Leveraging boundary spanning capabilities to encourage supplier investment: A comparative study

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1. Introduction

Intense competition in global supply chains motivates industrial customers to collaborate with suppliers to realize innovations customers cannot achieve by themselves (e.g., Dyer & Chu, 2003; Takeishi, 2001). To this end, industrial customers encourage suppliers to invest in new technologies that can generate innovations beyond those specified in their contracts (Cox, 2004; MacDuffie & Helper, 2006). Such future-oriented supplier investments are difficult for competitors to imitate and represent a source of competitive advantage for the industrial customer (e.g., Morgan & Daniel, 2001; Singh & Power, 2009). In particular, when competing industrial customers share the same supplier base, a customer firm can lose its competitive advantage if its suppliers are more willing to direct technology investments to support innovations of its competitors (MacDuffie & Helper, 2006; Takeishi, 2001). This has happened to a number of well-established industrial customers in the computer, copier, automobile, and construction industries (Hayes & Abernathy, 1980; Morgan & Daniel, 2001).

Suppliers decide, with at least some deliberations, for whom they will undertake future-oriented investments. For a supplier to be willing to make future-oriented investments, the supplier needs to be able to assess a customer’s intentions and strategic plans to determine whether it will be able to recover the value of its customer-firm-related investments (MacDuffie & Helper, 2006). This assessment is particularly challenging in a global market where customers and suppliers are separated by geographic and cultural differences (Kiessling, Harvey, & Garrison, 2004).

To foster supplier future-oriented investment, boundary spanning individuals play an increasingly important role in communicating knowledge of a customer firm’s intentions and strategic plans across organizational boundaries (Ireland & Webb, 2007; Kiessling et al., 2004). Knowledge, however, means little to firm success if it remains within a boundary spanning individual (Annett & Wittmann, 2013). Boundary spanning individuals’ knowledge and competencies will need to be leveraged into firm-level assets before they can influence a supplier’s investment decisions (MacDuffie & Helper, 2006). Nonetheless, little empirical research has been done to examine how individual boundary spanners disseminate critical knowledge across organizational boundaries to facilitate supplier future-oriented investment (Gupta & Polonsky, 2013; MacDuffie & Helper, 2006). Some case-based research provides insight on the role that boundary spanners play in facilitating organizational sharing and investment in critical technology (MacDuffie & Helper, 2006) and in cross-organizational learning (Gupta & Polonsky, 2013), but few studies have empirically tested these processes in customer–supplier relationships. Instead, studies of boundary spanners in inter-organizational relationships have primarily focused on the influence of boundary spanners on trust development between organizations (Doney & Cannon, 1997; Ireland & Webb, 2004).
operate at the periphery of an organization and act as exchange agents (Perrone et al., 2003) or compares relationship management practices of the U.S. and Southeast Asian countries (e.g., Dyer & Chu, 2003; MacDuffie & Helper, 2006; Sako & Helper, 1998). In global supply chains, the suppliers of a multinational customer firm are often located in multiple countries exhibiting differing cultural values and norms, which affect how suppliers allocate resources (Andersen, Christensen, & Damgaard, 2009; Kiesslering et al., 2004). Relationship management scholars have thus called for comparative studies of relationship management practices between the U.S. and other Western industrialized nations, as studies have found that practices in the United States may not be directly applicable to other Western industrialized countries (Wulf, Odeterken-Schroder, & Iacobucci, 2001).

To address these limitations in the existing literature, we develop and empirically test how boundary spanning capabilities of individuals are leveraged to encourage partner firm investment. Drawing from boundary spanning theory (e.g., Adams, 1980; Aldrich & Herker, 1977), we conceptualize two types of boundary spanning capabilities and propose that these individual capabilities need to be leveraged through firm-level communication in order to influence partner firm investment. Furthermore, we compare data collected from the suppliers in the U.S. with data collected from suppliers in other Western industrialized countries to determine whether the process of leveraging boundary spanning capabilities to encourage supplier willingness to invest differs in these regions. The rest of the paper presents an overview of the theoretical foundation of the study and hypotheses, followed by a discussion of the methods, results, and implications of the findings.

2. Boundary spanning process in managing customer–supplier relationships

2.1. Boundary spanning communication

Boundary spanning individuals are organizational personnel who operate at the periphery of an organization and act as exchange agents between the organization and its external environment (Adams, 1980; Aldrich & Herker, 1977). They are organizational actors yet closely involved in managing inter-organizational relationships with partner organizations (Gupta & Polonsky, 2013; Ireland & Webb, 2007). Because boundary spanning individuals are in direct contact with members of the collaborating firm, they are able to transfer vital information (e.g., Aldrich & Herker, 1977; Ireland & Webb, 2007; Kiesslering et al., 2004) and contribute to the strategic integration of firms (e.g., Ireland & Webb, 2007). Individual-level boundary spanning capabilities are leveraged to create firm-level assets by enabling effective communications first at the individual level, which in turn enables greater customer firm communication that generates familiarity and trust between collaborating firms (Kiesslering et al., 2004). Furthermore, through interactions between boundary spanning individuals, norms and attitudes toward information sharing are institutionalized into firm-level relational assets (Ireland & Webb, 2007; Walter, 1999) that encourage relationship-specific investment (Dyer & Singh, 1998; Paulraj, Lado, & Chen, 2008).

While studies applying boundary spanning theory conceptually endorse this process, few studies measure boundary spanning capabilities and distinguish between communication by boundary spanning individuals and firm communication. For suppliers to choose to make future-oriented investment to support a customer’s business, they need to receive meaningful, timely, and open communication from customer firms (Cassiman & Veugelers, 2002; Paulraj et al., 2008). Although boundary spanning individuals are critical to facilitating effective firm-level communication by delivering tacit knowledge (Gallego, Rubalcaba, & Suarez, 2013) and resolving conflicts (Perrone et al., 2003), boundary spanning individuals’ communications will influence a supplier’s investment decision only if the communications are viewed as reflecting the customer firm (MacDuffie & Helper, 2006). Customer firm communication is distinct from the ability of a boundary spanning individual to deliver vital information. Both are important to a supplier’s willingness to invest and share technologies (MacDuffie & Helper, 2006) and need to be modeled separately.

