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Small and Medium sized Enterprises' Collaborative Buyer-Supplier Relationships: Boundary Spanning Individual Perspectives

Boundary-spanning individuals (BSIs) play a critical role in supply chain management, especially in small and medium sized enterprises (SMEs) where interactions with buyers and suppliers can depend heavily on just a few individuals. This study, utilizing data from Korean manufacturing-sector SMEs, explores whether cooperative social value orientations of SMEs' BSIs influence the effects of collaborative buyer-supplier initiatives. The results suggested that the performance implication of decision-sharing initiative increases when BSIs have a high level of cooperative social value orientation. However, it also negatively moderates the relationship between risk/benefit sharing (involving financial losses or gains) and performance suggesting possible negative side-effects.

However, we found that such orientation also negatively moderates the relationship between risk/benefit sharing (involving direct financial losses or gains) and relationship performance suggesting possible negative side-effects.

Introduction

Collaborative buyer-supplier relationships can be a major source of company competitiveness (Carr and Pearson 1999; Stuart 1997). Indeed, many small- and medium-sized enterprises (SMEs) recently have chosen to make supply-chain management (SCM) initiatives (e.g., the building of closer buyer-supplier relationships) part of their strategies, due specifically to various associated benefits such as access to their partners' resources (Arend and Wisner 2005), though not all of those strategies have proved successful (Adams, Khoja, and Kauffman 2012).

Significant efforts have been made over the past few decades to identify the factors enabling such relationships. Among those identified thus far are trust (Capaldo and Giannoccaro 2015; Fynes, Voss, and De Búrca 2005; Johnston et al. 2004; Narasimhan et al. 2009; Wang, Craighead, and Li 2014; Zhao et al. 2008), information sharing (Cannon and Homberg, 2001; Humphreys, Lei, and Chan 2004; Paulraj and Chen 2005; Qrunfleh and Tarafdar 2014; Turker and Altuntas 2014; Walter et al. 2003), and long-term commitment (Paulraj and Chen 2005; Gundlach, Achrol, and Mentzer 1995; Kalwani and Nayarandas 1995; Ramanathan and Gunasekaran 2014; Turker and Altuntas 2014). However, the majority of such studies' findings are based on data from large companies (Bordonaba-Juste and Cambra-Fierro 2009; Gunasekaran, Forker, and Kobu 2000; Morrissey and Pittaway 2006; Quayle 2003), and as such, might not be applicable to SMEs (Adams, Khoja, and Kauffman 2012; Morrissey and Pittaway 2006). Certainly, more research into how SMEs should best approach SCM is needed.

One aspect of SMEs' buyer-supplier relationships requiring attention is the role of boundary-spanning individuals (BSIs): employees who play a variety of roles at the interfaces between organizations and their environments (Stock 2006). Existing research generally has

explored buyer-supplier relationships at the company level; however, BSIs, from both parties, lie at the core of such inter-firm relationships (Fugate, Thomas, and Golicic 2012; Mentzer et al. 2001; Mentzer, Foggin, and Golicic 2000). As Chen, Daugherty, and Roath (2009) suggested, such individuals are the main channels of inter-organizational interaction, and so play critical roles in establishing and maintaining supply-chain relationships (Charvet and Cooper 2011; Stock 2006). In fact, positive traits in BSIs — cooperativeness for example — are positively related to firm performance (Omar et al. 2012; Tangpong, Hung, and Ro 2010).

We suggest that the influence (positive or negative) of BSIs on buyer-supplier relationships can be more prominent in SMEs, where overall management resources are smaller, and where activities related to managing supply-chain partnerships — such as interactions with buyers and suppliers — are likely to depend heavily on small numbers of BSIs. We therefore argue that the ‘cooperative’ social value orientation of such individuals can either enhance or compromise the outcomes of collaborative buyer-supplier initiatives such as information sharing, decision sharing and risk/profit sharing in supply chains (Ha, Park, and Cho 2011). We suggest, furthermore, that BSIs with high levels of cooperative orientation will be better at identifying and evaluating partnership opportunities, thereby reducing the risk of committing SMEs’ limited resources to potentially unproductive partnerships, enabling them to engage in more appropriate collaborative initiatives and, in that way, tap their partners’ resources and capabilities.

Following this line of inquiry, the present research examined whether the ‘cooperative’ social value orientation of a firm’s BSIs positively moderates the effects of its collaborative buyer-supplier initiatives (e.g., information exchange, joint decision making, risk/profit sharing) on relationship performance, based on a survey of 344 Korean manufacturing-sector SMEs.

Theoretical Development

SCM and Buyer-Supplier Relationships in SMEs

The definition of an SME varies across countries. According to the Korean government's Small and Medium Business Administration (SMBA), the term refers to a company that employs no more than 300 people and has capital holdings of 8 billion Korean won or less (SMBA 2013). SMEs are an important component of the global economy. They account for 95 percent of non-farm businesses in the United States, (Adams, Khoja, and Kauffman 2012) as well as 99.9 percent of all Korean manufacturing companies, hiring over 12.6 million people between them in 2011 (SMBA 2013). The SME literature suggests that their main advantages include their niche nature (Arend and Wisner 2005; Dean, Brown, and Bamford 1998), their selective focus on specific strengths (Woo and Cooper 1981), as well as their flexibility (Fiegenbaum and Karnani 1991; Levy and Powell 1998) and speed of response, all of which positives are due to their structural simplicity (Chen and Hambrick 1995; Liesch and Knight 1999).

SCM can offer SMEs a number of benefits, including access to partners' resources (Arend and Wisner 2005), growth opportunities (Beekman and Robinson 2004), and financial and operational gains (Adams, Khoja, and Kauffman 2012; Bordonaba-Juste and Cambra-Fierro 2009; Sukwadi, Wee, and Yang 2013). Despite such benefits, SCM initiatives are often beyond the reach of many SMEs, due to their relative lack of management and other resources (Adams, Khoja, and Kauffman 2012), low purchasing/selling power (Cox 2001), and/or inability to perceive SCM's benefits (Vaaland and Heide 2007).

