The moderating role of relational bonding in green supply chain practices and performance

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A R T I C L E   I N F O

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A B S T R A C T

Previous research has paid attention to the effect of green supply chain practices on green innovation performance. However, little has been done to examine the substantive role of relational bonding in green supply chain management context. This study attempts to identify relational bonding as a potential moderator and examines the relationships between green supply chain practices, relational bonding, and green innovation performance. The results indicate that green supply chain practices and relational bonding are positively related to green innovation performance. Relational bonding moderates the relationship between green supply chain practices and green innovation performance. This study makes a contribution by integrating relationship marketing literature and green management literature. This study also provides practical implication for the essential role of relational bonding in green supply chain management.

1. Introduction

Under competitive, regulatory, and community pressures, firms develop systematic and integrated approaches to environmental management, such as green innovation and green supply chain management (Chiou et al., 2011; Giunipero et al., 2012; Zhu et al., 2012). Environmental challenges place competing demands upon firms who extend their green efforts across their supply chain (Vachon and Klassen, 2008; Wu et al., 2014). Firms cooperate with supply chain partners toward collective objectives to integrate environmental issues into their operational practices (Zhu et al., 2008, 2012). Green supply chain practices are related to logistical environmental management linkages (Zhu et al., 2012; Lee et al., 2014). These collective efforts involving partners help firms undertake green supply chain practices, such as eco-design, cleaner production, investment recovery, etc. (Vachon and Klassen, 2008; Wu et al., 2012; Zhu et al., 2012). Some recent studies show that firms and their suppliers develop green supply chain practices to facilitate the reduction of energy consumption, reuse of material, and the redefinition of operation and production processes (Yang et al., 2013; Zhu et al., 2013). For example, firms engaging in investment recovery can decrease production waste and increase material and product resource efficiency (Yang et al., 2013; Jabbour et al., 2014). Some benefits arise from green management in the supply chain, such as firm competitiveness (Yang et al., 2013), improved green performance (Chiou et al., 2011; Green et al., 2012; Yang et al., 2013; Jabbour et al., 2014), and better corporate performance (Zhu and Sarkis, 2004; Chan et al., 2012; Zhu et al., 2012). Firms can also strengthen their corporate reputation and image to achieve the goals of green innovation (Chen, 2008; Chiu et al., 2011).

While empirical evidence supports the benefits of green supply chain practices leading to improved performance, little is known about the contingent role of other organizational practices in the association of green supply chain practices and green innovation performance (Zhu and Sarkis, 2004). Relationship marketing literature indicates that relationships in a network act as bonds that tie parties together in a relational exchange (Chiu et al., 2005; Gounaris, 2005; Liang et al., 2008). Relational bonding refers to an economic, psychological, emotional, or physical attachment that is built through interaction (Chiu et al., 2005; Gounaris, 2005). Relational bonding has received considerable research attention in service contexts (Chiu et al., 2005; Gounaris, 2005; Harker and Egan, 2006; Liang et al., 2008). However, previous research has not considered the role of relational bonding in green supply chain management. It would be worthwhile to explore the unclear impact of relational bonding on green innovation performance. Accordingly, this study aims to examine the relationships between green supply chain practices, relational bonding, and green innovation performance. This study contributes to extend the concept of relational bonding to the green supply chain context. By identifying key green supply chain practices influencing green innovation performance, this study advances the green management literature to describe how internal and external green practices can be used to predict green innovation performance. Furthermore, by examining whether relational...
bonding can be a substantive moderator that influences the relationships between green supply chain practices and green innovation performance, this study suggests directions for effective relationship marketing in green supply chain management. This examination provides practical implications for understanding the essential role that relational bonding may play in the transformation of green supply chain practices into desirable green innovation outcomes. This study also contributes to the integration of relationship marketing literature and green management literature. The synthesis of these two fields opens new research avenues and provides new insights into our understanding of how green management benefits performance.

The original applications of relationship marketing focused on buyer-seller relationships (Chiu et al., 2005; Gouraris, 2005; Liang et al., 2008; Yu and Tung, 2013) and then were extended to help explain business-to-business relationships (Athanassopoulos, 2006). Relationship marketing has been shown to generate relational bonding that enhances customer loyalty and firm profits (Chiu et al., 2005; Gouraris, 2005; Harker and Egan, 2006; Liang et al., 2008; Yu and Tung, 2013). An organization is engaged in the development of the committed, interactive, and profitable exchanges with selected customers or partners (Harker and Egan, 2006; Liang et al., 2008). Social capital theory highlights the importance of social relations in knowledge transfer and boundary expansion (Adler and Kwon, 2002; Tsai, 2002). Social relationships between firms can facilitate the development of innovation to offset resource dependence and adapt to change (Athanassopoulos, 2006; Liang et al., 2008). Previous research has noted that relational bonding tactics help to build, develop, and maintain successful relational exchanges (Morgan and Hunt, 1994; Sarkar et al., 1998). Relational bonding enables a relationship to withstand disruptive forces and enhances partners’ willingness to engage in knowledge exchange (Sarkar et al., 1998; Chiu et al., 2005; Gouraris, 2005). Relational bonding promotes broader knowledge pooling that gives firms greater flexibility and more ideas with which to respond to environmental challenges.