2.2. Boundary spanning capabilities of individuals

Scholars have studied inter-organizational exchange systems (Saeed, Malhotra, & Grover, 2005; Teigland & Wasko, 2003), teams (e.g., Ancona, 1990; Marrone, 2010; Stock, 2006), and individuals (e.g., Doney & Cannon, 1997; Perrone et al., 2003) as boundary spanners. Individuals as boundary spanners are important to inter-organizational information exchange and trust development (Ireland & Webb, 2007; MacDuffie & Helper, 2006). Although boundary spanning individuals can hold different positions within an organization, Ireland and Webb (2007) propose that the role of boundary spanning individuals remains largely the same, regardless of their position. In this study, purchasing managers of a customer firm are the boundary spanning individuals of interest because they play an important role in managing supplier relationships in B2B markets (e.g., MacDuffie & Helper, 2006; Perrone et al., 2003).

Boundary spanning individuals primarily perform two job functions: information processing and external representation (Aldrich & Herker, 1977; Ireland & Webb, 2007; Kiesslering et al., 2004). The information processing function includes the selection, transmission, and interpretation of information from the external environment (Aldrich & Herker, 1977). Boundary spanners protect an organization from information overload while providing the latest information from the environment for use in the strategic decision making process (Ireland & Webb, 2007). The external representation function of boundary spanners involves establishing and maintaining organizational legitimacy and the public image of the firm. This function includes responsibilities such as reaching compromise between the boundary spanner’s organization and external entities, including negotiating with external entities to meet the organization’s needs (Adams, 1980; Kiesslering et al., 2004). As noted by Aldrich and Herker (1977), these two boundary spanning job functions are not mutually exclusive, as any given boundary spanning position can perform either or both functions.

Boundary spanning capabilities refer to the job performance of a purchasing manager in performing boundary spanning functions when interacting with supplier personnel (MacDuffie & Helper, 2006). Holcomb, Holmes, and Connelly (2008) indicate that managerial capabilities of individuals can be either general or firm- and industry-specific capabilities that produce value for the firm. Firm- and industry-specific capabilities of individual managers are considered most relevant to managing inter-organizational relationships (MacDuffie & Helper, 2006) and achieving competitive advantage for firms in a given industry (Holcomb et al., 2008). We accordingly assess firm- and industry-specific boundary spanning capabilities of purchasing managers within the context of managing supplier relations.

We examine two types of firm- and industry-specific boundary spanning capabilities of purchasing managers: (1) strategic communication skills and (2) job expertise in performing daily tasks. These two capabilities are not meant to be exhaustive of all possible boundary spanning capabilities of purchasing managers. Instead, they highlight the essential capabilities that enable purchasing managers to perform the boundary spanning functions at both strategic and tactical levels. In particular, strategic communication of purchasing managers is important to align the strategic goals of customers with suppliers and
facilitate long-term business planning (Paulraj et al., 2008), while job expertise of purchasing managers enables the smooth implementation of daily operational and relationship management tasks (Palmatier, Dant, Grewal, & Evans, 2006).

The strategic communication skills of a purchasing manager refer to the ability of the purchasing manager to convey a customer's strategic direction and overall corporate policy in a particular supplier relationship (Ireland & Webb, 2007). It involves disseminating information regarding the customer’s strategic plan and technology roadmap, explaining the overall corporate strategy to suppliers, and reflecting policy decisions involving the supplier (Adams, 1980; Ireland & Webb, 2007). This kind of information is often strategic in nature and requires the purchasing manager to selectively transmit information about the customer firm to suppliers. In this sense, purchasing managers primarily serve as the external representation of the customer firm during the strategic communication process with suppliers (Aldrich & Herker, 1977).

The job expertise of a purchasing manager refers to the knowledge and skills possessed by a purchasing manager in conducting business transactions with a particular supplier (Palmatier et al., 2006). Job-related expertise has been shown to determine the status of boundary spanning individuals and support the effectiveness of their information exchange activities within and across organizational boundaries (Tushman & Scanlan, 1981a, 1981b). In this study, job expertise includes knowledge about the product areas procured, accessibility for internal and external consultations (Tushman & Scanlan, 1981b), and expertise in dealing with conflicts with suppliers (Aldrich & Herker, 1977). This kind of job expertise allows purchasing managers to filter and transmit information from the external environment and to pass on inferences based on their observations. It is crucial in fulfilling the information processing function of boundary spanning. Moreover, purchasing managers' expertise in resolving conflicts in a timely manner given the available information also helps to maintain organizational legitimacy in their dealings with suppliers (Doney & Cannon, 1997).

3. Conceptual model and hypotheses

Fig. 1 outlines the conceptual model. We examine how capabilities of boundary spanning individuals employed by a customer firm influence suppliers’ willingness to make future-oriented investment. We propose that boundary spanning capabilities of individuals do not directly influence supplier willingness to invest. Instead, the capabilities of individual boundary spanners directly enhance customer firm communication efficacy, which influences supplier willingness to invest both directly and indirectly through building customer firm trustworthiness. Furthermore, we propose that the process differs in the U.S. and other Western industrialized nations in ways relevant to managerial decisions on resource allocation across regions.

3.1. Customer firm communication

Customer firm communication refers to the extent to which a customer firm is perceived as openly sharing meaningful and timely information with its supplier (Anderson & Narus, 1990; Heide & John, 1992). Technology-mediated communications are important to managing supplier relationships (e.g., Frohlich, 2002; Sanders, 2007), but ultimately, it is the quality of information being communicated that matters (Dyer & Chu, 2003; Paulraj et al., 2008; Prajogo & Olhager, 2012). Dependence on technology absent a willingness to share meaningful information with suppliers will not make customer firms effectively connected with suppliers and can fail to produce optimal collaborative outcomes (Anderson & Narus, 1990; Dyer & Chu, 2003; Prajogo & Olhager, 2012). Communication efficacy or openly sharing meaningful information is considered crucial to managing customer–supplier relationships (Cannon & Perreault, 1999; Takeishi, 2001) and thus the focus of the current research.

Purchasing manager strategic communication directly influences customer firm communication efficacy to supplier firms (Kiessling et al., 2004). Through transmitting strategic information about the
customer firm and reflecting policy decision involving the supplier, purchasing managers help to align strategic goals and objectives between customers and suppliers, and build a common ground for firm-level communication (Flaherty & Pappas, 2009; Kiessling et al., 2004). By serving as network nodes and forming direct contacts with personnel at the supplier firm, purchasing managers make the common interests of the exchange partners salient through strategic communication (Aldrich & Herker, 1977; Ireland & Webb, 2007), which increases the efficacy of customer firm communication. Thus, it is hypothesized that:

**H1.** Strategic communication of purchasing managers of a customer firm is positively related to customer firm communication with suppliers.

