



## Reprint of “Green Supply Chain Collaboration implementation in China: The mediating role of guanxi” ☆



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### ABSTRACT

This study aims to understand how buyer–seller relationship, competitive environment and guanxi affect Chinese manufacturers’ decision to implement Green Supply Chain Collaboration (GSCC). We also examine whether guanxi is able to mediate the buyer–seller relationship and GSCC implementation. Data collected from 222 Chinese manufacturing organizations were analyzed using the partial least squares method of structural equation modeling. The result shows that buyer–seller relationship influences Green Supply Chain Collaboration through asset specificity, volume uncertainty, transaction frequency and competitive environment. The results also showed support for our hypotheses that guanxi mediates the effect of asset specificity, volume uncertainty and environmental competition on GSCC.

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### 1. Introduction

Economic performance is traditionally an important priority for organizations in developing countries. However, economic growth in many of these countries, such as China, has substantially burdened the natural environment (Rao, 2002; Zhu and Sarkis, 2006). Organizations are subsequently beginning to realize the urgency to establish a balance between economic performance and environmental management (Angell and Klassen, 1999; Lee, 2008; Taghaboni-Dutta et al., 2010; Wu and Pagell, 2011; Yeh and Chuang, 2011). By improving environmental performance, (e.g., addressing environmental issues that concern their customers and reducing environmental effects of the production of goods and services), organizations can enhance their competitiveness (Rao and Holt, 2005). Environmental management is not just an act of compliance to government regulations, but also a stimulus for innovation and a strategy for efficient resource allocation (Zhu and Sarkis, 2006). An organization that manages its environmental initiatives will gain new competitive advantages that will add value to their core business operations (Porter and Class, 1995). Due to increasing environmental issues, the Chinese government has increased the pressure on Chinese manufacturers to reduce environmental damages caused by their operations (Zhu et al., 2011).

Green Supply Chain Collaboration (GSCC) is defined as the degree to which organizations strategically collaborate with supply chain partners to carry out environment-sustaining activities (Yang et al., 2013). It is increasingly being recognized

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as an important management approach and response from Chinese manufacturers to achieve productivity gains with less environmental harm (Zhu et al., 2011). Similar to supply chain management (SCM) practices, an important part of GSCC is the collaboration between supply chain partners, particularly among buyers and sellers (Barratt, 2004). Companies in the supply chain usually encounter difficulty in adopting to an innovation without “co-adoption” by their partners (Chong and Ooi, 2008) or lack of commitment in implementing green supply chain (Gunasekaran and Ngai, 2012). The inter-organizational relationship is critical in supply chain collaborations because smooth communication between buyers and sellers is established, thus allowing the achievement of long-term green production goals (Scannell et al., 2000). This research will first expand the small but growing literature examining the buyer–seller relationship in GSCC by applying the transaction cost approach and by considering the competitive environment.

Furthermore, existing studies on GSCC have focused on manufacturing firms in developed or western countries. China today is one of the largest manufacturing countries in the world. Chinese companies, as well as the Chinese government, understand that the key to sustaining growth in the manufacturing industry is to improve environmental performance. Although the concept of GSCC's origins can be traced to initiatives by developed countries, it is applicable to a developing economy context such as China. Examining Chinese manufacturing industries expand our understanding of GSCC as an international business phenomenon. Furthermore, many foreign countries work together with Chinese manufacturers due to the global supply chain, it is therefore important for companies both in China and outside of China to understand what influence Chinese manufacturers to implement GSCC.

Management scholars in the past have found that “guanxi” is an important factor in establishing and maintaining business relationships in China (Gao et al., 2012). A recent study by Cheng et al. (2012) found that guanxi also plays an important role in the management of supply chain relationships. Cheng et al. (2012) suggested that a good buyer–supplier relationship can increase transaction-specific investments, obtain valuable resources, and reduce opportunistic behaviors. Therefore, the second objective of this study is to empirically investigate the role of guanxi in the implementation of GSCC in Chinese manufacturers.

GSCC has gained attention from the manufacturing sector, and this trend will continue in the next two decades (Chong and Ooi, 2008; Gunasekaran and Spalanzani, 2012; Zhu and Sarkis, 2006), because the manufacturing sector is facing a growing number of competitive pressures such as the need to reduce operating cost and to improve efficiency regardless of the global competition, an increasing scarcity of resources, and amplified international pressure from trading partners in developed nations to exert environment-sustaining practices (Law and Gunasekaran, 2012; Zhu and Sarkis, 2006). Fueled by the need to improve environmental and economic performance, Chinese manufacturers have been increasing their efforts in implementing GSCC (Abdulrahman et al., 2014). Chinese manufacturers who do not comply with the environmental requirements risk losing their businesses as many of their overseas customers considerably emphasize on green initiatives. Therefore, Chinese manufacturers are driven to implement GSCC as a result of the competitive environment.

In summary, this research aims to answer the following research questions: (1) What will influence the implementation of GSCC among Chinese manufacturers? (2) Will guanxi mediate the antecedents (i.e., buyer–seller relationships and the competitive environment) of GSCC implementation by Chinese manufacturers?

## 2. Theoretical background and hypotheses development

### 2.1. Green Supply Chain Collaboration

A growing body of literature exists on the importance of green or environment-sustaining practices in the supply chain (Bowen et al., 2001; Sarkis, 1995; Sheu and Chen, 2012; Yeh and Chuang, 2011; Zhu and Sarkis, 2004). Green supply chain management has been conceptualized as one with green design, green procurement practices, total quality environmental management, environment-friendly packaging and transportation, and product end-of-life practices such as reduction, reuse, remanufacturing, and recycling (Hervani et al., 2005). Eltayeb et al. (2011) further expanded the definition of green supply chain management to include eco-design, green purchasing, and supplier and customer environmental collaborations. Green supply chain management includes internal green and external green integration and collaboration (Yang et al., 2013). Expanding from supply chain collaboration (Ramanathan et al., 2011), GSCC refers to two or more chain members, including customers, partners, and suppliers, strategically working together to gain competitive advantage and provide maximum value to customers by information and benefit sharing, by implementing an efficient flow of money, products, and services, and by making joint decisions instead of working alone (Simatupang and Sridharan, 2002; Yang et al., 2013). GSCC involves a significant number of environment-sustaining activities, such as recycling, reverse logistics and remanufacturing, and innovation (Zhu and Sarkis, 2004).

### 2.2. Buyer–seller relationship

Buyer–seller relationships are vital to the success of a supply chain and its improvement (Simpson et al., 2007). A well-coordinated and well-managed buyer–seller relationship can offer competitive advantages that are not easy to obtain from open-market transactions (Dyer and Nobeoka, 2000). Studies had shown that buyers and sellers collaborate to improve their supply chain because the enhancement of the supply chain will positively affect their business performances. A useful study

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