Moreover, not all SMEs that have managed to incorporate SCM into their strategies seem to have reaped the promised benefits: as Arend and Wisner (2005) found, in some SMEs, SCM initiatives were negatively related to performance. There are a number of reasons for

such ‘poor fits.’ First, SMEs tend to be insufficiently endowed with the resources and competencies required for successfully incorporating SCM (Adams, Khoja, and Kauffman 2012; Arend and Wisner 2005; Bordonaba-Juste and Cambra-Fierro 2009). For example, they can struggle to attract good managers (De Toni and Nassimbeni 2003), and many lack a senior executive responsible for SCM (Quayle 2003). Second, SCM initiatives are often imposed upon them or lead by other, larger parties (Arend and Wisner 2005; Gélinas and Bigras 2004; Quayle 2003): in such cases, SMEs view SCM as ‘the exertion of power’ by such companies (Quayle 2003), and their refusal to incorporate the SCM initiatives of larger partners might mean losing their business (Arend and Wisner 2005). Third, larger companies are not always keen on forming partnerships with SMEs (Olorunniwo and Hartfield 2001; Quayle 2003). Difficulties in implementation processes (Vaaland and Heide 2007), and the lack of formal strategies to accomplish the same (Adams, Khoja, and Kauffman 2012), also contribute to poor fit between SCM and SMEs.

Thus SMEs do not always find the implementation of collaborative buyer-supplier initiatives a straightforward matter. As De Toni and Nassimbeni (2003) suggest, a limited propensity for interacting with other firms is one of the distinctive characteristics of SMEs, for which reason, they focus less on collaborative buyer-supplier initiatives (Vaaland and Heide 2007). There can be a number of other reasons for SMEs’ low involvement and struggles in these efforts. First, SMEs lack specialized organizational resources for such engagements with other companies (Quayle 2003; Ramsey 2001). Second, they tend not to think in the long-term time-frames required for developing and maintaining buyer-supplier relationships (Ritchie and Brindley 2000). Third, SMEs tend to be more conservative than larger firms, and accordingly, are often unwilling to over-expose or over-extend themselves in relationship-specific investments (Adams, Khoja, and Kauffman 2012; Arend and Wisner 2005), which certainly can adversely influence the effectiveness of relationships in which

they are involved (Jap and Anderson 2003; Ramsey 2001).

As a result, more efforts need to be made to understand SCM from the SME perspective; this notwithstanding, and as already noted above, the majority of research on SCM and buyer-supplier relationships has taken the perspectives of larger companies (Bordonaba-Juste and Cambra-Fierro 2009; Morrissey and Pittaway 2006; Quayle 2003)

BSIs in SCM

Boundary-spanning individuals (BSIs) are defined as people who operate at organizational peripheries or boundaries, performing tasks which relate them with external elements (Leifer and Delbecq 1978). BSIs play various roles at the interfaces of organizations and their business environments (Stock 2006), including (1) information acquisition, processing and filtering (Aldrich and Herker 1977; Huang et al. 2013; Leifer and Delbecq 1978; Tushman and Scanlan 1981); (2) external representation (Aldrich and Herker 1977; Friedman and Podolny 1992; Huang et al. 2013; Perrone, Zaheer, and McEvily 2003); (3) conflict resolution (Perrone, Zaheer, and McEvily 2003); (4) mediation between counterparties in partnering firms (Aldrich and Herker 1977; Charvet and Cooper 2011), and (5) management of inter-organizational uncertainty (Ireland and Webb 2007). However, the roles of these important human agents in buyer-supplier relationships have been largely overlooked, as researchers have assumed that the traits of such individuals are subordinated to the norms of the exchanges in which they are involved (Tangpong, Hung, and Ro 2010).

Understanding buyer-supplier relationships can be difficult without understanding the BSIs working on them (Omar et al. 2012): they are the main channels through which such relationships operate (Chen, Daugherty, and Roath 2009), and indeed, their roles involve the establishment, development and maintenance of those relationships (Charvet and Cooper 2011; Fugate, Thomas, and Golicic 2012; Mentzer et al. 2000; Stock 2006). Supplier firms'

account managers and buying firms' purchasing managers are good examples of BSIs (Sabath and Fontanella 2002; Zhang, Viswanathan, and Henke 2011), whose main boundary-spanning roles are resource acquisition and disposal (Aldrich and Herker 1977). Companies engaged in collaborative buyer-supplier initiatives depend on the efforts and skills of such BSIs (Charvet and Cooper 2011); many factors that can enable or impede such partnerships are related to the actions of BSIs, and such factors will tend to reside, significantly, at the inter-personal level (Mentzer et al. 2000).

The nature of interactions between such boundary spanners is shaped not only by organizational factors such as culture and structure, but also by their willingness to form effective boundary-spanning relationships (Perrone, Zaheer, and McEvily 2003; Tangpong, Hung, and Ro 2010; Zhang, Viswanathan, and Henke 2011). This is to say that BSIs' capabilities (Zhang, Viswanathan, and Henke 2011) and personal traits (Smith et al. 2009; Tangpong, Hung, and Ro 2010) can influence the performance of their boundary-spanning functions. For example, their social competence (including willingness to collaborate) can impact supply-chain practices and performance (Barnes and Liao, 2012), and their mindsets in terms of appreciating the value of cooperation between supply-chain members can positively affect a firm's performance (Omar et al. 2012; Tangpong, Hung, and Ro 2010).

To our knowledge, there have been very few studies investigating the role of BSIs in managing SMEs' collaborative buyer-supplier relationships, and this despite the fact that there are significant reasons why the topic deserves more academic attention. As noted earlier, many SMEs lack advanced management procedures, structures and strategies (d'Amboise and Muldowney 1998), and are highly unlikely to have formal systems and procedures in place to manage collaborative buyer-supplier relationships. As a result, BSIs working in SMEs generally have great autonomy, and rely heavily on their own judgments and capabilities in making decisions about and managing buyer-supplier relationships— their

personal traits, therefore, will significantly influence the direction of such decision-making and relationship management (Fuller and Lewis 2002). SMEs also typically have fewer BSIs looking after their entire range of buyer-supplier relationships; and so, to restate, the success of such relationships will depend heavily on the judgments, capabilities and traits of those individuals (Crossan, Lane, and White 1999),

Cooperative Social Value Orientation of BSIs and Performance of Buyer-supplier Relationship

It would be easy to assume that BSIs in buyer-supplier relationships would behave in accordance with their 'rational self-interest' and aim to maximize their own outcomes. However, individuals involved in such social interactions can have other motivations: for example, wanting to enhance dyadic outcomes rather than maximize their individual gains (Van Lange 1999) at the expense of others. Individuals in social interactions place different relative importance (or weights) on their own and others' outcomes; such 'social values' refer to individuals' consistent preferences for particular distributions of outcomes to themselves and to others (Kramer, McClintock, and Messick 1986). Social value orientation theory suggests that when individuals weigh outcomes to self and others differently, they distribute their resources accordingly (Eek and Gärling 2008).