Past research has indicated that the expertise of boundary spanning individuals is an indication of the credibility of information sources (Doney & Cannon, 1997; Palmatier et al., 2006). It can foster an increase in the amount, as well as the relevance, of information exchanged between a customer and suppliers (Palmatier et al., 2006). More importantly, purchasing manager job expertise in filtering and processing information from the external environment helps to screen out irrelevant organizational inputs and outputs and therefore enhances a customer firm’s ability to deliver timely information to the supplier firms (Kiessling et al., 2004). Thus, it is hypothesized that:

**H2.** Job expertise of purchasing managers of a customer firm is positively related to customer firm communication with suppliers.

### 3.2 The direct and indirect effects of customer firm communication on supplier willingness to invest

Supplier willingness to invest (SWI) is defined as a supplier’s intent to go beyond the current call of duty by making long-term investment to maintain a relationship with a customer (Kumar, Scheer, & Steenkamp, 1995). While a powerful customer can demand some form of supplier technology investments in a contract, a supplier’s willingness to support business with customers that has not been awarded represents a non-contractual commitment that is not dictated by a customer’s power or contract (Abdul-Muhmin, 2005). SWI entails a certain amount of risk for the supplier (Kumar et al., 1995). The supplier’s investment in capital and effort may lose value if its relationship with the customer firm ends unexpectedly (Bello, Katsikeas, & Robson, 2010). As such, SWI represents a form of credible commitment in customer–supplier relationships (Bello et al., 2010; Kumar et al., 1995). It is often based on a collaborative relationship history and is long-term and future-oriented (Mudambi & Helper, 1998). SWI is crucial to industrial customers achieving competitive advantages in manufacturing industries (MacDuffie & Helper, 2006; Morgan & Daniel, 2001).

Inter-organizational relationship management scholars support the contention that firm communication efficacy is critical to maintaining value-enhancing relationships (e.g., Anderson & Narus, 1990; Dyer & Chu, 2000; Paulraj et al., 2008; Takeishi, 2001). Dyer and Chu (2000) propose that communication quality, rather than quantity or facet, is an important predictor of trust and buyer competitive advantage in the automotive industry. Takeishi (2001) proposes that extensive communication between automaker and suppliers significantly increase component design quality. Paulraj et al. (2008) found that inter-organizational communication significantly increases both buyer and supplier performance. Ultimately, customer communication is a fundamental driver that transforms idiosyncratic objectives of each collaborating firm into a set of common perspectives, which make it possible to reach optimal cooperation outcomes (Anderson & Narus, 1990; Claycomb & Frankwick, 2010).

Customer firm communication is particularly important in a global supply chain because of the complexity involved in coordinating activities across multiple country markets (Kiessling et al., 2004). A supplier’s future business planning and purchasing performance is facilitated by a customer’s openly communicating product design specifications, product design schedules, and forecasts (Cannon & Perreault, 1999; Noordewier, John, & Nevin, 1990). Furthermore, customer communication creates a supportive relational atmosphere with suppliers, which facilitates a supplier’s willingness to invest in the relationship (Mohr, Fisher, & Nevin, 1996; Morgan & Hunt, 1994). Thus, it is hypothesized that:

**H3.** Customer firm communication is positively related to supplier willingness to invest.

Besides the direct effect of encouraging SWI, customer firm communication can indirectly generate SWI through facilitating trust development in inter-organizational relationships (e.g., Aulakh, Kotabe, & Sahay, 1996; Morgan & Hunt, 1994). Morgan and Hunt (1994) propose a complete mediation effect of trust between communication and commitment and found support for such relationship. Aulakh et al. (1996) propose that trust partially mediates the relationship between the norm of information exchange and partnership performance, however, they did not find a significant relationship for either information exchange or trust on partnership performance in export channels. While trust may not mediate the relationship between firm communication and ultimate partnership performance in cross-border relationships, we propose that trust augments the potential for customer firm communication to enhance supplier willingness to invest, an indicator of supplier commitment to the relationship (Kumar et al., 1995; Morgan & Hunt, 1994).

Customer firm trustworthiness refers to a supplier’s perception of the credibility and goodwill of the customer firm (e.g., Doney & Cannon, 1997; Dyer & Chu, 2003; Powers & Reagan, 2007). It is the trustworthiness of the customer firm as perceived by suppliers (Dyer & Chu, 2003). When suppliers trust a customer firm, they are more willing to share information and make future-oriented investment beyond their contractual duties (Anderson & Weitz, 1992; MacDuffie & Helper, 2006; Morgan & Hunt, 1994). Supplier trust of the customer firm reduces their perceptions of the risk associated with potential opportunism by the customer and enhances their long-term orientation toward the relationship (Gundlach, Achrol, & Mentzer, 1995). In contrast, if a supplier expects a customer to act opportunistically, it can withhold valuable information or provide incorrect information to retaliate against the customer. Support has been found for the link between trust and relationship commitment in various contexts (e.g., Moorman, Deshpande, & Zaltman, 1993; Morgan & Hunt, 1994). Thus, it is hypothesized that:

**H4.** Customer firm trustworthiness is positively related to suppliers’ willingness to invest in a relationship with the customer firm.

Furthermore, the indirect effect of customer firm communication on SWI may differ across cultures (Hofstede, 1991; Huang & Van de Vliert, 2006). Various sources of cultural studies (e.g., Henrich, Heine, & Norenzayan, 2010; Hofstede, 1980; Lipset, 1996) indicate that American samples stand out relative to other Western countries with regard to their direct communication and extremely high individualism. Being the most individualistic society in the world, members of the U.S. society do not draw a strong distinction between in-group and out-group members (e.g., Henrich et al., 2010). They tend to have great skills in entering and leaving new groups and engage in open and direct communication (Hofstede, 1980, 1991). Open communication is endorsed in U.S. organizations, and the lack of strong group boundaries makes it easier for an external member to penetrate organizational boundaries and gain trust in the U.S. than elsewhere (Hofstede, 1991; Huang & Van de Vliert, 2006). Hofstede (1991) argues that open communication is more conducive to trust development in an individualistic society as it
is a highly valued trait of the society. Using data collected from more than 160,000 employees of a multinational corporation in 46 countries, Huang and Van de Vliet (2006) found that the link between perceived open employee management communication and employees’ tendency to trust their management is stronger in highly individualistic societies. Accordingly, we hypothesize that:

**H5a.** The positive relationship between customer firm communication and customer firm trustworthiness is stronger in the U.S. than in other Western industrialized countries.

