EFFECTS OF SUPPLIERS' REPUTATION ON THE FUTURE OF BUYER–SUPPLIER RELATIONSHIPS: THE MEDIATING ROLES OF OUTCOME FAIRNESS AND TRUST

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This study is motivated by the interest in looking beyond the must-have tangible performance factors of buyer–supplier relationships to understand the role of intangible factors that affect buyer–supplier relationship continuity and future collaboration. The article uses three sequential structural equation models that integrate relationship theory, signaling theory and social exchange theory to empirically evaluate the effects of suppliers' reputation on the future of buyer–supplier relationships. This multitheoretical approach shows that reputation at the start of a project has a direct effect on a buyer's future collaboration intentions with suppliers. However, when outcome fairness (an economic factor) is added to the model the effect of reputation is partially mediated. Conversely, when trust during the project collaboration (a social factor) is added to the model the effects of reputation and outcome fairness are completely mediated. These results support that trust during the project collaboration has a stronger influence on the future of buyer–supplier relationships than fair economic rewards or reputation.

Keywords: *buyer–supplier relationships; reputation; supply chain collaboration; relationship performance; signaling theory; social exchange theory; trust; survey; structural equation modeling.*

INTRODUCTION

Offering a framework for the evolution of buyer–supplier relationships, Dwyer, Schurr and Oh (1987) maintain that firms "benefit from attention to conditions that foster relational bonds leading to reliable *repeat business*" (p. 12, italics added). Over the more than two decades since this seminal work, the concept of fostering relational bonds leading to reliable repeat business has evolved to a concept of building *long-term relationships* among partners in a supply network.

Today, scholars across business disciplines continue to evaluate antecedents and consequences and test theories to explain the value benefits of enduring buyer–supplier relationships in dyads, triads and larger supply networks (Scheer, Kumar and Steenkamp 2003; Ulaga and Eggert 2006; Jap and Anderson 2007; Choi and Kim 2008; Terpend, Tyler, Krause and Handfield 2008). However, most empirical work concerning the effects of enduring buyer–supplier relationships focuses on "providing benefits to the customer or lowering a customer's costs" rather than the effects of intangible resources (Ulaga and Eggert 2006, p. 120). Specifically, buyers that evaluate suppliers generally consider tangible performance measures such as price/cost performance, product/service performance, delivery reliability and responsiveness, and assess suppliers' future capacity and ability to continue to perform at desired levels.

Terpend et al. (2008) offer further support for the tendency to focus on measurable, performance related tangible value in buyer–supplier relationships. After reviewing empirical buyer–supplier relationship studies published between 1986 and 2005, Terpend et al. (2008)

conclude that previous research investigates primarily the following four types of value: operational performance improvements, integration-based improvements, supplier capability-based improvements and financial performance outcomes.

While the importance of assessing the effects of tangible performance measures in enduring relationships is unquestioned, the effects of intangible factors such as the supplier's intangible resources or intangible assets (Vargo and Lusch 2004) need more study. The present research studies the effects of intangibles (i.e., reputation) on the future of relationships. This is important for several reasons. While tangible resources in buyer–supplier relationships are "must-haves," intangible assets are believed to be the source of competitive advantage for the supply network (Ulaga and Eggert 2006). From a service-dominant logic perspective, suppliers must view their customers as cocreators of value, engage in relational exchanges and also offer their customers intangible resources (Lusch 2011). Furthermore, from a social network perspective, reputation can be a critical "soft" type of actor attribute or tie among actors in a supply chain (Borgatti and Li 2009; Galaskiwicz 2011).

An example of a practical application of a supplier using its reputation to signal to current and potential customers that its success is due to integrating values such as fairness and trust with tangible business results is illustrated with a quote from the annual report of Robert Bosch (one of the world's leading suppliers of technology and services) (Robert Bosch 2006, p. 6):

> "[. . .] fundamental to long-term success [. . . is . . .] a balance between *result focus and values* such as responsibility, openness and *trust, fairness,* credibility, and cultural diversity [italics added]."

This quote illustrates that Robert Bosch uses its annual report to signal that the firm highly values social exchange factors such as fairness and trust. Thus, Robert Bosch uses these factors as indicators of its reputation because positively associating a supplier's reputation with fairness and trust might influence a buyer's future relational intentions.

The purpose of the present study is to understand the role of reputation — an intangible asset — in the context of buyer–supplier relationships. We sequentially investigate the effects of (1) the buyers' perception of the *suppliers' reputation at the start of a project,* (2) the degree of *outcome fairness* and (3) the degree of *trust during the project collaboration* on relationship continuity and future collaboration. The present study is timely since recent research suggests that buying firms need to pay more attention to a supplier's reputation (Ghosh and John 2009). However, because reputation alone cannot sustain a buyer–supplier relationship, an integrated test of the effects of reputation and tangible economic and intangible social factors is important and relevant to scholarship and practice.

The following section discusses and defines the key concepts of our study and its theoretical grounding. Subsequently, we present the conceptual frameworks. In three sequential models we test the effects of a buyer's perception about the supplier's reputation at the start of the project on the future of the buyer–supplier relationship: (1) a base model, without economic or social factors, to evaluate the direct effect, (2) a model to test the effect when an economic factor (outcome fairness) is added to the base model and (3) a model with both economic (outcome fairness) and interpersonal social (trust) factors added to the model to understand the impact of the integrated variables on the future of the relationship.

BACKGROUND

Reputation is an intangible asset and is defined in this study as the buyer's perception of the supplier firm's fairness, honesty and concern about the buying firm (Ganesan 1994). As an intangible asset, reputation signals information about a firm's quality and performance (Ghosh and John 2009). Furthermore, a positive reputation can be a source of competitive advantage (Rindova, Williamson, Petkova and Sever 2005; Hansen, Samuelson and Silseth 2008) and financial performance (Carr and Pearson 1999; Roberts and Dowling 2002; Eberl and Schwaiger 2005). Additionally, uncertainty in buyer–supplier relationships can be reduced when suppliers are evaluated based on their reputation (e.g., Rindova et al. 2005). On the other hand, a negative reputation is negatively related to relationship values such as trust (e.g., Anderson and Weitz 1989). While the consequences of positive or negative reputations are generally understood from a strategic management and marketing perspective, there is limited understanding about the consequences of a *buying firm's perception of a supplier's reputation* in a supply chain management context.

Perceived fairness is an important behavioral measure in economics (e.g., Fehr and Schmidt 1999) and it is also of considerable interest to consumer behaviorists (e.g., Vaidyanathan and Aggarwal 2003; Bolton and Alba 2006) as well as to scholars that evaluate organizational behavior (e.g., Dubinsky, Kotabe and Lim 1993). However, only a few scholars have studied the effects of perceived fairness in buyer–supplier relationships (e.g., Kumar, Scheer and Steenkamp 1995; Griffith, Harvey and Lusch 2006). The importance of trust in business-to-business relationships is well established in the literature across business disciplines (e.g., Anderson and Narus 1990; Ganesan 1994; Morgan and Hunt 1994; Doney and Cannon 1997; Smeltzer 1997; Kwon and Suh 2004).

The present study defines relationship continuity as the buyer's interest in building or maintaining an enduring relationship with a supplier (e.g., Scheer et al. 2003). Because the study is conducted at the project level of the

supply chain (i.e. cost reduction projects or innovation projects with supplier involvement), future collaboration intention concerns the buyer's willingness to collaborate with the supplier on future projects (e.g., Jap 2001).

Studying the effects of reputation on enduring buyer–supplier relationships and integrating social and economic factors into the effects-equation is a complex supply chain management phenomena. We explore this phenomenon by building on relationship theory with signaling theory (Spence 1973) and social exchange theory (Blau 1964; Homans 1974).

When evaluating the effects of complex phenomena, Lewis and Grimes (1999) and Poole and Van de Ven (1989) recommend using a multiparadigm theoretical approach, such as the integrated theory approach presented in this article. Furthermore, Ketchen and Hult (2011) advocate that supply chain management scholars should consider theory building efforts developed within the organizational sciences to present supply chain management phenomena.

CONCEPTUAL FRAMEWORK, THEORY AND HYPOTHESIS DEVELOPMENT

In our study, we use three separate models to sequentially evaluate the effects of buyers' perceptions of suppliers' reputation before and after adding the buyer's perceptions of two outcomes: fairness from the relationship (i.e., fair economic rewards) and trust during the project collaboration (an interpersonal social exchange factor) to the model. This is done in a hierarchical fashion (e.g., Baron and Kenny 1986; Huang, Kristal and Schroder 2008).

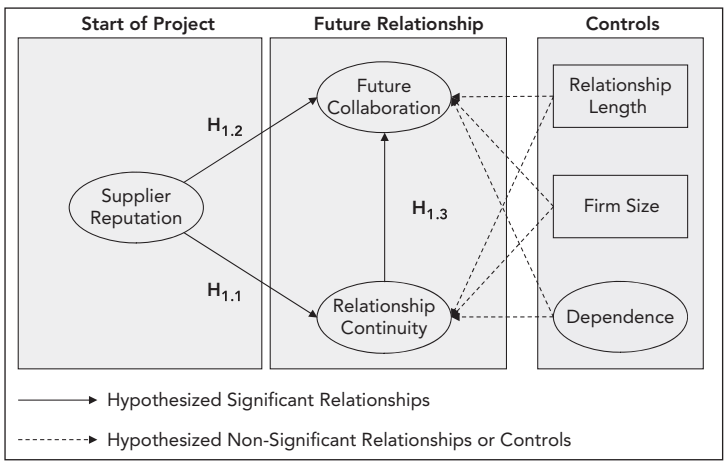
Model 1: Direct Effects of a Supplier's Reputation on Future Relationship Intentions

The first model (Figure 1) proposes that a supplier's reputation at the start of a project is a signal that influences the buyer's expectations for relationship continuity and intentions to collaborate with suppliers on future projects.

