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Decomposing the Effect of Supplier Development on Relationship Benefits: The Role of Relational Capital

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RESEARCH HIGHLIGHTS

- Supplier development investments do not automatically result in relationship benefits and can be even detrimental.
- Relational capital enables supplier development to create benefits for the supplier and reciprocated benefits for the buyer.
- Capability development and supplier governance work independently to increase relational capital resulting in mutual benefits.
- Relational capital can overcome any resentment associated with supplier governance compliance thus encouraging shared benefits.
- Paradoxically relational capital hinders reciprocated benefits from capability development.

ABSTRACT

Buyers invest considerably in developing their suppliers, yet the performance effects of such investments are not universal. Drawing on social capital theory, this research investigates whether the relationship between supplier development and relationship benefits may be facilitated by the generation of relational capital. The authors examine mediating and moderating roles of relational capital in the relationship between two aspects of supplier development (capability development, supplier governance) and two dimensions of relationship benefits (supplier benefits, buyer benefits), using survey data collected from 185 suppliers of a large manufacturing firm. Investment in supplier development does not automatically result in benefits for the supplier or reciprocated benefits for the buyer. Rather, relational capital “bridges” supplier development and relationship benefits: Without relational capital, benefits from capability development do not accrue, and the impact of a supplier governance regime can be even detrimental. In conditions of high relational capital, capability development results in lower perceived buyer benefits. The results can help managers ensure that the benefits from their supplier development efforts fully materialize.

Keywords: relational capital, supplier development, buyer–supplier relationship

1. Introduction

“To score big with suppliers, you have to win their hearts.”

—Dave Nelson, former vice president of purchasing, Honda of America¹

Competition is daunting, and firms operate with increasingly volatile supply chains, in which both buyers and suppliers recognize the benefits of collaborative partnerships (Hales, *et al.* 2011). With the shifting focus from transactional to collaborative relationships, buyers have grown increasingly aware of the strategic importance of developing programs to further their suppliers’ knowledge, capabilities, and market insights, in combination with effective governance mechanisms for streamlining relationships (Schoenherr, *et al.* 2012). For example, because Toyota is a top customer for most of its suppliers, the firm receives far more attention and innovative offerings from suppliers than its competitors (Marksberry 2012).

Yet mounting anecdotal evidence indicates that supply chain partners are not receiving the benefits they expected, because suppliers appear reluctant to implement improvements (Krause, *et al.* 2000). Supplier development activities thus do not translate into supplier performance improvement (Prahinski & Benton 2004); some firms note that their supplier development efforts actually decrease satisfaction (Handfield, *et al.* 2000), perhaps due to misconceptions, misunderstandings, or mistrust in buyer–supplier partnerships (McDuffie & Helper 1997). But supplier development represents a relationship-specific investment by the buyer, which is difficult or impossible to redeploy to other relationships (Anderson & Weitz 1992), leaving the buyer open to opportunistic behavior (Williamson 1985).

¹ See Laseter (1998).

To address some of these issues, we turn to social capital theory and specifically its insights into relational capital. Firms may seek to invest in and cultivate non-economic features of their buyer–supplier exchange if they perceive a risk of partner opportunism (Wang, *et al.* 2013). Relational capital then offers an appropriate theoretical lens, because supplier development encapsulates two building blocks of relational capital: shared knowledge and shared transaction-specific investments (Krause, *et al.* 2007). We therefore consider supplier development an antecedent of relational capital. Furthermore we note emerging evidence that relational capital in turn strengthens the impact of relational investments by overcoming free-riding behavior and facilitating knowledge sharing to create mutual understanding (Chang & Gotcher 2007; Kohtamaki, *et al.* 2012). Supplier development appears particularly effective in well-established relationships with high levels of trust and commitment (Wagner 2011). However, to account for diverging returns on supplier development programs, and the complexities and challenges faced by both buyers and suppliers, we need more managerial-level insights into the nature of this asset. Without understanding the mechanism by which supplier development delivers benefits, its returns will be negligible at best and detrimental at worst, perhaps even leading to the premature abandonment of supplier development initiatives.

Taking a supplier perspective, this article examines whether the relationship between supplier development and relationship benefits can be facilitated by relational capital. In turn, we seek to make three substantive theoretical contributions. First, prior research focuses on benefits such as operational or efficiency measures of buyer performance, rather than the creation of mutual value from a resource exchange (Tsai & Ghoshal 1998; Villena, *et al.* 2011). We examine instead the extent to which supplier development

provides benefits to both the supplier and the buyer. *Supplier benefits* refer to direct rewards of doing business with the buyer and measure the value of the relationship from the supplier's point of view. *Buyer benefits* entail the preferential treatment a supplier gives to a specific buyer in exchange for its past actions or future loyalty. Granting preferential buyer benefits is a key weapon in the arsenal of relationship marketing activity (Palmatier, *et al.* 2007b). In addition, we conceptually delineate capability development and supplier governance as two dimensions of supplier development and assess whether they independently translate into benefits for suppliers or buyers.

Second, we explicate how supplier development leads to enhanced performance, by examining the mediating role of relational capital. We empirically test the proposition that relational capital represents a supply chain asset, in which additional resources can be invested with the expectation of reciprocation, in the form of mutual benefits for buyers and suppliers. Researchers acknowledge the importance of relational capital for supply chains (Kohtamaki, *et al.* 2012) but offer few insights into how organizations might build this form of capital. It is suggested that relational capital can derive from relational investments, such as those inherent to supplier development activities, which should benefit both partners (Villena, *et al.* 2011).

Third, whereas previous research regarded relational capital as a mediating construct, no research considers its moderating role, specifically from the supplier side (Kohtamaki, *et al.* 2012). We explore whether relational capital might account for heterogeneity in the relationship between supplier development and performance and thereby respond to a recent call to examine the moderating effects of contingent variables on the activities–outcome relationships (Mahapatra, *et al.* 2012). In this sense, we combine the

transactional approach of supplier development investment with the reciprocal approach of relational capital building (Mahapatra, *et al.* 2012).

We next define and review literature on supplier development to develop our conceptual framework, which includes multiple dimensions of supplier development, relational capital, and relationship returns. To assess these intricate relationships empirically, we collected survey data from 185 suppliers of a large manufacturing firm. Although focusing on suppliers' perceptions of the benefits of supplier development is a rare approach (Ghijsen, *et al.* 2010), we consider the supplier an appropriate unit of analysis, because supplier development effectiveness depends on the suppliers' own commitment. We conclude with a discussion of our findings, which offer both theoretical and managerial implications.

2. Supplier Development

Supplier development is any activity or resource investment initiated by a buying organization to improve the performance of its supplier (Krause, *et al.* 1998). The cooperative effort between a buying firm and its suppliers aims to upgrade suppliers' technical, quality, delivery, and cost management capabilities and foster ongoing improvements (Handfield, *et al.* 2000; Krause 1999). Substantial research explores such supplier development activities from the buyer's perspective, without considering suppliers' perceptions of their benefits. The limited research that takes the supplier's perspective also offers mixed results. Prahinski and Benton (2004) find that supplier development activities do not translate directly into supplier performance improvement, and Ghijsen *et al.* (2010) note that activities geared toward capability development

enhance suppliers' commitment to the relationship, whereas those centered on influencing suppliers' behavior drive satisfaction with the benefits accrued from the relationship.

