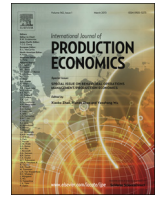




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Information sharing and collaborative behaviors in enabling supply chain performance: A social exchange perspective



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ABSTRACT

In modern business, competition is no longer between organizations, but among supply chains. Supply chain is complex in nature, involving various work flows across trading partners. Two major concerns arise in enabling supply chain performance, information sharing and collaborative effort. However, it is necessary to further identify the fundamentals for their implementation in terms of partners' exchange beliefs. Social exchange theory guides interactional behaviors for the expectation of a reward from partners. This study considers four key social exchange issues, trust, commitment, reciprocity, and power and to be antecedents of information sharing and collaboration. This study thus proposes a novel research model to examine the relationships among SET-based variables, information sharing and collaboration, and supply chain performance. Empirical findings show that SET-based issues are important to determine information sharing and collaboration and both information sharing and collaboration indicate partial mediation effect on supply chain performance.

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1. Introduction

In the contemporary business environment, competition is no longer between organizations, but between supply chains. Organizations are increasingly thinking that they must compete, as part of a supply chain, against other supply chains, to rapidly reflect market changes (Cigolini et al., 2004). The supply chain, in essence, is complex and dynamic across a large number of partners (Vijayasathiy, 2010). To respond to these challenges, supply chain management (SCM) is an important concept to effectively help a focal firm to manage its partners so that they can further build long-term partnerships (Fynes et al., 2008; Sambasivan et al., 2013). SCM can be defined as an effective management on the three complementary flows, material, information, and finance, between a focal firm and its partners (Rai et al., 2006; Lin and Lin, 2006). However, a well-defined mechanism for coordinating partners through using online information plays an important role in effectively managing these flows (Sahin and Robinson, 2002). The major concerns for this mechanism are two-fold: information sharing and collaborative effort (Smith et al., 2007; Yang et al., 2008).

First, information is often inconsistent between upstream and downstream of supply chain partners (Prajogo and Olhager, 2012). Supply chain partners may have to forecast their market demands based on incomplete information. All partners thus require

keeping higher stock for their products or components to immediately respond to market changes. As a result, this would cause the increase of production cost and the reduction of profit margin for partners. This is well known as “bullwhip effect”. Thus, many studies have highlighted that information sharing is one of critical factors for an effective supply chain practice (Narasimhan and Nair, 2005; Jeong and Leon, 2012). Second, a well-defined supply chain is founded on the essence of collaborative behaviors on which a mutual decision-making process is established toward achieving common goals across participants (Smith et al., 2007; Vachon and Klassen, 2008). In essence, collaborative behaviors allow participants to jointly gain a clear understanding of future demand, develop a realistic plan to satisfy the demand, and coordinate related activities in a systematic manner to finish the task (Barratt, 2004). Thus, it is the driving force of an effective supply chain practice (Horvath, 2001). Further, to guide collaborative undertakings, researchers have suggested the importance of advanced IT in supporting information sharing and thereby facilitating collaboration in the supply chain (Smith et al., 2007; Chan et al., 2012).

When information sharing and collaboration are closely related to the success of supply chain alliance, however it is imperative to further identify the fundamentals in contributing to both exchange beliefs of partners (Myhr and Spekman, 2005; Sheu et al., 2006). Social exchange theory (SET) argues that individuals or groups attempt to interact with others for the expectation of a reward (Yang et al., 2008). SET assumes that attitudes and behaviors can be assessed by the rewards of interaction minus the cost of that interaction. In the context of supply chain, a supplier makes a contribution to its manufacturer via their partnership policies and

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an expectation from its manufacturer forms for the return of a contribution at a later time (Narasimhan et al., 2009). Many studies have applied SET to examine inter-firm information sharing or collaborative behaviors in the supply chain. SET in supply chain has been defined differently for the particular focus. For example, one study modeled how justice and power issue in SET influence long-term orientation and relational behaviors toward partners (Griffith et al., 2006). Some studies proposed two key issues in SET, trust and commitment, for maintaining relational stability in supply chain alliance (Kwon and Suh, 2005; Yang et al., 2008). Additional studies focused on mutual adaption between partners for developing strategic alliance based on trust and power issue in SET (Hallen et al., 1991; Molm, 1997). Given the theoretical foundations of SET in the supply chain, we thus define comprehensively the antecedents of information sharing and collaboration: trust, commitment, reciprocity, and power.