Signaling Theory. Spence's (1973) seminal work investigates signaling theory from an economic point of view. His work differentiates between an individual's unalterable attributes coined as *indices* such as sex or age, and *signals* such as education. He describes signals as unobservable characteristics that are subject to manipulation such as the use of one's education or lack of education to influence decisions about potential employee–employer relationships. In business, companies also have certain indices and signals. For example, on the one hand, a company's age, country of origin and other observable factors inherent in the company's culture (permanent characteristic factors) are *indices* since they are unalterable or not easily altered attributes. On the other hand, a company's reputation is a *signal* because reputation is an unobservable characteristic, subject to manipulation. Examples of factors that can positively impact or "manipulate" a company's reputation and influence opinions are corporate social responsibility efforts, philanthropic actions and media announcements concerning strategic decisions. Ghosh and John (2009) suggest that even a company's brand can influence reputation. While reputation is an unobservable attribute, it is given "visible form" through positive or negative observable factors that can influence perceptions about the firm's capabilities and intentions, such as the way the company treats relationship partners or what a firm says in its annual report.

Today, scholars' continued use of Spence's (1973) signaling theory (e.g., Kirmani and Rao 2000; Hoxmeier 2001) supports the potential of signals as influencers in business-to-business relationships. However, studies evaluating signaling effects in buyer–supplier relationships are limited. Furthermore, few

FIGURE 1
Conceptual Framework (Model 1)



studies intentionally combine signaling theory with social exchange theory to examine antecedents and consequences in buyer–supplier relationships.

Signaling theory lends support to the idea that a supplier's reputation is a signal that could positively or negatively affect a buyer's perception about the exchange relationship. We integrate signaling theory with relationship theory using the work of Anderson and Weitz (1989, 1992). Related to the assumption that a supplier's reputation is a signal to buyers and other stakeholders, Anderson and Weitz (1989) report that "...stability can be enhanced by avoiding building a poor reputation for treatment of channel members" (p. 322); and they show that a reputation for fairness enhances commitment among partners in the relationship (Anderson and Weitz 1992). Anderson and Weitz (1989) also state:

> Individuals and firms provide *signals* of their future actions through their presentations. People are especially attuned to behaviors which allow them to infer cooperative rather than competitive tendencies. An individual is more willing to commit to another if the other person holds a *reputation for cooperative behavior* [...]. The same mechanism operates among firms, [...]. (p. 314, italics added)

We study a supplier's perceived reputation at the start of a particular project collaboration as a fairness and honesty signal. A supplier's reputation could be a signal to buying companies and individuals representing buyer firms that the supplier has high interest in being cooperative and fair in exchange relationships (Homans 1974). It seems reasonable that buyers would likely consider enduring relationships with suppliers that generally signal a cooperative behavior and a good reputation. Integrating theory, we predict the causal relationships shown in Model 1:

> **$H_{1.1}$:** A buyer's perception of a supplier's reputation at the start of the project relates positively to expectations of relationship continuity.
> **$H_{1.2}$:** A buyer's perception of a supplier's reputation at the start of the project relates positively to willingness to collaborate on future projects.

Here, supplier reputation refers to the degree to which a supplier is believed to be concerned about the customer and fair and honest in its dealings with the buying firm.

A buyer's perception that an exchange relationship with a supplier will continue long-term suggests a relational commitment (Anderson and Weitz 1992). This commitment signals future project collaboration interest with the supplier. Therefore, we posit:

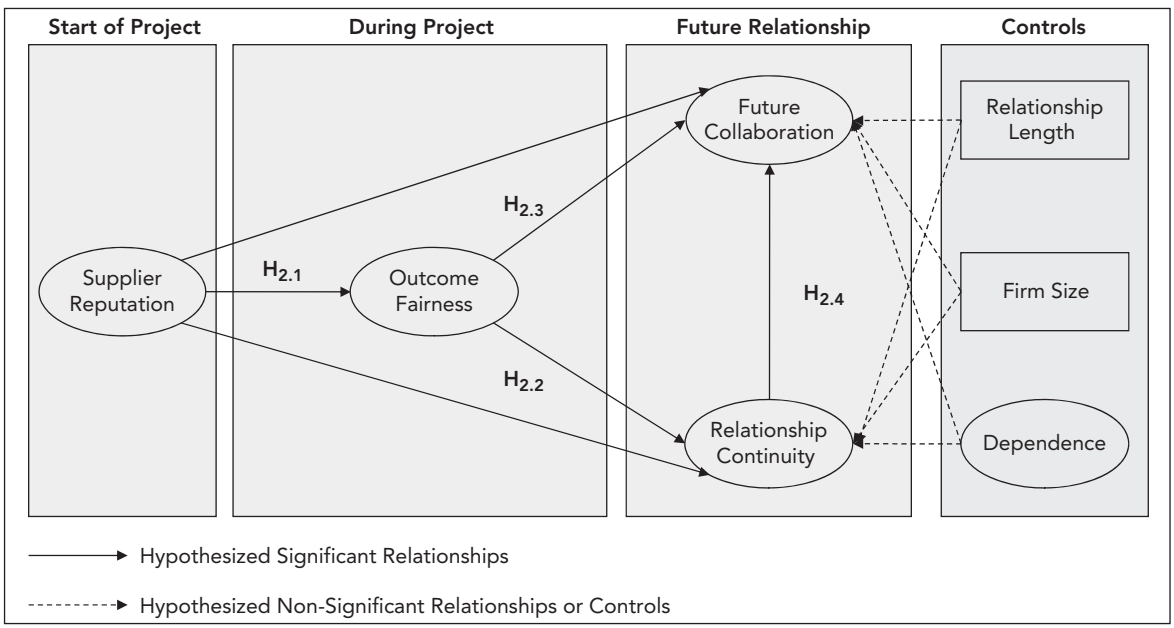
> **$H_{1.3}$:** The buyer's perception of relationship continuity relates positively to willingness to collaborate on future projects.

Model 2: Effects of Adding Outcome Fairness

Model 2 (Figure 2) predicts that when outcome fairness is in the model, the effects of reputation on the future of the relationship are partially mediated.

Unlike signaling theory, social exchange theory has been used in a few studies in the context of buyer–supplier relationships in both marketing and supply chain management (e.g., Anderson and Narus 1990;

FIGURE 2
Conceptual Framework (Model 2)



Griffith et al. 2006). We add insights by combining signaling theory and social exchange theory with relationship theory to investigate the effects of reputation when outcome fairness is in the model (i.e., conditions of Model 2 versus Model 1) on future relationship intentions in buyer–supplier relationships.

Social Exchange Theory. Social theorists (e.g., Homans 1958; Blau 1964) and social psychology theorists (e.g., Thibaut and Kelley 1959) are among the scholars that offer a theoretical foundation for incorporating social factors into buyer–supplier relational exchange research. Thus, relationship theory borrows from social exchange theory to support today's supply chain management research agenda, which "argues that individuals or corporate groups interact for reward or with the expectation of a reward from their interactions with others" (Griffith et al. 2006, p. 86).

A further testament to the importance of social exchange theory to relationship theory is Homans' (1958) assertion, made over 50 years ago that "... [social exchange theory] is one of the oldest theories of social behavior, and one that we still use every day to interpret our own behavior" (p. 597), which is still relevant today. Specifically, supply chain management, relationship theory, marketing and management scholars continue to use Homans' theory as foundational support for recent work (e.g., Palmatier, Dant and Grewal 2007; Narasimhan, Nair, Griffith, Arlbjørn and Bendoly 2009).

In contrast to traditional economic theory, which focuses exclusively on economic outcomes, the use of social exchange theory in the present research acknowledges the belief that companies in exchange relationships in a supply network evaluate the outcomes of the collaboration against pre-conceived reward expectations (Thorelli 1986). These expectations include both economic factors *and* social values (Blau 1964; Granovetter 1985, 1992).

Effect of Adding Outcome Fairness, a Social Theory Variable, to the Model (Fair Economic Rewards). This study captures the idea of economic fairness, in sharing relational benefits from buyer–supplier collaborations, with the concept of outcome fairness. Outcome fairness is the buyer's perception of fair benefits, fair gains or fair economic rewards from the project collaboration. One could argue that the primary purpose of buyer–supplier relationships is to generate some economic or performance outcome. Furthermore, several scholars support the importance of tangible performance in buyer–supplier relationships (e.g., Terpend et al. 2008; Cannon, Doney, Mullen and Petersen 2010). A few scholars test the significance of fairness in long-term relationships (e.g., Griffith et al. 2006) or fairness in sharing the pie of economic benefits (e.g., Jap 2001) on the future of the relationship.

Integrating the intangible benefits of the supplier's reputation with the work that shows a positive relationship between fairness and long-term orientation (Griffith et al. 2006) and work that supports the importance of fair sharing of relational benefits (Jap 2001) we predict that:

$H_{2.1}$: A buyer's perception of a supplier's reputation at the start of the project relates positively to perceptions of outcome fairness.

$H_{2.2}$: A buyer's perception of outcome fairness partially mediates the positive relationship between the buyer's perception of the supplier's reputation at the start of the project and expectations of relationship continuity.

$H_{2.3}$: A buyer's perception of outcome fairness partially mediates the positive relationship between the buyer's perceptions of the supplier's reputation at the start of the project and willingness to collaborate on future projects.

$H_{2.4}$: When outcome fairness is in the model, the buyer's expectations of relationship continuity continue to relate positively to willingness to collaborate on future projects.

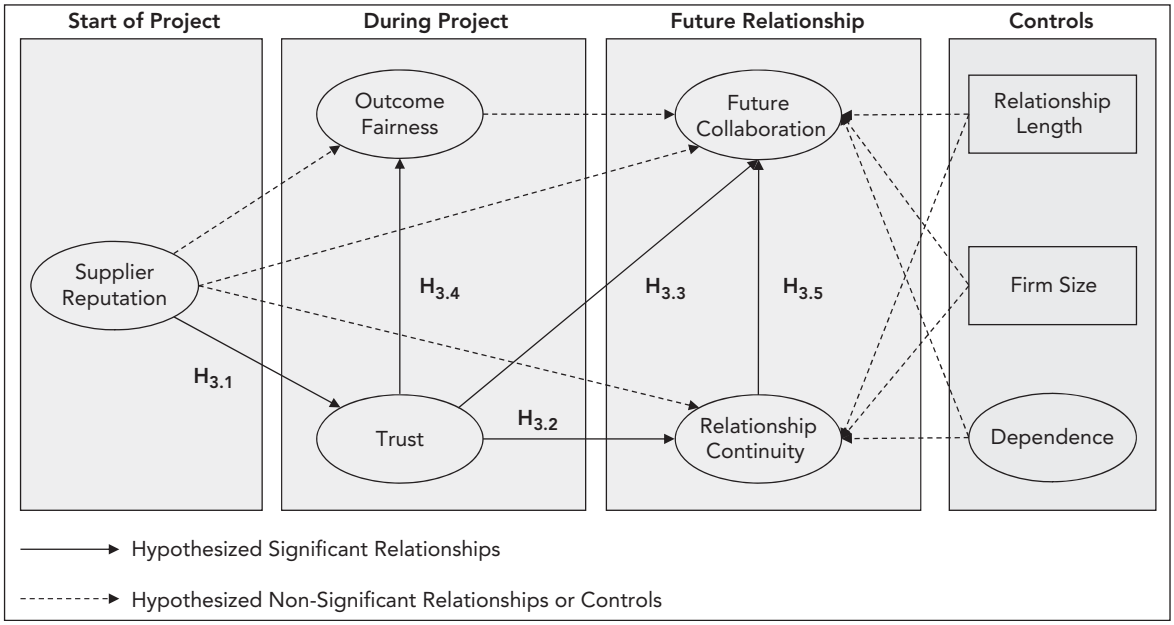
Model 3: Effects of Adding Trust

Finally, Model 3 (Figure 3) investigates the effects when outcome fairness and trust experienced during the project are considered in the same model (i.e., conditions of Model 3 versus Model 2). It predicts that the direct effects of buyers' perception of suppliers' reputation on outcome fairness, relationship continuity and willingness to collaborate in the future are completely mediated by perceptions of trust during project collaboration.

