



Sustainability in shipper-logistics service provider relationships: A tentative taxonomy based on agency theory and stimulus-response analysis

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ABSTRACT

The paper contributes to research on sustainability in dyadic buyer–supplier relationships of logistics services. It presents deeper knowledge on why and how suppliers choose to behave sustainably. The research analyzes how shippers stimulate their LSPs and how LSPs respond by conducting sustainability activities. Agency theory and the stimulus–organism–response model are applied as the theoretical foundations for an explorative case study analysis of three large and five small and medium-sized European logistics service providers (LSPs) active in road transport services. Significant differences are found between the sustainability efforts of SMEs and large LSPs and a tentative taxonomy of the sustainability response types of LSPs is derived. The taxonomy contributes to theory-guided research in sustainable supply chain management and procurement. Thereby, mismatches of stimuli and responses are identified and related agency problems in dyadic relationships in terms of sustainability are discussed. From a managerial point of view, the findings may serve as a starting point for purchasers of logistics services to develop adequate sustainability selection criteria and incentives.

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1. Introduction

Contemporary academic and practitioner journals reflect the increasing relevance of sustainability in purchasing and supply chain management. Publications on topics like corporate social responsibility, environmental responsibility, philanthropy and business ethics (interchangeable names for sustainability) (Bansal and Roth, 2000; Lockett et al., 2006; McWilliams et al., 2006) have increased significantly within the past decade (Carter and Easton, 2011; Seuring and Müller, 2008b). However, in times of global value creation networks and growing outsourcing, sustainability management clearly surpasses corporate borders and demands linkages with supply chain management (SCM) (Carter and Rogers, 2008; Pagell and Wu, 2009; Svensson, 2007).

The evolving interorganizational supply chain perspective of sustainability brings up the questions of if and how suppliers' sustainable behavior is required and actuated by buyers (Seuring and Müller, 2008a), as well as how suppliers react to the new sustainability demands of their customers. These questions play a prominent role in research on sustainable procurement. Articles in the field deal with drivers and mediators for the integration of supplier levels (Min and Galle, 1997; Pagell et al., 2010; Simpson

et al., 2007; Walton et al., 1998) and their impact on firm performance (Foerstl et al., 2010; Reuter et al., 2010), the development of sustainability selection criteria and methodologies (Bai and Sarkis, 2010; Lu et al., 2007), and the organizational changes required to implement sustainable supplier management practices (Koplin et al., 2007).

A closer look at relevant articles outlines four major research gaps and elucidates the relevancy and objectives of this paper. First, current research predominantly deals with conceptual frameworks on the constituents and mediators of sustainable purchasing principles from a buyer perspective (Amaeshi et al., 2008; Carter, 2004, 2005; Carter and Jennings, 2004; Salam, 2009). Although the supplier's view from a dyadic perspective may give deeper insights regarding the implementation of inter-organizational sustainability management, this perspective has rarely been contemplated (Simpson et al., 2007; Wolf and Seuring, 2010). Second, the majority of current publications neglect the tripartition of the sustainability concept by focusing on the environmental dimension only (Carter and Dresner, 2001; Kogg, 2003; Lu et al., 2007; Min and Galle, 1997; Vachon, 2007; Walton et al., 1998). Third, from the viewpoint of organization theory, institutional and stakeholder approaches are identified as being predominant in the field (Amaeshi et al., 2008; Simpson et al., 2007). According to Sarkis et al. (2011), research into incentive mechanisms and their impact on the adoption of sustainable practices could especially benefit from the consideration of agency theory (Kogg, 2003) and the behavioral sciences.

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Finally, it was found that the available research on sustainable procurement intensively focuses on international product suppliers and less on service suppliers such as logistics services providers (Wolf and Seuring, 2010). However, in addition to their well-known economic role, logistics processes have a strong impact on the environment (e.g. transportation-induced greenhouse gas emissions, noise and land consumption) and social issues (e.g. transport safety and physically draining occupations). Moreover, the derivative character of logistics services (i.e. the dependency of the demand for logistics services on the production and sales volumes of shipping industries) promotes the importance for focal companies to integrate related services into their interorganizational sustainability management.

Against this background, this research aims to fill the identified gaps regarding interorganizational sustainability management in shipper–LSP relationships using the following research question:

RQ: How is sustainability stimulated by shippers and how do LSPs respond?

The study contributes to research on the procurement of sustainable logistics services through the application of a combined theory approach that encompasses the agency theory of economics and the stimulus–organism–response model (S–O–R) of behavioral science. This combined approach provides a deeper conceptual understanding of the contractual relationship between shippers and LSPs in terms of sustainability and rational behavior. For empirical evidence, an exploratory case study analysis of eight European LSPs is applied from a dyadic but supplier-focused perspective. Based on the theoretical and empirical implications, a taxonomy of sustainability response types of LSPs is developed.

