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# Does Trust Matter? Exploring the Effects of Interorganizational and Interpersonal Trust on Performance

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Interpersonal and inter-organizational trust have been widely cited as important components of economics exchanges. However, rarely have these concepts been measured and their implications examined. This paper focuses on these difficult tasks.

Jay B. Barney

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## Abstract

A conceptual challenge in exploring the role of trust in inter-organizational exchange is translating an inherently individual-level concept—trust—to the organizational-level outcome of performance. We define interpersonal and interorganizational trust as distinct constructs and draw on theories of interorganizational relations to derive a model of exchange performance. Specifically, we investigate the role of trust in interfirm exchange at two levels of analysis and assess its effects on negotiation costs, conflict, and ultimately performance. Propositions were tested with data from a sample of 107 buyer-supplier interfirm relationships in the electrical equipment manufacturing industry using a structural equation model. The results indicate that interpersonal and interorganizational trust are related but distinct constructs, and play different roles in affecting negotiation processes and exchange performance. Further, the hypotheses linking trust to performance receive some support, although the precise nature of the link is somewhat different than initially proposed. Overall, the results show that trust in inter-organizational exchange relations clearly matters.

(*Interorganizational Trust; Interfirm Relations; Relational Governance*)

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The sharp increase in various forms of interfirm cooperation in the current economic environment has stimulated a profusion of research on such interfirm ties, and more

specifically on the role of trust in facilitating the organization and coordination of economic activities between firms. A special issue of *The Academy of Management Journal* (1995) on the subject of collaborative interfirm ties noted editorially that the role of trust in cooperative relationships is of fundamental importance and that “the study of trust and its impact on cooperative relationships at all levels may be a particularly fruitful area of future research” (Smith et al. 1995, p. 15). Despite the importance of understanding the nature of trust in cooperative interfirm relationships, considerable ambiguity is evident in the literature about the precise role of trust as it operates at different levels of analysis and its influence on performance.

A fundamental challenge in conceptualizing the role of trust in economic exchange is extending an inherently individual-level phenomenon to the organizational level of analysis. Not clearly specifying how trust translates from the individual to the organization level leads to theoretical confusion about who is trusting whom because it is *individuals* as members of organizations, rather than the organizations themselves, who trust. The ambiguity about the multilevel nature of trust is apparent in theoretical frameworks that address the role of trust in economic exchange, notably transaction cost economics (Williamson 1975, 1985). Specifically, transaction cost theory implies that *firms* tend to behave opportunistically

(Williamson 1975, 1985), thereby attributing (micro) individual motivations and behaviors to (macro) organizations and thus committing a “cross-level fallacy” (Rousseau 1985). We maintain that theories of interfirm exchange that simply view opportunism—or conversely, trust—as a property of organizations without specifying the link between micro and macro levels is inaccurate as it tends to anthropomorphize the organization.

Some imprecision about the roles of trust at multiple levels of analysis and how trust is related across levels is also apparent in economic sociology, more specifically in relational exchange (Dore 1983, Macneil 1980). A central premise of relational exchange theory is that personal relations generate trust and discourage opportunistic behavior between firms. However, that perspective does not address how interpersonal trust influences the economic exchange between and among complex social systems, such as organizations. Simply stated, the relational exchange perspective does not stipulate the mechanisms by which *individual*-level action affects *organizational*-level outcomes.

Further, though several theoretical traditions have recognized the importance of trust in economic exchange (e.g., Arrow 1974, Granovetter 1985, Macauley 1963), little research has been done to explain how trust, particularly when conceptualized as a multilevel phenomenon, operates to affect the *performance* of interfirm exchange. In particular, the organizational and strategy literature (e.g., Gulati 1995) has asserted that trust in interfirm exchange is beneficial and can be a source of competitive advantage (Barney and Hansen 1995). In the organizational economics literature, trust has been theorized to reduce opportunistic behavior, and hence transaction costs of exchange, ultimately resulting in more efficient governance (Bromiley and Cummings 1995, John 1984). However, though the link between trust and performance in economic exchange has been frequently theorized in general terms, elucidating the precise nature of the trust-performance relationship in a multi-level context remains an important theoretical and empirical challenge.

The primary objective of our research is to explain how trust operates at both individual and organizational levels of analysis, how trust at the two levels is related, and particularly how the mechanisms by which this inherently individual-level phenomenon translates into an organizational-level outcome: performance. We argue that in an actual exchange relationship, the role of individual boundary spanners, acting on behalf of their organizations, has an important influence on interfirm exchange. In particular, we propose that institutionalized

practices and routines for dealing with a partner organization create a stable context within which interorganizational and interpersonal trust develop. Further, we maintain that there is a reciprocal relationship between trust at the two levels of analysis, and neither alone is sufficient for understanding relational exchange performance. We conceptualize the trust-performance link as being mediated by interfirm negotiation processes, and we identify the influence of trust at each level on eventual exchange performance.

We tested our propositions on a sample of 107 buyer-supplier interfirm relationships in the electrical equipment manufacturing industry using a structural equation model. Our hypotheses linking trust to performance are partially supported, but several of our findings were unexpected. The results indicate that interpersonal and interorganizational trust are related but distinct constructs, and play different roles in affecting exchange performance.

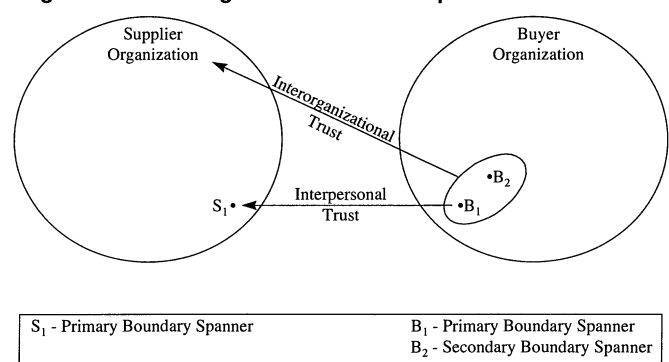
## Theory and Hypotheses

### Interpersonal and Interorganizational Trust

We use the term *interpersonal* trust to refer to the extent of a boundary-spanning agent's trust in her counterpart in the partner organization. In other words, interpersonal trust is the trust placed by the individual boundary spanner in her individual opposite member. The term *interorganizational* trust is defined as the extent of trust placed in the partner organization by the members of a focal organization (see Figure 1).

Although considerable research in psychology and sociology has focused on trust in individuals (e.g., Rotter 1971) and in social groups (e.g., Lewis and Weigert 1985a, Zucker 1986), in the organizational and interorganizational context the role of trust has only recently attracted interest, notably in the marketing channels literature (e.g., Anderson and Narus 1990), and in strategy

**Figure 1** Interorganizational and Interpersonal Trust



and organizational research (e.g., Bradach and Eccles 1987, Ring and Van de Ven 1992, Zaheer and Venkatraman 1995). As a result of both the range of disciplinary lenses used to study trust and the inherent ambiguity of the trust construct, there is currently a confusing assortment of conceptual perspectives on trust. For our purposes, two principal issues are involved in developing a working definition of the trust construct: (1) the intrinsically complex and multifaceted nature of trust (Corazzini 1977) and (2) the variety of units and levels of analysis to which trust has been applied.