On the other hand, the extremely high individualism and lack of a strong bond by group memberships in the U.S. create loosely connected work groups and organizations than might exist in other Western industrialized countries (Henrich et al., 2010). Although cooperation and work groups and organizations than might exist in other Western industrialized countries, strong bond by group memberships in the U.S. create loosely connected work groups and organizations than might exist in other Western industrialized countries (Henrich et al., 2010). Although cooperation and work groups and organizations than might exist in other Western industrialized countries makes it difficult to build trust among in-group members (Page, 2002). In contrast, other Western cultures have a strong in-group concept (e.g., mateship in Australia) and a shared sense of common fate among in-group members (Page, 2002). In cultures with less individualism, a higher level of commitment is shown to supervisors, workgroups, and organizations that are considered in-group members than in the U.S. (e.g., Chatman & Bar Salvador, 1995; Hewett & Bearden, 2001; Thomas & Au, 2002). Hewett and Bearden (2001) found that trust is less effective at motivating cooperation in highly individualistic cultures in foreign subsidiary marketing operations. In the context of U.S.-Mexican strategic alliances, Rodriguez and Wilson (2002) found that the relationship between trust and commitment is weaker in the U.S. sample than in the Mexican sample, although they did not test whether the difference was statistically significant. As such, we hypothesized that:

**H5b.** The positive relationship between customer firm trustworthiness and supplier willingness to invest is weaker in the U.S. than in other Western industrialized countries.

### 3.3 Control variables

We include relationship length as a control variable for customer trustworthiness and for SWI as suggested in the relationship management literature (e.g., Dyer & Chu, 2003; Jap & Ganesan, 2000). Industry is included as a dummy variable to control for any potential industry effect on SWI and customer trustworthiness. Furthermore, following the recommendations of the previous boundary spanning literature (e.g., Doney & Cannond, 1997; Ireland & Webb, 2007; Perrone et al., 2003), we include the two boundary spanning capabilities as control variables for customer firm trustworthiness. A boundary spanner’s capability in strategic communication enables the suppliers to align strategic goals with those of the customer firm (Ireland & Webb, 2007), which serves as a foundation for trust building. Furthermore, strategic communication of boundary spanners also offers transparency to a customer firm’s intentions and actions (Kissling et al., 2004), which increases the confidence with which a supplier places trust in the customer firm (MacDuffie & Helper, 2006; Zhang et al., 2011). Furthermore, boundary spanners’ job expertise in service and product areas and in resolving conflicts serve as a signal of the credibility of the customer firm they represent (Bradach & Eccles, 1989; Doney & Cannon, 1997; Moorman et al., 1993), which increases a supplier’s trust in the customer firm.

### 4. Research method

#### 4.1. Research setting and data collection

We collected data from the supply base of industrial customers in the global automotive industry, the oil industry, and the aircraft engine industry. These three industries are mature industries with similar challenges managing supplier relations (MacDuffie & Helper, 2006; Geiger & Finch, 2011). The dynamics of supplier relationship management in mature industrial markets have had a significant influence on our understanding of relationship management in industrial markets. The oil, automotive, and aerospace industries have served as rich research contexts for a number of previous B2B relationship management studies (e.g., Jap & Ganesan, 2000; Takeishi, 2001; MacDuffie & Helper, 2006; Rossetti & Choi, 2005). Furthermore, understanding how boundary spanning capabilities of individuals are leveraged to foster supplier innovation is both important and challenging in these mature industries (Geiger & Finch, 2011; Kiessling et al., 2004). The major customers in the three industries are moderately to heavily dependent on their supply bases for innovation and, because of supply base rationalization during the past several years, rely on relatively few suppliers in any single production commodity area. Furthermore, within each of the industries selected, each customer, their competitors, and their suppliers are generally located geographically close to one another with most suppliers supplying not only a customer, but also its competitors. Suppliers within a region can thus decide whether to direct discretionary technology sharing and investment to the three major customers or their competitors. Given this situation, boundary spanning personnel attributes are becoming increasingly important in these industries for fostering supplier innovation (e.g., MacDuffie & Helper, 2006; Geiger & Finch, 2011). Considering the importance of supplier relations and boundary spanners in these industries, we obtained support from the three major customers to collect data from their respective production suppliers to test our conceptual model.

We were able to obtain contact information for production suppliers of two major customers in the oil industry and the automotive industry in the United States and of two major customers in the industry and aircraft engine industry in the other Western industrialized countries (i.e., Western European countries and Australia). For convenience, we refer to the suppliers in the other Western industrialized countries as the European sample in the rest of the text. The selected suppliers were in a stable relationship with customers.

The key informants of our study were the salespeople of the production suppliers who have commercial responsibilities for interacting with the purchasing managers of each division within the major industrial customers and are directly responsible for supplying a specific manufacturing site(s) of the customers. The salespeople thus have detailed knowledge of operational problems within both their organization and the industrial customers’ sites for which they are responsible on a day-to-day basis—an important consideration in the selection of key informants (Kumar, Stern, & Anderson, 1993). We focus on the customer-supplier relationship at the buying situation level, which refers to a particular component type delivered to the customer firm by a supplier. Each buying situation represents a unique case, as relationship management practices can differ significantly among business units (e.g., Takeishi, 2001).

We collected data using a web-based survey of the industrial customers’ supplier salespeople. Potential respondents were first contacted via a pre-survey e-mail signed by the top executives of the industrial customers to encourage their participation. A follow-up e-mail with the survey link included was then sent to 405 supplier salespeople working for production suppliers supplying two major customers in the U.S. and 435 supplier salespeople working for production suppliers supplying two major customers in Europe. These supplier salespeople were asked to assess the purchasing manager with whom they had the most contact over the prior year and answer questions about the purchasing manager and multinational companies as they related to the buying situation for which they had responsibility. Five reminders were sent to the non-responding potential respondents before the data collection was closed. 222 individuals completed the questionnaires for a response rate of 55% for the U.S. sample; in the European sample, 198 individuals responded for a response rate of 46%. Usable data on all focal constructs was
received on 198 buying situations for the U.S. sample and 181 buying situations for the European sample. The respondent suppliers in the U.S. have worked for the multinational company for an average of 22 years, with a range from 3 to 100 years. The respondent suppliers in the European sample have supplied the company for an average of 23 years, with a range from less than 1 year to 100 years. The average annual sales of the supplier firms are $236 million in the United States and $178 million in the European sample. Early and late responses were compared in terms of relational lengths and annual sales to evaluate nonresponse bias (Armstrong & Overton, 1977). No significant differences were found.