It is important to delineate the different aspects of supplier development activities, because their impact on relationships is not universal (Ghijsen, *et al.* 2010; Payan & McFarland 2005). The activities aimed at developing suppliers' capabilities differ conceptually from those aimed at influencing the supplier's behavior by governing certain relationship aspects (Krause, *et al.* 2007; Wagner 2006).

Capability development refers to the buying firm's investments and efforts to increase a supplier's capabilities, so that it can meet the buyer's short- or long-term needs. The buying firm may help the supplier by investing in human and capital resources (Krause, *et al.* 1998; Mahapatra, *et al.* 2012). Capability development investments might include (onsite) training to suppliers, offering technical and quality expertise and advice, site visits or personnel exchanges between the supplier's and the buyer's facilities, involvement in the buyer's new product design and development, and information sharing (Krause 1999; Krause, *et al.* 1998). Because capability development aims to enhance the efficiency of supplier operations, it has a direct effect on performance-related benefits, such as reduced costs, greater quality and flexibility, more reliable delivery, and faster product development cycle times (Krause, *et al.* 2007). Carr and Kaynak (2007) also find that supplier investments likely increase provided product quality, which should result in better sales for the supplier. In this sense, capability development is a relational investment that can improve the buyer–seller relationship (Li, *et al.* 2012).

Supplier governance instead implies that the buying firm invests limited resources to encourage or reinforce the supplier's improvement. Governance requires the systematic collection of information by the buyer, so that it can establish the extent of the supplier's compliance with its process or performance requirements. The main steps in supplier governance thus are setting supplier performance improvement goals, evaluating suppliers, providing performance feedback, offering rewards and recognition for improved performance, and establishing supplier certification programs (Krause, *et al.* 2007; Modi & Mabert 2007). This process encourages important information exchanges that ultimately should help buyers and suppliers improve their own performance (Krause, *et al.* 2007).

Investments in supplier development by the buyer also are specific to each relationship (Anderson & Weitz 1992). Relationship-specific investments include training and/or dedicating personnel to service a specific partner, adopting a common order processing system, building specialized facilities, and linking the supplier and buyer in the customer's mind through promotions. Such idiosyncratic investments are difficult or impossible to redeploy, and they add unique texture to the focal relationship (Anderson & Weitz 1992). The expected returns from these investments cannot accrue though unless suppliers are willing to commit substantial financial, capital, and personnel resources and share timely and sensitive information (Handfield, *et al.* 2000; Krause *et al.* 2007). The nature of the buyer-seller relationship therefore should have significant impacts on the effectiveness of supplier development.

3. Relational Capital

Social capital and its specific form relational capital refer to the sum of actual and potential resources embedded within, available through, and derived from networks of relationships between organizations (Nahapiet & Ghoshal 1998). This theory contends that the information, influence, and solidarity inherent in relationships across an interorganizational network create value (Adler & Kwon 2002). The effects of social capital on relationship performance are transmitted by relational capital (Carey, *et al.* 2011; Kohtamaki, *et al.* 2012; Tsai & Ghoshal 1998), which is defined as the strength of the ties between organizations (Granovetter 1992) and provides a profound sense of the partner's reliability and faithfulness in resource exchanges (Moran 2005). Relational capital is built by repeated exchanges between partners. Such repeated exchanges are characteristic of supplier development activities (Lawson, *et al.* 2008; Villena, *et al.* 2011).

From a relational capital view, a relationship consists of multiple facets (Bolino, *et al.* 2002; Palmatier 2008). Relational capital is reflected by attributes such as trust (Carey, *et al.* 2011), reciprocity (Mathwick, *et al.* 2008), and affective commitment (Wasko & Faraj 2005). Trust is not only a basic ingredient of relational capital but also a facilitator of collective action (Coleman 1990). In general, it develops when a history of favorable past interactions leads to expectations about positive future interactions (Wasko & Faraj 2005). Reciprocity, or the social norm dictating that an action performed by one party requires a compensating movement by the other, is a cornerstone of cooperative exchange relationships (Hoppner & Griffith 2011). The feeling of indebtedness that buyers and suppliers in a relationship experience provides a sense of obligation to do business in the future (Hoppner & Griffith 2011; Kaufman, *et al.* 2006). Finally, affective commitment is

suppliers' predisposition to remain in the relationship because of their positive affect, feeling of unity or obligation, and emotional attachment to the buyer (Palmatier, *et al.* 2007a). Tuliet *al.* (2010) suggest that firms embedded with relational capital likely focus on their mutual interests over the long run and exhibit greater commitment and reciprocity.

Furthermore, relational capital can help overcome concerns about the relationship-specific nature of supplier development investments. First, supplier development programs are effective mainly when both partners believe in the relative value of this resource, yet these beliefs are subject to considerable heterogeneity, which might cause tensions in the relationship (Venkataraman 1997). Relational capital encourages a shared understanding that can decrease this heterogeneity and create shared appreciation of the value of supplier development; it also generates bonding and group solidarity to help overcome free-riding (Takahashi 2000; Wang, *et al.* 2013).

Second, relational capital increases the effectiveness of supplier development investments because it improves the buyer's technical performance (Lawson, *et al.* 2008), due to suppliers' increased willingness to participate in joint problem solving and offer reciprocal investments. However, their willingness also depends on their perceptions of relational capital with the buyer. When relational capital exists, suppliers likely reciprocate investments made by buyers, which is a necessary condition for effective supplier development. When buyers and suppliers trust each other, they are more willing to cooperate and less worried about abuse by their partners (Granovetter 1992; Wang, *et al.* 2013), which in turn facilitates the knowledge sharing and cooperative behavior that is

needed to make supplier development work (Adler & Kwon 2002; Kohtamaki, *et al.* 2012).

4. Conceptual Model

Our conceptual model appears in Figure 1, linking two aspects of supplier development (capability development, supplier governance) and two dimensions of relationship benefits (supplier benefits, buyer benefits) through relational capital. Previous research has studied either relationship benefits or performance outcomes, from either the buyers' or (infrequently) the supplier's point of view. We incorporate both these aspects. As we noted previously, *supplier benefits* are the direct rewards of doing business with the buyer (e.g., contract renewal; Handfield, *et al.* 2000), and *buyer benefits* are preferential treatment granted to a specific buyer in exchange for past or future loyalty (e.g., value-adding services, customized procedures; Palmatier, *et al.* 2007b).

[Figure 1 about here]

In addition to a direct relationship between supplier development and relationship benefits, we explore how relational capital mediates and moderates this relationship. Supplier development represents relationship-specific investments that leave the buyer open to opportunistic behavior (Williamson 1985). For example, expropriation effects (Wang, *et al.* 2013) arise when suppliers appropriate all the benefits of the supplier development investments for themselves. Suppliers may believe they can avoid reciprocating these benefits because the buyer has made so many unique investments in the relationship that it cannot leave the relationship (Jap & Ganesan 2000; Williamson 1985). Relational capital instead prompts group solidarity, generalized reciprocity,

knowledge sharing, and cooperative behaviors.