In addressing the first issue, we focus on the exchange dyad to develop a definition of trust that is inherently *relational* because we are specifically interested in studying the role of trust in economic exchange and, more generally, in interorganizational relationships. The literature on interorganizational relations provides two general definitions of trust: confidence or predictability in one's expectations about another's behavior, and confidence in another's goodwill (Ring and Van de Ven 1992). We use and extend both conceptualizations and define trust as the *expectation* that an actor (1) can be relied on to fulfill obligations (Anderson and Weitz 1989), (2) will behave in a predictable manner, and (3) will act and negotiate fairly when the possibility for opportunism is present (Anderson and Narus 1990, Bromiley and Cummings 1995). Our conceptualization of trust as an expectation rather than a conviction reflects an uncertain anticipation of the referent's future behavior. Our definition explicitly allows for the possibility of betrayal, which we view as an inherent feature of trust. This probabilistic element of trust is analogous to making a "leap of faith" by placing confidence in a referent without knowing with absolute certainty that the referent's future actions will not produce unpleasant surprises. Our definition therefore characterizes interorganizational trust as being based on three components—reliability, predictability,<sup>1</sup> and fairness—that capture some of the complexity of trust (Lewis and Weigert 1985b, Rempel and Holmes 1986, Rempel et al. 1985).

Our conceptualization of trust also explicitly recognizes the distinction between relational and dispositional trust. Whereas dispositional trust is an individual trait reflecting expectancies about the trustworthiness of others in general (Rotter 1971), relational forms of trust pertain specifically to the counterpart in the dyad. That distinction is important because high relational trust does not imply naively trusting all exchange partners. Rather, relational trust is likely to be based on experience and interaction with a *particular* exchange partner (Ring and Van de Ven 1992).

The second issue involved in developing a working

definition of the trust construct concerns the level of analysis involved. The *Oxford English Dictionary* defines trust as "confidence in or reliance on some quality or attribute of a *person or thing*" (emphasis added), highlighting the fact that the *referent* of trust may vary. In other words, it is conceptually consistent to view trust as being placed in another individual or in a group of individuals such as the partner organization. However, the same cannot be said for the *origin* of trust. In our view, trust has its basis in individuals, although individuals in an organization may share an orientation toward another organization. From this perspective, interorganizational trust describes the extent to which organizational members have a collectively-held trust orientation toward the partner firm, which is quite different from saying that organizations trust each other. In contrast, we view interpersonal trust as also made up of the three elements—reliability, predictability, and fairness—but with an individual as *both* the referent and origin of trust.

We note that trust as represented by the three components can be expressed in different forms—cognitive, behavioral, and emotional—at both the interpersonal and the interorganizational levels. However, we recognize that to do full justice to the complexity of trust would require considerably more elaborate schemes (e.g., Cummings and Bromiley 1996).

### Micro-Macro Links in Interorganizational Relations

Organizations are far from monolithic. Rather, as Pfeffer (1982, p. 64) notes, they are "... pluralistic, divided into interests, sub-units, and subcultures." Similarly, rather than the relationship between organizations being faceless and monolithic, it is actively handled and managed by *individual boundary spanners* (Katz and Kahn 1978) whose orientations and motivations may well be different from those of the organization as a whole. Boundary spanners are more closely involved in the interorganizational relationship than other members of the organization, and tend to interact with their counterparts to a greater extent (Friedman and Podolny 1992). Hence, when examining the characteristics of an interorganizational relationship, we need to study the individual and organizational levels simultaneously (Rousseau 1985). In the eyes of some scholars, theory-driven research on multilevel phenomena is what "sets [this] field apart from its parent disciplines in that most of what we study in and about organizations are phenomena that are intrinsically mixed-level" (Rousseau 1985, p. 2). In particular, the outcomes of trust may be different when the boundary-spanning individual is considered separately from the rest of the organization, with important consequences for performance.

We argue that the connection between interpersonal and interorganizational trust is based on institutionalizing processes. Over time, repeated ties between two firms evolve into deeper and more stable cooperative arrangements (Gulati 1995). Although individual boundary spanners come and go, role definitions are stable and enduring (Ring and Van de Ven 1994). Institutionalizing processes codify informal commitments made by individual boundary spanners, which over time become established and taken-for-granted organizational structures and routines (Zucker 1977). Thus, as new individual boundary spanners enter the interfirm exchange relationship, they become socialized into the norms of the mini-society it represents (Macneil 1980). Norms from the interorganizational relationship are internalized and recreated in boundary spanners' interpersonal trust orientations toward each other in the process of conducting exchange. At the same time, interpersonal trust becomes reinstitutionalized and boundary spanners' trust orientation in turn influences the orientation of other organizational members toward the partner organization. The creation and recreation of trust structures and action at the interpersonal and interorganizational levels is akin to Giddens' (1979) concept of structuration. In sum, the foregoing arguments imply that interorganizational trust and interpersonal trust exert a positive influence on each other.

**HYPOTHESIS 1.** *There is a positive relationship between the extent of interpersonal trust and interorganizational trust in an interfirm dyad.*

### **Trust as Reducing Costs and Improving Performance**

*Trust as Reducing Costs of Negotiation.* Consistent with the organization economics literature, we define negotiating costs as those involved in reaching mutually acceptable agreements. By this definition, negotiating costs include the time and effort required to determine "efficient courses of action, and to settle on divisions of costs and benefits" (Milgrom and Roberts 1992, p. 147). In particular, bounded rationality, uncertainty, and information asymmetries stemming from imperfect communication, private information, and observation and verification difficulties, all contribute to increasing costs of negotiation.

Negotiations are less costly under conditions of high interorganizational trust because agreements are reached more quickly and easily as parties are more readily able to arrive at a "meeting of the minds." Interorganizational trust mitigates the information asymmetries inherent in interfirm exchange by allowing more open and honest

sharing of information. As a result, partners' expectations about how changes in the external environment will affect their exchange relationship tend to converge (Malmgren 1961). Specifically, when unforeseen contingencies arise, such as costs not explicitly covered by the terms of a contract, high levels of trust facilitate the development of a common understanding about the contingencies and how they might be resolved. When interorganizational trust is high, negotiating positions are based on similar underlying assumptions, and agreements are likely to be reached more quickly. In a related vein, we suggest that trust promotes negotiating efficiency by enabling each exchange partner to be more flexible in granting concessions because of the expectation that the other exchange partner will reciprocate in the future (Dore 1983).<sup>2</sup>

From a transaction cost perspective, the most compelling argument for the superior efficiency of interorganizational relationships that involve trust is simply that trust reduces the inclination to guard against opportunistic behavior (i.e., deliberate misrepresentation) on the part of the exchange partner (Bromiley and Cummings 1995, Dore 1983, John 1984). Under conditions of low trust, lengthy and difficult negotiations over unforeseen contingencies are likely to take place between exchange partners because of the possibility of both *ex ante* and *ex post* opportunism (Williamson 1975). In addition, contractual and structural safeguards are put in place to protect investments in the relationship (Williamson 1985). Under high trust conditions, in contrast, firms are less inclined to rely on elaborate safeguards for specifying, monitoring, and enforcing agreements. Relations high in trust therefore imply more efficient exchange governance in the form of eased negotiations.

