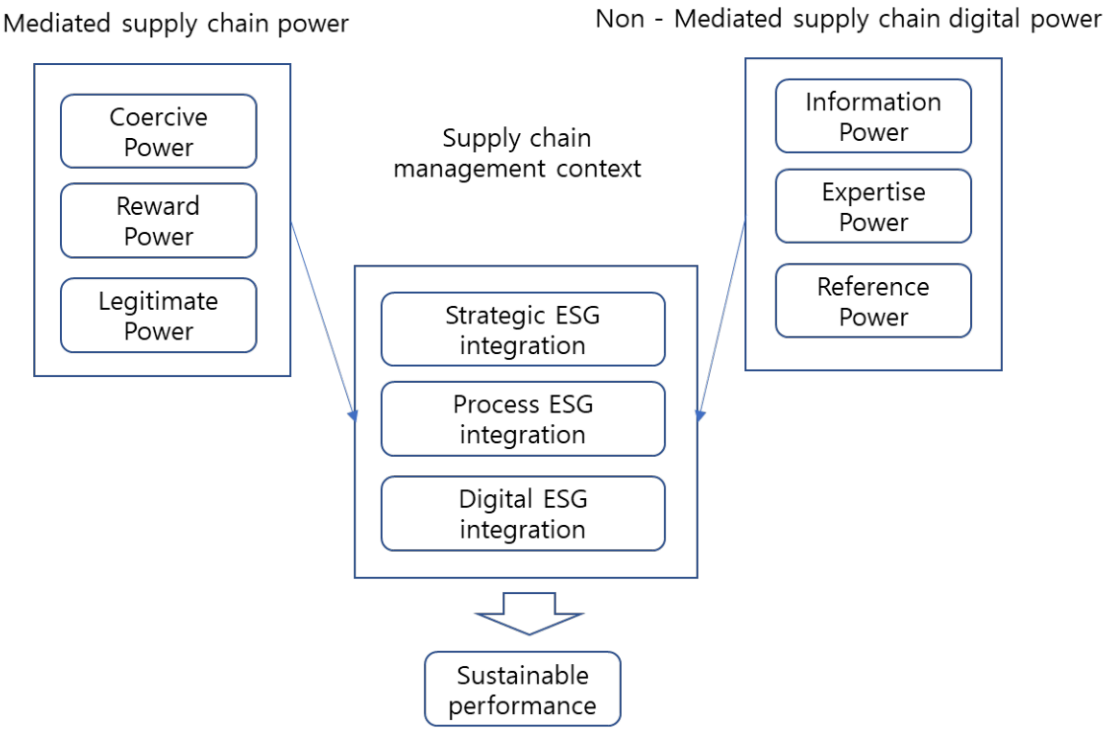

Figure 2: research model

Methodological approach: SEM vs. fsQCA

As this paper is conceptual, it lays the foundation for future empirical research on ESG integration in supply chain management. Based on the research gap to fill, we consider two methods. They are Structural Equation Modelling (SEM) and Fuzzy Set Qualitative Comparative Analysis (fsQCA). SEM is suitable for testing interactions between supply chain powers and ESG integration to supply chain practices. Its statistical approach assesses the strength and direction of the relationships between key variables (Gefen *et al.*, 2011)so offers insights of how supply chain powers contribute to ESG goals. However, it relies on predefined pathways may limit possible findings on impact of supply chain powers to ESG integration to supply chain management.

On the other hand, fsQCA offers a configurational approach that may accommodate complex causal relationships among key variables (Jang *et al.*, 2023)so able to capture multiple combinations of factors that may affect successful ESG outcomes in different scenarios. In sum, while SEM offers a structured framework to test the relationships among variables proposed in our model, fsQCA provides the flexibility to identify multiple combinations of variables for ESG success.

Criteria	SEM	fsQCA
Fit for Testing Hypotheses	Good. It is suitable for predefined hypotheses testing in the model	Less suited for hypothesis testing. It explores configurations of power types influencing ESG success
Captures Complex Interactions	Limited. It assumes linear relationships so potentially miss the non-linear relationships within the model	Effective. It accommodates diverse combinations of powers and other supply cahin practices

Flexibility In Pathways	Less flexible. It focuses on linear pathways for ESG implementation	Flexible. It identifies various configurations leading to successful ESG integration to supply chain management
Measures Strength & Direction	Good. It measures direct and indirect effects of power on ESG integration to supply chain management	Limited. It captures key combinations not exact influence or impact

Table 1: Comparison of SEM and fsQCA for the research question

Conclusion and suggestions for future research

This study establishes a conceptual basis for how supply chain power affect ESG adoption in supply chain management. It interprets ESG components into supply chain practices, examining how environmental, social, and governance factors can be integrated within the supply chain context. By combining Stakeholder Theory and Supply Chain Power Theory, it proposes a model that theorizes the mechanisms promoting ESG implementation in the supply chain network. This approach suggests how different forms of power—mediated and non-mediated—interact with ESG integration in supply chain management to promote sustainable performance.

Future empirical research is required to validate this conceptual model. The empirical research needs to explore the diverse pathways through which supply chain power influence ESG integration to supply chain practices. Researchers should consider different method such as SEM or fsQCA to offer a comprehensive understanding of these interactions. Then researchers are allowed to test the proposed relationships and examine different configurations of power across supply chain networks. Furthermore, studies should consider various industry contexts and regional factors to offer tailored guidance to enhance their firms ESG initiatives. This approach may not only deepen theoretical insights but also propose actionable strategies for sustainable supply chain management.

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