To reduce potential common method bias, we used supplier sales personnel as key informants and invited them to use other supplier personnel to help answer the survey items. 50.3% of the surveys in the European sample and 36.4% of the surveys in the United States were completed by consensus among multiple personnel working for the supplier; 49.7% of the surveys in the European sample and 63.6% of the surveys in the United States were completed by a single salesperson. These latter responses tended to be from local suppliers or salespeople responsible for a single product and thus knowledgeable about the questionnaire items.

Furthermore, we applied the method variance (MV) marker method to assess the potential for common method bias (Grayson, Johnson, & Chen, 2008; Lindell & Whitney, 2001; Sheng, Zhou, & Li, 2011). Following the recommendation of Lindell and Whitney (2001), we identified a scale in the survey that is theoretically unrelated to at least one criterion variable in the model to serve as the MV marker (a proxy for method variance). This three-item MV marker scale measures operational pressure suppliers face (Cronbach's alpha = 0.653). Per Lindell and Whitney (2001), we used the lowest positive correlation (r = 0.03) between this MV marker scale and one of our criterion variables (strategic communication) as the best estimate of method variance. This correlation was used to adjust the correlations among key constructs and their statistical significance levels. We found that the zero-order significant correlations among key constructs remain significant after the adjustment, which suggests that an excluded variable driving the observed relationships is not likely to be a serious threat to the study findings. Additionally, Harman's single factor test shows that common method bias is not a major concern.

4.2. Questionnaire instrument

Questionnaire development had three steps. First, potential measures for key constructs were identified from a literature review. Second, 32 purchasing managers and 14 supplier sales personnel were interviewed to assess content validity. Based on their feedback, we modified some measures and added new measures. The questionnaire was pretested with another 16 sales personnel, different from those who helped develop the questions, resulting in a final set of revisions to the survey instrument.

4.3. Measures

A one to five scale (1 = to a very little extent, 5 = to a very great extent) was used for all items. Details for the measurements are provided in Table 1. The Cronbach alpha coefficients for measurements of the constructs range from 0.67 to 0.95 and exceed the .6 cutoff value for all the constructs included in the study, establishing construct reliability.

The scales for the boundary spanning capabilities were developed from the existing boundary spanning literature (Ireland & Webb, 2007; Palmatier et al., 2006) and field interviews in the oil and automotive industry. A number of management scholars have measured managerial capabilities using the assessments of personnel who worked closely with the focal party (e.g., Ahmed, Rafiq, & Saad, 2003; Henderson & Cockburn, 1994). Several scholars have suggested that it is intrinsically difficult to measure core capabilities and competencies objectively since capabilities that are easy to measure objectively are less likely to be sources of competitive advantage (Barney, 1991; Henderson & Cockburn, 1994; Nelson, 1991). Following the approach used in previous research, we ask supplier salespeople to assess purchasing managers’ boundary spanning capabilities because a purchasing manager’s competencies at performing boundary spanning functions in managing supplier relations is directly observed by supplier salespeople, the purchasing managers’ key supplier contact. Purchasing manager strategic communication is measured by a four-item scale based on ideas presented in Ireland and Webb (2007) and field interviews. Purchasing manager job expertise is measured by a three-item scale developed based on ideas presented in Palmatier et al. (2006) and field interviews.

Customer firm

Table 1

<table>
<thead>
<tr>
<th>Construct measures</th>
<th>Standard loading (the United States)</th>
<th>Standard loading (Europe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchasing manager strategic communication</td>
<td>α = .92</td>
<td>α = .94</td>
</tr>
<tr>
<td>1. Explaining company’s strategic direction</td>
<td>.884</td>
<td>.926</td>
</tr>
<tr>
<td>2. Explaining supplier’s role in the company’s overall strategy</td>
<td>.930</td>
<td>.928</td>
</tr>
<tr>
<td>3. Explaining the company’s technology roadmap</td>
<td>.810</td>
<td>.901</td>
</tr>
<tr>
<td>4. Explaining importance of supplier bringing innovation/new technologies to the company</td>
<td>.885</td>
<td>.861</td>
</tr>
<tr>
<td>Purchasing manager job expertise</td>
<td>α = .88</td>
<td>α = .82</td>
</tr>
<tr>
<td>1. Service/product knowledge</td>
<td>.827</td>
<td>.767</td>
</tr>
<tr>
<td>2. Accessibility/availability</td>
<td>.832</td>
<td>.782</td>
</tr>
<tr>
<td>3. Timely resolution of issues</td>
<td>.941</td>
<td>.786</td>
</tr>
<tr>
<td>Customer firm communication</td>
<td>α = .93</td>
<td>α = .90</td>
</tr>
<tr>
<td>1. Company communicates openly and honestly with suppliers</td>
<td>.895</td>
<td>.827</td>
</tr>
<tr>
<td>2. Company communicates timely information to suppliers</td>
<td>.926</td>
<td>.870</td>
</tr>
<tr>
<td>3. Company communicates adequate amount of information to suppliers</td>
<td>.900</td>
<td>.846</td>
</tr>
<tr>
<td>Customer firm trustworthiness</td>
<td>α = .85</td>
<td>α = .75</td>
</tr>
<tr>
<td>1. Company honors its contractual commitments</td>
<td>.675</td>
<td>.592</td>
</tr>
<tr>
<td>2. Company treats suppliers as valued suppliers</td>
<td>.899</td>
<td>.794</td>
</tr>
<tr>
<td>3. Company lives up to the spirit of its commitments</td>
<td>.879</td>
<td>.766</td>
</tr>
<tr>
<td>Supplier willingness to invest</td>
<td>α = .67</td>
<td>α = .67</td>
</tr>
<tr>
<td>1. Supplier willingness to invest in new technology in anticipation of new/additional customer firm business (SWI1)</td>
<td>.662</td>
<td>.728</td>
</tr>
<tr>
<td>2. Supplier willingness to share new technology with customer firm without the assurance of obtaining a purchase order from customer firm (SWI2)</td>
<td>.771</td>
<td>.565</td>
</tr>
<tr>
<td>3. Supplier willingness to provide customer firm support that is above and beyond the supplier’s contractual responsibilities (SWI3)</td>
<td>.440</td>
<td>.588</td>
</tr>
</tbody>
</table>

