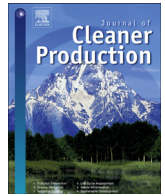


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# A hard nut to crack! Implementing supply chain sustainability in an emerging economy

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## ABSTRACT

In the last decade, sustainable supply chain management has become a key topic in the sustainability literature as well as a buzzword in industry and policy circles. Although research has made substantial contributions, there is a lack of understanding on how focal companies operating in emerging economies can lead the implementation of sustainability into their supply chains. This research connects and advances the constructs of cleaner production, sustainability and supply chains by exploring a classic case of a focal company operating in an emerging economy that, even facing considerable challenges, has been able to succeed in transforming its entire supply chain. Drawing from stakeholder theory and contingency theory, this research offers four key contributions to the sustainability and supply chain discourses as follows: 1) it proposes an innovation-centered approach to sustainable supply chain management, by adapting and extending the TCOS uncertainty framework; 2) it suggests that the way a focal company manages and is influenced by its established network of relationships shape the evolution of the supply chain sustainability trajectories; 3) it argues that supply chains are dynamic entities and should then be considered and understood through the lenses of evolutionary approaches; and 4) it suggests that the implementation and management of sustainable supply chains are context-specific challenges and therefore theoretical, managerial and policy generalizations are difficult to be achieved.

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## 1. Introduction

Sustainable supply chain management has been recently raising significant attention from industry leaders, academics and policy-makers. The debate is currently centered on why supply chains should incorporate sustainability and how sustainable supply chains can actually be implemented and managed. The research literature articulates that supply chains must be managed to achieve higher economic returns to its members (Power, 2005). However, economic objectives cannot be achieved at the expense of the natural environment and/or the society, i.e., financial goals should not be detached from the environmental and social dimensions (Linton et al., 2007; Markley and Davis, 2007; Seuring and Muller, 2008) so that satisfactory solutions for all stakeholders can be achieved (Hall et al., 2012a).

Therefore, careful attention to economic, environmental and social aspects of supply chain operations is what the literature defines as the compliance with the triple bottom line (Elkington, 1998),

which requires a balanced focus on those three key sustainability dimensions. Recent studies argue that economic objectives can be compatible with environmental and social objectives (Pagell and Wu, 2009) while others show evidences that the implementation of sustainable supply chains actually leads to commercial success (Zailani et al., 2012). However, even after substantial progress, several studies still claim that the social aspect of sustainability has been often neglected in existing research and practice (Beske, 2012).

Although the previous research has made significant contributions, the literature suggests that there is a dearth of research on the implementation and management of sustainable supply chains in emerging economies (Zhu et al., 2005; McCormack et al., 2008; Cerra et al., 2008). To help filling this gap, this research explores an exemplary case in an emerging economy and builds on stakeholder theory and contingency theory to derive at least four theoretical contributions. First, this paper adapts and extends the TCOS uncertainty framework by linking it to the sustainable supply chain literature as a means to provide a tool to understand and analyze the evolution of sustainability trajectories of supply chains. Second, I propose that the way a focal company manages and is influenced by its established network of relationships shape the

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evolution of the supply chain sustainability trajectories. Third, I argue that sustainable supply chains should be considered and understood through the lenses of evolutionary approaches, where supply chains are initially immature, but they learn and evolve overtime, and eventually incorporate sustainability into their business practices. Finally, I suggest sustainable supply chain implementation and management are context-specific issues and therefore theoretical, managerial and policy generalizations are difficult to be achieved.

In the remainder of the paper, the theoretical framework is discussed through the lenses of stakeholder theory and contingency theory as well as how the issues associated with these research streams may be applied to sustainable supply chain management in emerging economies. The methodology employed in this study is then detailed, followed by an exploratory in-depth illustrative case study in the oil and gas supply chain in Brazil. The paper finalizes with a discussion, implications and contributions of this research as well as avenues for future investigation.

## 2. The theoretical framework

The literature defines sustainable supply chains as the ones that perform consistently well on financial, environmental and social dimensions (Pagell and Wu, 2009). In practice, sustainable supply chains must truly adopt business practices and measures that are consistent with these three pillars of sustainability. If one stage of a supply chain fails in considering, measuring and/or controlling one of these dimensions, that supply chain is then unsustainable and will suffer the consequences of such an ambiguous and risky path.

Another critical element for sustainable supply chains to function well is the collaboration among its members. Collaboration in supply chain demands “aligned objectives, open communication, sharing of resources, risks and rewards” (Soosay et al., 2008:160). Since the literature clearly sustain that supply chain collaboration enhances innovation and sustainability performance (Sahay, 2003; Swink, 2006), the main goal becomes thus to adopt the right business practices to facilitate collaboration (Bello et al., 2004; McCarthy et al., 2013).