4.1. Supplier Development and Relationship Benefits

Capability development aims to enhance the efficiency of supplier operations through the achievement of performance-related benefits, such as reduced cost, greater quality and flexibility, more reliable delivery, and shorter product development cycle times (Krause, *et al.* 2007). These direct benefits for the supplier should increase its effectiveness. In addition, Carr and Kaynak (2007) find that the supplier's responses to supplier development programs tend to increase the buyer's product quality, which results in increased sales overall in the channel. Capability development cannot be redeployed and thus makes the relationship more important to the buyer too (Humphreys, *et al.* 2004), increasing its desire to maintain and even expand the relationship. Finally, close collaborative relationships resulting from capability development initiatives likely allow the buyer to develop a position as a customer of choice (Li, *et al.* 2012). Therefore, preferential treatment likely results from capability development, and we hypothesize:

H1: Capability development is positively associated with (a) supplier benefits and (b) buyer benefits.

Supplier evaluations, feedback, and certification processes also likely provide the buyer and supplier with important information to help each partner improve its performance (Krause, *et al.* 2007). Complying with a buyer's governance requirements is a relationship-specific investment by the supplier that increases the supplier's desire to maintain the relationship (Palmatier, *et al.* 2007a) and its tendency to treat the buyer favorably. The process of supplier governance also might increase the level of

understanding between suppliers and buyers, such that suppliers can better respond to buyers' specific needs and requests, improving their relationship performance (Rogers, Purdy, *et al.* 2007). We posit:

H2: Supplier governance is positively associated with (a) supplier benefits and (b) buyer benefits.

4.2. Supplier Development and Relational Capital

Relational capital builds through relational investments (Villena, *et al.* 2011), such as capability development (Li, *et al.* 2012). The resulting buyer–supplier collaborations enhance the supplier's understanding of the nature of relationship and thus levels of trust, commitment, and reciprocity (Anderson & Weitz 1992). Capability development likely causes suppliers to view buyers as possessing high degrees of integrity, such that trust is likely to develop (Palmatier, *et al.* 2007a).

Capability development activities, such as providing training or technology-related advice, often involve interactions among buyer and supplier employees who represent various functions (e.g., purchasing, production, engineering, quality, logistics). The rich communication that takes place in these interactions helps create mutual understanding and a shared vision thus enhancing relational capital (McFarland, *et al.* 2008). Capability development requires the exchange of explicit information, often facilitated by investments in structural linkages (e.g., formal teams, collaborative information and communication technology systems). Such investments enable relationship learning and interfirm knowledge sharing (Chang & Gotcher 2007). Similarly, capability

developments aimed at improving manufacturing processes require direct participation by buyers and suppliers, which deepens their relationship. Therefore, we hypothesize:

H3: Capability development is positively associated with relational capital.

Governance and evaluation policies seek to increase supplier compliance with buyer needs and requests (Rogers, *et al.* 2007). Supplier governance intensifies the need for relational capital, because of the requirement for complex coordination and firm participation. Such activities can take place only when the supplier and buyer operate from the same foundations (Heide & John 1990), which encourages the supplier to develop a closer relationship with the buyer and its representatives. When the process of supplier governance involves regular visits to supplier sites aimed at assessing and familiarizing itself with the supplier's operations, it results in more personal, face-to-face interactions and increases exchanges of tacit knowledge, which deepens their relational capital (Krause, *et al.* 2007). Supplier governance also sets standards and routine procedures for a supplier to follow, creating less confusion, eliminating double standards, and reducing divergent interpretations of similar activities but increasing mutual understanding and trust (Prahinski & Benton 2004; Storey & Kocabasoglu-Hillmer 2013). Finally, supplier governance often requires the supplier to adapt its communication with the buyer. For example, the supplier might need to adopt the buyer's electronic data interchange system or web portals. This substantive investment of capital and effort is specific to the supplier-buyer relationship and leads to further commitment to the buyer. We therefore hypothesize:

H4: Supplier governance is positively associated with relational capital.

4.3. Relational Capital and Relationship Benefits

The success of a firm likely depends on its ability to develop relational capital that it can use to improve relationship performance (Nahapiet & Ghoshal 1998). Relational capital helps activate and translate shared cognitions between the buyer and supplier into value-enhancing mechanisms (Carey, *et al.* 2011). Although supplier development programs can be an effective resource, they require both partners to embrace their relative value. Relational capital reflects a shared understanding reducing the heterogeneity in beliefs about the value of supplier development (Venkataraman 1997). In addition, relational capital makes it easier to obtain information and increases the confidence of both parties in the information exchanged, which decreases the related transaction costs (Dyer & Singh 1998). Information about a buyer's operating environment can help a supplier understand its idiosyncratic requirements and demand patterns. In turn, suppliers can better tailor offerings to meet those unique needs (Rogers, *et al.* 2007). Tuli *et al.* (2010) also argue that relational capital helps the supplier gain access to confidential information about the buyer, so that it can serve the buyer better.

In terms of the potential for opportunistic behavior inherent to relationship-specific investments (Anderson & Weitz 1992; Williamson 1985), the trust and reciprocity embodied in relational capital can help build confidence that both parties will act in good faith in negotiations related to the achievement and sharing of benefits (Carey, *et al.* 2011). Wang *et al.* (2013) consider trust a potent mechanism for managing opportunism, because it increases social costs and thus discourages the temptation to engage in opportunistic behaviors. In addition, relational capital generates bonding and shared values (Takahashi 2000), such that suppliers should be more likely to cooperate with

buyers, enjoy working together, and perceive the possibility of achieving congruent goals (Heide & John 1990; Wang, *et al.* 2013).

According to reciprocal action theory, actions by relationship partners get reciprocated in kind by the other party (Lee, *et al.* 2008). Therefore, suppliers may deliver preferential benefits to buyers on the basis of the relational capital they have built, or in anticipation of future benefits. Studies of strategic alliances acknowledge that the development of mutual trust encourages special favors (Nooteboom, *et al.* 1997). Therefore, buyer–supplier relationships embedded with relational capital, through the confidence and assurance they create, are more likely to deliver mutually rewarding benefits. We hypothesize:

H5: Relational capital is positively associated with (a) supplier and (b) buyer benefits.

4.4. Moderating Role of Relational Capital

As well as acting as a mediator, we argue that relational capital can increase the effectiveness of supplier development investments. Reciprocity dictates that an action performed by one party requires a compensating act by the other, which is a cornerstone of cooperative exchange relationships (Hoppner & Griffith 2011). According to reciprocal action theory, actions get reciprocated by partners (Lee, *et al.* 2008). Effective capability development similarly requires mutually supporting actions, which are undertaken more freely on behalf of exchange partners when reciprocal benefits are expected (Yli-Renko, *et al.* 2001). Investments by both parties are specific to the relationship, so effective mechanisms must be in place to discourage free-riding (Dyer &

Singh 1998); relational capital embodies reciprocity that can do so (Mahapatra, *et al.* 2012; Takahashi 2000). Thus relational capital lowers investment risks and encourages reciprocation of investments made by buyers, which is a necessary condition for effective supplier development investments.

Effective supplier development also demands the exchange of confidential information, which creates opportunism and leakage risks (Liker & Choi 2004). When buyers and suppliers trust each other, they grow more willing to cooperate and are less worried about being abused by their partners (Granovetter 1992; Wang, *et al.* 2013), which facilitates knowledge sharing and cooperative behavior (Adler & Kwon 2002; Kohtamaki, *et al.* 2012). Much of the knowledge required for capability development is tacit, complex, and difficult to convey without relational capital in place. Relational capital enables the joint creation of tacit resources that are difficult to share outside the relationship and help redress any buyer–supplier power asymmetries, yielding optimized resource deployment (Kohtamaki, *et al.* 2012; Mahapatra, *et al.* 2012). Chang and Gotcher (2007) indicate that relational capital helps increase the learning and operational performance that occurs as a result of relationship-specific investments, such as those inherent to capability development. With efforts to enhance the supplier’s capabilities, knowledge transfer increases along with the degree of human interaction (Wagner & Krause 2009). Thus,

H6: Relational capital strengthens the relationship (a) between capability development and supplier benefits and (b) between capability development and buyer benefits.