Overall model fit indices: $\chi^2 (94) = 239.525$, CFI = 0.943, IFI = 0.944; GFI = .865, std. RMR = 0.046 for the U.S. sample; $\chi^2 (94) = 218.066$, CFI = 0.931, IFI = 0.932; GFI = .869, std. RMR = 0.053 for the European sample.
communication is measured by a three-item scale modified from Anderson and Narus (1990). It captures the degree to which the customer firm openly and honestly exchanges information with its suppliers and delivers adequate and timely information to its suppliers. Customer firm trustworthiness is measured with a three-item scale modified from Doney and Cannon (1997). The three items measure the degree to which a supplier perceives that a customer firm honors its contractual commitments, treats suppliers as valued suppliers, and lives up to the spirit of its commitments. Supplier willingness to invest is measured by a three-item scale modified from Kumar et al. (1995). These items measure a supplier’s willingness to engage in behaviors that indicate its non-contractual commitment to a customer firm.

5. Results

5.1. Measurement model evaluation

The measurement models were evaluated using confirmatory factor analysis (CFA) (EQS 6.1). We evaluate the construct validity of all constructs for each sample separately. The CFA model has an acceptable fit for each of the two samples ($\chi^2 (94) = 239.525$, CFI = 0.943, IFI = 0.944, GFI = .865, std. RMR = 0.046 for the United States sample; $\chi^2 (94) = 218.066$, CFI = 0.931, IFI = 0.932, GFI = .869, std. RMR = 0.053 for the European sample). All factor loadings were statistically significant at the 5% level and exceed the 0.5 standard except for one item of supplier willingness to invest (SWI) for the U.S. sample. Given that the item captures an important theoretical aspect of supplier willingness to invest, we chose to keep the item for further structural analysis. All cross-construct correlations differed significantly from 1.0, suggesting discriminant validity (Bagozzi, VI, & Phillips, 1991). These results support construct validity for the measures used. Construct validity and reliability results are reported in Table 1.

Furthermore, we evaluate the measurement or metric equivalence of two regional samples in order to make a meaningful comparison of the interrelationships between constructs across the two samples (Steenkamp & Baumgartner, 1998; Wulf et al., 2001). Following the procedures outlined in Wulf et al. (2001), we assessed the equivalence of factor loadings (metric equivalence) by constraining the factor loadings to be equal across the two samples for each construct (Bollen, 1989). While full metric equivalence is a condition to strive for in cross-cultural comparisons, it is not expected to be fully realized (Wulf et al., 2001). However, partial metric equivalence is a necessary condition for comparison of structural model findings across cultures (Steenkamp & Baumgartner, 1998; Wulf et al., 2001). Using the LM test in EQS 6.1, we evaluate whether any equality constraints of factor loadings contribute to a significant increase in $\chi^2$ or worsened model fit. The LM test results show that none but one of the equality constraints contributed to a significant increase in $\chi^2$. In other words, factor loadings are equivalent across the two samples at a 5% significance level for all measures except for one item in SWI. We thus relax the equality constraints for that pair of parameters across the two samples to test for partial metric equivalence. Evidence for partial metric equivalence is found for the measurement model. In summary, convergent validity, discriminant validity, and metric invariance are established, which enable us to compare structural model results across the two samples.

5.2. Structural model evaluation: multi-group analysis

After establishing reliability, construct validity and metric equivalence, composite scores of each construct were used to test a structural model. The structural model with all paths freely estimated for the U.S. and European samples shows satisfactory overall fit ($\chi^2 (11) = 17.372$, CFI = 0.992, IFI = 0.992, GFI = .985, RMSEA = 0.060). Table 2 presents the correlation matrix. Table 3 presents the structural path estimates.

The relationship between purchasing manager strategic communication and customer firm communication is positive and significant for both samples ($b = 0.378, p < .05$ for the United States sample, $b = 0.336, p < .05$ for the European sample), which supports $H_1$. We found that purchasing manager job expertise also has a significant and positive effect on customer firm communication in both the United States ($b = 0.380, p < .05$) and the European sample ($b = 0.222, p < .05$). $H_2$ is thus confirmed. A positive association between customer firm communication and supplier willingness to invest is found for both samples ($b = 0.358, p < .05$ for the United States sample; $b = 0.306, p < .05$ for the European sample), which supports $H_3$. Consistent with the previous literature, a positive and significant association was found between customer firm communication and customer firm trustworthiness ($b = 0.659, p < .05$ for the United States sample; $b = 0.306, p < .05$ for the European sample). Lastly, we found support for the hypothesized positive relationship ($H_4$) between customer firm trustworthiness and SWI for both samples ($b = 0.238, p < .05$ for the United States sample; $b = 0.405, p < .05$ for the European sample), which supports that customer firm trustworthiness partially mediates the relationship between customer firm communication and supplier willingness to invest ($H_5$).

In order to evaluate whether the hypothesized structural path coefficients are equivalent between the U.S. and European samples, multi-group analysis was performed using EQS 6.1 by constraining all structural paths to be equal across the two groups. We found that the coefficients for the relationships between customer firm communication and trust ($\Delta\chi^2 = 21.453; p < .05$), and between trust and supplier willingness to invest ($\Delta\chi^2 = 3.001; p < .1$) are significantly different between the two samples in the hypothesized direction. $H_3a$ and $H_5a$ are thus supported.