**HYPOTHESIS 2.** *There is a negative relationship between interorganizational trust and costs of negotiation between the partners to the exchange.*

At the level of individual boundary spanners, the negotiation literature suggests that a trust-based relationship is conducive to the discovery of mutually beneficial, integrative solutions (Walton and McKersie 1965). Trusting relations between boundary spanners also have been found to be associated with easier negotiations (Currall and Judge 1995). Negotiations may be easier because of boundary spanners' willingness to share sensitive information and their confidence that information provided by the counterpart is not misrepresented. Consequently, we expect mutually beneficial agreements to be reached more quickly when boundary spanners trust each other. We argue that the relationship between interpersonal trust and costs of negotiation is likely to be negative, similar to that between interorganizational trust and negotiating costs.

**HYPOTHESIS 3.** *There is a negative relationship between interpersonal trust and costs of negotiation between the partners to the exchange.*

*Trust as Reducing Conflict.* Because firms' objectives in exchange relationships are rarely identical, divergent goals and unforeseen contingencies in their day-to-day relationships are likely to result in disagreements. Relational exchange ties that are imbued with trust are characterized by the internal harmonization of conflict and an array of norms and social processes that work to preserve the relationship (Macneil 1980). Partners in relational exchange that have forged a high level of interorganizational trust are more likely to give each other the benefit of the doubt and greater leeway in mutual dealings. Such leeway will tend to reduce the scope, intensity, and frequency of dysfunctional conflict.

Alternatively, rather than *reducing* the incidence of conflict, high levels of interorganizational trust may actually *promote* conflict. In particular, the "mixed-motive" nature (Sako 1992) of buyer-supplier relationships creates tension between cooperation and competition. Interorganizational trust gives exchange partners the confidence to be open with each other, knowing that information shared will not be used against them. However, though such openness may facilitate the discovery of solutions that increase the size of the collective economic pie, it could also lead to disagreement over the pie's distribution. As additional opportunities for profit are recognized, the incentives for exchange partners to attempt to capture a larger proportion for themselves are raised (Helper and Levine 1992). The divergence in their goals (e.g., to appropriate as much of the pie as possible for themselves) may become more salient. As a result, efforts by exchange partners to appropriate the gains from the relationship for themselves are likely to be manifested as conflict.

One way of resolving the apparent inconsistency between arguments for positive and negative effects of trust on conflict is to view those alternatives in the context of extended exchange relationships. From that perspective, higher trust may temporarily be associated with higher conflict, but over time interfirm disagreements will tend to lead to either termination or reaffirmation of the relationship. In the latter case, trust is likely to reduce conflict. Based on this line of reasoning, we hypothesize,

**HYPOTHESIS 4.** *There is a negative relationship between interorganizational trust and the level of conflict in the exchange relationship.*

Because the boundary spanners are active participants in the process of managing the exchange relationship,

their interpersonal relationship is likely to affect the level of conflict (Currall and Judge 1995). Where interpersonal trust between boundary spanners is high, the parties are likely to develop solutions that are focused on the problem at hand rather than on the personalities involved (Fisher and Ury 1991). Moreover, when interpersonal trust is high, a boundary spanner is likely to give the counterpart the benefit of doubt rather than jumping to conclusions about the other's motives and intentions. Further, as conflict often derives from unexpected actions by one party, the predictability inherent in high levels of interpersonal trust is likely to be associated with lower levels of conflict.

A contrasting view of the link between interpersonal trust and conflict is based on the premise that interpersonal trust may actually allow conflict to surface without disruptive consequences. We argue that individuals involved in exchange relationships characterized by trust may be more likely to confront and resolve disagreements rather than smoothing them over. This notion is akin to the idea that boundary spanners are more likely to confront trusted counterparts with "harsh truths" than those they do not trust. In such cases, the parties are able to accept periodic disagreements without fear of exploitation because the risk that conflict will permanently damage the interpersonal relationship is lower in the presence of interpersonal trust (Walton and McKersie 1965). Paradoxically, we expect such confrontations ultimately to *reduce* conflict among boundary spanners by enabling the individuals to resolve issues in a comprehensive way that gets at the underlying cause of problems rather than treating them superficially. As a result, the sum total of conflict is lower in a high trust than in a low trust relationship. The process of resolving core differences may be conflictual, but in the end it promotes smoother and more harmonious interactions in the future.

**HYPOTHESIS 5.** *There is a negative relationship between interpersonal trust and the level of conflict in the exchange relationship.*

*Costs of Negotiation and Performance.* A central premise of organization economics is that costs are associated with conducting exchange (Coase 1937). Such transaction costs stem from the inability of exchange partners to specify contingencies fully in a contract (Williamson 1985). The efficiency and performance of an exchange relationship are consequently greatly influenced by the parties' ability to limit the costs associated with contracting, in particular the costs of negotiation and renegotiation. As mentioned earlier, we conceptualize negotiating costs as the time and effort expended by the

exchange partners to arrive at agreements about the distribution of costs and benefits (Milgrom and Roberts 1992).

We maintain that exchange performance<sup>3</sup> is lowered when negotiation costs are high because "... bargaining position[s] carry direct costs that the bargainers may wish they could all avoid. In this regard, the time and energy so often spent haggling, posturing, and delaying agreements in attempts to influence the terms of the deal are related wastes" (Milgrom and Roberts 1992, p. 149). The resources expended in such costly haggling and negotiation take their toll on performance because the exchange partners are distracted from their business. More specifically, when contingencies arise, such as unexpected costs not explicitly covered by the contract or unanticipated design changes, high levels of interorganizational trust enable the partners to address these contingencies without resorting to legalistic remedies. For example, rather than concentrating on assigning blame and debating responsibility for bearing the costs of changes, the parties will tend to direct their efforts toward determining how best to reach mutually beneficial solutions.

**HYPOTHESIS 6.** *There is a negative relationship between supplier performance and costs of negotiation between the partners to the exchange.*

**Conflict and Performance.** Disagreements are a natural aspect of interorganizational exchange and may result in damaging conflict or may be worked out amicably with consequences that are largely positive (Anderson and Naurus 1990, Dwyer et al. 1987). As one industry participant we interviewed put it:

... to maximize return we can only do it through a managed—not adversarial—relationship. Although some conflict is there, we respect each others' business goals.