According to Eek and Gärling (2008), individuals tend to have one of the following social value orientations for social exchange: (1) cooperative orientation to maximize mutual outcomes; (2) individualistic orientation to maximize own outcomes with little regard for those of others, or (3) competitive orientation to maximize own outcomes relative to others' (e.g., to augment the difference). Cooperative social value orientation captures the situations wherein individuals behave in ways designed to maximize mutual gains (Dabholkar, Johnston, and Cathey 1994; Messick and McClintock 1968). Tangpong, Hung, and Ro (2010)

conceptualize this particular disposition in the buyer-supplier setting as ‘cooperativeness’; an example is the personality trait that entails acting towards others in tolerant, empathetic, supportive and compassionate ways for mutual benefit. Cooperative social value orientations can enhance mutual gains from an exchange relationship in a dyadic negotiation setting (Pruitt and Lewis 1975; Schultz and Pruitt 1978) and in non-negotiation settings (Weingart, Bennett, and Brett 1993), for the following reasons.

First, cooperative social value orientation works as an efficient opportunism-mitigating mechanism. Liu et al. (2012) argued that such coupling behaviors are positively related to relationship performance. Opportunism in supply-chain operations can do serious economic and relational damage (Morgan, Kaleka, and Gooner 2007); indeed, it is considered to pose significant risks to exchange relationships (Handley and Benton 2012). BSIs with high levels of cooperative social value orientation, contrastingly, tend to behave in mutually helpful ways that encourage various positive interactions with their counterparts, such as joint problem solving and long-term orientations, which collectively work to mitigate opportunism (Tangpong, Hung, and Ro 2010). Individuals with such benevolent dispositions would not attempt to be opportunistic, even when there is a chance to personally gain from a partner (Smith and Barclay 1997).

Second, BSIs with high levels of cooperative social value orientation tend to engage in an exchange relationship in ways that maximize dyadic outcomes rather than behaving in an egotistic or competitive manner (Dabholkar, Johnston, and Cathey 1994; Eek and Gärling 2008; Messick and McClintock 1968; Van Lange 1999). This would reduce the difference between their and their partners’ outcomes from an exchange relationship (Smeesters et al. 2003). This in turn promotes justice in an exchange relationship, which, in turn, is a factor important to the success of any such relationship (Hofer et al. 2012; Kabanoff 1991; Kumar 2006). Behaviors of this type will increase the perceived level of justice among supply-chain

partners, which is to say, partners' perceived fairness of their outcomes in terms of equity (Adams 1965) and equality (Deutsch 1985). This shared perception of justice is important for successful buyer-supplier relationships, as the lack of it is a common antecedent of conflict (Kabanoff 1991). Justice also functions as an important channel for encouragement of coupling behaviors, which behaviors in turn promote successful relationships (Liu et al. 2012).

Third, from the resource-based view (RBV), more cooperatively-oriented BSIs tend to identify and evaluate the resources and capabilities of their partners more accurately. The RBV suggests that one of the main motivations for establishing new or closer inter-firm relationships is to have access to a partner's resources, to pool each other's resources, and/or to co-create new resources (Dyer and Singh 1998; Eisenhardt and Schoonhoven 1996; Kogut 1991; Kogut and Zander 1992; Lorenzoni and Lipparini 1999; Rungtusanatham et al. 2003). For a firm to acquire or maintain access to the complementary resources and capabilities of its partner, it needs to be able to value them appropriately (Dyer and Singh 1998). Cooperatively orientated BSIs believe that the competitive positions of their firms would be enhanced by accessing resources and capabilities from beyond their boundaries (Tangpong, Hung, and Ro 2010), and so are used to searching actively for valuable complementary assets. Their experience and expertise in such searches means that they are likely to be in a better position to appreciate the existence, nature and value of their counterparts' resources and capabilities. As a result, BSIs with high levels cooperative social value orientation can be better at identifying and evaluating partnership opportunities and, in so doing, reduce the risk of the company's resource commitment to potentially unproductive partnerships. Such individuals, moreover, are also more likely to be able to design and deploy more appropriate collaborative initiatives to better tap their partners' resources and capabilities.

As noted above, the management of collaborative supply-chain initiatives in SMEs tends

to be conducted by small numbers of BSIs, who themselves tend to rely heavily on their own judgments and capabilities when engaging with supply-chain partners, since SMEs tend to lack appropriate management procedures, structures and strategies (d'Amboise and Muldowney 1998). We can therefore assume that the cooperative orientation of their BSIs will play a critical role in moderating the efficacy of various SME collaborative supply-chain initiatives.

Conceptual Model and Hypotheses

In the present study, we investigate the moderating role of the social value orientation of BSIs with respect to the performance of SMEs' buyer-supplier relationships. First, we investigated collaborative supply-chain initiatives including (1) information sharing, (2) decision sharing and (3) risk and profit sharing in order to determine if they are related to SMEs' buyer-supplier relationship performance. The rationale for focusing on these initiatives is that when a buyer and a supplier engage collaboratively, their activities tend to be centered on the above areas (Ha, Park, and Choi 2011; Mentzer, Foggin, and Golicic 2001). Indeed, there is a large body of literature in the fields of operations management (OM) and SCM on the performance implications of the initiatives examined in this study (for the list of papers using these variables, refer to Sodhi and Son 2009). Thus, we hypothesized that the cooperative social value orientation of BSIs positively moderates the impact of such initiatives in SMEs.

The specific hypotheses for this study were developed using multiple-theoretical lenses, because 1) collaborative buyer-supplier relationships, due to their complexity, traditionally have been investigated from multi-theory perspectives, and 2) the lack of previous research on social value orientation in the SME supply-chain setting calls for a broader theoretical

base.

In this paper, the term ‘information sharing’ refers to initiatives designed to ensure effective communication and information exchange between partners (Bagchi et al. 2005; Gunasekaran, Patel, and Tirtiroglu 2001; Harland 1996; Stank, Keller, and Daugherty 2001; Tan 2002). Information sharing provides the following benefit to the parties involved in a partnership. From the transaction cost economics perspective, the sharing of information among supply-chain partners can reduce the transaction costs and uncertainties of inter-firm collaboration (Bakos 1991; Clemons and Row 1992). For this reason, information sharing often leads the partners to engage in further collaboration (Clemons and Row 1992; Prajogo and Sohal 2013). Therefore, successful information sharing has been identified as an important factor in successful buyer-supplier relationships (Carr and Kynak 2007; Field and Meile 2008; Li et al. 2005; Monczka et al. 1998; Sodhi and Son 2009; Whipple, Frankel, and Anselmi 1999).

In the same way as large companies, SMEs share various types of information with their supply-chain partners; however, such sharing tends to be done via low-tech methods such as direct contact, as SMEs often lack the resources and knowledge needed to implement sophisticated IT systems for external information sharing (Morrell and Ezingard 2002; Muscatello, Small, and Chen 2003; Welker, van der Vaart, and Pieter van Donk 2008). Nevertheless, information sharing is an important aspect of collaborative supply-chain initiatives that can benefit SMEs’ buyer-supplier relationships (Wu 2008). Accordingly, we formulated the following hypothesis.

