International Journal of Information Management 39 (2018) 5–19

Contents lists available at ScienceDirect

International Journal of Information Management

journal homepage: www.elsevier.com/locate/ijinfomgt

Research Note

Examining supply chain collaboration with determinants and performance impact: Social capital, justice, and technology use perspectives

Ing-Long Wu[a,*], Mai-Lun Chiu[b]

[a] Department of Information Management, National Chung Cheng University, Taiwan
[b] Department of Information Management, National Penghu University of Science and Technology, Taiwan

ARTICLE INFO

Keywords:
Supply chain collaboration
Social capital theory
Justice theory
IS success model
Firm performance

ABSTRACT

Supply chain collaboration is critical to achieving the integration of partners for performance impact. Two major concerns arise, organization's sharing behaviors and technology use behaviors. An organization's sharing behaviors relates to a decision of two perceptions among partners, commitment of network resources and fairness of network resources distribution. Further, technology use behaviors are important for members in IT-enabled supply chain. Social capital and justice issues intend to explain the two particular perceptions as IS success model defining technology use behaviors. This study integrates the three issues to examine their influence on supply chain collaboration and in turn, realized firm performance. Empirical findings report that technology use behaviors are most significant as other two issues are also concerned.

1. Introduction

Supply chain (SC) is a concept for uniting various business flows among partners toward a common objective (Bowles and Lu, 2014; Nakano, 2009). SC collaboration is recognized as a critical behavior between members for reaching a smoothly flowing of a supply chain (Kwon & Suh, 2005; Wu, Chuang, & Hsu, 2014). This behavior is characterized by the sharing of information, material/product, finance, and risk across the supply chain (Ranganathan, Dhaliwal, & Teo, 2004; Teo & Dhaliwal, 2011). This indicates that the willingness of sharing network resources between members is important in determining collaborative behaviors in the supply chain. Previous studies have claimed that sharing behaviors between partners would promote the coordination of various flow activities across the supply chain (Narasimhan, Nair, Griffith, Arlbjorn, & Bendoly, 2009; Smith, Watson, & Baker, 2007). Specifically, Klein and Rai (2009) discussed the importance of relational behaviors (a type of sharing behaviors), such as trust and commitment between partners, in facilitating collaborative partnerships in the supply chain.

Meanwhile, many studies have reported the enabling role of IT in supporting collaborative behaviors in the supply chain and the further specific IT, interorganizational systems (IOS) or supply chain technologies, are the important components of collaborative behaviors (Lin, 2014; Wu & Chiu, 2015; Youn, Yang, Kim, & Hong, 2014). Considering IT supported SC collaboration is the main focus of this study. Technology use behaviors for members may also play the critical role in determining the success of the collaborative behaviors. Extant literature has argued this issue extensively (Straub, Rai, & Klein, 2004; Subramani, 2004).

In brief, previous discussions have shown that research on SC collaboration was mostly focused either on sharing behavior or on technology-use behavior perspective. In essence, the two perspectives are shown a great distinction for an organization (interorganizational features) and technology based property. Further, several studies have proposed both behavior perspectives as different sources for defining the main drivers of SC collaboration (Singh and Teng, 2016; Paulraj, Lado, & Chen, 2008). More evidence can be also found for the argument. For instance, the technology-organization-environment framework (TOE) has been widely used as different sources for identifying the main drivers of interorganizational innovation for partners (Chan, Chong, & Zhou, 2012; Zhu, Kraemer, & Xu, 2006). Accordingly, two major concerns arise in driving collaborative behaviors, sharing behaviors and technology use behaviors.

Further, many studies have claimed that sharing behaviors in the supply chain, in general, relates to a decision of two inter-organizational concepts among partners, social capital and perceived justice (Du, Lai, Cheung, & Cui, 2012; Fawcett, Osterhaus, Magnan, Brau, & McCarter, 2007; Krause, Handfield, & Tyler, 2007; Wu et al., 2014). Little research has been focused on both social capital and justice concept with collaborative behaviors in the supply chain.

For the social capital, Min et al. (2008) defined network resources in a supply chain as a set of social resources embedded in the network

* Corresponding author at: Department of Information Management, National Chung Cheng University, 168 University Road, Ming-Hsiung, Chia-Yi, Taiwan.
E-mail address: ilwu@mis.ccu.edu.tw (I.-L. Wu).

https://doi.org/10.1016/j.ijinfomgt.2017.11.004
Received 14 June 2016; Received in revised form 30 September 2017; Accepted 10 November 2017

relationships and indicated that a high level of perceived interdependence encourages a willingness to commit network resources for partners. Several researchers also indicated the importance of a commitment of network resources in the supply chain as exemplified by openness to sharing of resources and ideas as well as a joint decision-making process (Cheng & Fu, 2013; Zacharia, Nix, & Lusch, 2011). Their arguments are mainly based on a premise of the role of relational behavior in the supply chain, a type of social capital, to permit a privilege for an access to common resources. Accordingly, a commitment of network resources is greatly dependent on the development of social capital/resources in the supply chain. Social capital theory (SCT) can be applied for analyzing sharing behaviors.

For the perceived justice, the sharing of resources enables supply chain partners to better create value from the relationship that has well established appropriate/fair processes and rewards for dealing with network resources (Huo, Wang, & Tian, 2016; Narasimhan, Narayanan, & Srinivasan, 2013). Liu et al. (2012) argued that a failing to develop fairness perception regarding the distribution of network resources for partners may result in damage to or termination of the supply chain relationship. When a firm in a supply chain perceives the development and management of the relationship policies for network resources to be fair/equitable, it tends to develop a long-term orientation toward its partners (Griffith, Harvey, & Lusch, 2006; Katok and Pavlov, 2013). On the basis of the evidence, the distribution of network resources builds on the development of fair policies in the supply chain. Justice theory is suitable for examining sharing behaviors.