If conflict is frequent and pervasive, however, the outcomes may be dysfunctional because of the increased time and effort spent resolving the conflict, the involvement of other, more senior, members of the organization, the spill-over of the conflict into other areas, and the like. In such cases the performance of the supply relationship tends to decline as the parties' efforts are directed toward non-value-enhancing activities.

**HYPOTHESIS 7.** *There is a negative relationship between supplier performance and the level of conflict in the exchange relationship.*

### Control Variables

Other elements of the transaction context play a role in the structuring of the dyadic relationship and in the performance of the relationship. In particular, asset specificity, or the extent to which a party's assets are dedicated

to the transaction, influences dyadic governance structure by requiring safeguards against appropriation of the associated rents. Uncertainty in the transaction environment increases the number of contingencies, creating greater potential for opportunistic renegotiation of the terms of the contract. Together, asset specificity and uncertainty have been theorized to influence the governance structure, which is the framework within which firms negotiate, execute, and monitor exchange agreements (Williamson 1985). Prior research has demonstrated that relationship performance is influenced by a governance structure that safeguards the firm's specific assets in the presence of uncertainty (e.g., Heide and John 1990, Walker and Weber 1984). Given the extensive history of research in this area, we *control* for asset specificity, environmental uncertainty, and governance form, and do not hypothesize specific relationships between these constructs.

## Methods

### Data

Data on dyadic exchange relationships of electrical equipment manufacturers and their component suppliers were gathered in four phases. In phase 1 an original group of manufacturing firms in the "Electronic and Other Electrical Equipment and Components" industry (SIC code 3600) was constructed. We selected this industry because it contains a wide range of purchasing arrangements and provides a sampling frame of adequate size. A list of purchasing managers in the firms who are members of the National Association of Purchasing Managers (NAPM) was made available to us by the association. Extensive semistructured interviews, each 45 minutes to one hour long, were held with 20 purchasing managers from different firms in the industry.

In phase 2 we identified 1,050 NAPM members who were eligible to participate in our study on the basis of the following criteria: (1) their firms purchase components, (2) they deal directly with supplier firms, and (3) they have purchasing relationships with at least six suppliers. These NAPM members received a letter requesting their participation in our study of buyer-supplier relationships. We also asked purchasing managers to identify a specific supplier firm that provides their firm with some key component used in the final product.

To control for potentially confounding effects on relational governance caused by the importance of a supplier and by the amount of purchases made from it, we used a randomizing procedure (Anderson and Narus 1990). We asked purchasing managers to select their *fourth* largest supplier and to identify a specific individual

(i.e., the individual counterpart) with whom they have been dealing personally. The procedure of selecting the fourth largest rather than the largest supplier also mitigates social desirability bias, which is sometimes present in questionnaire research. A total of 153 purchasing managers agreed to participate and sent the requested information about a specific supplier.

**Testing for Nonresponse Bias.** The participation rate of approximately 15% (i.e., 153/1,050) was somewhat low and suggested the potential for nonresponse bias. We therefore conducted a telephone survey of 100 randomly selected nonparticipants to determine whether there were any systematic differences between our sample and the rest of the population. We carried out *t*-tests for differences in the means of participating and nonparticipating firms on certain key variables. No significant differences in the means were found for the size of firms ( $t = 1.10$ ), length of the business relationship with the supplier company ( $t = -0.81$ ), or satisfaction with the buyer-supplier relationship ( $t = -0.56$ ). Hence, we believe the threat to internal validity of the results is limited.

**Questionnaires.** To increase the reliability and validity of our measures we developed two separate questionnaires on the basis of the semistructured interviews and previous research: one for the purchasing managers and another for a second respondent in the purchasing organization (Bagozzi et al. 1991). The questionnaire for the second respondent was identical to that for the purchasing managers with the exception that all items corresponding to the interpersonal relationship between the purchaser's and the supplier's representatives were eliminated. Questionnaires were pretested among local purchasing managers in the same industry, who were subsequently excluded from the sample.

In phase 3 of the data collection, we mailed the questionnaires to the 153 purchasing managers and to the second respondents. In total, questionnaires were mailed to 306 individuals in the buyer organization. In the final phase of our data collection we implemented Dilman's (1978) techniques for maximizing the response rate with follow-up correspondence, questionnaires, and telephone calls.

We received a total of 205 responses for a final response rate of 67% of individuals eligible and willing to participate (205/306). Of the 205 completed questionnaires received, 120 were from purchasing managers and 85 were from the second respondent in the purchasing organization.

**Assessing Multiple Informant Competence.** We collected data from multiple informants with the aim of addressing concerns about single-informant bias in research on interorganizational relations (Kumar et al. 1993, p.

1634). However, that approach poses a further problem of identifying additional individuals competent to report on a particular dyadic relationship. We evaluated the competency of the second informant in the purchasing organization by including an item designed to measure specific knowledge of the firm's business relationship with the focal supplier. Of the 85 second informants surveyed, 77 (91%) responded to the item "I am familiar with most aspects of our business relationship with Supplier X" by circling four or higher on a scale from one (strongly disagree) to seven (strongly agree). Any second informants responding three or lower were removed from our dataset and not included in any analyses. Of the 77 qualified second informants retained, 68 had matching questionnaires from purchasing managers.

## Measurement

**Scales.** Table 1 reports the details of the measurement items and scales used to operationalize our theoretical constructs. Where available, we used measurement instruments from the literature to develop constructs. Some items were modified to reflect the specific context of the study. The Cronbach alpha reliability value for each construct is also reported in Table 1. The reliability values of the measurement scales all exceed the recommended value of 0.70 (Nunnally 1978) with the exception of that for the joint action construct, which is marginal at 0.64. Details of the development of the trust constructs follow.

**Trust:** To develop measures of trust at the two levels of analysis we relied primarily on a measurement instrument created and validated by Rempel et al. (1985) as modified by Rempel and Holmes (1986). We chose to base our trust scales on that instrument because it was designed specifically to tap trust in close, personal relationships rather than a more general trusting orientation. However, not all of the Rempel and Holmes items were applicable to our research context. In particular, we excluded items measuring a faith element and replaced them with items designed to measure the fairness component of trust based on our conceptualization of trust in an exchange context. We also eliminated items that did not apply to both the interorganizational and interpersonal levels. We further adapted the instrument for use in an interfirm context by altering the referent of trust (which was either the organization or the individual counterpart, referred to as the "contact person"). Last, we ensured that items corresponding to all three forms of trust—cognitive, behavioral, and emotional—were represented in the scales, consistent with our conceptualization.