Without the moderating effect of relational capital, supplier governance structures merely

create transaction costs and cause frustration for both sides of the relationship (Adler & Kwon 2002; Kohtamaki, *et al.* 2012). Supplier governance can uncover discrepancies between the partners in a way that aggravates asymmetries in perceptions and information, causing resentment and reducing coordination (Gilliland, *et al.* 2010). Wang *et al.* (2013) suggest that relational capital and the shared understanding on which it is built should ease the difficulty of determining which factors to evaluate and reduce ambiguity in these evaluations. It will be less difficult for buyers to monitor and assess their supplier's performance when they share similar goals and values. Furthermore, supplier governance is a formal control mechanism, whereas relational capital offers a social control mechanism, which aligns with the complementary nature of formal and relational methods of governance in driving relationship performance (Jap & Ganesan 2000; Liu, *et al.* 2009). We therefore argue that the presence of relational capital can moderate the relationship between governance and benefits by lowering the cost of compliance and increasing the effectiveness of monitoring and coordinating efforts.

Alternatively, supplier governance can have negative implications (Gundlach & Cannon 2010). Suppliers may become suspicious of their buyer's motives; research also shows that heavy-handed, formalized, rule-specific controls often discourage voluntary cooperation (Gilliland, *et al.* 2010). Relational capital should provide a reservoir of goodwill to overcome this suspicion and mitigate the possible harmful effects of supplier governance on relationship performance. If trust-based relational capital is low though, misunderstandings are more likely, and defenses tend to be high (Robert, *et al.* 2008), such that the knowledge integration required for supplier governance to work is unlikely.

We predict:

H7: Relational capital strengthens the relationship (a) between supplier governance and supplier benefits and (b) between supplier governance and buyer benefits.

5. Methodology

5.1. Measurement Instruments

The measurement instruments included in the survey for this study were established scales from previous studies or adapted from extant literature. We pretested and validated the questionnaire with semi-structured interviews with five representatives from the buying firm and eight supplier representatives. All items were measured on seven-point Likert scales (see the Appendix).

We addressed two aspects of supplier development. *Capability development*, the direct investments in the supplier's knowledge and processes, was measured by six items pertaining to advice given by the buyer (related to technology, quality, or product development), training, and collaborations to improve processes (Ghijsen, *et al.* 2010; Wagner & Krause 2009). This indicator reflects the perceived degree of attention directed toward the supplier by the buying organization, relative to other organizations. We operationalized *supplier governance* with five items related to monitoring and control mechanisms. The items covered formal evaluation procedures, setting clear improvement targets, recognition for performance improvements, and the use of supplier certification (Krause, *et al.* 2007; Modi & Mabert 2007).

Relational capital represented a second-order, reflective, multidimensional latent construct with three first-order constructs: trust, reciprocity, and affective commitment.

This approach is consistent with previous research (Palmatier 2008). These three factors, or their combinations, are common to most definitions of relational capital (Nahapiet & Ghosal 1998; Wasko & Faraj 2005). Each first-order factor, though related, captures unique aspects of the relationship; in aggregate, they reflect how the supplier views the relationship. *Affective commitment* is the predisposition of the supplier to stay in the relationship (Kumar, *et al.* 1994). *Reciprocity* represents the feeling of indebtedness and obligation to do business in the future that the relationship parties experience (Hoppner & Griffith 2011; Palmatier 2008). *Trust* is the extent to which partners expect each other not to act selfishly but to follow through on promises (Kaufman, *et al.* 2006).

We measured two relationship performance dimensions by capturing benefits to the supplier and the buyer. *Supplier benefits* was measured by three items covering profit, market position, and customer acquisition (Geyskens & Steenkamp 2000), to reflect the direct benefits of doing business with the buyer. *Buyer benefits* measured the extent to which the supplier granted preferential treatment to the buyer, in the form of value-added services, direct investments, process adaptations, or special treatment (Palmatier, *et al.* 2007b). Suppliers evaluated the extent to which they granted preferential buyer benefits to the buying firm, compared with the wider population of buyers.

Finally, we included several control variables. Granting benefits depends on the law of voluntarism (Das & Teng 2002), so we measured relative power and dependence in the relationship. For the supplier's dependence, we used the scale developed by Kumar *et al.* (1994); the buyer's power relied on a three-item latent variable from Mohr *et al.* (1996). We collected objective information about the buyer's share of business (i.e., share of the buyer in the total turnover of the supplier), on a five-point scale (1 = 1–20%, ..., 5 = 81–

100%). We also included a firm size variable, measured as turnover, because small firms may be more likely to require supplier support to stay in business (Wagner 2006). To control for cultural differences a dummy variable was included for non-European suppliers. Furthermore the location of the buying factory was accounted for (dummy variables for the two largest factories in Belgium and Italy). Finally, we measured the length, in years, of the supplier's relationship with the buying firm and the length of the accounts manager's working relationship with the buyer (Jap & Ganesan 2000).

5.2. Sample and Data Collection

The buying firm selected for this study is a division of a global manufacturer of industrial equipment with operations in Belgium, France, and Italy and total annual turnover of approximately €3 billion. We surveyed its suppliers and thus excluded contextual effects and allowed for a single frame of reference. This buying firm also had a sophisticated purchasing and supply management function in place, had rationalized its supply base, and invested in supplier development programs.

The sample included only product-related suppliers for parts needed to assemble the buying firm's end product (e.g., mechanical and electrical parts, cooling systems, engines, tires, cables, plating). Excluding small volume and incidental suppliers, we identified 254 product-related suppliers, and we received 185 completed surveys from these suppliers' key account managers, for a response rate of 73%. About 65% of the key suppliers were based in Belgium and Italy (close to the operations of the buying firm); the others were mainly in France, Germany, or the rest of Europe, as we show in Table 1. To evaluate non-response bias, we compared early respondents (first tercile) with the late

respondents (last tercile) and found no significant differences in our study variables (Armstrong & Overton 1977). An analysis of variance showed no systematic differences in the latent variables between locations.

[Table 1 about here]

5.3. Analysis

We used SmartPLS v2.0 (Ringle, *et al.* 2005) to obtain partial least squares (PLS) estimates for both the measurement and the structural model. Not only was PLS path modeling more suitable for this complex model (Chin 1998), but Chin *et al.* (2003) also indicate that PLS path modeling is superior to regression analysis and covariance-based methods for testing moderating hypotheses. Relational capital served as the second-order construct in the PLS path model, with reflective relationships at the first-order and second-order levels, using the repeated indicator approach (Wetzels, *et al.* 2009). We report the first-order and second-order loadings in the Appendix. To test the stability and statistical significance of the parameter estimates in the structural model, we used a bootstrapping procedure with 500 resamples to generate standard errors (Chin 1998). Furthermore, we examined the measurement model to assess its suitability for use in the PLS structural model. As we show in the Appendix, the reliability of the latent variables, according to composite reliability (CR) and average variance extracted (AVE), was acceptable (Chin 1998; Hair, *et al.* 2007). The second-order loadings indicated the psychometric properties for the constructs (Wetzels, *et al.* 2009). To assess discriminant validity, we compared whether the constructs shared more variance with their own measures than with other constructs in the model (Hair, *et al.* 2007). The value of the

square root of the AVE for each construct exceeded the bivariate intercorrelations with all other remaining constructs in the study (Table 1), and no item had a higher cross-loading on another construct than on its intended construct.