Hypothesis 1: ‘Information sharing’ is positively related to the performance of buyer-supplier relationships.

In this study, ‘decision sharing’ refers to joint operational/strategic planning and sales and production management between supply-chain members (Bagchi et al. 2005; Harland 1996; Lee 2000; Stank, Keller, and Daugherty 2001). Decision sharing is an important factor for successful relationships including a buyer-supplier relationship (Saxton 1997), for the following reasons. First, from the social capital theory perspective, the interaction between a buyer and a supplier through joint decision making provides the condition — in the form of reciprocity — for the formation of relational capital, which is the key determinant of a successful buyer-supplier relationship (Carey, Lawson, and Krause 2011; Cousin, Hanfield, and Lawson 2006). Also, such interaction provides clarity on the status of supply-chain operations to both parties, thereby facilitating dyadic cooperation in the relationship (Cousin and Menguc 2006). Second, from game theory perspective, shared decision making reduces the likelihood of opportunistic behaviors by a partner, since such mutual involvement acts as both a signaling and monitoring mechanism for the relationship (Saxton 1997). As a result, information asymmetry is reduced when both partners have significant levels of participation in and knowledge of joint decisions, and this will enhance relational outcomes for both parties (Saxton 1997). Moreover, decision sharing can increase the frequency of contact, which will build members’ future expectations of their relationships, and which has been shown to have positive effects on those relationships’ performance (Heide and Miner 1992).

There have been only a limited number of studies looking into buyer-supplier ‘decision sharing’ initiatives at the SME level; nonetheless, the evidence thus far obtained suggests that SMEs tend to be involved in various types of joint decision making (e.g., joint production planning) that appear to be beneficial to them (Bayraktar et al. 2009; Lenny Koh et al. 2007; Kuo, Chen, and Smits 2005; Mezgár, Kovács, and Paganelli 2000). Therefore, we formulated our second hypothesis as follows.

Hypothesis 2: 'Decision sharing' is positively related to the performance of buyer-supplier relationships.

The sharing of risks and benefits among supply-chain members is a key element of successful SCM (Harland, Brenchley, and Walker 2003; Lambert and Cooper 2000; Lau, Yam, and Tang 2010; Mentzer et al. 2001; Norrman and Jansson 2004). Companies often engage in close buyer-supplier relationships, since these provide opportunities for sharing and joint management of risks (Hallikas et al. 2004; Moore 1998; Wakolbinger and Cruz 2011). This enables companies to deal with supply-chain risks more effectively, since many such risks in any case originate from partner companies' shared processes and relationships, and certainly, their influence can extend beyond the boundaries of a single company (Jüttner 2005). Furthermore, the existence of any mechanism that can apportion the benefits of buyer-supplier relationships can significantly enhance the performances of those relationships (Bowersox, Closs, and Stank 1999; Ellinger 2000; Harland, Brenchley, and Walker 2003; Liu et al. 2012). From equity theory perspectives (Adams 1965; Deutsch 1985), the lack of such a mechanism can have negative performance implications, since it could give rise to a sense of significant injustice among members (Kabanoff 1991; Liu et al. 2012). Therefore, we hypothesize:

Hypothesis 3: Risk/Benefit sharing is positively related to the performance of buyer-supplier relationships.

BSIs are people who operate at organizational peripheries or boundaries (Leifer and Delbecq 1978). For an SME supplier, account managers, who perform various tasks with

their buyers such as price negotiations and the drafting of contracts, are good examples. As discussed earlier, cooperative social value orientation can enhance the efficacy of collaborative supply-chain initiatives, since 1) it acts as an opportunism-mitigation mechanism (Smith and Barclay 1997; Tangpong, Hung, and Ro 2010) and 2) it fosters justice in an exchange relationship (Hofer et al. 2012; Kabanoff 1991; Kumar 2006). Moreover, in the RBV, BSIs of such orientation are more capable of identifying and evaluating opportunities to acquire valuable complementary resources beyond the firm boundaries, and therefore, better able to avoid committing the SMEs' limited resources to potentially unproductive partnerships (Smith and Barclay 1997; Tangpong, Hung, and Ro 2010). We therefore formulate the following final hypotheses.

***Hypothesis 4a:** The cooperative social value orientation of a BSI positively moderates the impact of information sharing on the performance of buyer/supplier relationships.*

***Hypothesis 4b:** The cooperative social value orientation of a BSI positively moderates the impact of decision sharing on the performance of buyer/supplier relationships.*

***Hypothesis 4c:** The cooperative social value orientation of a BSI positively moderates the impact of risk/benefit sharing on the performance of buyer/supplier relationships.*

<Insert Figure 1 around here>

Research Methods

Survey Administration and Data Collection

Our study setting was SME in the Korean manufacturing sector; data were collected via a

postal survey between August and October 2011. We used the SME definition provided by the Korean government's Small and Medium Business Administration: a company with 300 or fewer employees. We selected 2,000 SMEs identified from the Korean Chamber of Commerce and Industry Directory, and, to ensure that our respondents were in boundary-spanning roles in their companies, included a covering letter asking that the questionnaire be completed by BSIs such as sales managers. We conducted a field pre-test of the questionnaire with 10 evening MBA students working in BSI roles in order to identify any deficiencies in its design, administration or question wordings (Remenyi et al. 1998) and to assess how the survey instrument would work under realistic conditions (Fowler Jr 1993). Some of the wording of the questionnaire was modified after a number of participants pointed out certain ambiguities. The questionnaires were then sent to the 2,000 SMEs, and, after discarding the responses with excessive missing data, 344 responses (17.2 percent) were used in the analyses (Table 1). As this low rate raised concerns about sampling bias, we carried out an assessment of non-response bias using the method suggested by Armstrong and Overton (1977) based on firm size, the results indicating that no significant non-response bias existed in our data set.

<Insert Table 1 around here>

Measurement Instrument

This study sought to discover if cooperative social value orientations among BSIs in SMEs moderate the efficacy of three types of collaborative supply-chain initiatives. In order to ensure the quality of our measures, we endeavored, where possible, to use either established measures or to develop them from extant literature. All of the items were measured on a 7-point Likert scale ranging from 'Not at all' to 'To a very great extent' or

from ‘Strongly disagree’ to ‘Strongly agree,’ as appropriate (see the Appendix for the questionnaire items).