We created parallel instruments to measure trust at both levels of analysis. The initial item pool for interorganizational and interpersonal trust scales contained the same



**Table 1**      **Measurement Instruments**

Measures and Items	Internal Consistency Reliability ( $\alpha$ )	Source
<p><i>Interorganizational Trust</i></p> <p>1. Supplier X has always been evenhanded in its negotiations with us.  2. Supplier X may use opportunities that arise to profit at our expense.<sup>a</sup>  3. Based on past experience, we cannot with complete confidence rely on Supplier X to keep promises made to us.<sup>a</sup>  4. We are hesitant to transact with Supplier X when the specifications are vague.<sup>a</sup>  5. Supplier X is trustworthy.  (1 = strongly disagree, 4 = neither agree nor disagree, 7 = strongly agree)</p>	0.7664	Adapted from Rempel and Holmes (1986)
<p><i>Interpersonal Trust</i></p> <p>1. My contact person has always been evenhanded in negotiations with me.  2. I know how my contact person is going to act. S/he can always be counted on to act as I expect.  3. My contact person is trustworthy.  4. I have faith in my contact person to look out for my interests even when it is costly to do so.  5. I would feel a sense of betrayal if my contact person's performance was below my expectations.  (1 = strongly disagree, 4 = neither agree nor disagree, 7 = strongly agree)</p>	0.8799	Adapted from Rempel and Holmes (1986)
<p><i>Negotiation</i></p> <p>1. How <i>easy</i> are negotiations between your business unit and Supplier X over sharing the burden of costs (not explicitly covered by the contract) when  a. Your business unit requests engineering changes?  b. Supplier X's raw material costs increase?  (1 = not at all, 4 = somewhat, 7 very much)  2. How <i>quick</i> are negotiations between your business unit and Supplier X over sharing the burden of costs (not explicitly covered by the contract) when  a. Your business unit requests engineering changes?  b. Supplier X's raw material costs increase?  (1 = very easy, 4 = somewhat difficult, 7 = very difficult)</p>	0.8824	New Items
<p><i>Conflict</i></p> <p>1. During the past year how often were there significant disagreements between  a. Your business unit and Supplier X?  b. You and the contact person?  (1 = never, 4 = sometimes, 7 = very often)</p>	0.8104	Adapted from Van de Ven and Ferry (1980)
<p><i>Supplier Performance</i></p> <p>1. Please rate Suppliers X's performance on fulfilling each of the following goals:  a. Competitive price  b. Timeliness of delivery  c. High quality supply  (1 = very poor, 4 = fair, 7 = excellent)</p>	0.7502	New Items
<p><i>Asset Specificity</i></p> <p>1. Our production system has been tailored to meet the requirements of dealing with Supplier X.  2. Gearing up to deal with Supplier X requires highly specialized tools and equipment.  3. Our production system has been tailored to using the particular items bought from Supplier X.  4. We have made significant investments in tools and equipment dedicated to our relationship with Supplier X.  (1 = strongly disagree, 4 = neither agree nor disagree, 7 = strongly agree)</p>	0.7069	Adapted from Heide and John (1990)

**Table 1** Continued

Measures and Items	Internal Consistency Reliability ( $\alpha$ )	Source
<p><i>Uncertainty</i></p> <p>0.7700</p> <p>Adapted from Noordewier, John, and Nevin (1990)</p> <p>1. How would you describe the supply of the component purchased from Supplier X compared to other similar products (not only provided by Supplier X)?</p> <p>a. Stable availability<sup>a</sup></p> <p>b. Easy to monitor technological trends<sup>a</sup></p> <p>c. Stable industry volume<sup>a</sup></p> <p>d. Accurate sales forecasts<sup>a</sup></p> <p>(1 = not at all, 4 = somewhat, 7 = very much)</p>		
<p><i>Joint Action</i></p> <p>0.6412</p> <p>New Items</p> <p>1. Supplier X provides our business unit with cost structure information for the component we purchase from them.</p> <p>2. We share with Supplier X our long-term plans for our products.</p> <p>3. Our business unit helps out Supplier X in whatever ways they ask.</p> <p>4. Our business unit has been actively pursuing JIT (Just-In-Time) practices with Supplier X.</p> <p>5. Our business unit relies heavily upon TQM (Total Quality Management) policies to manage its relationship with Supplier X.</p> <p>(1 = strongly disagree, 4 = neither agree nor disagree, 7 = strongly agree)</p>		

<sup>a</sup>Reverse coded.

set of items. However, factor analysis of the two trust measures revealed that a reduced final set of items provided measurement properties superior to those of our earlier conceptualization of trust as containing the three components of predictability, reliability, and fairness. In particular, we found that the emotional form of trust emerged in the interpersonal trust construct but not in the interorganizational one. Further, the predictability items dropped out of the interorganizational scale and reliability did not emerge in the interpersonal scale. The final item pool contained five items each for interorganizational trust and interpersonal trust, of which three correspond to the original items in the Rempel and Holmes (1986) scale.

Of the five items for the construct *interorganizational trust*, two items reflected the fairness component of trust, one item directly assessed interorganizational trust, and the other two tap the reliability aspect of trust. We discarded items measuring predictability after assessing the construct for unidimensionality, as mentioned previously.

The five-item scale for *interpersonal trust* consists of one item related to predictability, three items related to fairness, and one item that directly assesses interpersonal trust. Items measuring the reliability element of interpersonal trust were eliminated as a result of the assessment for unidimensionality.

**Negotiation:** We operationalized the costs of negotiation with a four-item scale. Two items captured the ease and speed of negotiations pertaining to engineering changes and two items measured the ease and speed of negotiations pertaining to increases in raw materials costs.

**Conflict:** Two items measured the degree of conflict between the two organizations and the level of conflict between the two boundary-spanning individuals. The items were adapted from Van de Ven and Ferry (1980).

**Performance:** We operationalized the performance construct with a four-item scale reflecting the degree to which the supplier organization fulfilled the goals of competitive price, timeliness of delivery, high quality supply, and supplier flexibility (Heide and Stump 1995, Walker 1994).<sup>4</sup> The operationalization is based on the reasoning that "the less cooperative the supplier is in meeting the buyers' needs, the higher the transaction costs the buyer incurs in trying to achieve its goals in the supply relationship" (Walker 1994, p. 583). This operationalization is also consistent with the marketing channels literature (Heide and Stump 1995).

**Asset specificity:** Our asset specificity construct was based on a four-item scale measuring the extent to which the production system is customized for the exchange

partner in terms of investments in specialized tools and equipment (Heide and John 1988).

**Uncertainty:** Four items, adapted from Noordewier et al. (1990), measured the degree of environmental uncertainty in terms of industry volume, technological trends of the market, stable availability, and accuracy of forecasts.

**Joint Action:** The joint action construct was measured on a five-item scale reflecting the degree of interpenetration of organizational boundaries and the extent to which the exchange activities are carried out in a cooperative and coordinated manner (Heide and John 1990).