Linking Relationship Theory to Social Exchange Theory — the Role of Trust. Trust is a dominant variable that links relationship theory to social exchange theory. Anderson and Weitz (1992) and Morgan and Hunt (1994) advanced the idea of a mutual trust link between social exchange theory and business relationship factors (e.g., propensity to leave the relationship, cooperation, acquiescence) or behavior that can be associated with an interest in relationship continuity. Trust is a relationship success factor and a key social exchange theory variable (Morgan and Hunt 1994). Social exchange theory postulates that reciprocal actions and behavior in formal relationships enhance the perceived trust of an exchange partner (Blau 1964). Buyers (suppliers) are more likely to expect that suppliers (buyers) with a positive reputation are also trustworthy (i.e., credible and benevolent). Anderson and Weitz (1989) lend empirical support for the present study to build from by showing that a poor reputation lowers trust in relationships.

As conceived in Model 3, the observable indices (Homans 1974) of trust such as whether the supplier (1) was always honest during the project, (2) seemed genuinely concerned about the customer's success or (3) kept promises made during the project (Doney and Cannon 1997) links the buyer's perceptions about the suppliers reputation at the start of the project (Model 1)

FIGURE 3
Conceptual Framework (Model 3)



to outcome fairness during the project (Model 2). This conceptualization proposes that the buyer's perception of the supplier's reputation at the start of the project is thereby linked directly to trust (Ganesan 1994) experienced during the ongoing project collaboration.

We propose that maintaining long-term relationships depends more on the behavior that is signaled during the project collaboration, such as a signal of trustworthiness, rather than the impressions that a supplier's reputation signals to the buyer at the start of the collaboration. That is to say, after project collaboration commences, the effect of reputation at the start of the project is affected by perceptions of trust during the project collaboration. Anecdotal information from practice suggests that a good reputation is "difficult to build and easy to lose." Thus, if negative information or distrust is experienced during the collaboration this would be a concern for the effect of reputation, which should be mediated through trust experienced during the project. We predict:

> **$H_{3.1}$:** A buyer's perception of a supplier's reputation at the start of the project relates positively to trust during the project.
> **$H_{3.2}$:** Trust during the project collaboration mediates the positive relationship between a buyer's perceptions of a supplier's reputation at the start of the project collaboration and expectations of relationship continuity.
> **$H_{3.3}$** Trust during the project collaboration mediates the positive relationship between a buyer's perceptions of a supplier's reputation at the start of the project collaboration and willingness to collaborate on future projects.

Ganesan (1994) lends support to these predictions. His work showed a mediating effect of trust between reputation and a retailer's "long-term orientation," which he defined as concern for joint outcomes over a long period of time. Furthermore, Morgan and Hunt (1994) argue that trust is a key mediating variable in buyer–supplier relationships and without trust in the model the effects of the antecedents on the outcomes are not well explained. Therefore, adding trust to Model 3 better explains the dynamics of reputation and the economic rewards of the product collaboration toward maintaining long-term relationships. Adding the conditions predicted in Model 3 implies that without trust, the effects of reputation and outcome fairness on the outcomes are simply not well explained (Morgan and Hunt 1994).

Combining outcome fairness and trust in the same model recognizes, as Wathne, Biong and Heide (2001) show, that "interpersonal factors alone do not play the frequently mentioned role of buffer against price and product competition" (p. 54) because, "interpersonal relationships did not seem to be an important disincentive to switch suppliers" (p. 62). Therefore, once suppliers are invited to collaborate, suppliers should want to establish a positive association between the buyer's perceptions of interpersonal trust during the project collaboration and outcome fairness, an economic factor of the relationship. That is to say, suppliers should want buyer firms to experience their trustworthiness during the project as well as feel that the economic rewards of the collaboration are just (e.g., Kumar et al. 1995; Yilmaz, Sezen and Kabadayi 2004).

Companies sharing a "pie of benefits" (e.g., Jap 2001, p. 86) in buyer–supplier relationships should want to perceive relationship fairness. Furthermore, they should want to trust that there is equity in the sharing of the benefits derived from their joint efforts (Adams 1963;

Homans 1974). In practice, both outcome rewards and trust are needed in project collaboration relationships. When trust is considered in the model we hypothesize:

> **$H_{3.4}$:** Trust during the project collaboration mediates the positive relationship between a buyer's perceptions of the supplier's reputation at the start of the project and outcome fairness.

Yilmaz et al.'s (2004) work associates fairness and trust. Additionally, Kumar et al. (1995) suggest that perceptions of *unfairness* jeopardize the future of relationships. Buyers and suppliers that experience trust during a project exchange are more likely to signal an interest in the future of the relationship (Morgan and Hunt 1994). Again, trust is conceived as a central mediating measure since trust is foundational for enduring relationships (Anderson and Weitz 1989; Morgan and Hunt 1994; Palmatier, Dant, Grewal and Evans 2006). Given that trust is generally defined in terms of credibility and benevolence (Doney and Cannon 1997; Cannon et al. 2010), buyers that highly trust their suppliers should have a lower propensity toward termination of the relationship (Morgan and Hunt 1994). Furthermore, trust is an important factor for the stability of relationships (Anderson and Weitz 1989). Therefore, companies should have more interest in working on future projects with suppliers that they trust during project collaborations.

If buyers perceive both satisfactory trust *and* economic value (e.g., Wathne et al. 2001) in their relationships with suppliers, then these positive signals should reduce a need to search for additional suppliers (Hansen et al. 2008). Reducing the need to search for additional suppliers has implications toward perceptions of relationship continuity with existing suppliers. Therefore, expectations of relationship continuity should relate positively to a buyers' willingness to collaborate on future projects because "customers who find themselves in a satisfying relationship are less inclined to spend resources on alternative search" (Hansen et al. 2008, p. 210):

> **$H_{3.5}$:** When both outcome fairness and trust are in the model, a buyer's expectations of relationship continuity continue to relate positively to willingness to collaborate on future projects.

RESEARCH METHOD

Data Collection and Sample

Key informants (one purchasing manager from each customer firm) in industrial firms in Germany and Switzerland participated in a large-scale survey. The unit of analysis is the buyer–supplier relationship in the context of recently completed (within the last 12 months) projects that pertain to cost reduction, quality improvement or innovation in processes or products.

Contact details for managers with purchasing responsibilities within a particular firm were obtained from a publically available industry source (n=1,846). The managers received personalized email invitations with a direct link to the online-based questionnaire and were offered a summary of the results as well as a practitioners' purchasing book as incentives. Three email follow-ups and reminder phone calls generated 186 completed questionnaires (10.1 percent response rate).

Forty potential key informants (2.1 percent) actively replied to one of the mailings communicating that their particular company had not been involved in a buyer–supplier project over the last 12 months. This response alerted the researchers to the possibility of the same constraint for other potential informants. Consequently, we randomly contacted 100 nonrespondents by telephone to understand if they were generally able to answer the questionnaire (i.e., had been involved in buyer–supplier projects during the study's time frame). Overall, 45 percent of the informants in this follow-up indicated that they had not conducted buyer–supplier projects in the 12 months before data collection. In sum, the effective response rate seems reasonable given the lack of recent buyer–supplier projects among a large number of the firms.

The 2006 annual sales volumes of the participating companies ranged from US$6.6 million up to US$138.4 billion, averaging US$3.09 billion. Appendix A shows the sample distribution based on annual dollar sales, number of employees and industries included.

Most key informants were purchasing executives likely to have an overarching, boundary-spanning view of their companies' supply chains and supplier activities. The majority held titles as head of purchasing or chief purchasing officer (45.9 percent), purchasing manager (17.5 percent) as well as chief executive officer, owner or plant manager (11.5 percent). The remainder of the respondents characterized their positions as head of logistics, supply chain or operations (8.7 percent) as well as head of supplier management/development (2.7 percent) and other managers (6.0 percent). On average, they had been in their current positions for 7.8 years and with the particular firm for 11.4 years.

The study design included two questions to ensure the informants' ability to answer the questionnaire (Kumar, Stern and Anderson 1993). These questions assessed the managers' degree of knowledge about the (1) specific project and (2) relationship to the respective supplier (five-point Likert scales anchored at 1=fully disagree; 5=fully agree). While most informants rated their knowledge about the project and the relationship with values of 4.0 or 5.0 (92 percent and 96 percent, respectively), three informants rated these questions below the scale rating of 3.0 so they were deleted from the sample. The responses from the remaining 183 questionnaires indicate a high average degree of knowledge about the

project (4.4) and the relationship (4.6). In sum, these results suggested knowledgeable informants.

Comparisons of early (initial email) and late (second and third reminder) responses from informants on all items in the model found no statistically significant mean differences ($p < 0.05$). Additionally, comparisons (in terms of sales and number of employees) of the study sample with the 100 randomly selected companies from the initial sample drawn from an independent industry database showed no significant difference in terms of average means ($p < 0.05$). In sum, these tests indicated that nonresponse bias does likely not exist (Wagner and Kemmerling 2010).