From an exploratory factor analysis of all manifest variables, Harman's single-factor test showed that the first factor accounted for only 28% of the total variance indicating common method bias (CMB) was not a significant problem (Podsakoff, *et al.* 2003). Moreover, we applied the Schmid-Leiman solution (Yung, *et al.* 1999) using principal axis factoring, which allowed for the inclusion of a common method factor (Podsakoff, *et al.* 2003). The common method factor accounted for 38% of the total variance. In addition, following Liang, *et al.*'s (2007) approach the structural model estimates with and without a latent method factor remained virtually unchanged showing any CMB did not materially affect the results (see Table 2). Accordingly, we conclude that CMB does not appear to be a significant problem.

[Table 2 about here]

6. Findings

6.1. Direct Effects Model

Because the psychometric properties of the measurement scales indicated their reliability and validity, we used the PLS model to test the hypotheses; we provide the results in Table 3. The R-square values of the endogenous variables (Tenenhaus, *et al.* 2005) showed acceptable quality, and a goodness-of-fit (GoF) measure ($\sqrt{\text{average } R^2 * \text{average AVE}}$) reached .48 for the direct effects model. Assuming a large

average effect size ($R^2 = .26$) and a cut-off value of .50 for the AVE, we calculated a comparison GoF value of .36, which supported our model (Tenenhaus, *et al.* 2005; Wetzels, *et al.* 2009). In addition, the Stone-Geisser Q^2 , calculated for the outcome variables (.30 for supplier benefits and .14 for buyer benefits) suggest its predictive relevance (Tenenhaus, *et al.* 2005). Finally, the variance inflation factors of the latent variables in the structural model were less than 2.5, so multicollinearity was not an issue (Hair, *et al.* 2007).

[Table 3 about here]

The results indicated conflicting direct effects of supplier development on relationship benefits, which failed to support H1 or H2. Capability development had a significant positive direct effect on supplier benefits ($\beta = .20$, $t = 2.42$, $p < .01$), but supplier governance's impact was negative ($\beta = -.15$, $t = 1.76$, $p < .05$). We found no significant direct relationships for both aspects of supplier development and buyer benefits. Contrasting this capability development ($\beta = .27$, $t = 2.96$, $p < .01$) and supplier governance ($\beta = .30$, $t = 2.98$, $p < .01$) had strong significant relationships with relational capital. Relational capital was linked to both supplier benefits (H5a: $\beta = .55$, $t = 8.37$, $p < .01$) and buyer benefits (H5b: $\beta = .15$, $t = 1.80$, $p < .05$).

6.2. Interaction Effects

To develop interaction terms, we used a residual product indicator approach (Henseler & Chin 2010). Adding the interaction terms to the direct effects model (see Table 2) increased the R-square for supplier benefits significantly, from .48 to .53 ($\Delta F = 8.97$; $p < .00$). The increase in R-square for buyer benefits was similarly significant ($\Delta R^2 = .09$; ΔF

= 11.78; $p < .00$). Cohen's f^2 were .10 and .14, respectively, suggesting medium effects (Henseler & Chin 2010). These results supported the use of a moderated model.

Relational capital positively moderated the link between capability development and supplier benefits ($\beta = .14$, $t = 2.02$, $p < .05$) but negatively moderated the link with buyer benefits ($\beta = -.21$, $t = 2.36$, $p < .01$). Relational capital had a positive moderating effect for the connection of supplier governance with both supplier benefits ($\beta = .12$, $t = 1.75$, $p < .05$) and buyer benefits ($\beta = .16$, $t = 2.06$, $p < .05$). These results provided support for H6a, H7a, and H7b but not H6b. Next, to investigate the interaction effects in detail, we split the sample according to high or low levels of the moderating variable, relational capital: 1σ above or below the mean. Graphs were produced showing the effects of the independent variables on the dependent variables at these levels. The results are in Figure 2.

[Figure 2. About here]

7. Discussion

By examining whether the relationship between supplier development and relationship benefits is facilitated by the generation of relational capital, we make three main contributions (as outlined in the introduction). First, we help delineate the dimensions of supplier development to show that capability development and supplier governance work independently. This study is the first to disentangle their impacts on a set of performance mechanisms that include both the buyer and the supplier, such that we reduce an existing research gap and reveal how supplier development investments get reciprocated. Prior research has focused on the benefits of relational capital for operational or efficiency

measures of buyer performance (Krause, *et al.* 2007; Lawson, *et al.* 2008), rather than the creation of mutual value through resource exchanges (Tsai & Ghoshal 1998; Villena, *et al.* 2011). We find contrasting effects for the two dimensions of supplier development on relationship benefits.

Specifically, the anticipated outcomes for buyers investing in a supplier include potential customer-of-choice status, in which case it receives preferential benefits (e.g., value-added service, operational investments, tailoring responses to specific buyer requests). But our results do not support this prediction. Supplier development can lead to operational improvements, but the suppliers might not be motivated to reciprocate these investments directly by creating differential value and competitive advantages for the buyer. By making relationship-specific investments, buyers leave themselves open to expropriation effects, such that suppliers act opportunistically and think they can get away with not reciprocating (Wang, *et al.* 2013).

Furthermore, whereas capability development, as expected, had a direct impact on supplier benefits, supplier governance was detrimental to supplier benefits. The governance process can uncover discrepancies between the partners and aggravate their asymmetries, causing resentment and hindering coordination (Gilliland, *et al.* 2010). In addition formal monitoring tools can be viewed as coercive governance, which does not necessarily lead to supplier compliance (Payan & McFarland 2005). The lack of coordination and compliance by the supplier means a buyer will be less likely to reward it with increased business. This finding helps explain why recent research has shown that the use of influence strategies can lead to supplier dissatisfaction (Ghijsen, *et al.* 2010).

Second, we clarify how supplier development leads to performance by examining the mediating role of relational capital. Relational capital is a bridge between supplier development and buyer benefits. Prior researchers indicate the role of relational capital in the effective functioning of supply chains but pay relatively less attention to how organizations might build relational capital (Carey, *et al.* 2011; Kohtamaki, *et al.* 2012). Our study fills this gap in supply chain literature by offering, to the best of our knowledge, the first evidence that buyers' investments in supplier development programs build relational capital, resulting in mutual benefits.

Third, in explicating how relational capital can explain heterogeneity in the relationship between supplier development and performance, this study responds to a recent call for buyer–supplier literature to examine the moderating effects of contingent variables on the activities–outcome relationships (Mahapatra, *et al.* 2012). Insufficient research describes relational capital's moderating role, especially from the supplier side (Kohtamaki, *et al.* 2012). Our results show that despite the importance of relational capital, it is not a panacea—consistent with recent research that relational capital may not be universally beneficial (Wang, *et al.* 2013).