**Modeling Approach.** We used the estimation procedure of LISREL 7 (Jöreskog and Sörbom 1989) to construct a structural equation model to test our hypotheses. The LISREL technique has the advantage over standard regression analysis of explicitly considering the measurement error in the indicators and simultaneously estimating a system of structural equations. However, researchers have noted the difficulty of fitting LISREL models with a large number of items per latent variable (Williams and Hazer 1986). Specifically, as the number of items and parameters increases, the model “can be unwieldy because of likely high levels of random error in typical items and the many parameters that must be estimated” (Bagozzi and Heatherton 1994, p. 43). Because of the complexity of our conceptual model and the relatively large number of manifest variables, particularly for the trust constructs, we used the *partial aggregation model* described by Bagozzi and Heatherton (1994). The partial aggregation approach addresses this modeling problem by consolidating the manifest items of a latent variable into a smaller number of composite indicators.

To construct the composite indicators, we first evaluated each construct for unidimensionality using factor analysis (Williams and James 1994). We then ranked each construct’s items according to their loadings and assigned them to one of two indicators. The mean of the items assigned to each indicator was used as the value for the indicator. The indicators were then loaded onto the respective latent variables in the measurement model. All constructs were modeled with the partial aggregation modeling approach, with the exception of conflict which contained only two items.

Means, standard deviations, and zero-order correlations among composite indicators are reported in Table 2, and the loadings of the composite indicators on latent variables are reported in Table 3. We handled possible non-normality by using the maximum likelihood estimation procedures of LISREL 7, which “have been found to be robust against non-normality” (Jöreskog and

Sörbom 1989, p. 21) even with sample sizes as low as 50 (Anderson and Gerbing 1988).

**Convergent and Discriminant Validity.** Convergent validity is “. . . the degree to which multiple attempts to measure the same concept by different methods are in agreement” (Phillips 1981, p. 399; Campbell and Fiske 1959). In organizational research, “different methods” often is taken to mean obtaining reports from independent, qualified respondents<sup>5</sup> (Bagozzi and Phillips 1982). We assessed convergent validity in our study by examining the correlation between interorganizational trust as reported by the purchasing manager and by the second respondent in the purchasing organization. As shown in Figure 2 ( $\phi_{13}$ ), the correlation between interorganizational trust measured by the two respondents (methods) is 0.706 ( $t = 4.27$ ,  $p < 0.01$ ). The positive and highly significant correlation provides strong evidence for the convergent validity of our interorganizational trust construct.

Drawing on Campbell and Fiske’s (1959) discussion of construct validity, Bagozzi (1993, p. 54) defines discriminant validity as “the degree to which measures of different concepts are distinct. The notion is that if two or more concepts are unique, then valid measures of each should not correlate too highly.” We tested for discriminant validity by comparing a model with the correlation between the two constructs constrained to equal one with an unconstrained model. A significantly lower chi-square value for the model with the unconstrained correlation provides support for discriminant validity (Jöreskog 1971).

We conceptualized interpersonal and interorganizational trust as theoretically distinct but related constructs. Consequently, we were primarily concerned with assessing the discriminant validity of those constructs.<sup>6</sup> Tests of a model with a correlation between constructs constrained to unity yielded  $\chi^2(7 \text{ df}) = 17.70$ ,  $p < 0.013$ , and a model with unconstrained correlation yielded the following:  $\chi^2(6 \text{ df}) = 8.05$ ,  $p < 0.234$ . The difference in chi-square (1 df) of 9.65 is statistically significant at  $p < 0.01$ , providing strong support for the discriminant validity of interpersonal and interorganizational trust.

## Analysis

To test our hypotheses we specified two models using the maximum likelihood estimation procedure in LISREL: a *trust correlation* model and a *structural* model. The trust correlation model (see Figure 2) tested H1, predicting a positive link between trust at the two levels of analysis, with data from both the primary and secondary respondents of the purchasing organization. The significance of the correlation coefficients estimated by the LISREL procedure, and reflected in the  $\phi$  parameter, provides a test

**Table 2** Descriptive Statistics and Zero-Order Correlations Constructs

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Interorganizational trust 1	5.888	1.189															
2 Interorganizational trust 2	5.513	1.013	0.578														
3 Interpersonal trust 1	5.628	1.305	0.392	0.166													
4 Interpersonal trust 2	5.136	1.344	0.402	0.177	0.792												
5 Negotiation 1	2.923	1.343	-0.517	-0.424	-0.083	0.029											
6 Negotiation 2	2.560	1.171	-0.440	-0.376	-0.019	-0.014	0.741										
7 Conflict 1	2.442	1.327	-0.439	-0.413	-0.245	-0.214	0.413	0.422									
8 Conflict 2	1.845	1.035	-0.306	-0.375	-0.125	-0.141	0.315	0.432	0.655								
9 Performance 1	5.621	0.987	0.573	0.495	0.263	0.251	-0.291	-0.296	-0.352	-0.159							
10 Performance 2	5.746	0.972	0.575	0.523	0.376	0.387	-0.305	-0.316	-0.371	-0.164	0.757						
11 Asset specificity 1	3.080	1.530	-0.193	-0.172	-0.038	-0.052	0.149	0.241	0.121	0.030	-0.180	-0.165					
12 Asset specificity 2	3.170	1.421	-0.209	-0.165	0.013	0.091	0.117	0.192	0.109	0.039	-0.184	-0.149	0.676				
13 Uncertainty 1	2.813	1.159	-0.203	-0.223	-0.102	-0.086	0.128	0.081	0.113	-0.009	-0.230	-0.265	0.064	0.135			
14 Uncertainty 2	2.894	1.202	-0.235	-0.173	-0.143	-0.142	0.079	0.024	0.214	-0.028	-0.205	-0.195	-0.139	-0.034	0.654		
15 Joint action 1	5.038	1.289	0.049	0.026	0.079	0.118	-0.040	-0.046	-0.088	0.076	0.171	0.256	0.184	0.364	-0.183	-0.215	
16 Joint action 2	4.742	1.289	0.102	0.174	0.077	0.162	-0.101	-0.148	-0.144	-0.026	0.239	0.319	0.194	0.292	-0.144	-0.264	0.611

**Table 3** Parameter Estimates for Structural Model (Figure 3)

Parameter	Standardized Solution	t-value
$\lambda x_1$	0.844	(fixed parameter)
$\lambda x_2$	0.686	7.430**
$\lambda x_3$	0.815	(fixed parameter)
$\lambda x_4$	0.972	7.111**
$\lambda x_5$	0.603	(fixed parameter)
$\lambda x_6$	1.119	3.707**
$\lambda x_7$	0.822	(fixed parameter)
$\lambda x_8$	0.793	4.260**
$\lambda y_1$	0.902	(fixed parameter)
$\lambda y_2$	0.822	8.297**
$\lambda y_3$	0.909	(fixed parameter)
$\lambda y_4$	0.720	5.734**
$\lambda y_5$	0.839	(fixed parameter)
$\lambda y_6$	0.737	5.350**
$\lambda y_7$	0.823	(fixed parameter)
$\lambda y_8$	0.898	9.438**
$\beta_1$	0.264	1.388*
$\beta_2$	0.034	0.264*
$\beta_3$	0.261	2.829**
$\gamma_1$	-0.810	-5.865**
$\gamma_2$	-0.593	-4.465**
$\gamma_3$	0.359	3.231**
$\gamma_4$	0.017	0.148
$\gamma_5$	0.395	3.840**
$\gamma_6$	-0.345	-2.829**
$\gamma_7$	1.011	3.716**
$\gamma_8$	-0.066	-0.477**

\*\*p &lt; 0.01.