Survey Instrument

A literature review and eight in-depth interviews with purchasing managers in industrial companies in Germany were the first steps in developing the survey instruments and measures. This prework was foundational for a preliminary questionnaire used to obtain comments about the potential items from several academics (with diverse research backgrounds) and a few practitioners. Next, the survey instrument was pretested through interviews with German purchasing executives. To ensure clarity and avoid possible bias, half of the feedback interviews were conducted while informants were answering the questionnaire and half were after completion. The final survey instrument incorporated relevant comments.

Common Method Variance

To ensure a lack of a common method bias we used both procedural and statistical controls (Podsakoff, MacKenzie, Lee and Podsakoff 2003). The procedural methods were (1) use of mid-to-senior-level managers and leaders with high levels of relevant knowledge (Mitchell 1994), (2) adoption of some survey items from previous research to ensure quality scales (Lindell and Whitney 2001), (3) use of back translation to "improve comprehension" (Podsakoff et al. 2003, p. 888), (4) assurance to participants that their responses would be kept confidential (Fugate, Stank and Mentzer 2009) and (5) separation of the predictor variable items from the criterion variable items to create some proximal separation (Podsakoff et al. 2003). The statistical methods were Harman's single-factor test (Podsakoff et al. 2003), the use of a theoretically unrelated marker variable (i.e., project goals) (Lindell and Whitney 2001) and the use of LISREL 8.80 to test two single-factor models where all reflective study indicators loaded freely on a single construct. The single-factor models showed insufficient fit, rejecting the hypothesis that there is a general factor that accounts for the majority of the covariance across the measures. In summary, our results indicated a lack of common method variance.

Constructs and Variables

For the most part, items and measures are from literature sources. However, some modification was necessary to accommodate the context (project-based) and German-speaking informants. All multi-item measures are disclosed in Appendix B. Confirmatory factor analysis and reliability tests were conducted before model testing (Fornell and Larcker 1981; Anderson and Gerbing 1988).

Antecedent. The antecedent in this study is supplier reputation at the start of the project. This measure was adapted from Ganesan (1994) and Anderson and Weitz (1992). On the one hand, Ganesan (1994) measured the reputation for fairness of vendors and retailers in channel relationships. On the other hand, Anderson and Weitz (1992) considered the reputation of manufacturers and distributors. The present study measures the reputation of suppliers at the start of the project collaboration from the viewpoint of purchasing managers (buyers).

Mediators. The two proposed mediators were outcome fairness (economic rewards) and trust. These were chosen after careful consideration of the literature and practice. We operationalized outcome fairness using Jap (2001), who investigated companies working together in complex R&D collaborations. In addition to the items in that study, we also tested two new reverse-coded items chosen to enhance the explanatory power of the measure, considering the present study's domain. However, these items were later dropped as they did not fit the measurement model. We operationalized trust by modifying the scale of Doney and Cannon (1997), who measured trust of a salesperson and offered "insight into how trust develops and how it influences industrial buying behavior" (p. 36). Specifically, the salesperson language was changed to "supplier" and items were refined to fit differences in translation from English to German where reversed-coded items seemed to cause concern.

Outcomes. As previously mentioned, there were two outcome measures. The measures for relationship continuity were adapted from Scheer et al. (2003) and the measures for future collaboration from Jap (2001).

Control Variables. We included three control variables. First, *relationship length* (e.g., Tangpong and Ro 2009) appears to be an important contextual factor that could affect future intentions of the buyer in the buyer–supplier relationship. To measure length of relationship, we asked the respondents to report the numbers of years that their company had been working with a particular supplier at the start of the project. Second, (relative) *firm size* (e.g., Huang et al. 2008) is included because size imbalances could affect power between the firms. Firm size was measured in relative terms by asking respondents for a comparison of their sales with the specific supplier using a one-item, five-point Likert scale where 1=Much smaller, the midpoint was 3=Same size, and 5=Much bigger. Third, *dependence on the supplier* has been shown to affect relationship constructs and outcomes (e.g., Ganesan 1994; Tangpong and Ro 2009; Cannon et al. 2010). This construct was measured with three items recommended by Jap and Ganesan (2000) on a five-point Likert scale anchored at 1=Strongly disagree and 5=Strongly agree.

We retested all measures to assess reliability, convergent validity and discriminant validity with the current data. The results of these tests are presented next.

RESULTS OF THE MEASUREMENT MODEL

Reliability and Convergent Validity

For all multi-item scales, confirmatory factor analysis (LISREL 8.80) and theory drove item selection while considering context and statistical constraints. Confirmatory factor analysis supports that when all items for each measure are in the same measurement model, each item loads on the designated factor with no cross loading. Furthermore, the analysis supports that the estimates for all measures were all significant ($p < 0.05$), ranging from 0.75 to 0.95. The final measures, their items (codes) and factor loadings with significant *t*-values are shown in Table 1. Also shown in Table 1 are Cronbach's α reliabilities and composite reliabilities. The α coefficients for all the factors exceeded the 0.70 minimum cut off (ranging from 0.74 to 0.95), indicating good internal consistency for each measure (Fornell and Larcker 1981; Nunnally and Bernstein 1994; MacKenzie, Podsakoff and Jarvis 2005; Hair, Black, Babin, Anderson and Tatham 2010).

Furthermore, the composite reliability for each factor was greater than the 0.70 benchmark (ranging from 0.75 to 0.96), indicating good scale reliability in each case (Nunnally and Bernstein 1994; MacKenzie et al. 2005; Hair et al. 2010). Additionally, the average variance extracted (AVE) for each measure was greater than 0.50, which indicated high convergent validity between the constructs and the individual items (Fornell and Larcker 1981; Hair et al. 2010). Fit statistics for the measurement model indicated a good fit with the data (Table 1).

Table 2 provides a correlation matrix of all final items and the control variables (dependence, length of relationship and size of firm) with descriptive statistics.

Discriminant Validity

After finalizing the measures, all possible theoretical measure-pairs of interest (10 pairs) in this study were separately entered into a structural model to test discriminant validity. Discriminat validity verifies that measures of different constructs are unique. In each test between the construct pairs, the items loaded on the designated factors with no cross loading. As shown in Table 3, in every case the AVE for each construct in the paired relationships is >0.50, which is an indicator of good discriminant validity. Furthermore, the AVE for

TABLE 1

Factors/Items, Factor Loadings, *t*-values and Reliabilities

Construct Name/Items	Factor Loading	*t*-Value	Coefficient α	Composite Reliability
Supplier reputation (REP_SUP)			0.81	0.81
REP_SUP1	0.83	12.49		
REP_SUP2	0.77	11.32		
REP_SUP4	0.69	9.87		
Outcome fairness (FAIR)			0.91	0.91
FAIR1	0.82	11.80		
FAIR2	0.97	17.41		
FAIR3	0.87	14.46		
Trust (in supplier X) (TRUST)			0.82	0.83
TRUST2	0.77	11.80		
TRUST4	0.73	11.08		
TRUST7	0.87	14.14		
Relationship continuity (CONTINUE)			0.74	0.77
CONTINUE1	0.95	15.31		
CONTINUE2	0.55	7.68		
CONTINUE3	0.66	9.50		
Future collaboration (FUTURE)			0.95	0.95
FUTURE2	0.95	17.50		
FUTURE3	0.95	16.81		
Dependence (on supplier X) (DEP_SUP)			0.92	0.94
DEP_SUP1	0.90	15.28		
DEP_SUP2	0.92	15.91		
DEP_SUP4	0.87	14.43		

TABLE 2

Correlation Matrix for Items and Descriptive Statistics

	Items	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	REP_SUP1	4.0	0.90	1.00	Supplier reputation																	
2	REP_SUP2	3.9	0.94	0.61**	1.00																	
3	REP_SUP4	3.8	0.87	0.61**	0.56**	1.00																
4	FAIR1	3.9	0.85	0.34**	0.35**	0.28**	1.00	Outcome fairness														
5	FAIR2	4.0	0.78	0.41**	0.39**	0.32**	0.80**	1.00														
6	FAIR3	3.9	0.81	0.37**	0.37**	0.25**	0.71**	0.84**	1.00													
7	TRUST2	4.0	0.94	0.51**	0.47**	0.37**	0.48**	0.52**	0.50**	1.00	Trust											
8	TRUST4	4.1	0.88	0.45**	0.47**	0.34**	0.42**	0.48**	0.44**	0.52**	1.00											
9	TRUST7	4.2	0.76	0.53**	0.54**	0.32**	0.49**	0.57**	0.52**	0.67**	0.65**	1.00										
10	CONTINUE1	4.4	0.86	0.39**	0.37**	0.27**	0.46**	0.51**	0.46**	0.56**	0.42**	0.55**	1.00	Relationship continuity								
11	CONTINUE2	3.9	1.12	0.32**	0.20**	0.22**	0.25**	0.27**	0.25**	0.38**	0.28**	0.34**	0.52**	1.00								
12	CONTINUE3	4.4	0.96	0.24**	0.25**	0.16*	0.23**	0.38**	0.27**	0.38**	0.33**	0.41**	0.63**	0.38**	1.00							
13	FUTURE2	4.2	0.91	0.46**	0.41**	0.36**	0.51**	0.57**	0.51**	0.60**	0.51**	0.62**	0.68**	0.40**	0.44**	1.00	Future collaboration					
14	FUTURE3	4.2	0.93	0.48**	0.41**	0.35**	0.47**	0.55**	0.51**	0.62**	0.52**	0.65**	0.68**	0.40**	0.42**	0.91**	1.00					
15	RELATION-SHIP LENGTH	10.-	9.92	0.10	0.10	0.07	−0.02	0.02	0.03	−0.01	0.07	0.01	0.08	0.15*	0.09	−0.04	0.03	1.00	Relationship length			
16	FIRM SIZE	3.3	1.54	0.09	0.19*	0.07	−0.01	0.03	0.05	−0.01	0.01	0.02	0.35	0.05	0.09	−0.00	−0.05	−0.04	1.00	Firm size		
17	DEP_SUP1	2.8	1.38	−0.01	0.03	0.02	−0.14	−0.19*	−0.11	−0.07	−0.02	−0.13	−0.03	0.02	0.03	−0.08	−0.09	0.11	0.36**	1.00	Depen-dence	
18	DEP_SUP2	3.1	1.32	0.03	0.03	0.05	−0.12	−0.17*	−0.09	−0.03	0.01	−0.05	−0.01	0.12	0.03	−0.04	−0.08	0.09	0.36**	0.83*-	1.00	
19	DEP_SUP4	2.6	1.31	−0.02	−0.08	−0.03	−0.11	−0.14	−0.05	−0.12	−0.08	−0.16*	−0.02	0.06	0.00	−0.04	−0.08	−0.02	0.34**	0.78*-	0.80**	1.00

*Significant at the 0.05 level (2-tailed).