Green supply chain management needs to consider multiple members of a supply chain and balances the potential costs and benefits among these members (Zhu et al., 2012; Igarashi et al., 2013; Yang et al., 2013). Strong bonding between partners increases interaction leading to the development of new knowledge and solving problems underlying the green product and green process (Vachon and Klassen, 2008; Wu et al., 2014). The collective efforts from partners can help firms to mitigate the environmental impact arising from logistics activities in supply chain (Zhu et al., 2008; Yang et al., 2013; Jabbour et al., 2014; Wu et al., 2014). Moreover, interacting partners exhibit greater efficiency in task coordination and certain improvements to facilitate material recovery or eco-design. In this way, relational bonding may serve as an effective mechanism that facilitates firms to develop green practices for favorable green innovation performance results. Accordingly, this study reasonably expects that the adoption of green supply chain practices to enhance green innovation performance will depend on the extent of relational bonding.

To achieve the objectives of this study, we review relevant literature and establish hypotheses in Section 2. Section 3 describes the data collection methods and measures for this study. Section 4 presents the results of the empirical study. The last section discusses the results with some theoretical and practical implications.

2. Research background and hypotheses

2.1. Green supply chain practices

The emphasis on environmental management and ecological protection has become a critical concern worldwide. Sustainability is a critical value consideration across the entire supply chain (Günnipero et al., 2012; Zhu et al., 2013; Jabbour et al., 2014). With the growing concern about environmental issues and regulations, companies are facing pressure to integrate green supply chain management into their operations (Günnipero et al., 2012; Hoejmoose et al., 2014). Green supply chain management is the process of incorporating environmental criteria or concerns into organizational purchasing decisions and long-term relationships with suppliers (Chan et al., 2012; Hoejmoose et al., 2014; Lee et al., 2014). Supply chain firms are now encouraged to implement green supply chain practices, such as cleaner production, green purchasing, eco-design, investment recovery, etc. (Zhu et al., 2008; Chan et al., 2012; Yang et al., 2013). Green supply chain practices integrate environmental concerns and consider inter-organizational activities (Green et al., 2012; Jabbour et al., 2014). Firms can manage the supply chain to meet the requirements of suppliers to increase resource efficiency, reduce energy consumption, or decrease emission discharge (Chiu et al., 2011; Zhu et al., 2012; Chan et al., 2012; Yang et al., 2013).

Green supply chain practices range from reactive monitoring of general environmental management programs to more proactive practices (Zhu et al., 2013; Lee et al., 2014). Previous research has identified the dimensions underlying the implementation of green management practices. Zhu and Sarkis (2004) examined environmental supply chain management and developed four green management practices: internal environmental management, external activities, investment recovery, and eco-design. Later studies conducted by Zhu et al. (2012) and Zhu et al. (2013) also focused on internal and external logistical linkages, eco-design, and investment recovery tactics. Peng and Lin (2008) indicated that green management practices involve producing of environmentally friendly products and minimizing overall impacts via green production, green R & D, and green marketing. Chan et al. (2012) investigated foreign-invested enterprises in China and demonstrated the presence of three core activities for green supply chain management: green purchasing, customer cooperation, and investment recovery. Yang et al. (2013) examined the relationships between internal green practices, external green integration, green performance, and firm competitiveness in the container shipping context. Internal green practices included green marketing, green policy, and green shipping practices. External green collaboration attributes included green collaboration with customers, partners, and suppliers. Hoejmoose et al. (2014) distinguished green supply chain practices into coercive and cooperative approaches. The choice of coercive approach requires firms and suppliers to behave in an environmentally responsible manner. In contrast, firms adopt cooperative approach by collaborating with suppliers to develop environmentally sound practices. Lee et al. (2014) indicated that green supply chain management practices comprise internal environmental management, eco-design, investment recovery, green purchasing, and cooperation with customers. The five green practices need to be integrated with one another.

The green supply chain encompasses various ecologically responsible practices designed to incorporate environmental considerations into decision making at each stage of a firm’s management of materials and logistical functions (Zhu et al., 2008; Chan et al., 2012; Hoejmoose et al., 2014). Green supply chain practices involve communication and coordination of the supply chain regarding a firm’s adoption of green management actions (Zhu et al., 2012; Yang et al., 2013; Jabbour et al., 2014). Green supply chain practices have various elements that broadly include both internal and external practices (Chiu et al., 2011; Green et al., 2012; Zhu et al., 2013; Yang et al., 2013). Internal practices include internal support for environmental commitment and the adoption of green practices (Zhu and Sarkis, 2004; Peng and Lin, 2008). External practices comprise green purchasing, cooperation with customers, environmental requirements, investment recovery, eco-design practices, and so forth (Chan et al., 2012; Jabbour et al., 2014; Lee et al., 2014). This study is based on classifications from previous literature (Green et al., 2012; Zhu et al., 2013; Lee et al., 2014), and green supply chain practices include internal environmental management, external activities, investment recovery, and eco-design. Internal environmental management reflects support and commitment.
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