The first initiative — ‘information sharing’ — was measured using a three-item scale adapted from previous research. The respondents were asked to assess ‘the existence of a compatible IT system with the partner’ (Carr and Pearson 1999; Iskandar, Kurokawa, and LeBlanc 2001; Tan 2002), ‘the degree of sharing of operational information’ (Ha, Park, and Cho 2011; Sodhi and Son 2009; Whang and Lee 1998; Zhou and Benton Jr. 2007), and ‘the degree of sharing of strategic information’ (Ha, Park, and Cho 2011; Klein and Rai 2009; Lo and Yeung 2004; Sodhi and Son 2009) with their supply-chain partners. The second initiative — ‘decision sharing’ — also was examined using a three-item scale. Specifically, the respondents were asked to indicate the extent to which they undertook ‘joint strategic supply-chain planning’ (Carr and Pearson 1999; Heide and John 1990; Johnston et al. 2004), ‘joint operational supply-chain planning’ (Carr and Pearson 1999; Johnston et al. 2004; Stank, Keller, and Daugherty 2001), and ‘joint management of other aspects of the supply chain’ (Bagchi et al. 2005; Bowersox, Closs, and Stank 1999; Ha, Park, and Cho 2011; Sodhi and Son 2009) with their partners. The third initiative — ‘benefit and risk sharing’ — was again measured on a three-item scale, this time taken from previous research, and asked BSIs to assess the levels of sharing of benefits and risks with their supply-chain partners (Ha, Park, and Cho 2011; Sodhi and Son 2009; Stank, Keller, and Daugherty 2001).

Measuring the performance of an inter-firm relationship` (including buyer-supplier relationships) is not straightforward (Geringer 1998; Glaister and Buckley 1998), a variety of objective and subjective measures having been used for this purpose (Sodhi and Son 2009). For the present study, we used subjective and perceptual measures of relationship performance, since the commonly used objective measures (e.g., ‘termination and survival,’ ‘duration’) are unsuitable for assessment of buyer-supplier relationship performance (Sodhi

and Son 2009). We adopted measures from Geringer and Herbert (1991) and Glaister and Buckley (1998), which assess the extent of a relationship's contribution to various dimensions of a firm's performance, from which measures a three-item scale was developed for assessment of the contribution of the buyer-supplier relationship to a firm's efforts to 'improve cost control', 'increase profitability', and 'increase market share' (Geringer and Herbert 1991; Glaister and Buckley 1998).

As there are only a limited number of studies in this area, we developed a measurement instrument for the cooperative social value orientation of BSIs on a six-item scale based on an idea by Tangpong, Hung, and Ro (2010) and Yilmaz and Hunt (2001). First, we measured the level of the BSIs' belief that collaborative relationship is important for their companies' competitiveness (Chen, Daugherty, and Roath 2009; Li et al. 2006; Min and Mentzer 2004). Second, we measured the level of the BSI's compassion (Tangpong, Hung, and Ro 2010) and trust towards their partners by asking them about their willingness to help their partners in times of need (Claro, Claro, and Hagelaar 2006; Ha, Park, and Cho 2011; Siguaw, Simpson, and Baker 1998) and the relevant levels of trust (Cachon and Lariviere 2005; Min and Mentzer 2004; Ryu, So, and Koo 2009; Siguaw, Simpson, and Baker 1998). Finally, we looked at the BSIs' willingness to facilitate collaboration (Tangpong, Hung, and Ro 2010, Yilmaz and Hunt 2001). To facilitate our measurement of these factors, the respondents were asked to evaluate their willingness (1) to share goals with their partners (Cannon and Perreault Jr. 1999; Chen, Daugherty, and Roath 2009; Ha, Park, and Cho 2011; Min and Mentzer 2004); (2) to make their processes compatible with their partners' (Ha, Park, and Cho 2011; Li et al. 2006; Mentzer et al. 2001; Ryu, So, and Koo 2009), and (3) to share cost and benefits with their partners (Cachon and Lariviere 2005; Chauhan and Proth 2005; Min and Mentzer 2004; Ryu, So, and Koo 2009). If a BSI rated high in the above questions, his/her social value orientation was deemed to be more pro-social (cooperative) than pro-self

(individualistic or competitive).

Measurement Validity and Reliability

The convergent validity, discriminant validity and reliability of these factors were assessed to test the overall construct validity using AMOS version 20 (see Table 2). First, the convergent validity was assessed by examining the factor loadings of the measurement model. These ranged from 0.784 and 0.921, but all, at $p < 0.05$, were significant, which provided strong support for their convergent validity, since they were all rated greater than 0.7 (Fornell and Larcker 1981; Gefen and Straub 2005). Moreover, the average variance extracted (AVE) values, ranging from 0.621 to 0.684, all exceeded the cut-off value of 0.5; thus, these results also provided strong support for the convergent validity (Fornell and Larcker 1981). Second, we assessed the reliability of our measures using composite reliability (CR) and Cronbach's Alpha. All of the values exceeded 0.7, suggesting that there was no significant reliability issue in the measures. Third, the discriminant validity was assessed by comparing the square-rooted AVE for each factor as well as the correlations between them. The results revealed all of the square-rooted AVEs to be greater than the correlations (as indicated in Table 3), thereby confirming that there were no significant discriminant validity issues in our measures (Gefen and Straub 2005).

<Insert Table 2 around here>

<Insert Table 3 around here>

Common Method Bias

Since the data for this research were self-reported, and because the same respondents were asked to assess both predictor and criterion variables involved, there was a possibility of

common method bias (Podsakoff et al. 2003; Podsakoff and Organ 1986). To test for this possibility, we employed two methods. First, we conducted a Harman's one-factor test by loading all of the variables into an exploratory factor analysis to determine if any one single factor would emerge to account for the majority of the covariance between the measures (Podsakoff et al. 2003). The un-rotated factor solution suggested that the largest factor accounted for only 42.1 percent. **Error! Bookmark not defined.** These findings indicate that common method bias was unlikely to have influenced the results in the present case (Malhotra, Kim, and Patil 2006).

Control Variables

Since we intended to identify the performance impact of collaborative supply-chain initiatives and the interaction effect of BSI's cooperative social value orientation, which can be generalized across different size of SMEs from different industries, control variables for industry and firm size were used in the regression analyses. Additionally, 'Duration of relationships' was added as a control variable, since it is known to be related to collaborative-relationship performance (Gulati 1998; Parkhe 1993).

Analysis and Results

We conducted hierarchical regression analyses using SPSS version 20 to test our hypotheses. In the field of SME and SCM research, testing the moderation effect using hierarchical regression models is a common practice (e.g., Beekun and Robinson 2004; Gray and Handley 2015; Rasheed 2005; Tang and Rai 2012). First, the assumptions of the regression analyses were tested, but there was no significant assumption violation apart from the minor violations of normality assumptions for the control variables. Then, all of the independent variables apart from the controls were mean-centered to avoid multicollinearity

issues (Aiken and West 1991; Jaccard, Wan, and Turrisi 1990). For hypotheses testing, we started with the base model with only the control variables (Step 1); then, we added the independent variables (the main effect model, Step 2), followed by the interactions (Step 3).