Without relational capital though, the supplier's benefits from capability development cannot accrue, and supplier governance will have detrimental effects. In this sense, our research supports the view that relational capital increases tacit knowledge sharing and enhances learning (Chang & Gotcher 2007), thus optimizing investments on both sides of the relationship. Similarly, Payan and McFarland (2005) find that compliance with a manufacturer's recommendations required the distributor first to trust the manufacturer's information. Buyer benefits result from supplier governance only if relational capital

exists. The development of relational capital also decreases the fear of opportunistic behavior and thus encourages shared benefits (Carey, *et al.* 2011; Nooteboom, *et al.* 1997).

As an unexpected result, we found that capability development, in conditions with high relational capital, leads to lower buyer benefits, which we might explain by noting the subtle dichotomy between gratitude and indebtedness. If the supplier feels indebted to the buyer, following from its capability development investments, it also may feel less gratitude (Watkins, *et al.* 2006). Recent research has shown that this effect increases in circumstances marked by social self-consciousness and anxiety (Mathews & Green 2010). Relational capital may create anxiety, in terms of not wanting to feel indebted, and reduce gratitude toward the buyer, such that the supplier shows less gratitude in the form of preferential buyer treatment. In addition, with low relational capital, the supplier is unsure of its standing with the buyer and may feel obliged to repay the buyer for its development investments by immediately providing preferential buyer benefits. Similar evidence of the detrimental effects of being too close to relationship partners appears in some emergent research (Villena, *et al.* 2011; Wang, *et al.* 2013).

8. Managerial Implications

This study provides several implications for buyers that want to improve their competitive positioning. Supplier development may not be sufficient to guarantee preferential access to scarce supply resources; to become a customer of choice, buyers need to build relational capital. Without this supporting mechanism, the returns on their supplier development investments likely are negligible, or even negative.

Especially in the current economic environment, supplier development needs a critical review, because it represents a serious investment of time and resources. In particular, buying firms should pursue effective supplier segmentation to ensure that their valuable time and resources are being allocated to the right suppliers. Although segmentation criteria such as spending volume, business criticality, and supply risk (Kraljic 1983) still dominate, we suggest acknowledging the importance of relational capital and use alternative supplier segmentation criteria, such as trust, appetite for collaboration, and mutual understanding of value creation potential.

The objectives of supplier development efforts also should include improving operational performance, as suggested by prior studies (Krause, *et al.* 2000), rather than just receiving direct preferential benefits. Handfield *et al.* (2000) suggest that buyers' motivation for developing suppliers often is based on an expectation of direct, real-time, price reductions. This motivation may be inappropriate, because suppliers perceive it as a coercive action that reduces their relational capital. The recognition that capability development and supplier governance, in different relationship conditions, drive distinct relationship benefits will allow relationship partners to set appropriate goals and better balance investments across different development aspects.

Relational capital is at least partially affective in nature, so it also is important for buyers to think about the impression they want to make on their suppliers. Interpersonal interaction is key; the "little" things make a big difference. Toyota encourages its employees (from different functional areas and managerial levels) to be humble and friendly when dealing with key suppliers (Day 2011). Rather than assigning relations to a single purchasing manager, all functional managers interacting with a supplier have

equally important relationship management roles. Creating affinity groups of buyer and supplier employees with similar responsibilities can align opinions, views, feelings, and behaviors and help build cohesiveness and trust between organizations (McGrath & Sparks 2005). In addition, the continued growth of social media and communication technologies will keep speeding up knowledge and information exchanges across social networks (Rozemeijer, *et al.* 2012), with potentially significant impacts for relational capital.

Finally, buyers that do not pay their invoices on time, cannot provide reliable order forecasts, fail to live up their promises, or must rely on many rush orders—in other words, buyers that are not in control of their own purchasing processes—will never be attractive customers to suppliers and thus will have great difficulties building necessary levels of relational capital to realize the potential benefits of supplier development (Rozemeijer 2008). Supplier satisfaction surveys can reveal the extent to which suppliers express satisfaction with actual organizational buying behavior and thus help buyers understand how suppliers perceive them, as well as how they compare with other customers.

9. Conclusions

Investments in supplier development do not automatically result in benefits for the supplier or reciprocated benefits for the buyer. Rather, relational capital has important mediating and moderating effects on the relationships across different dimensions of supplier development and relational benefits. The danger is that without relational capital, benefits can fail to materialize or even cause harm. However, capability development and

supplier governance can effectively increase the relational capital embedded in buyer–supplier relationships.

This study provides the first investigation of the interrelationship of supplier development and relational capital from the supplier’s point of view. Although it thus fills a research gap, it also represents a limitation; further research might take a dyadic perspective. A particular area of interest is the extent to which the two sides’ perceptions of social capital align, and the effects of any misalignment on relationship performance. Further research should consider whether effective supplier development investments require matched, relationship-specific investments by buyers and suppliers.

As a second limitation, our research method created a high risk of CMB. Our analyses suggested it was not a significant problem, yet the possibility remains that the results suffered from CMB. We hope additional studies collect more objective, rather than subjective, performance data.

This research also adopted a static perspective and thus did not capture causal effects. Longitudinal research could overcome this limitation and reveal how relational capital and relational benefits coevolve with supplier development investments over time. For example, how quickly can relational capital be built, and how quickly can it be transformed into supplier and buyer benefits? We call on further research to determine whether it is preferable to initiate capability development before putting a supplier governance system in place, or vice versa.

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Appendix: Constructs and component variables

	Standardized loadings (λ)
Capability Development (CR = .93; AVE = .69)	
We receive training from Buyer X. ^a	0.72
Buyer X collaborates with us to improve our manufacturing processes.	0.84
Buyer X gives us technological advice (e.g., on materials, software).	0.89
Buyer X gives us product development advice (e.g., on processes, project management).	0.91
Buyer X gives us quality related advice (e.g., on the use of inspection equipment, quality assurance procedures).	0.86
Buyer X standardizes product specifications together with us.	0.77
Supplier Governance (CR = .88; AVE = .66)	
Buyer X sets clear improvement targets.	0.89
Buyer X uses a formal procedure to evaluate our performance (e.g., audits, quality, delivery measurement).	0.88
We are recognized by Buyer X for the improvements we realize.	0.86
We have been certified to work with Buyer X	0.58
<i>Buyer X visits our site to assess our processes.</i> ^b	
Relational Capital (CR = .89; AVE = .74)	
<i>Trust</i> (CR = .87; AVE = .69) ^c	0.87
When making decisions, Buyer X considers our business interest as well as its own.	0.84
We trust that Buyer X keeps our best interest in mind.	0.87
We can count on Buyer X to follow through on their promises.	0.77
<i>Reciprocity</i> (CR = .81; AVE = .52)	0.85
Buyer X feels indebted to our firm as a supplier for what we have done for them.	0.69
We feel indebted to Buyer X for what they have done for us.	0.73
The relationship that we have with Buyer X can be defined as “mutually beneficial.”	0.76
We expect that we will be working with Buyer X far into the future.	0.69
<i>Commitment</i> (CR = .86; AVE = .66)	0.85
It is pleasant working with Buyer X that is why we continue the relationship.	0.81
We want to remain a supplier to Buyer X.	0.85
Our decision to remain a supplier for Buyer X is based on our attraction to the things that Buyer X represents as a firm (e.g., image, brand, reference).	0.78
Buyer Benefits (CR = .83; AVE = .55)	
Buyer X receives special value-added benefits from us (e.g., inventory control, expediting, training).	0.61
Buyer X receives special treatment from us	0.77
We adapt our procedures to Buyer X.	0.80
We have made specific investments for Buyer X.	0.77
Supplier Benefits (CR = .83; AVE = .63)	
The relationship with Buyer X has provided our firm with a profitable market position.	0.78
Through the relationship with Buyer X we were able to attract other customers.	0.71
Doing business with Buyer X is profitable.	0.88

Appendix cont.