In a first step, relevant literature is analyzed with respect to findings and identified research gaps. Frameworks on the motivation for sustainability and sustainable supply chain management (SSCM) are considered, as well as sustainable logistics. Second, the underlying research framework and the combined theory approach are introduced. Third, the methodological steps of the case study analysis and taxonomy development are presented. Within the first part of the results section, the current status of stimuli or incentives in interorganizational sustainability management in the context of logistics services is analyzed. The second part deals with the responding sustainability activities. Finally, the results are contrasted and a tentative taxonomy of the response types of LSPs is developed. Thus, a categorization for sustainable logistics services is presented and the findings are discussed from an agency theory point of view.

2. Literature review

Sustainability and green supply chain strategies are described as ranging from compliance with legislation to holistic sustainability concepts that involve employees, customers and suppliers (Min and Galle, 1997; Walton et al., 1998) and, thus, reactive and proactive strategy types (Srivastava, 2007). Walton et al. (1998), as well as Min and Galle (1997), find limited integration of suppliers in their samples. However, they underline the important influence of purchasers and supply chain managers on sustainability management and suggest increased effort to proactively manage sustainability or environmental issues.

This aspect is linked with research on motivations for sustainability, which predominantly focuses on the role of institutional pressures. Therewith, normative, coercive and mimetic pressures are discussed as the key moderators for sustainable behavior (Bansal and Roth, 2000; Delmas and Toffel, 2004; Jennings and Zandbergen, 1995; Zhu and Sarkis, 2007). Against this background, Campbell (2007) proposes that economic conditions, such as weak financial performance and intensity of competition, as

well as institutional conditions (e.g. industrial self-regulation), drive companies to behave more or less sustainably. Zhu and Sarkis (2007) go one step further and test the moderating effects of implementing green supply chain practices. They point out that “the existence of market (normative) and regulatory (coercive) pressures will influence organizations to have better environmental performance (...)” and that “there are situations (...) where it might be prudent for production managers and strategists to champion certain practices down their supply chain (market pressures) (...)” (p. 4352). Furthermore, they highlight the role of firm size as a future research topic and propose that “(...) whereas regulatory and market pressures may influence larger organizations, smaller organizations may be more influenced by competitive pressures” (p. 4353).

While the articles presented deal with institutional and stakeholder pressures, they focus predominantly on the company level of sustainability. However, three current contributions were found that derive interorganizational SSCM frameworks. Carter and Rogers (2008) base their framework on a comprehensive literature review and integrate strategy, organizational culture, transparency and risk management into the triple bottom line concept. Seuring and Müller (2008b) include triggers for SSCM and supplier management for risk and performance, as well as SCM for sustainable products, into their framework. Pagell and Wu (2009) apply case study research to develop a model of sustainable SCM practices, which centers managerial orientation on sustainability and transparency in the supply chain and aims to increase sustainability outcomes. These frameworks reveal major research gaps in SSCM research: the triggers or incentives of SSCM, transparency by using adequate sustainability performance indicators, stronger supply chain orientation by the integration of suppliers and, finally, managerial orientation or organizational culture towards sustainability on a firm level (Kudla and Stölzle, 2011).

Since the discussed publications do not point out any specifics regarding service suppliers and logistics services in particular, two articles on sustainable or environmental logistics services are finally discussed. Carter and Jennings (2002) propose an integrative framework for socially responsible logistics services, based on 26 comprehensive interviews with logistics managers of medium and large-sized manufacturing companies. They develop an initial framework encompassing managerial antecedents, consequences and activities in the areas of diversity, environment, ethics, human rights/quality of life and safety. Since they do not consider outsourced logistics services, they suggest “(...) a confirmation by other supply chain members” and an “(...) exploration of other functional areas within the firm, as well as suppliers, customers, small manufacturing concerns, service firms, including transportation and warehousing providers (...)” (p. 168). In contrast, Wolf and Seuring (2010) use a dyadic approach, analyzing how buyers of logistics services consider environmental issues. They present initial evidence and challenges on incentives and supplier management for logistics services. Due to the lack of deeper insight and theory building in their findings, they suggest “(...) more in-depth analysis on pressures and incentives for implementing environmental logistics” (p. 99).

To conclude, the literature review highlights diverse knowledge gaps that motivate the research. First, the majority of the articles solely discuss environmental and green supply chain issues in contrast to the triple bottom line understanding of sustainability, which encompasses economy, environment and society (Elkington, 1997; WCED, 1987). Second, various publications are of a theoretical or quantitative nature and lack deeper insights into types of pressures in buyer–supplier relationships and suppliers’ responses. Third, the aspect of firm size is named crucial to the implementation of sustainability but also demands more in-depth analysis. Fourth, logistics services, as a predominant outsourcing function

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