For the technology use, Delone and Mclean's IS success model (D&M Model) identifies the links between IT features, information, system, and service quality, and user satisfaction, further leading to individual and organizational benefits (Delone & Mclean, 2003). It has been widely used in various IS contexts to explore user acceptance (Venkatesh & Bala, 2008). In particular, several studies have reported the importance of information quality for assessing the support provided by a supply chain system regarding the flow activities among their partners (Peiris, Jung, & Gallupe, 2015; Zhou et al., 2014). These studies therefore considered D&M model as a theoretical basis to define the performance indicators. Other studies have argued for using D&M model to evaluate supply chain logistics information systems as the three IT features, information, system, and service quality, are the main concerns to the integration of this system (Bell, Bradley, Fugate, & Hazen, 2014; Klein & Rai, 2009). The D&M is proposed for exploring technology use behaviors.

Finally, we examine a focal firm performance regarding managing SC collaboration as the research target. Supply chain studies on organizational performance have been focused more on financial measures (Ranganathan et al., 2004; Wu & Chuang, 2010). Exploring IT value in a firm level has been inconclusive and this may be due to applying inappropriate performance measurement methods (Devaraj & Kohli, 2003). This study therefore considers both financial and non-financial performance measurement in a complementary manner.

Grounded on SCT, justice concept, and D&M Model, this study proposes a novel research model to understand the drivers of SC collaboration and in turn, a focal firm performance, in a complete manner. These drivers include both SCT and justice concept for sharing behaviors as well as system related features for technology use behaviors. In addition, many studies have suggested a number of organizational characteristics with a control effect on the realization of firm performance, such as industry type and firm size (Subramani, 2004; Banker, Bardhan, Chang, & Lin, 2006). We thus specify industry type and firm size as two control variables.

2. Literature review

2.1. Supply chain collaboration

A supply chain, in essence, is not a chain of businesses with one-to-one, business-to-business relationships, but a network of businesses and relationships (Lambert, Cooper, & Pagh, 2003). SC offers opportunities to capture the synergy of intra- or inter-firm integration and the management to create common advantages (Petersen, Handfield, Lawson, & Cousins, 2008). In general, there are three components flowing through the supply chain: information, material, and finance (Rai, Patnayakuni, & Seth, 2006). The movement of the three components requires a great effort of collaboration with the support of IT between partners. Recently, the growth in information and communication technologies (ICT) such as Internet technologies has enhanced organizational capabilities to effectively integrate the supply chain (Angeles, 2009; Wu, Zhong, & Mei, 2011).

SC collaboration is a mechanism to managing interdependencies for operations, product/process designs, marketing effort, and sale planning/forecasting as well as establishing strategic decision among SC members (Tan, Lyman, & Wisner, 2002). It essentially requires the support from a sharing of information, material/finished products, and finance as well as a higher level of joint decision-making and goal-setting aimed at enhancing both common and individual advantages (Zacharia, Nix, & Lusch, 2009). It indeed indicates a high level of interrelationships across partners with uncertainty (Nakano, 2009). This mechanism becomes a critical linking path to fulfill the increased need of integration across the entire supply chain.

Moreover, as information sharing is often discussed for its effect on the participation of network relations in the supply chain, SC collaboration is quite different from information sharing in a variety of perspectives. Information sharing refers to the extent to which critical and proprietary information is communicated to SC partners (Chae, Yen, & Sheu, 2005). Information sharing basically indicates the exchange of the different types of information among SC members, including operational, tactical, and strategic (Narasimhan and Nair, 2005; Rai et al., 2006). However, SC collaboration is more complex for its mechanism which requires a commitment of time and resources as well as a joint high-level decision making process for SC partners while a sharing of information is just a part of SC collaboration (Zacharia et al., 2011).

Further, some studies of SC collaboration have reported resources sharing as an important precursor of SC collaboration (Min, Mentzer, & Ladd, 2007; Fawcett, Wallin, Allred, Fawcett, & Magnan, 2011). Specifically, Fawcett et al. (2011) claimed that SC collaboration relies heavily on sharing constraint resources or critical information for being able to create operational performance and customer satisfaction. Chae et al. (2005) also recognized the importance of successful SC collaboration for being associated with a high level of resources/information sharing.

2.2. Antecedents of supply chain collaboration

As discussed above, there are two major issues for building SC collaboration, sharing behaviors and technology use behaviors. Further, many researchers have argued the importance of sharing behaviors for SC members to participate in collaborative behaviors (Smith et al., 2007; Zacharia et al., 2009). As SC is often recognized with a digitally enabled property due to the complexity of inter-organizational nature, several studies have pointed out the important role of technology use behaviors in motivating collaborative behaviors (Subramani, 2004; Rai, Arikan, Pye, & Tiwana, 2015).

Further, there are two related decisions defined in the study for sharing behaviors among partners, commitment of network resources and fairness of network resources distribution (Du et al., 2012; Krause et al., 2007; Wu et al., 2014). Specifically, supply chain researchers have studied how building social capital/resources with a commitment creates values for partners to be willing to share information and participate in collaborative behaviors (Lawson, Tyler, & Cousins, 2008; Bernardes, 2010). Supply chain scholars have discussed the importance of buyer-supplier interdependence in the principle of equity and justice