**Significant at the 0.01 level (2-tailed).

Shaded cells: Construct inter-item correlation.

TABLE 3

AVE Discriminant Validity Tests

	Construct Pairs	Average	SMC	Average
1	FAIR and REP_SUP	<0.72	0.30	<0.55
2	FAIR and TRUST	<0.79	0.46	<0.62
3	FAIR and FUTURE	<0.79	0.33	<0.89
4	FAIR and CONTINUE	<0.72	0.37	<0.55
5	CONTINUE and FUTURE	<0.56	0.54	<0.91
6	CONTINUE and TRUST	<0.54	0.48	<0.62
7	CONTINUE and REP_SUP	<0.54	0.23	<0.59
8	REP_SUP and TRUST	<0.59	0.54	<0.64
9	REP_SUP and FUTURE	<0.57	0.31	<0.91
10	FUTURE and TRUST	<0.89	0.59	<0.63

each construct in each of the 10 pairs is greater than the squared multiple correlation between the 10 construct pairs which further supports discriminant validity between those factors (Fornell and Larcker 1981).

EMPIRICAL RESULTS AND ANALYSIS

Structural equation modeling (SEM) is a good choice for testing the structural relationships given the questions and conditions in this study because it allows for the examination of nested models and the direct comparison of the effects of adding or subtracting variables. Furthermore, it can be employed to test mediation models (James, Mulaik and Brett 2006). The size of our sample (N=183) was sufficiently large as to allow adequate fit of all models (Byrne 1998). Furthermore, the ratio of sample size to number of estimated parameters is within the 5:1 guidelines (Kelloway 1998).

To use SEM with a single-item measure latent factor in the model, we allowed the item for each single-item measure to load on the respective latent construct (either length of relationship or firm size) (Kelloway 1998; Brown 2006). Specifically, we fixed the common item and the unique factor loadings to 1, assuming perfect measures (Brown 2006). The same controls were entered into each of the three structural models (Models 1–3). None of them had a significant effect on either of the outcomes.

Model 1 Hypothesis Testing: The Direct Effect of Reputation

Model 1 achieved an excellent fit to the data ($\chi^2_{(52)}$=62.22, p=0.16; χ^2/df=1.20, CFI=0.99, GFI=0.95, NFI=0.96, NNFI=0.99, IFI=0.99, RFI=0.94, RMR=0.03 and RMSEA=0.03).[1]

[1]CFI refers to comparative fit index, GFI refers to goodness-of-fit index, NFI refers to normed fit index, NNFI refers to nonnormed fit index, IFI refers to incremental fit index, RFI refers to relative fit index, RMR refers to root mean square residual and RMSEA refers to root mean square error of approximation.

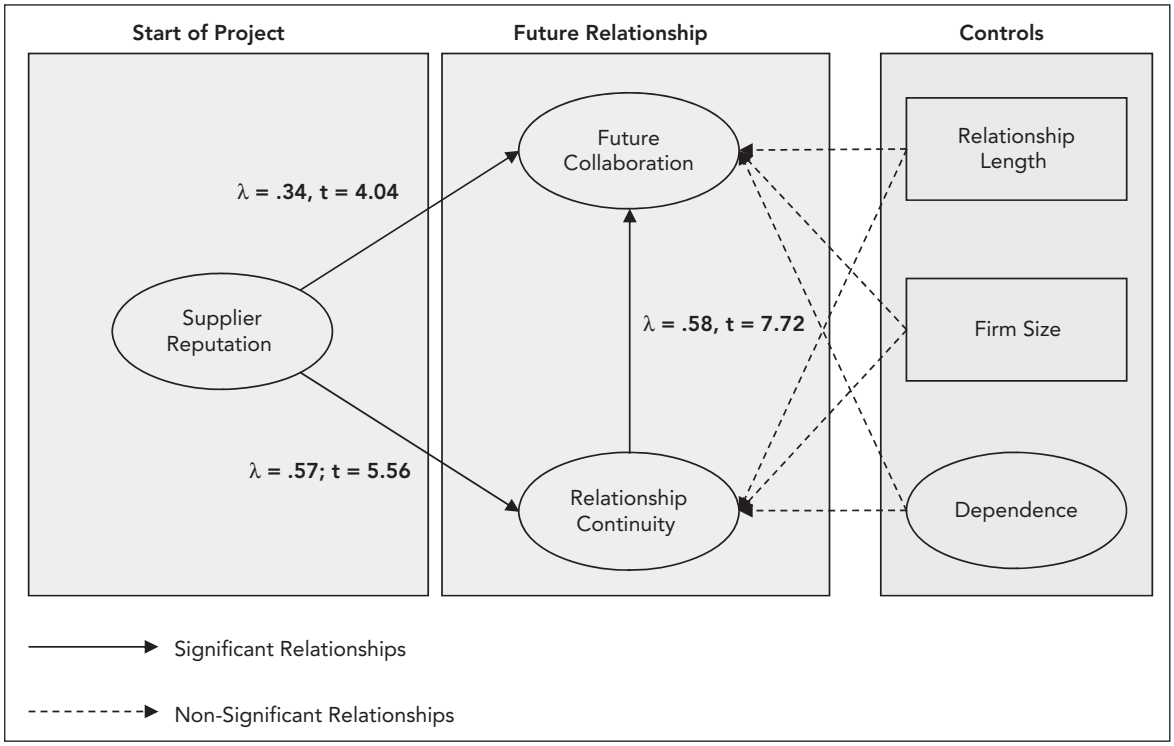
The findings supported all Model 1 hypotheses (Figure 4). Specifically, the data supported that a buyer's perception of the supplier's reputation at the start of the project positively signals both the buyer's expectations of relationship continuity ($H_{1.1}$: λ=0.57, t=5.56) and the willingness to collaborate in the future ($H_{1.2}$: λ=0.34, t=4.04). These findings confirm the importance of the supplier's reputation at the start of a project toward influencing the buyer's future intentions concerning the relationship with the supplier. The data also support the prediction that a buyer's expectations of relationship continuity positively relates to willingness to collaborate on future projects ($H_{1.3}$: λ=0.58, t=7.72). These findings suggest that if suppliers have interest in future project collaboration with buyers, then they should strive to use their reputation at the start of the project as a signal of excellence.

Model 2 Hypothesis Testing: The Role of Outcome Fairness

Model 2 also fits to the data very well ($\chi^2_{(88)}$=98.97, p=0.20; χ^2/df=1.12, CFI=0.99, GFI=0.94, NFI=0.96, NNFI=0.99, IFI=0.99, RFI=0.95, RMR=0.05 and RMSEA=0.03).

Model 2's findings support predictions that a buyer's reputation at the start of the project positively signals perceptions of outcome fairness ($H_{2.1}$: λ=0.50, t=5.93). $H_{2.2}$ was also supported. Specifically, conditions for partial mediation are met because reputation has a significant positive relationship with outcome fairness and outcome fairness has a significant effect on expectations of relationship continuity (λ=0.49, t=5.10) while the buyer's perception of the supplier's reputation at the start of the project continues to have a significant direct effect (λ=0.30, t=2.91). Similarly, $H_{2.3}$ was supported because the effects of outcome fairness also show a significant effect on willingness to collaborate on future projects (λ=0.24, t=2.97) and the buyer's perception of the supplier's reputation at the start of the project continues

FIGURE 4
Model 1 Estimation Results: The Direct Effects of Reputation



to have a significant direct effect (λ=0.26, t=3.16), also meeting conditions for partial mediation (James et al. 2006). The partial mediation effect is confirmed for the relationships between reputation, outcome fairness and expectations of continuity because b_{mx}(0.50, t=5.93), $b_{yx.m}$(0.30, t=2.91) and $b_{ym.x}$(0.24, t=2.97) are all significant. Likewise, partial mediation is confirmed for the relationships between reputation, outcome fairness and future collaboration intentions since b_{mx}(0.50, t=5.93), $b_{yx.m}$(0.26, t=3.16) and $b_{ym.x}$(0.49, t=5.10) are all significant (James et al. 2006). Finally, with outcome fairness in the model the buyer's expectations of relationship continuity continues to positively relate to the willingness to collaborate on future projects (λ=0.54, t=6.58), supporting $H_{2.4}$. Figure 5 shows the results for the structural paths.

Model 3 Hypothesis Testing: The Role of Trust

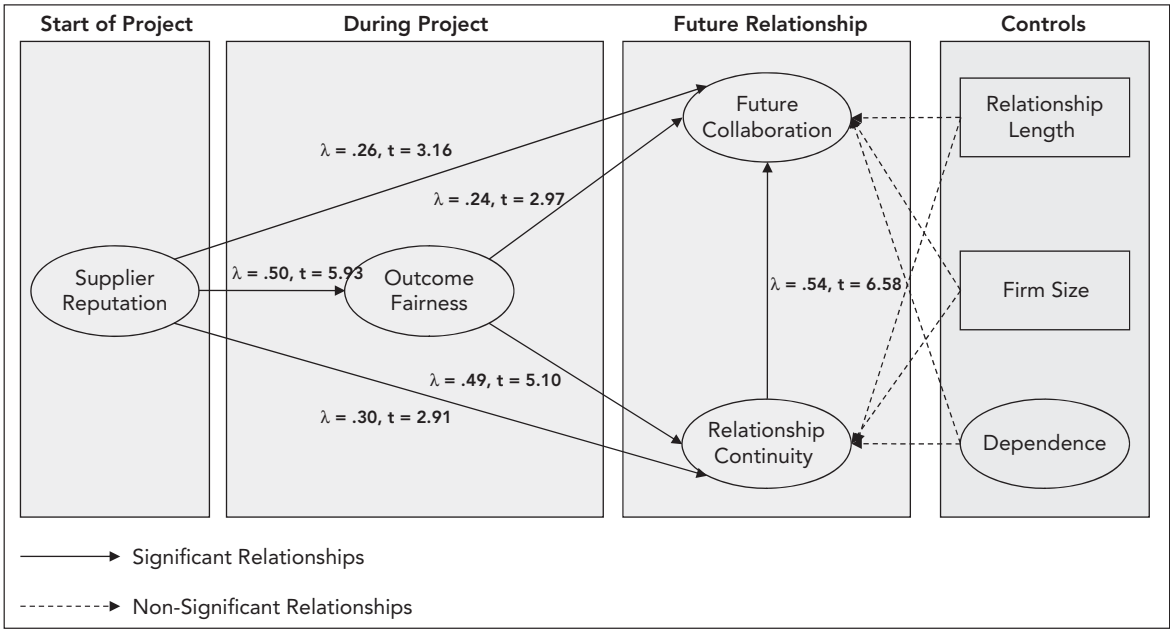
Finally, we also received excellent fit indices for Model 3 ($\chi^2_{(132)}$=145.12, p=0.21; χ^2/df=1.10, CFI=0.99, GFI=0.92, NFI=0.96, NNFI=0.99, IFI=0.99, RFI=0.95, RMR=0.05 and RMSEA=0.02).