\*p &lt; 0.05.

of H1. The structural model (see Figure 3) tested H2 through H7, which link trust with performance, mediated by costs of negotiation and level of conflict. Data from the purchasing manager respondents were used to estimate the path coefficients that are reflected in the respective  $\gamma$  and  $\beta$  values. The statistical significance of the path coefficients provides tests of the hypotheses.

## Results

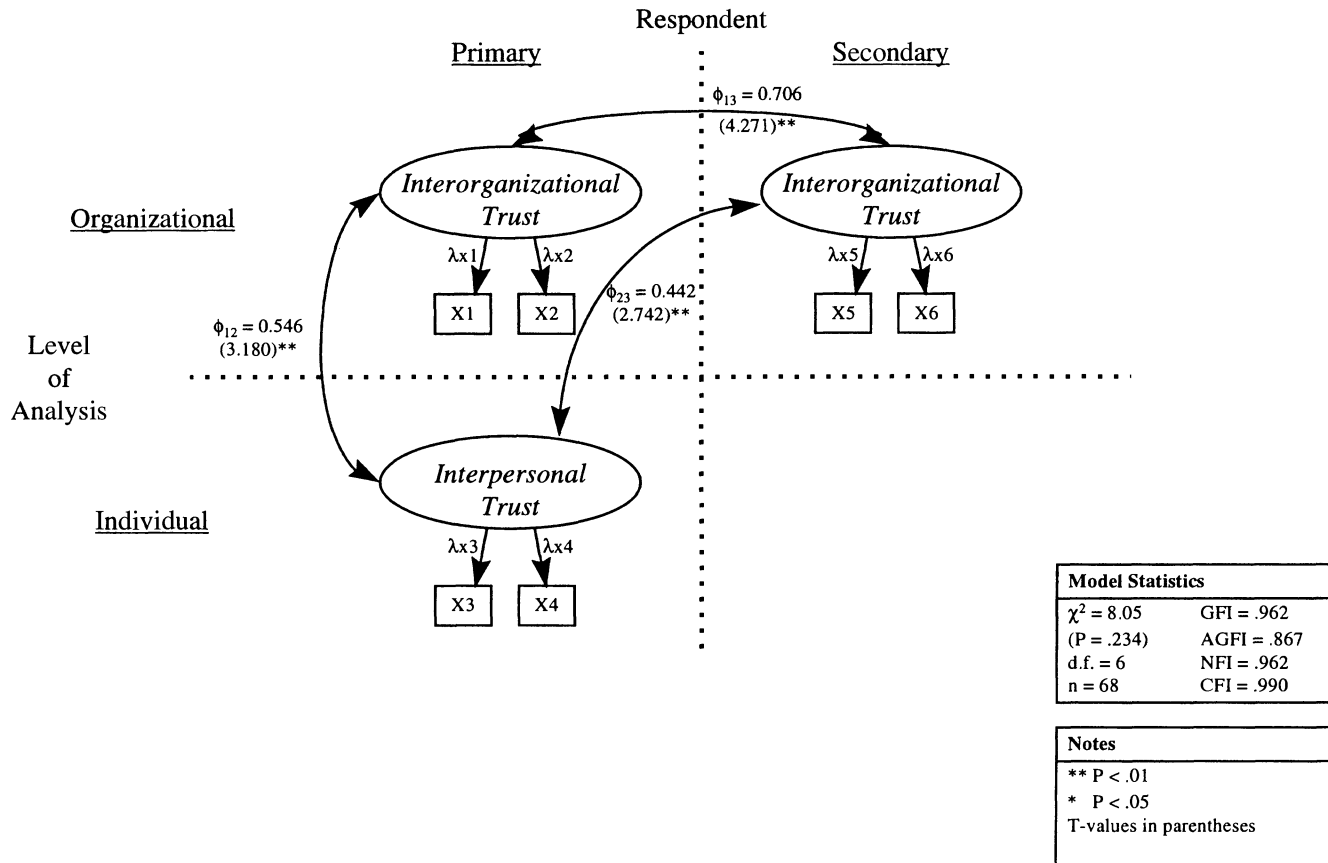
**Trust Correlation Model.** The model consists of three latent variables: interpersonal and interorganizational trust as reported by the purchasing manager and interorganizational trust as reported by the second respondent in the purchasing organization. The degree of overall fit between the actual and predicted covariances among variables of a model is reflected in a series of goodness-of-fit measures. This model had a chi-square value (6 df) of

8.05 ( $p = 0.234$ ). Standard fit indices, as reported in Figure 2, indicate a satisfactory fit of the model with the data.<sup>7</sup>

The predicted relationship (H1) is tested by the strength of the correlation between interpersonal trust reported by the purchasing manager and interorganizational trust reported by the second respondent (see Figure 2,  $\phi_{23}$ ). Interpersonal trust and interorganizational trust are highly correlated ( $\phi_{23} = 0.442$ ;  $t = 2.74$ ;  $p < 0.01$ ), providing support for H1. As a second test of H1, we specified a correlation path between interpersonal and interorganizational trust both as reported by the purchasing manager (see Figure 2,  $\phi_{12}$ ). Once again, the correlation is positive and statistically significant ( $\phi_{12} = 0.546$ ;  $t = 3.18$ ;  $p < 0.01$ ), adding further support for H1.

**Structural Model.** The structural model (see Figure 3) specifies the relationships between trust and performance, mediated by conflict and negotiating costs, with controls for transaction cost variables. Following Venkatraman (1989), we tested for the mediated relationships by specifying an *additional direct path* along with the mediation paths. In other words, to test the prediction that the interorganizational trust-performance link is mediated by negotiation costs, we specified three paths: a link between interorganizational trust and negotiation, a further path between negotiation costs and performance, and a third direct path between interorganizational trust and performance. The same pattern of structural paths was specified for each of the remaining mediated relationships hypothesized. This model had a chi-square value (86 df) of 94.82 ( $p = 0.242$ ). Standard fit indices, as reported in Figure 3, suggest a good fit of the model with the data.