Controls	
Buyer Power (CR = .85; AVE = .74)	
Buyer X can pretty much dictate how well we produce the product.	0.77
Buyer X has a significant influence on our operations.	0.94
<i>Buyer X has changed and/or influenced our programs and/ or procedures and/or policies.^b</i>	
Supplier Dependence (CR = .88; AVE = .72)	
There is too much effort (time and/or energy and/or expense) in switching to another customer, that is why we stay with Buyer X.	0.88
Right now staying with Buyer X is a matter of necessity since no feasible alternatives exist.	0.79
It is too difficult to switch to another customer because of the lack of good alternatives, therefore we stay with Buyer X; otherwise, we would consider leaving.	0.88
Notes: CR = composite reliability; AVE = average variance extracted.	
^a All scales were assessed on seven-point Likert scales.	
^b Item removed during analysis.	
^c First-order factors.	

Length of suppliers' working relationship with buyer:		
< 5 years		25%
> 5 to ≤ 10 years		24%
> 10 to ≤ 15 years		20%
> 15 years		31%
Supplier sector (SIC):		
Industrial and commercial materials		35%
Electronics and other electrical		20%
Fabricated metal products		17%
Measurement, analysis and control products		9%
Primary metal industries		9%
Other		10%
Annual turnover (€m):		
< 50		64%
> 50 to ≤ 100		13%
> 100 to ≤ 1,000		10%
> 1,000		13%
	Average	€403m
Supplier country:		
Belgium		34%
Italy		32%
Germany		9%
France		6%
Other European		13%
Non-European		6%
Length of key account manager's working relationship with buyer:		
< 5 years		43%
> 5 to ≤ 10 years		29%
> 10 to ≤ 15 years		15%
> 15 years		13%
Gender of respondents:	Male = 88%, Female = 12%.	

Table 1. Sample Demographics

Latent variable	A	B	C	D	E	F	G	H	I	J	K	L
A. Supplier Benefits	<i>0.79¹</i>											
B. Buyer Benefits	0.13	<i>0.74</i>										
C. Relational Capital	0.63	0.20	<i>0.86</i>									
D. Capability Development	0.40	0.12	0.47	<i>0.83</i>								
E. Supplier Governance	0.33	0.19	0.48	0.65	<i>0.81</i>							
F. Supplier Dependence	-0.17	-0.09	-0.21	0.04	-0.12	<i>0.85</i>						
G. Buyer Power	0.31	0.36	0.25	0.37	0.41	-0.01	<i>0.86</i>					
H. Non-European Supplier	0.12	-0.28	0.04	0.08	0.01	-0.03	-0.13	-				
I. Sales	0.18	0.13	0.15	0.15	0.27	-0.01	0.22	-0.09	-			
J. Factory Location(Italy)	0.12	0.09	-0.01	-0.09	-0.03	-0.09	0.17	-0.11	-0.06	-		
K. Factory Location(Belgium)	-0.05	-0.01	-0.01	0.13	0.11	0.06	-0.09	0.17	0.14	<i>n.a.</i>	-	
L. Size	-0.14	-0.12	-0.10	-0.17	-0.11	-0.05	-0.11	0.02	-0.14	-0.01	0.04	-
M. Length of Relationship	0.08	0.26	-0.01	0.07	0.06	0.06	0.05	-0.35	0.08	-0.12	0.07	0.10

1. $\sqrt{\text{AVE}}$

Table 2. Latent Variable Correlations

Path	Direct Effects Model		Interaction Effects Model		Hypothesis supported
	β	t	β	t	
Capability Development → Supplier Benefit	0.20**	2.42	0.17*	2.27	H1a: Yes
Capability Development → Buyer Benefits	-0.10	1.30	-0.08	1.33	H1b: No
Supplier Governance → Supplier Benefits	-0.15*	1.76	-0.14*	1.79	H2a: No
Supplier Governance → Buyer Benefits	0.02	0.31	0.03	0.51	H2b: No
Capability Development → Relational Capital	0.27**	2.96	0.27**	2.98	H3: Yes
Supplier Governance → Relational Capital	0.30**	2.98	0.30**	3.12	H4: Yes
Relational Capital → Supplier Benefits	0.55**	8.37	0.57**	9.52	H5a: Yes
Relational Capital → Buyer Benefits	0.15*	1.80	0.14*	1.68	H5b: Yes
Buyer Power → Supplier Benefits	0.11*	1.72	0.13*	2.32	
Buyer Power → Buyer Benefits	0.31**	3.82	0.26**	3.22	
Supplier Dependency → Supplier Benefits	-0.08	1.54	-0.05	1.40	
Supplier Dependency → Buyer Benefits	-0.08	1.36	-0.07	1.23	
Firm Size → Supplier Benefits	-0.05	1.13	-0.06	1.45	
Firm Size → Buyer Benefits	-0.11*	1.77	-0.16**	2.87	
Non-European Supplier → Supplier Benefits	-0.13*	2.12	0.13*	2.04	
Non-European Supplier → Buyer Benefits	-0.18*	1.78	0.12	1.45	
Relationship Length → Supplier Benefits	0.04	0.97	0.04	0.81	
Relationship Length → Buyer Benefits	0.21**	2.88	0.18**	2.56	
Factory Location(Italy) → Supplier Benefits	0.13*	2.08	0.09	1.57	
Factory Location(Italy) → Buyer Benefits	0.09	1.49	0.07	1.22	
Factory Location(Belgium) → Supplier Benefits	0.05	0.92	0.02	0.48	
Factory Location(Belgium) → Buyer Benefits	0.10	1.49	0.11	1.64	
Capability Development × Relational Capital → Supplier Benefits			0.14*	2.02	H6a: Yes
Capability Development × Relational Capital → Buyer Benefits			-0.21**	2.36	H6b: No
Supplier Governance × Relational Capital → Supplier Benefits			0.12*	1.75	H7a: Yes
Supplier Governance × Relational Capital → Buyer Benefits			0.16*	2.06	H7b: Yes
<u>Variance Explained (R²)</u>					<u>F change</u>
Relational Capital	0.27		-		
Supplier Benefits	0.48		0.53		8.97 **
Buyer Benefits	0.26		0.35		11.78 **

* Path significant at $p < .05$. ** Path significant at $p < .01$ (one-tailed).