The findings support the Model 3 (Figure 6) hypotheses that once buyers are engaged in the project work with suppliers, the buyer's perception of the supplier's reputation at the start of the project positively signals trust during the project ($H_{3.1}$: λ=0.70, t=8.08). Furthermore, trust mediates the relationship between the buyers' perceptions of the supplier's reputation and expectations of relationship continuity ($H_{3.2}$: λ=0.79, t=4.28) as well as the willingness to collaborate in the future ($H_{3.3}$: λ=0.49, t=2.94).

The respective direct effects were no longer positive or significant (λ=− 0.11, t=− 0.81 and λ=0.04, t=0.41). That is, "all effects of antecedent X [reputation] on the consequence Y [relationship continuity or future collaboration] are transferred through the mediator M [trust]" (James et al. 2006, p. 236). Specifically, complete mediation is confirmed for the relationships between reputation ($_x$), trust ($_m$), and expectations of continuity ($_y$) since b_{mx}(0.70, t=8.08) and b_{ym}(0.79, t=4.28) are both significant and the indirect effect of X on Y via $M(b_{mx} \times b_{ym}$=0.55) compared with the observed correlation r_{yx}(0.38) are not significantly different (z=1.30, $p>0.05$). Likewise, complete mediation is confirmed for the relationships between reputation ($_x$), trust ($_m$), and future collaboration intentions ($_y$) since b_{mx}(0.70, t=8.08) and b_{ym}(0.49, t=2.94) are both significant and the indirect effect of X on Y via $M(b_{mx} \times b_{ym}$=0.34) compared with the observed r_{yx}(0.49) are not significantly different (z=1.04, $p>0.05$) (James et al. 2006).

Furthermore, the effect of reputation on outcome fairness was also mediated by trust during the project. On the one hand, the path leading from trust to outcome fairness in Model 3 reported as λ=0.71, t=5.22, supporting hypothesis $H_{3.4}$. On the other hand, the direct effect of reputation on outcome fairness in Model 3 was

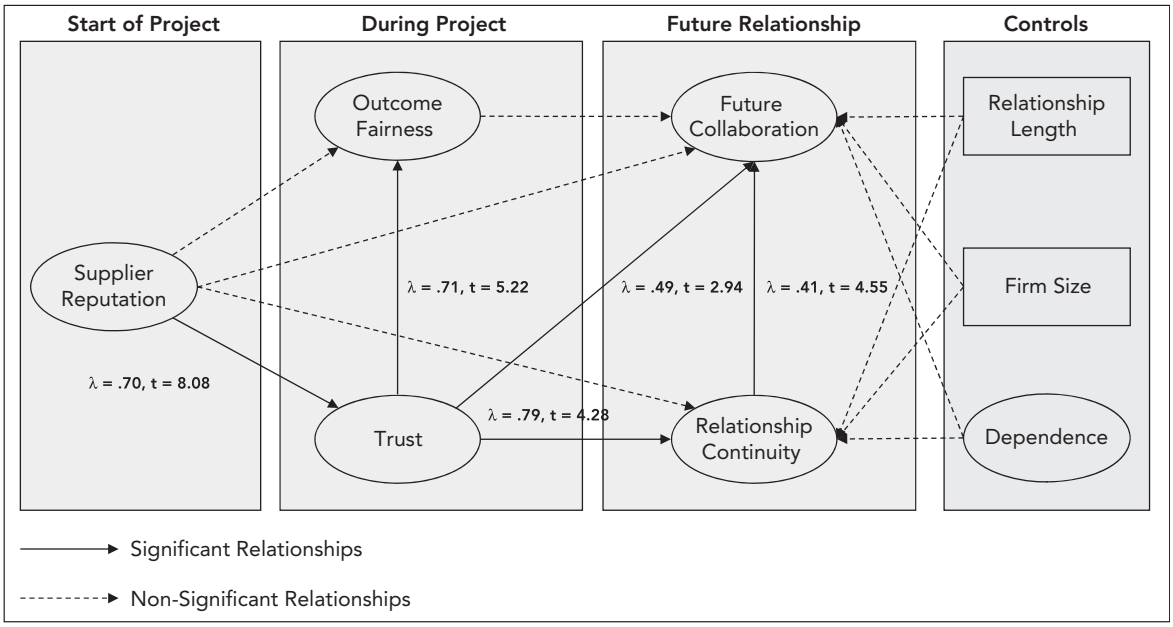
FIGURE 5
Model 2 Estimation Results: Outcome Fairness in the Model



insignificant (λ=0.04, t=0.41). Specifically, complete mediation is confirmed for the relationships between reputation ($_X$), trust ($_m$), and outcome fairness (γ) since b_{mx}(0.70, t=8.08) and b_{ym}(0.71, t=5.22) are both significant and the indirect effect of X on Y via $M(b_{mx} \times b_{ym}=0.50)$ compared with the observed r_{yx}(0.49) are not significantly different (z=0.07, $p>0.05$).

According to Morgan and Hunt (1994, p. 31), ". . .failing to include the effects [of trust] in studies of relationship marketing would result in less variance explained among the outcomes [and] . . . flawed conclusions regarding not only the direct impact . . . of trust on important outcomes, but the impact of other antecedents [such as reputation in the current study] as well." Finally, the link between relationship continuity and future collaboration ($H_{3.5}$) is again supported. As predicted, expectations of relationship continuity relate positively to a buyer's willingness to collaborate on future projects (λ=0.41, t=4.55).

FIGURE 6
Model 3 Estimation Results: Outcome Fairness and Trust in the Model



DISCUSSION AND IMPLICATIONS FOR PRACTICE

The importance of a good reputation is generally accepted in practice. Since every firm has a reputation, reputation is always a factor in buyer–supplier relationships. An anecdotal saying is that "a good reputation is difficult to build and easy to lose." Therefore, reputation is a useful choice of an antecedent in studying buyer–supplier relationships. The present study empirically explains the importance of the buyer's perception of suppliers' reputation at the start of a project collaboration as it relates to expectations of relationship continuity and future collaboration intentions in buyer–supplier relationships.

The paper empirically shows that when outcome fairness is added to the model, the factor partially mediates the effects of reputation on the future of buyer–supplier relationships. However, adding trust during the project causes complete mediation. Intentionally demonstrating the effects of fair economic rewards (outcome fairness) from a project collaboration and trust during the project collaboration may be practical ways for suppliers to attract buyers' interest in future buyer–supplier project collaboration.

The present work contributes to supply chain management theory and its related relationship theory by integrating multiparadigm theories and testing the effects on the future of relationships in German and Swiss buyer–supplier industrial settings at the project level of the relationship. In addition, we extend signaling theory and social exchange theory by integrating the theories with the concept of supply chain management. Specifically, the results of the present study indicate that a buyer's perception of a supplier's reputation at the start of the project signals potential for relationship continuity and future collaboration. However, once a buyer–supplier project commences and outcome fairness from the collaboration is considered, the effects of the buyer's perception of the supplier's reputation at the start of the project on the future of the relationship are partially mediated through outcome fairness. Therefore, when new suppliers are looking to build long-term relationships with buyers, as well as existing suppliers that want to continue to be invited to participate in project level buyer–supplier collaboration, they need to consider the effects of their reputation at the start of each new project. Then, once the project commences, suppliers will need to ensure that their reputation, signaled at the start of the project, compares positively with the buyer's perceptions of outcome fairness and trust experienced during the project collaboration.

The findings also indicate that demonstrating or signaling trust during the project collaboration is more important to the future of the relationship than perceptions of reputation at the start of the project or outcome fairness. Furthermore, since perceptions of reputation at the start of the project link more strongly to trust than fair economic outcomes, it appears that companies value the interpersonal social aspects of trust during the relationship collaboration higher than fair economic outcomes when considering the future of exchange relationships at the project level. Consequently, a negative or positive social experience regarding trust during buyer–supplier project collaborations could have a higher potential to affect future relationship intentions than the supplier's reputation at the start of the project or the perception of fair economic rewards of the relationship. Our findings on the role of trust in this study lend support to Morgan and Hunt's (1994) assertion that trust is the most important mediator in business-to-business relationships. Addressing the effects of conditions on long-term relationships without trust in the model simply do not adequately capture the phenomenon.

The findings and conclusions from the present study also make sense for supply chain management practice. A supplier can have a great reputation and a promising future with a buyer but if the buyer loses confidence in the supplier's trustworthiness during a specific project, the future of the relationship could be in jeopardy. Even after controlling for the length of the relationship, the results did not change. This would suggest that, regardless of relationship length, each new project represents an opportunity for suppliers to demonstrate outcome fairness and trust toward consideration for the next project or toward a long-term project relationship with the buyer.

The findings also extend the knowledge on the development of corporate reputation (Fombrun 1996; Dowling 2001) and suggest that while a supplier's reputation can initially signal favorable expectations to buyers, experiences during the project collaboration are more important as indicators for the potential of enduring relationships. However, the results also indicate that while the direct effect of a firm's reputation at the start of the project decreases in importance during the project collaboration, reputation is still important, but it is mediated by trust during the project collaboration. Again, trust is a key mediating factor in relationship management and its inclusion could aid in "understanding the relationship development process" (Morgan and Hunt 1994, p. 31).