For the control variables, we found that relationship length has a negative and significant effect on customer firm trustworthiness for the European sample ($b = −0.267, p < .05$) and a non-significant effect for the U.S. sample ($b = −0.041, p > .1$). We also found that relationship length has a positive and significant effect on SWI for the European sample and a negative and significant effect on SWI for the U.S. sample ($b = −0.159, p < .05$ for the United States sample, $b = 0.121, p < .01$ for the European sample). No significant relationship was found between purchasing manager expertise and customer firm trustworthiness for both samples ($b = −0.087, p > .1$ for the United States sample, $b = 0.051, p > .1$ for the European sample). We found that purchasing manager strategic communication has a positive and significant effect on customer firm trustworthiness for the European sample ($b = 0.259, p < .05$), and a positive but non-significant relationship on customer firm trustworthiness for the United States sample ($b = 0.079, p > .1$). The industry dummy variable (0 = oil industry, 1 = others) has a positive and significant effect on SWI for the European sample ($b = 0.182, p < .05$) and a negative and significant effect on SWI for the U.S. sample ($b = −0.132, p < .05$). The industry dummy variable also has a negative and significant effect on customer firm trustworthiness for the U.S. sample ($b = −0.318, p < .05$) and a negative but non-significant effect on SWI for the European sample ($b = −0.006, p > .1$). Adding these control variables does not alter the sign and statistical significance of other hypothesized parameters.
sistent with Aldrich and Herker’s (1977) discussion that the expertise of communication. Similarly, the job-related expertise of purchasing man-

ners to view open communication as a signal of the customer rm's integrity and credibility. In fact, Hofstede (1991) explains that in less in-

ternal information is important to organizational success. Our finding also offers support to Kiessling et al.’s (2004) observation that boundary spanning personnel will be valuable in providing customer knowledge and suggestions for improvement in a global supply chain.

We also found that customer rm communication not only directly increases supplier willingness to invest, but also indirectly does so through trust. The results are consistent across the two samples. Customer rm communication seems to serve as an important channel that links boundary spanning capabilities of individuals to rm-level relational assets (Paulraj et al., 2008). These findings extend the ideas expressed in MacDuffie and Helper (2006). Through case studies in the automotive industry, McDuffie and Helper (2006) propose that trust building with suppliers will encourage supplier technology sharing and investment and ultimately serves as a source of competitive advantage for major automotive assemblers. We extend their study by showing that customer firms need to ensure effective communication at the firm level that links boundary spanning capabilities of individuals to firm trustworthiness and subsequent supplier future-oriented investment.

Furthermore, we found that the positive mediating effects of trust on customer firm communication and SWI differ across the U.S. and the European samples. Customer firm communication enhances firm trustworthiness significantly more in the U.S. sample than in the European sample. In an inter-organizational context, we found support for the general notion that cultural contexts moderate the relationship between communication and trust (e.g., Hofstede, 1991; Huang & Van de Vliert, 2006). Being the most individualist society in the world, American suppliers have less of an in- vs. out-of-group concept and lower organizational boundaries than European suppliers. As such, it is easier for the customer firm to bypass the organizational boundary and engage in open and honest communications with external suppliers in the U.S. than in other Western industrialized countries. As open communication with external members is a highly valued trait in the U.S. society (Hofstede, 1991), U.S. suppliers are more likely than European suppliers to view open communication as a signal of the customer firm’s integrity and credibility. In fact, Hofstede (1991) explains that in less individualist societies (as in the case of the European nations), open communication with out-of-group members is valued less and may even cause embarrassment and undermine rather than strengthen trust. In general, in an inter-organizational context, the finding extends the literature on the influence of cultural contexts on trust development (e.g.,

5.3. Direct vs. mediating effects

The hypothesized model was compared to an alternative nested model that specified direct relationships between boundary spanning capabilities and SWI (Bagozzi & Yi, 1988; Wulf et al., 2001). We found no evidence for significant direct effects between boundary spanner capabilities and SWI. Specifically, adding direct paths did not contribute to a significant reduction in overall chi-square or improved overall model fit ($\Delta\chi^2 = 2.03$ for the United States sample, $\Delta\chi^2 = 1.35$ for the European sample), and no significant relationships were found between purchasing manager strategic communication and SWI ($b = 0.133$, $p > .05$ for the United States sample, $b = -0.091$, $p > .05$ for the European sample) and between purchasing manager job expertise and SWI ($b = -0.160$, $p > .05$ for the United States sample, $b = 0.045$, $p > .05$ for the European sample).

6. Discussion

6.1. Theoretical implications

Boundary spanning capabilities of individuals are important to man-

agement of customer–supplier relations (e.g., Ireland & Webb, 2007; Perrone et al., 2003; Zhang et al., 2011). The current study, however, demon-

strates that such capabilities do not directly impact supplier willingness to invest. Instead, customer firm-level communication serves as a bridge that links boundary spanning capabilities of individuals with supplier willingness to invest. Furthermore, we found that the efficacy of customer firm communication differs across cultures.

The findings show that the boundary spanning capability of strategic communication is instrumental to customer firm communication with suppliers. Strategic communication of purchasing managers helps reduce information asymmetry and increase behavioral transparency of the customer firm (Paulraj et al., 2008). Our finding extends previous studies on firm-level communications (e.g., Anderson & Narus, 1990; Paulraj et al., 2008; Takeishi, 2001) by demonstrating that firm-level communication depends upon the effectiveness of individual-level communication. Similarly, the job-related expertise of purchasing man-

agers also facilitates customer firm communications. This finding is con-

sistent with Aldrich and Herker’s (1977) discussion that the expertise of boundary spanners in the selection, transmission, and interpretation of
Hofstede, 1991; Huang & Van de Vliet, 2006) by showing that customer firm communication engenders greater trust among U.S. suppliers than suppliers from other Western industrialized countries. The finding further adds insights to the cross-cultural communication literature (Hofstede, 1991; Huang & Van de Vliet, 2006; Hewett & Bearden, 2001; Henrich et al., 2010) by showing that the efficacy of open and timely communication at managing B2B relationships differs among Western industrialized countries, that is, a customer firm can earn trust more easily via open and timely communication with external suppliers in the U.S. than elsewhere.

On the other hand, we found that trust encourages less SWI in the U.S. sample than in the European sample. Being members of a highly individualist society, U.S. suppliers do not value the bond with a trustworthy customer the same way as the less individualist European suppliers do. They do not feel the same sense of loyalty toward a trusting collaborative partner. Rather, the highly individualistic U.S. society places high value on the choice of an individual to enter and leave a group with relative ease, which possibly fosters the mentality of low commitment to a particular group and inhibits a supplier’s willingness to make future-oriented investment to a particular customer firm. In contrast, in other less individualist European countries, suppliers are more receptive to social bonding and place high value on associating with a trustworthy customer. In those societies, trust is more effective at motivating cooperative behaviors (Chatman & Barsade, 1995). The European suppliers are likely to feel a stronger bond with a trustworthy customer and are more willing to demonstrate their loyalty to the customer by going beyond their current call of duty to make future-oriented investment. This finding extends that of Hewett and Bearden (2001). By examining foreign subsidiary marketing operations, Hewett and Bearden (2001) found that trust has a stronger effect on cooperation in collectivistic cultures than in individualistic ones. Our findings show that there is variance even among Western individualist cultures: the effect of trust on supplier willingness to invest is weaker in the U.S., the most individualist culture in the world, compared to the other Western industrialized countries studied.