<Insert Table 4 around here>

Test of Main Model

Our main model examined whether the levels of collaborative initiatives are related to the performance of buyer-supplier relationships involving SMEs. Table 5 summarizes the results.

<Insert Table 5 around here>

The results of the analyses indicated no support for Hypothesis 1, which postulated that information sharing was positively and significantly related to relationship performance. On the other hand, ‘decision sharing’ was shown to be positively and significantly related to relationship performance ($\beta = 0.19$, $p < 0.01$), thus providing full support for Hypothesis 2, while the coefficient associated with the effect of risk and benefit sharing was also shown to be significantly and positively related to relationship performance ($\beta = 0.14$, $p < 0.01$), thereby supporting Hypothesis 3 as well.

Test of Interaction Models

In the interaction models, we hypothesized that the cooperative social value orientation of a BSI positively moderates the effects of collaborative buyer-supplier initiatives on relationship performance (Hypotheses 4). The results (in Table 5) showed no support for Hypothesis 4a (that the cooperative orientation of a BSI positively moderates the impact of

information sharing on SCM performance), but did support Hypothesis 4b: in fact, the interaction term was positive and significant ($p < 0.05$), suggesting that a BSI's cooperative social value orientation positively moderates the link between joint decision making and relationship performance. However, to our surprise, the results — a negative interaction term significant at $p < 0.05$ — also suggested that cooperative orientation has a detrimental effect on the relationship between joint sharing of profits and risks and relationship performance (Hypothesis 4c).

We next conducted simple slope analyses for further investigation of the moderation effects. This process involved calculating regression equations for the links between two collaborative initiatives and the relationship performance at low and high levels of cooperative social value orientation (defined as one standard deviation from the mean either way; Cohen and Cohen 1983). As Figure 2 illustrates, high levels of cooperative social value orientation of BSIs means that decision sharing has a more potent effect on relationship performance (Slope = 0.339, $p < 0.001$), while low levels seem not to have any significant effect, thus providing further support for Hypothesis 4b. In terms of Hypothesis 4c, the results indicated the opposite (as Figure 3 shows): that low levels of cooperative orientation of BSIs makes the effect of risk/benefit sharing more influential on relationship performance (Slope = 0.251, $p < 0.001$), but that high levels seem not to have any significant effect.

<Insert Figure 2 around here>

<Insert Figure 3 around here>

Discussion and Conclusions

SMEs recently have started to take more systematic approaches to managing various

aspects of their supply chains (Arend and Wisner 2005), but the results have been rather mixed: various factors, such as the lack of strategies and resources (Adams, Khoja, and Kauffman 2012), seem to have made establishing and managing collaborative buyer-supplier relationships especially daunting tasks (Quayle 1998; Ramsey 2001).

While past research has significantly enhanced our understanding of collaborative buyer-supplier relationships, the majority of such studies have taken large-company perspectives (Bordonaba-Juste and Cambra-Fierro 2009; Morrissey and Pittaway 2006; Quayle 2003), and so their findings might not be equally applicable to SMEs' managements (Adams, Khoja, and Kauffman 2012; Morrissey and Pittaway 2006). Some studies have investigated issues related to buyer-supplier relationships from SMEs' perspectives, though, to the best of our knowledge, none has investigated the value-adding role of the people (i.e., BSIs) from SMEs who actually interact with their counterparts in other companies to manage such initiatives. Unlike in large companies, collaborative supply-chain initiatives in SMEs tend to be managed by only a few individuals. And as such firms tend to lack management resources, procedures, structures and strategies for systematic SCM (d'Amboise and Muldowney 1998), the success of those kinds of initiatives can be heavily dependent on the judgment and experience of those individuals. The purpose of this research was to shed light on the moderating role of the social value orientation of BSIs working for SMEs. Using data from 344 Korean SME manufacturers, we empirically tested if their cooperative social value orientation positively moderates the impact of collaborative initiatives on the performance of buyer-supplier relationships.

The first set of hypotheses examined the relationship between collaborative supply-chain initiatives — information sharing, decision sharing and risk/benefit sharing — and relationship performance. For this, we used multiple-theoretical lenses, since the performance implications of these initiatives had previously been investigated using mixed data sets of

SMEs and large companies from various theoretical perspectives. Similar to the findings of those studies, we found that decision sharing (Bagchi et al. 2005; Heide and Miner 1992; Kogut and Zander 1992; Parkhe 1993; Saxton 1997) and risk and benefit sharing (Ellinger 2000; Hallikas et al. 2004; Liu et al. 2012; Moore 1998; Norrman and Jansson 2004) were positively related to the relationships' performance. Our findings using our SMEs data are in line with what equity, social capital and game theory posit, which is: 1) equitable sharing of risk/benefit and 2) relational capital accumulation and reduction in information asymmetry by joint decision making are beneficial to a buyer-supplier relationship involving an SME. On the other hand, information sharing was not related to relationship performance, which possibly reflect SMEs' tendency to lack sufficient resources and knowledge for development or implementation of IT systems (Morrell and Ezingard 2002; Welker, van der Vaart, and Pieter van Donk 2008), which curtails the benefits SMEs can take from external information sharing.

The present study's results provided partial support for our other hypotheses, which proposed the moderating effects of BSIs' cooperative social value orientations. We found that the effect of decision-sharing initiatives between SMEs and their partners on partnership performance increases when the SME's BSIs have a high level of cooperative social value orientation— that is, when they strive to maximize mutual outcomes rather than just those of their own firms. This finding is in line with previous research in various social interaction settings (Pruitt and Lewis 1975; Schultz and Pruitt 1978; Tangpong, Hung, and Ro 2010). However, we also found that cooperative orientation negatively moderates the relationship between risk/benefit sharing and relationship performance— which is to say, that sharing risks and benefits is more effective in improving relationship performance when BSIs have a low level of cooperative social value orientation.

The unexpected result of negative moderation of risk/benefit sharing suggests, perhaps

surprisingly, that cooperative orientations can have negative side-effects on certain types of collaboration. The SMEs in our sample are all manufacturers, many of which sell the majority of their products to large manufacturers and retailers. When engaged with larger companies, SMEs can be very vulnerable to opportunistic behaviors, which probably reflect such large companies' tendency to act opportunistically when their counterparts have less bargaining power (Holcomb and Hitt 2007). Large firms also often have information (e.g., about demand), which is not available to SME counterparts, and so act first to take advantage of it, to the SMEs' cost. Additionally to this, risk/benefit sharing — in contrast to decision sharing — often results in direct financial losses or gains (e.g., buy-back and revenue-sharing arrangements, respectively), and so large companies can sometimes be more tempted to act opportunistically against their SME partners when opportunities arise.