It is important that corporate buyers and suppliers understand that a firm's reputation is directly related to trust during collaboration. This suggests that suppliers should consciously develop and protect good reputations by demonstrating fairness in economic business interactions and trustworthiness during project collaboration as business values. Some observable factors that could enhance unobservable reputation signals (Spence 1973) like fairness and trustworthiness include value statements in annual reports, favorable testimonials from associates, previous customers, expert opinions, publishing best practices and receipt of industry-level recognitions.

As a business strategy, supplier firms should first define fairness and trust from the perspective of their own business environment and then permeate the concepts throughout the organization. Specifically, they could (1) test the organization to determine to what extent the internal populations believe that the company values fairness and trust and act on the findings to improve internal perceptions, (2) initiate a follow-up process of self-evaluations for completed projects to compare with supplier-initiated customer evaluations on questions of fairness and trustworthiness, (3) make fairness and trust advertised and action-oriented key values of the firm, (4) ensure that fairness and trust are part of the training expectations among company representatives that work face-to-face with customers, (5) embed respect-for-fairness and trustworthiness or honesty into expected behaviors and (6) tie fairness and trustworthiness to company evaluation and reward systems.

In summary, a supplier's reputation at the start of the project is important to the future of the buyer–supplier relationship, but once the project commences, interpersonal social exchange factors such as trust and fairness are important, with trust being a much stronger determinant of the future of the relationship.

DIRECTIONS FOR FUTURE RESEARCH AND STUDY LIMITATIONS

On the one hand, buyer–supplier relationships are forged to address tangible aspects related to economic rewards such as service and performance. On the other hand, buyer–supplier relationships involve intangible aspects such as reputation and values such as fairness and interpersonal trust. Empirically testing buyer–supplier relationships using a multi-paradigm perspective (i.e., social, psychological, relationship marketing and supply chain management), such as with the present study, helps to shed new practical and theoretical insight concerning concepts traditionally not tested in supply chain management. Supply chain management scholars need to integrate multiple theories in order to address the complex phenomena associated with close buyer–supplier relationships (Poole and Van de Ven 1989; Ketchen and Hult 2011). Extending the present work would be useful. The intangible factors such as the antecedent reputation and mediators such as outcome fairness and trust in this study should be tested in other models with tangible buyer–supplier relationship performance measures, such as cost, delivery reliability or responsiveness (e.g., Liao, Hong and Rao 2010) on the customer's future intentions with their suppliers.

Scheer et al. (2003) show differences in the fairness perceptions between United States and Dutch managers. On another front, Cannon et al. (2010) show that the effects of trust are moderated by culture. Consequently there may be cultural differences that would affect the results found in this study among German-speaking managers, when testing the same models among managers in the United States, for example. Therefore, data collection using U.S.-based firms would be a logical next step to consider. Further, applying the study models in different business settings (e.g., service versus manufacturing relationships, in supply chains with a dominant retailer, high-tech versus low-tech industry), and at different levels of analysis (e.g., firm, business unit) would add to knowledge in this area.

The anecdotal evidence in this study, that Robert Bosch mentions fairness and trust as business values in the company's annual report, suggests that there may be a link between reputation for fairness and business success (Robert Bosch 2006). The relationship between a reputation for fairness and business performance would be an interesting hypothesis for future research. Finally, since the study relies on the answers from buyers, an opportunity for future research is to test the effects from the supplier's perspective and to conduct dyadic analysis.

REFERENCES

Adams, J.S. "Toward an Understanding of Inequity," *Journal of Abnormal and Social Psychology*, (67:5), 1963, pp. 422-436.

Anderson, E. and B.A. Weitz. "Determinants of Continuity in Conventional Industrial Channel Dyads," *Marketing Science*, (8:4), 1989, pp. 310-323.

Anderson, E. and B.A. Weitz. "The Use of Pledges to Build and Sustain Commitment in Distribution Channels," *Journal of Marketing Research*, (29:1), 1992, pp. 18-34.

Anderson, J.C. and D.W. Gerbing. "Structural Equation Modeling in Practice: A Review and Recommended Two-step Approach," *Psychological Bulletin*, (103:3), 1988, pp. 411-423.

Anderson, J.C. and J.A. Narus. "A Model of Distributor Firm and Manufacturer Firm Working Partnerships," *Journal of Marketing*, (54:1), 1990, pp. 42-58.

Baron, R.M. and D.A. Kenny. "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic and Statistical Considerations," *Journal of Personality and Social Psychology*, (51:6), 1986, pp. 1173-1182.

Blau, P.M. *Exchange and Power in Social Life*, Wiley, New York, 1964.

Bolton, L.E. and J.W. Alba. "Price Fairness: Good and Service Differences and the Role of Vendor Costs," *Journal of Consumer Research*, (33:2), 2006, pp. 258-265.

Borgatti, S.P. and X. Li. "On Social Network Analysis in a Supply Chain Context," *Journal of Supply Chain Management*, (45:2), 2009, pp. 5-22.

Brown, T.A. *Confirmatory Factor Analysis for Applied Research*, Gilford Press, New York, 2006.

Byrne, B.M. *Structural Equation Modeling with LISREL, PRELIS, and SIMPLIS*, Lawrence Erlbaum Associates, Mahwah, NJ, 1998.

Cannon, J.P., P.M. Doney, M.R. Mullen and K.J. Petersen. "Building Long-Term Orientation in Buyer–Supplier Relationships: The Moderating Role of Culture," *Journal of Operations Management*, (28:6), 2010, pp. 506-521.

Carr, A.S. and J.N. Pearson. "Strategically Managed Buyer–Supplier Relationships and Performance Outcomes," *Journal of Operations Management*, (17:5), 1999, pp. 497-519.

Choi, T.Y. and Y. Kim. "Structural Embeddedness and Supply Management: A Network Perspective," *Journal of Supply Chain Management*, (44:4), 2008, pp. 5-13.

Doney, P.M. and J.P. Cannon. "An Examination of the Nature of Trust in Buyer–Seller Relationships," *Journal of Marketing*, (61:2), 1997, pp. 35-51.

Dowling, G.R. *Creating Corporate Reputations*, Oxford University Press, Oxford, 2001.

Dubinsky, A.J., M. Kotabe and C.U. Lim. "Effects of Organizational Fairness on Japanese Sales Personnel," *Journal of International Marketing*, (1:4), 1993, pp 5-24.

Dwyer, F.R., P.H. Schurr and S. Oh. "Developing Buyer–Supplier Relationships," *Journal of Marketing*, (51:2), 1987, pp. 11-27.

Eberl, M. and M. Schwaiger. "Corporate Reputation: Disentangling the Effects on Financial Performance," *European Journal of Marketing*, (39:7/8), 2005, pp. 838-854.

Fehr, E. and K.M. Schmidt. "A Theory of Fairness, Competition, and Cooperation," *Quarterly Journal of Economics*, (114:3), 1999, pp. 817-868.

Fombrun, C.J. *Reputation: Realizing Value from the Corporate Image*, Harvard Business School Press, Boston, 1996.

Fornell, C. and D.F. Larcker. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, (18:1), 1981, pp. 39-50.

Fugate, B.S., T.P. Stank and J.T. Mentzer. "Linking Improved Knowledge Management to Operational and Organizational Performance," *Journal of Operations Management*, (27:3), 2009, pp. 247-264.

Galaskiwicz, J. "Studying Supply Chains from a Social Network Perspective," *Journal of Supply Chain Management*, (47:1), 2011, pp. 4-8.

Ganesan, S. "Determinants of Long-Term Orientation in Buyer–Seller Relationships," *Journal of Marketing*, (58:2), 1994, pp. 1-19.

Ghosh, M. and G. John. "When Should Original Equipment Manufacturers Use Branded Component Contracts with Suppliers?," *Journal of Marketing Research*, (46:5), 2009, pp. 597-611.

Granovetter, M. "Economic Action and Social Structure: The Problem of Embeddedness," *American Journal of Sociology*, (91:3), 1985, pp. 481-510.

Granovetter, M. "Problems of Explanation in Economic Sociology." In N. Nohria and R.G. Eccles (Eds.), *Networks and Organizations: Structure, Form and Action*. pp. 25-56, Harvard Business School Press, Boston, 1992.

Griffith, D.A., M.G. Harvey and R.F. Lusch. "Social Exchange in Supply Chain Relationships: The Resulting Benefits of Procedural and Distributive Justice," *Journal of Operations Management*, (24:2), 2006, pp. 85-98.

Hair, J.F., W.C. Black, B.J. Babin, R.E. Anderson and R.L. Tatham. *Multivariate Data Analysis*, 7th ed., Prentice Hall, Upper Saddle River, NJ, 2010.

Hansen, H., B.M. Samuelson and P.R. Silseth. "Customer Perceived Value in B-t-B Service Relationships: Investigating the Importance of Corporate Reputation," *Industrial Marketing Management*, (37:2), 2008, pp. 206-217.

Homans, G.C. "Social Behavior as Exchange," *American Journal of Sociology*, (63:6), 1958, pp. 597-606.

Homans, G.C. *Social Behavior: Its Elementary Forms*, Revised Edition, Harcourt Brace Jovanovich, New York, 1974.

Hoxmeier, J.A. "Software Preannouncements and their Impact on Customers' Perceptions and Vendor Reputation," *Journal of Management Information Systems*, (17:1), 2001, pp. 115-139.

Huang, X., M.M. Kristal and R.G. Schroder. "Linking Learning and Effective Process Implementation to Mass Customization Capability," *Journal of Operations Management*, (26:6), 2008, pp. 714-729.

James, L.R., S.A. Mulaik and J.M. Brett. "A Tale of Two Methods," *Organizational Research Methods*, (9:2), 2006, pp. 233-244.

Jap, S.D. "'Pie Sharing' in Complex Collaboration Contexts," *Journal of Marketing Research*, (38:1), 2001, pp. 86-99.

Jap, S.D. and E. Anderson. "Testing a Life Cycle Theory of Corporative Interorganizational Relationships: Movement Across Stages of Performance," *Management Science*, (53:2), 2007, pp. 260-275.

Jap, S.D. and S. Ganesan. "Control Mechanisms and the Relationship Lifecycle: Implications for Safeguarding Specific Investments and Developing Commitment," *Journal of Marketing Research*, (37:2), 2000, pp. 227-245.

Kelloway, E.K. *Using LISREL for Structural Equation Models: A Researcher's Guide*, Sage Publications, Thousand Oaks, CA, 1998.