Among the control variables, our results show that purchasing agent expertise does not directly enhance buyer firm trustworthiness. The result is consistent in both the U.S. and European samples. The effect of boundary spanner job expertise on customer firm trustworthiness is fully mediated by customer firm communication. This is consistent with the findings of previous studies on the role of individual boundary spanners on trust development (e.g., Doney & Cannon, 1997). Job expertise of individual boundary spanners directly affects credibility of the individual, which enhances customer firm communication efficacy and ultimately leads to supplier trust in the customer firm. Furthermore, we found that purchasing agent strategic communication directly enhances customer firm trustworthiness in the European sample. In the U.S. sample, the effect of purchasing agent strategic communication on trust is fully mediated by customer firm communication. We extend the study of Ireland and Webb (2007) and Zhang et al. (2011) by showing the direct relationship between boundary spanner strategic communication and firm trustworthiness hold in some societies, and may be fully mediated by firm communication efficacy to influence firm trustworthiness in highly individualist societies.

6.2. Managerial implications

The findings of this study show that customer firm communication efficacy is an important predictor of supplier investment in innovation across both U.S. and European samples. Executives of the customer firms should consider not just the total quantity of information delivered to suppliers, but the effectiveness of overall customer firm communication as indicated by its openness, honesty, timeliness, and adequacy. As such, executives of the customer firms should ensure that communications from all divisions (e.g., purchasing, engineering, product design) are open, timely and adequate. Customer firm communication is a company-wide task and not just the task of the purchasing division. The findings indicate that customer firms that are able to accomplish this are likely to gain more supplier innovation. This is particularly important in mature industries (e.g., automotive and oil industries) where multiple industrial customers share overlapping supplier bases and compete for investment in innovation from the same set of suppliers.

Second, our findings show that a multinational customer firm may have to adjust expectations for trust development according to the region in which the supplier is located. A multinational customer’s efforts at trust building in Europe might take longer than in the U.S., which suggests that customers need to be more patient both with suppliers as well as with the personnel communicating with them. Furthermore, the customer firm should adjust their expectations for supplier investment based on trust for U.S. based suppliers. Multinational customers should anticipate that they need to achieve higher levels of trust among U.S. suppliers in order to achieve the same level of supplier investment in innovation as from European suppliers. Though we do not specifically examine regions other than the U.S. and Europe, the differences we found suggest that other regions might have even more pronounced differences. Multinational firms would be advised to not assume that trust development will occur at the same rate in different countries, and they should anticipate that rewards from trust differ in magnitude among different regions.

Third, our findings show that developing effective customer firm communication is not a straightforward task and requires competent boundary spanning individuals. Technology and electronic interfaces may be able to deliver certain types of information to a supplier firm, but it cannot substitute for direct communication delivered by boundary spanning individuals (e.g., purchasing and sales directors, managers, and agents). Our results suggest that firms need to hire individuals who can engage in strategic communication with supplier personnel by explaining the customer firm’s strategic direction, the supplier’s role in the customer firm’s overall strategy, the customer firm’s technology roadmap, and the importance of the supplier bringing innovation/new technologies to the company, etc. Additionally, employees in boundary-spanning positions need to be credible purveyors of the information, i.e., the boundary spanners are perceived to have job expertise related to service and product knowledge, being available, and able to resolve conflict with supplier personnel in a timely manner. These skills are essential for the boundary spanning individuals to facilitate effective customer firm communication. These findings demonstrate the importance of customer-firms building the capabilities of their purchasing personnel at both the strategic and tactical levels. Management of the customer firm should consider establishing training programs that help to ensure that the various purchasing personnel have appropriate levels of knowledge of the strategic direction of the firm, general product technical knowledge, and also conflict management abilities that enable them to carry out their interfacing activities with suppliers in a manner that exudes expertise. This type of training could help purchasing managers develop capabilities to effectively perform boundary spanning functions that can facilitate the development of firm-level effective communication and ultimately, supplier investment in innovation.

7. Conclusions

Our findings contribute to the growing literature on boundary spanning in industrial markets (e.g., Gupta & Polonsky, 2013; Ireland & Webb, 2007; Perrone et al., 2003; Zhang et al., 2011) by empirically examining the process of leveraging boundary spanning capabilities of individuals to encourage supplier investment. The majority of studies in this area are conceptual (Ireland & Webb, 2007; Kiessling et al., 2004), are case-based (Gupta & Polonsky, 2013; MacDuffie & Helper, 2006), or focus on the direct consequences of boundary spanning activities (Perrone et al., 2003; Zhang et al., 2011). We found that the capabilities of boundary spanning individuals do not directly influence supplier
willingness to invest. Instead, customer-firm communication serves as a mediator that leverages boundary spanning capabilities of individuals to produce firm relational assets. We found consistent evidence for this process using two samples of suppliers located in the U.S. and Europe. Furthermore, we extend the propositions of cultural theorists’ (e.g., Henrich et al., 2010; Hofstede, 1980, 1991) by showing that the influence of customer firm communication on supplier investment differs among Western industrialized nations. We found that although the same level of customer firm communication creates more trust in the U.S. sample than the European sample, the same level of trust produces a higher level of supplier willingness to invest in the European sample than in the U.S. sample. The empirical evidence shows that multination- al corporations need to allocate resources differently in different regions to maximize supplier investment.

The findings of the study should be considered in light of the following limitations. First, data were collected from suppliers of three major corporations in the mature industry. Although relationship management practices in mature industries have a significant impact on B2B relationship management practices, some scholars (e.g., Jap, 1999; Noorderhaven et al., 1990) note that effects may vary across industries. Future researchers could examine these effects in emerging industries. Second, a single source was used in this B2B relationship management study. As such, future research may consider the use of matched data through additional surveys or field interviews with both supplier-side and customer-side boundary spanners to ensure that both parties have a shared view of the relationship and to minimize common method bias. Third, a limited set of measures was used to enable collection of a large scale sample across countries. Future research should consider other methods to collect richer data and conduct empirical validation of the study findings.

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