BSIs in SMEs could use relational and contractual governance to safeguard themselves against such opportunism (Liu et al. 2009; Lumineau and Henderson 2012; Tangpong, Hung, and Ro 2010; Zhao et al. 2008). The cooperative orientation of BSIs can be an efficient relational-governance mechanism for mitigating opportunism (Tangpong, Hung, and Ro 2010) as well as a less costly alternative to contract-based mechanisms (Hill 1990). In these ways then, SMEs with limited resources and knowledge (e.g., legal knowledge) might rely heavily on their BSIs' cooperative orientation. However, over-reliance on this for mitigation might give SMEs a false sense of security and, so, deter them from deploying other (more costly but potentially more effective) means, such as legal safeguards. This could leave SMEs vulnerable to large companies' opportunistic behaviors, especially in risk/benefit sharing, which is a high-stakes form of collaboration. These findings support the view of organizational-governance theorists that these governance mechanisms should be deployed complementarily rather than as a substitute, in order to overcome their respective limitations (e.g., inflexibility of contractual governance) (Li et al. 2010; Liu et al. 2009; Lumineau and

Henderson 2012).

In summary, our findings constitute useful insights for SMEs. When SMEs' senior managers make staffing decisions about boundary-spanning roles (e.g., sales-related positions), they should consider individuals' personal characteristics — such as cooperative social value orientations — because their attitudes towards cooperation can greatly enhance the efficiency of process-oriented collaborative buyer-supplier initiatives (e.g., decision sharing). When SMEs are involved in high stake collaborations, on the other hand, such as risk/benefit sharing, BSIs personal trait could increase the firm's risk of being exploited.

This study has two limitations that future research could address. First, it uses a data set obtained from Korean SMEs. One unusual phenomenon of the Korean manufacturing sector is the dominance of a number of very large corporate conglomerates (in Korean: *Cheabol*) as customers. Regulatory protection for Korean SMEs correspondingly is rather weak, and so it is possible that they will face greater risks of being exploited by such firms, which fact could have biased our findings. Another important point to be noted in this regard is that Korea is a collectivistic country (Du and Choi 2010), and there is empirical evidence that a collectivistic national culture influences various relational aspects (e.g., trust and dependency) of a collaborative inter-firm relationship (Graca, Barry, and Doney 2015; Hewett and Bearden 2001; Park and Unguson 1997). This means, in short, that there is a possibility that it would interact with social value orientations of the BISs surveyed in this study, thereby biasing the results. Generalizing our findings to a broader population, therefore, will require some caution. The second limitation of this study is the possibility that the cooperative orientation of a BSI in senior position has a stronger moderation effect than that of a BSI holding a more junior position. This issue also will require further research.

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<Insert Appendix around here>

Tables

Table 1. Sample descriptive data (n=344)

Respondents' titles		Firm size (employees)	
CEO/Director	5.8 percent (20)	Less than 20	14.8 percent (51)
General Manager	18.0 percent (62)	20 - 50	20.9 percent (72)
Manager	24.7 percent (85)	50 - 100	23.5 percent (81)
Assistant Manager	31.4 percent (108)	100 - 150	16.6 percent (57)
Staff	18.9 percent (65)	150 - 200	11.1 percent (38)
Miscellaneous	1.2 percent (4)	200 - 250	3.8 percent (13)
		250 - 300	9.3 percent (32)

Respondents' work experience		Firm size (sales, Korean won)	
Less than 2 yrs.	5.5 percent (19)	Less than 0.5 mil.	4.1 percent (14)
2 - 5 yrs.	27.9 percent (96)	0.5 - 1 mil.	4.7 percent (16)
5 - 10 yrs.	29.7 percent (102)	1 - 5 mil.	16.6 percent (57)
10 - 15 yrs.	20.3 percent (70)	5 - 10 mil.	9.9 percent (34)
15 - 20 yrs.	10.8 percent (37)	10 - 50 mil.	33.4 percent (115)
20 - 25 yrs.	3.8 percent (13)	50 - 100 mil.	8.1 percent (28)
25 - 30 yrs.	1.4 percent (5)	100 -mil., and over	23.2 percent (80)
Over 30 yrs.	0.6 percent (2)		

Table 2. Construct analysis

Factors	Range of factor loadings	Cronbach's Alpha	AVE	C.R.
INFO	0.750 to 0.866	0.859	0.684	0.796
DECISON	0.563 to 0.663	0.829	0.621	0.764
RISJBENE	0.720 to 0.832	0.856	0.680	0.804
SCRIP	0.519 to 0.905	0.735	0.621	0.747
BSI	0.752 to 0.888	0.913	0.644	0.862

Table 3. Construct level correlation matrix (n=344)

	INFO	DECISON	RISJBENE	SCRIP	BSI
INFO	0.684				
DECISON	0.607***	0.621			
RISJBENE	0.376***	0.619***	0.680		
SCRIP	0.119***	0.202***	0.162***	0.644	
BSI	0.113***	0.197***	0.151***	0.243***	0.621

+p<0.1; *p <0 .05; **P <0 .01; ***P <0 .001

Table 4. Correlation matrix and descriptive statistics

	Mean	S.D.	1	2	3	4	5	6	7	8
1. Information sharing	12.099	3.425								
2. Decision sharing	11.916	3.199	0.691**							
3. Risk/Benefit sharing	11.244	3.259	0.562**	0.673**						
4. Cooperative orientation	29.198	6.563	0.319**	0.392**	0.366**					
5. Relationship performance	14.128	2.982	0.381**	0.474**	0.437**	0.525**				
6. Industry 1	0.110	0.314	-0.108*	-0.081	-0.026	0.090	0.044			
7. Industry 2	0.145	0.353	-0.058	-0.069	-0.071	0.049	-0.029	-0.145**		
8. Size (employees)	123.468	148.794	0.107*	0.003	-0.046	0.105	0.114*	0.214**	-0.113*	
9. Duration of relationships	3.125	3.142	0.030	-0.008	0.087	0.131*	-0.024	-0.103	-0.012	-0.010

+p<0.1; *p <0 .05; **P <0 .01; ***P <0 .001

Table 5. Results of regression analyses

	Buyer-supplier relationship performance		
	Step 1	Step 2	Step 3
	β	β	β
Control			
Industry 1	0.158	0.058	-0.026
Industry 2	-0.122	-0.111	-0.128
Size	0.002	0.001	0.001
Duration of relationships	-0.020	-0.082	-0.077
Main effects			
Information sharing		.025	0.033
Decision sharing		0.182**	0.193**
Cost/Benefit sharing		0.145**	0.145**
Cooperative orientation		0.175**	0.085
Moderating effects			
Information sharing x Cooperative orientation			-0.016
Decision sharing x Cooperative orientation			0.022*
Risk/Benefit sharing x Cooperative orientation			-0.016*
ΔR^2	0.0140	0.372**	0.019*
ΔF	1.201	50.649	3.531
Overall R^2	0.014	0.386	0.405
Adjusted R^2	0.002	0.371	0.385
Overall model F	1.201	20.507**	20.507**

+p<0.1; *p <0 .05; **P <0 .01; ***P <0 .001

Appendix

Cooperative orientation of BSI

I believe that having collaborative relationships with my partners makes my company competitive.