Finally, supply chain performance is the ultimate goal for partners to implement this practice (Tan et al., 2002). In this study, we examine supply chain performance in terms of a focal firm's performance in managing its supply chain. Historically, studies on organizational performance have focused more on financial measure (Lapide, 2000; Ranganathan et al., 2004), and the inconclusive results of IT productivity may be due to applying inappropriate measuring methods (Devaraj and Kohli, 2003). This study therefore considers both financial and non-financial measures for the supply chain performance in a complementary manner. In addition, many studies on supply chain have suggested a number of organizational characteristics for potential effects on achieving supply chain performance, such as industry type and firm size (Banker et al., 2006; Wu and Chang, 2012). We thus specify industry type and firm size as two control variables. Grounding on SET and the interactional behaviors between partners, this study proposes a research model to explore the relationships among exchange drivers, information sharing and collaboration, and supply chain performance. Empirical data are further used to examine this research model.

2. Literature review

Based on the above discussion, Fig. 1 provides a pictorial depiction of this research model. The followings discuss the theoretical foundations and the development of hypotheses.

2.1. Supply chain management

Most firms are striving to improve their flexibility and customer responsiveness in the dynamic market. The concept of SCM is an important weapon for them to reach the goal (Tan et al., 2002).

Moreover, the growth in B2B commerce has spotlighted the role of SCM in the modern digital economy. SCM is in a purpose to integrate key business processes among partners for effectively providing various forms of semi-products and services in the end-product creation and hence adds value to customers and other stakeholders (Lambert et al., 1998). Specifically, the mechanism basically involves a large variety of flow activities across the whole supply chain, including material, subassembly, product, order, delivery, payment, and customer service (Stank et al., 2001; Lin and Lin, 2006). It is extremely difficult to effectively manage these complex flows together.

These flows require a huge amount of online communication efforts to support information sharing in establishing collaborative behaviors among participants in the supply chain.

Two major concerns arise for the problem from the literature review, the technical issue (information technology integration) and the social issue (information sharing and inter-organizational relationship) (Gunasekaran and Ngai, 2004; Prajogo and Olhager, 2012; Wei et al., 2012). However, adopting e-business technologies is known as a popular means for information technology (IT) integration between members and is well defined for most business organizations in the Internet era. A platform of IT integration is also a prerequisite for defining information sharing. It is the notion of this study that over reliance on the technical issue without a willingness to share information for critical activities creates a problem for partners with meaningless connection, that is, lack of an effective collaboration. A new approach is thus the major effort of this study in terms of viewing inter-organizational relationships and information sharing as the important antecedents of collaborative behaviors.

2.2. SET and supply chain management

SET originally focuses on cost-profit view for individuals and corporate groups to form basic motivation for an interaction with others (Emerson, 1976). Further, SET argues that attitudes and behaviors for exchange with others are determined by the rewards of interaction minus the cost of that interaction (Luna-Reyes et al., 2005; Kale and Singh, 2009). In other words, the more often a particular exchange is rewarded, the more likely a participant to the exchange is to perform again. SET basically composes a series of basic principles of psychological and economical reinforcement outlining the system of social exchange in an analysis of their participating behaviors, including trust, commitment, reciprocity, justice, relative dependence, and power (Bock and Kim, 2002). Many studies have utilized SET to examine the development of supply chain relationships (Kwon and Suh, 2005; Wei et al., 2012). They argued that social relationships between supply chain partners are formed and maintained because the partners offer reciprocal benefits to one another over time.

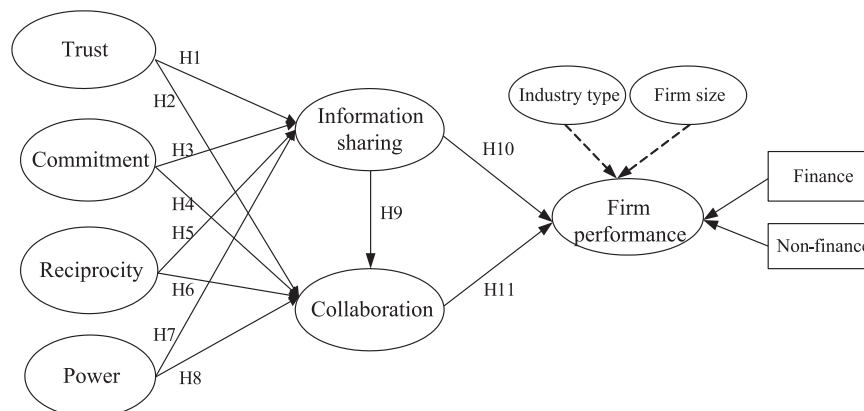


Fig. 1. Research model.

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