Table 3. Results of PLS Analysis

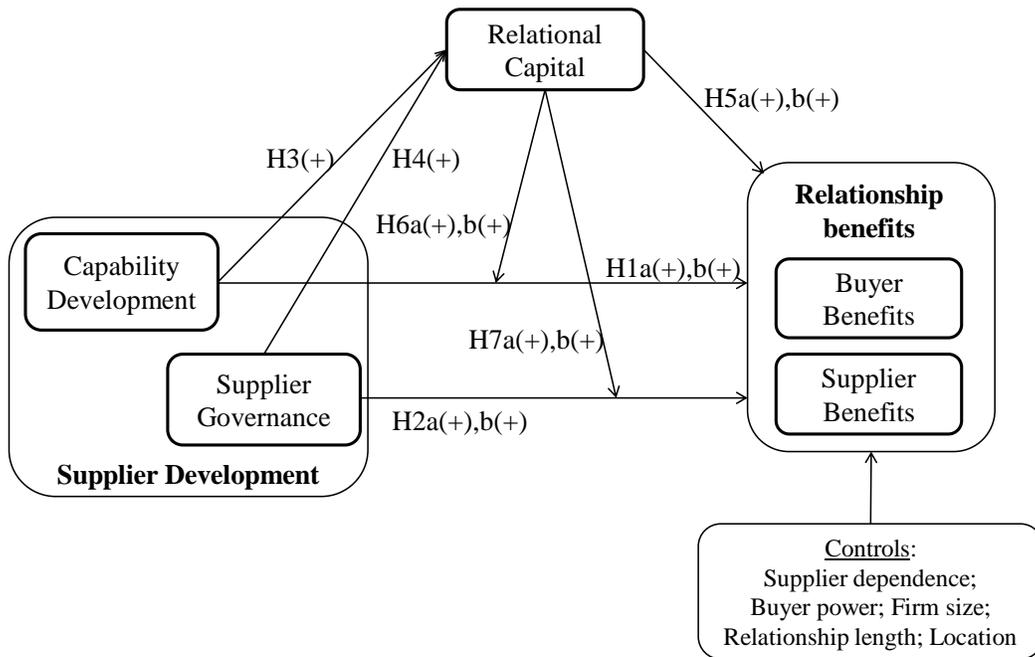


Figure 1. Mediating and Moderating Role of Relational Capital on the Supplier Development–Relationship Benefits Link

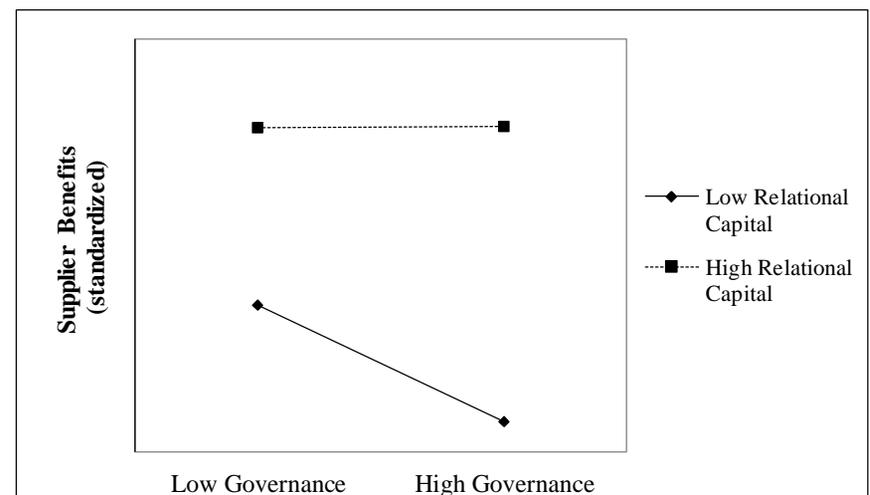
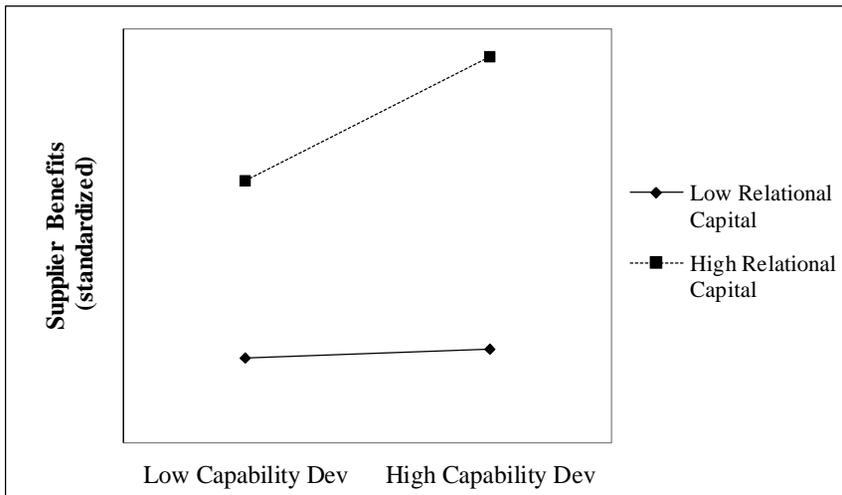
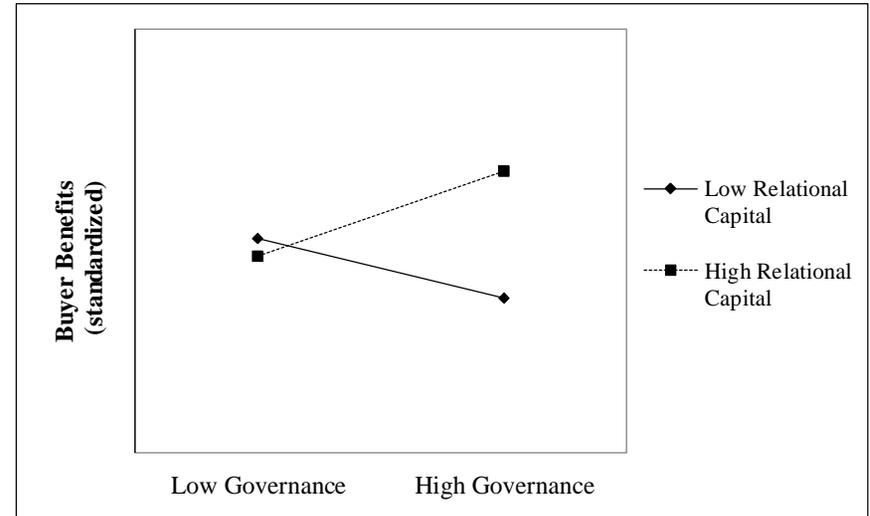
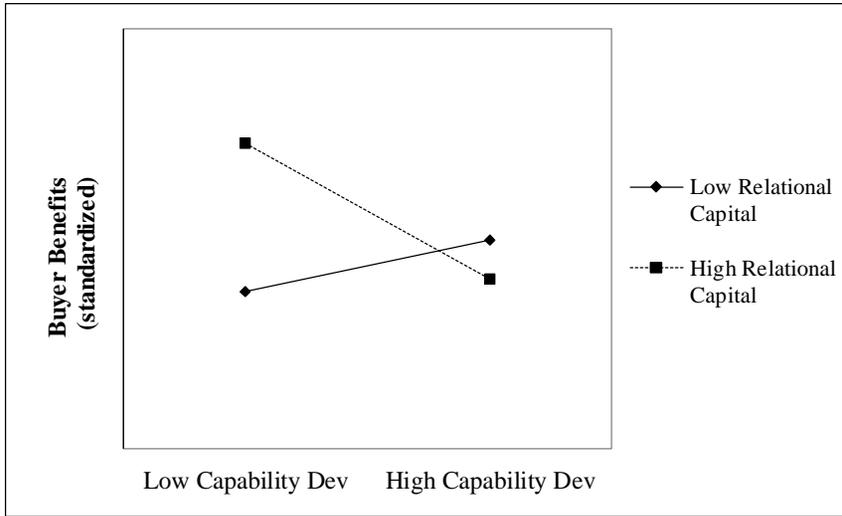


Figure 2. Graphs of Interaction Effect