Ketchen, D.J. and G.T.M. Hult. "Building Theory about Supply Chain Management: Some Tools from the Organizational Sciences," *Journal of Supply Chain Management*, (47:2), 2011, pp. 11-17.

Kirmani, A. and A.R. Rao. "No Pain, No Gain: A Critical Review of the Literature on Signaling Unobservable Product Quality," *Journal of Marketing*, (64:2), 2000, pp. 66-79.

Kumar, N., L.K. Scheer and J.-B.E.M. Steenkamp. "The Effects of Supplier Fairness on Vulnerable Resellers," *Journal of Marketing Research*, (32:1), 1995, pp. 54-65.

Kumar, N., L.W. Stern and J.C. Anderson. "Conducting Interorganizational Research using Key Informants,"

Academy of Management Journal, (36:6), 1993, pp. 1633-1651.

Kwon, I.-W.G. and T. Suh. "Factors Affecting the Level of Trust and Commitment in Supply Chain Relationships," *Journal of Supply Chain Management*, (40:2), 2004, pp. 4-14.

Lewis, M.W. and A.J. Grimes. "Metatriangulation: Building Theory from Multiple Paradigms," *Academy of Management Review*, (24:4), 1999, pp. 672-690.

Liao, Y., P. Hong and S.S. Rao. "Supply Flexibility and Performance Outcomes: An Empirical Investigation of Manufacturing Firms," *Journal of Supply Chain Management*, (46:3), 2010, pp. 6-22.

Lindell, M.K. and D.J. Whitney. "Accounting for Common Method Variance in Cross-Sectional Designs," *Journal of Applied Psychology*, (86:1), 2001, pp. 114-121.

Lusch, R.F. "Reframing Supply Chain Management: A Service-Dominant Logic Perspective," *Journal of Supply Chain Management*, (47:1), 2011, pp. 14-18.

MacKenzie, S.B., P.M. Podsakoff and C.B. Jarvis. "The Problem of Measurement Model Misspecification in Behavioral and Organizational Research and Some Recommended Solutions," *Journal of Applied Psychology*, (90:4), 2005, pp. 710-730.

Mitchell, V.-W. "Using Industrial Key Informants: Some Guidelines," *Journal of the Market Research Society*, (36:2), 1994, pp. 139-144.

Morgan, R.M. and S.D. Hunt. "The Commitment–Trust Theory of Relationship Marketing," *Journal of Marketing*, (58:3), 1994, pp. 20-38.

Narasimhan, R., A. Nair, D.A. Griffith, J.S. Arlbjørn and E. Bendoly. "Lock-in Situations in Supply Chains: A Social Exchange Theoretic Study of Sourcing Arrangements in Buyer–Supplier Relationships," *Journal of Operations Management*, (27:5), 2009, pp. 374-389.

Nunnally, J.C. and I.H. Bernstein. *Psychometric Theory*, 3rd edn., McGraw-Hill, New York, 1994.

Palmatier, R.W., R.P. Dant and D. Grewal. "A Comparative Longitudinal Analysis of Theoretical Perspectives of Interorganizational Relationship Performance," *Journal of Marketing*, (71:4), 2007, pp. 172-194.

Palmatier, R.W., R.P. Dant, D. Grewal and K.R. Evans. "Factors Influencing the Effectiveness of Relationship Marketing: A Meta-Analysis," *Journal of Marketing*, (70:4), 2006, pp. 136-153.

Podsakoff, P.M., S.B. MacKenzie, J.-Y. Lee and N.P. Podsakoff. "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies," *Journal of Applied Psychology*, (88:5), 2003, pp. 879-903.

Poole, M.S. and A.H. Van de Ven. "Using Paradox to Build Management and Organizational Theories," *Academy of Management Review*, (14:4), 1989, pp. 562-578.

Rindova, V.P., I.O. Williamson, A.P. Petkova and J.M. Sever. "Being Good or Being Known: An Empirical Examination of the Dimensions, Antecedents, and Consequences of Organizational Reputation," *Academy of Management Journal*, (48:6), 2005, pp. 1033-1049.

Robert Bosch. *Annual Report 2005*, Stuttgart, 2006.

Roberts, P.W. and G.R. Dowling. "Corporate Reputation and Sustained Superior Financial Performance," *Strategic Management Journal*, (23:12), 2002, pp. 1077-1093.

Scheer, L.K., N. Kumar and J.-B.E.M. Steenkamp. "Reactions to Perceived Inequity in U.S. and Dutch Interorganizational Relationships," *Academy of Management Journal*, (46:3), 2003, pp. 303-316.

Smeltzer, L.R. "The Meaning and Origin of Trust in Buyer–Supplier Relationships," *Journal of Supply Chain Management*, (33:1), 1997, pp. 40-48.

Spence, M. "Job Market Signaling," *Quarterly Journal of Economics*, (87:3), 1973, pp. 355-374.

Tangpong, C. and Y.K. Ro. "The Role of Agent Negotiations Behaviors in Buyer Supplier Relationships," *Journal of Managerial Issues*, (21:1), 2009, pp. 58-79.

Terpend, R., B.B. Tyler, D.R. Krause and R.B. Handfield. "Buyer–Supplier Relationships: Derived Value Over Two Decades," *Journal of Supply Chain Management*, (44:2), 2008, pp. 28-55.

Thibaut, J.W. and H.H. Kelley. *The Social Psychology of Groups*, John Wiley & Sons, New York, 1959.

Thorelli, H.B. "Networks: Between Markets and Hierarchies," *Strategic Management Journal*, (7:1), 1986, pp. 37-51.

Ulaga, W. and A. Eggert. "Value-Based Differentiation in Business Relationships: Gaining and Sustaining Key Supplier Status," *Journal of Marketing*, (70:1), 2006, pp. 119-136.

Vaidyanathan, R. and P. Aggarwal. "Who Is The Fairest of Them All? An Attributional Approach to Price Fairness Perceptions," *Journal of Business Research*, (56:6), 2003, pp. 453-463.

Vargo, S.L. and R.F. Lusch. "Evolving to a New Dominant Logic for Marketing," *Journal of Marketing*, (68:1), 2004, pp. 1-17.

Wagner, S.M. and R. Kemmerling. "Handling Nonresponse in Logistics Research," *Journal of Business Logistics*, (31:2), 2010, pp. 357-381.

Wathne, K.H., H. Biong and J.B. Heide. "Choice of Supplier in Embedded Markets: Relationship and Marketing Program Effects," *Journal of Marketing*, (65:2), 2001, pp. 54-56.

Yilmaz, C., B. Sezen and E.T. Kabadayi. "Supplier Fairness as a Mediating Factor in the Supplier Performance-Reseller Satisfaction Relationship," *Journal of Business Research*, (57:8), 2004, pp. 854-863.

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APPENDIX A

Buying Firm Size and Industry Breakdown

	Number of Firms	% of Samples
Annual dollar sales		
< US$50 million	57	31
US$50 million–US$99 million	40	22
US$100 million–US$199 million	16	9
US$200 million–US$499 million	13	7
US$500 million–US$999 million	11	6
US$1 billion–US$1.99 billion	5	3
US$2 billion and more	17	9
NA	24	13
Number of employees		
< 250 employees	73	40
250–499 employees	45	25
500–999 employees	16	9
1,000–2,499 employees	15	8
2,500–4,999 employees	7	4
5,000–9,999 employees	11	6
10,000 employees and more	10	6
NA	6	3
Industry breakdown		
Industrial machinery	37	20
Electronics and optics	35	19
Automotive and transport equipment	24	13
Metals and metal working	17	9
Chemicals and pharmaceuticals	14	8
Construction	6	3
Food and consumer goods	5	3
Rubber and plastic products	4	2
Textiles and clothing	3	2
Other	38	21
Total	183	100

APPENDIX B

Measures and Items

Supplier reputation (REP_SUP)	
REP_SUP1	Supplier X had a reputation for being honest
REP_SUP2	Supplier X had a reputation for being concerned about the customers
REP_SUP3	Supplier X had a bad reputation in the market (R)*
REP_SUP4	Supplier X had a reputation for being fair
Outcome fairness (FAIR)	
FAIR1	Our outcomes received from the project were just
FAIR2	The benefits of the project with Supplier X have been fair
FAIR3	Our gains from this project with Supplier X have been fair
FAIR4	Our company has benefited disproportionately from the project in comparison to Supplier X (R)*
FAIR5	We would have deserved a larger share of the outcomes (R)*
Trust (in supplier X) (TRUST)	
TRUST1	Supplier X kept promises it made to our firm during the project*
TRUST2	Supplier X was always honest with us during the project
TRUST3	We believed the information that Supplier X provided us during the project*
TRUST4	Supplier X was genuinely concerned during the project that our business succeeded
TRUST5	When making important decisions during the project, Supplier X considered our welfare as well as its own*
TRUST6	We trusted Supplier X keeps our best interests in mind during the project*
TRUST7	Supplier X was trustworthy during the project
TRUST8	We found it necessary to be cautious with Supplier X during the project (R)*
Relationship continuity (CONTINUE)	
CONTINUE1	We expect our relationship with Supplier X to continue for a long time
CONTINUE2	Renewal of relationship with Supplier X is virtually automatic
CONTINUE3	It is likely that our firm will still be doing business with Supplier X in 2 years
Future collaboration (FUTURE)	
FUTURE1	We would welcome the possibility of collaboration with Supplier X in additional projects in the future*
FUTURE2	We would be willing to work with Supplier X in projects in the future
FUTURE3	We would be willing to collaborate with Supplier X in projects, should the opportunity arise
Controls	
Dependence (on supplier X) (DEP_SUP)	
DEP_SUP1	If our relationship had been discontinued with Supplier X, we would have had difficulty achieving our goals
DEP_SUP2	It would have been difficult for us to replace Supplier X
DEP_SUP3	We were quite dependent on Supplier X*
DEP_SUP4	We did not have a good alternate to Supplier X
Relationship length	For how many years had your company been working with Supplier X at the beginning of the project (in full years)?
Firm size	How would you evaluate the size of your company compared to Supplier X at the beginning of the project? Concerning sales volume our company was . . .1 (Much smaller)–5 (Much bigger)

If not indicated otherwise, items are anchored by *strongly disagree* (1) and *strongly agree* (5).
*Item dropped in final measurement model. (R) Reverse-coded item.