Taking a holistic perspective, I argue that relationships and collaborations between supply chain members and other external stakeholders are as important as the collaboration within the supply chain itself. This is because external stakeholders can be a source of risk for supply chains if their concerns are not accommodated. For example, the literature suggests that stakeholder theory is fundamental to understand and manage those complex networks of relationships and conflicting interests (Donaldson and Preston, 1995; Matos and Silvestre, 2013). According to Freeman (1984: 53), stakeholder is “any group or individual who can affect or is affected by the achievement of an organization’s purpose”, and include multiple individuals or groups such as financial claimants, employees, customers, communities, non-governmental agencies, universities, media, governmental officials, among others (Stubbs and Cocklin, 2008; Jensen, 2010). Studies using stakeholder approaches to address sustainability issues are not rare in the existing literature. For example, Byrd (2007) states that key stakeholders must be involved in the process when pursuing sustainable tourism development. Similarly, Steurer et al. (2005) argue that stakeholder relations management is a powerful mechanism through which organizations can address sustainable development challenges. Particularly related to Brazil, Lourenço and Branco (2013) examine the incentives for Brazilian firms to invest in corporate sustainability by using a theoretical approach that combines a resource-based perspective and stakeholder theory. In the oil and gas industry, Wheeler et al. (2002) explore the case of Shell in Nigeria and conclude that when dealing with local communities in

underdeveloped regions, corporations must respond quickly and be able to accommodate social demands, which is likely to bring benefits both for external stakeholders and the business.

In this paper, I apply the stakeholder theory perspective to sustainable supply chain management and, consistent with Matos and Silvestre (2013), argue that managers should make decisions by taking into account the interests of all supply chain stakeholders. This is a complex task indeed, but sustainable supply chains will be able to overcome uncertainties and build the required trust and legitimacy if stakeholders’ voices are listened and their concerns are accommodated. If stakeholders’ concerns are ignored, the supply chain can eventually suffer reactions from these stakeholders. This in turn puts firms and supply chains in uncomfortable positions and makes them lose reputation and legitimacy in the marketplace, which always negatively affect the financial performance of such firms and supply chains. If firms and supply chains are focused solely on financial goals, these uncomfortable situations frequently occur and can be difficult to overcome.

Focal companies are central agents that can encourage such dialogue-based behavior from all supply chain members. In fact, the literature says that external pressures and incentives put forward by external stakeholders (e.g., government, customers, media, etc) are departing points for sustainable supply chains (Seuring and Muller, 2008; Matos and Silvestre, 2013). The types and intensities of external pressures faced by supply chains depend on the nature of the firms involved, the industry where they operate, the region/country where they are located and the products and services they offer. Therefore, focal companies, supply chain members and external stakeholders are embedded in a particular business environment and consequently face context-specific issues: i.e., in each supply chain these entities will have different views, interests, pressures, values, behavior and attitudes toward sustainability. The definition of business environment involves all relevant physical and social aspects outside the boundary of an organization that impacts on the business decision-making processes (Duncan, 1972; Kumar et al., 1998).

Because of the existing idiosyncrasies associated with each context, I argue that the understanding and management of sustainable supply chains must take a contingency approach (Fisher, 1997). The literature says that when it comes to strategic issues, the decision-making process is situational, depending largely on multiple factors that are unique to a given situation (Hofer, 1975). Several studies in multiple industries use contingency approaches to address sustainability issues. For example, Walker and Jones (2012) draw on contingency theory and specific literature to develop a typology of approaches to sustainable supply chain management. Kunz et al. (2013) argue that contingency theory is a useful perspective to understand how organizations should manage informal networks, remain adaptive and resilient regarding sustainability while Christ and Burritt (2012) draw on contingency theory to develop a research framework to identify the circumstances under which organizations were more likely to engage in environmental management accounting activities. Regarding supply chain sustainable initiatives, Wu (2013) suggests that firms tend to adopt proactive environmental strategies and green innovations during periods of environmental uncertainty, which is an important contingency variable for firm environmental initiatives. I reason that this is also the case of sustainable supply chains in emerging economies, and without a deep understanding of the contextual factors, sustainability decision-making processes are erratic and the management of supply chains becomes extremely challenging.

This research highlights that the combination of stakeholder theory, which recognizes that the effectiveness of the decision-making processes is dependent on firms’ and supply chains’

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