I am willing to share risks and benefits with my partners.

I believe that having common goals with my partners is important for the success of my company.

I believe that making my processes mutually compatible with my partners' is important for the success of my company.

I am willing to help my partners when they find themselves in difficult situations.

I trust my partners.

Information sharing

My company has a compatible IT system with our partners.

My company shares operational information with our partners.

My company shares strategic information with our partners.

Decision sharing

My company does strategic supply-chain planning jointly with our partners.

My company does operational supply-chain planning jointly with our partners.

My company manages various aspects of the supply chain jointly with our partners.

Risk/benefit sharing

My company shares the benefits from our relationships with our partners.

My company shares the costs of our relationships with our partners.

My company shares the risks of our relationships with our partners.

Relationship performance measures

The relationships with our partners positively influence cost control at my company.

The relationships with our partners positively influence the profitability of my company.

The relationships with our partners positively influence the market share of my company.

Figures

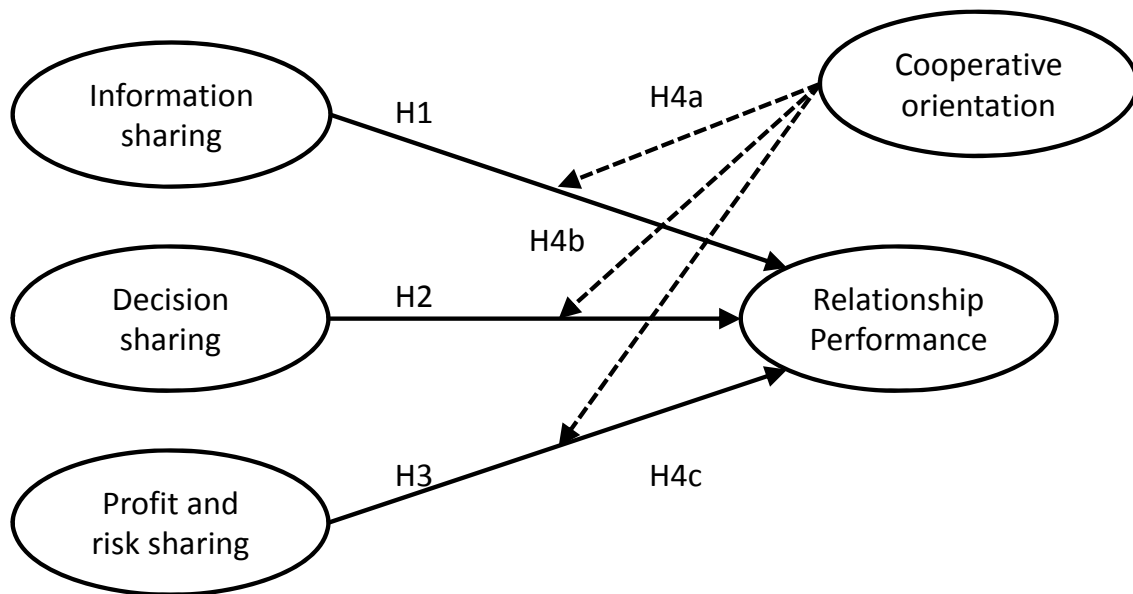


Figure 1 .Conceptual model and research hypotheses

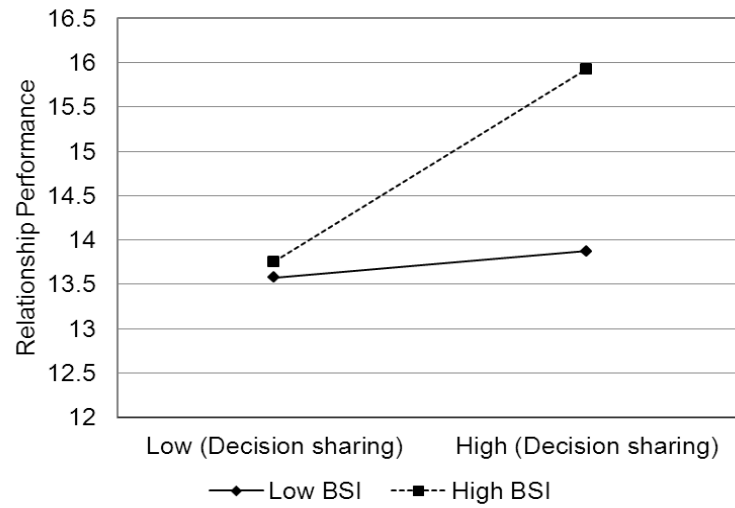


Figure 2. Slope analysis on link between decision sharing and relationship performance by BSI' s cooperative social value orientation

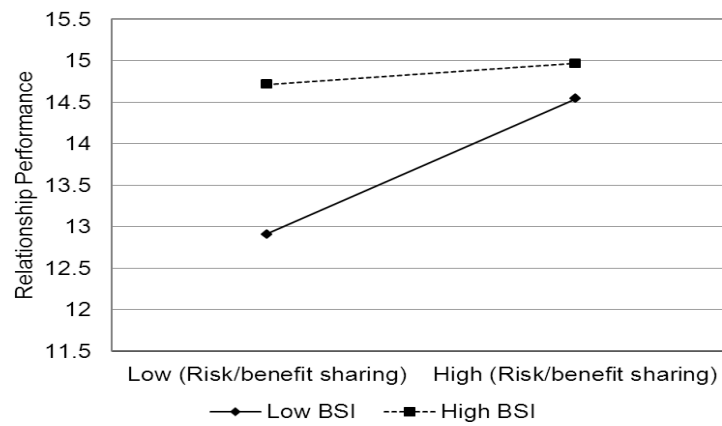


Figure 3. Slope analysis on link between Risk/Benefit sharing and relationship performance by BSI' s cooperative social value orientation