Hypothesis 2, predicting a negative relationship between interorganizational trust and costs of negotiation, is strongly supported ( $\gamma_1 = -0.810$ ;  $t = -5.87$ ;  $p < 0.01$ ). Hypothesis 3 predicting a negative relationship between interpersonal trust and costs of negotiation and is *not* supported. Rather, the relationship is both *positive* and statistically significant ( $\gamma_3 = 0.359$ ;  $t = 3.23$ ;  $p < 0.10$ ). As predicted in H4, a negative relationship was observed between interorganizational trust and conflict ( $\gamma_2 = -0.593$ ;  $t = -4.47$ ;  $p < 0.01$ ). Contrary to H5, a negative relationship was *not* observed between interpersonal trust and conflict. The relationship is *positive*, although not statistically significant ( $\gamma_4 = 0.017$ ;  $t = 0.148$ ; n.s.). Hypothesis 6, predicting a negative relationship between supplier performance and costs of negotiation, is not supported ( $\beta_1 = 0.264$ ;  $t = 1.39$ ; n.s.), nor is H7, predicting a negative relationship between supplier performance and conflict ( $\beta_2 = 0.034$ ;  $t = 0.264$ ; n.s.). The direct path that we specified from interorganizational

**Figure 2** Correlational Model of Trust

trust to performance is positive and statistically significant ( $\gamma_7 = 1.011$ ;  $t = 3.716$ ;  $p < 0.01$ ), but the direct path from interpersonal trust to performance is not significant ( $\gamma_8 = -0.066$ ;  $t = -0.477$ ; n.s.).

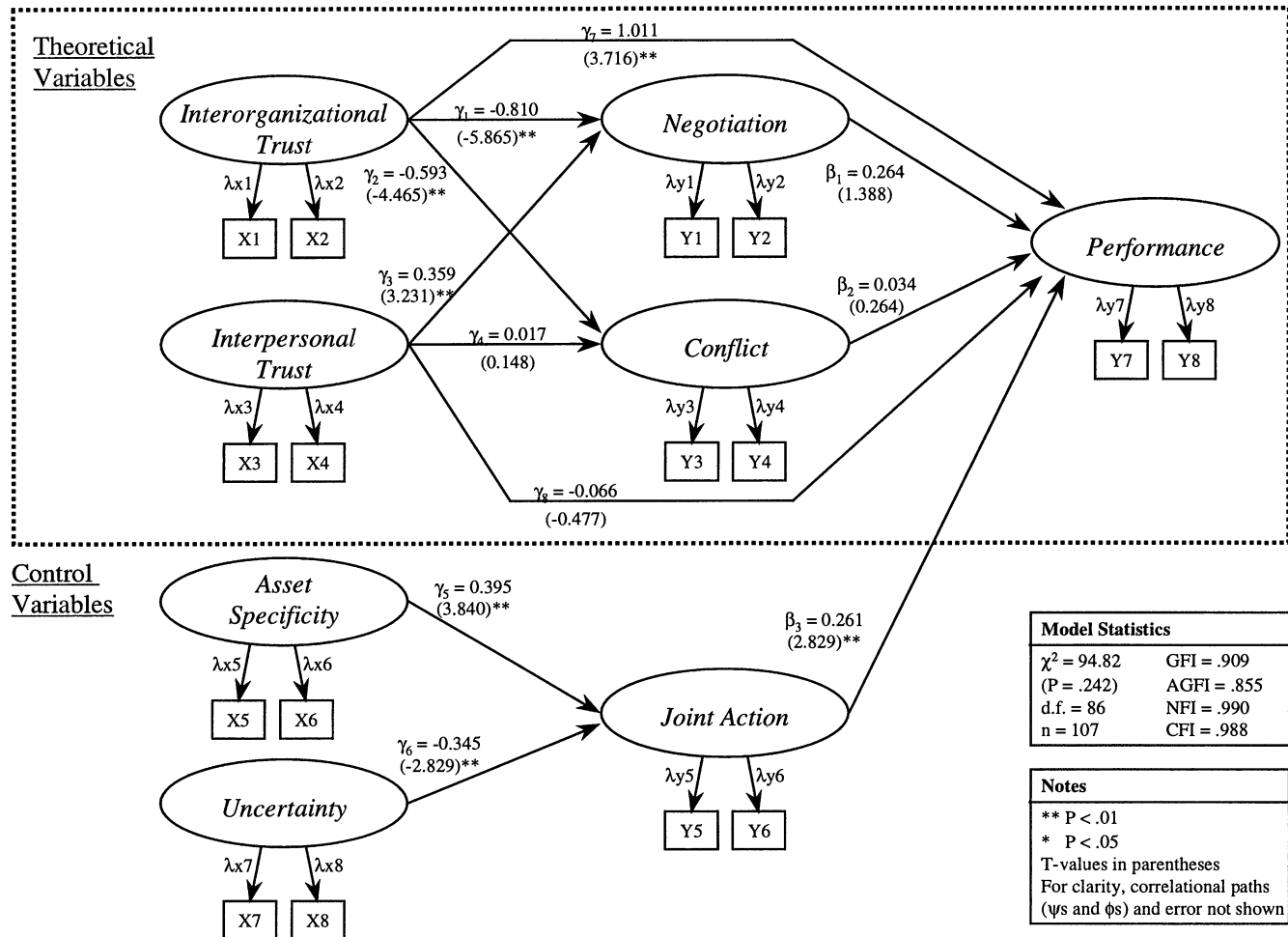
## Discussion

In this paper, we examined trust-based relational exchange to explicate a mechanism for the connection between trust and performance, and to distinguish between the consequences of interorganizational and interpersonal trust. Our results broadly support the thesis that trust in relational exchange influences negotiation processes and performance, although the precise nature of the link is somewhat different from what we initially proposed. Eased negotiation and reduced conflict are indeed outcomes of trust, yet the pattern of findings differs sharply across levels. Interorganizational trust emerges as the overriding driver of exchange performance, negotiation, and conflict, whereas interpersonal trust exerts little direct influence on those outcomes. Nevertheless, interpersonal

trust may also matter through its institutionalizing effects on interorganizational trust.

## Key Findings

*Trust at Two Levels of Analysis.* As hypothesized, we found interorganizational trust and interpersonal trust to be related, although empirically and theoretically distinct. Moreover, that finding is not merely an artifact of single-source bias given that we used data from two different respondents in the buying organization to test the relationship. From the perspective of the boundary-spanning individual in the buying organization, this means that the more one trusts the supplier representative with whom one deals, the more one's organization trusts the supplier organization. We see this relationship as operating in the opposite direction as well, suggesting mutually reinforcing effects of trust at the two levels. The implication of these reciprocal effects is that, although interorganizational trust may appear to be the more important influence in relational exchange, interpersonal trust must also be considered for its effects on interorganizational trust. At

**Figure 3** Structural Model of Relational Exchange

the same time, interorganizational research examining trust solely at the individual level may be missing important institutionalized effects of interorganizational trust. Simply aggregating interpersonal trust as a proxy for interorganizational trust ignores the influence of social context in the form of individuals' interactions (Coleman 1990) and organizational rules (Sitkin and Roth 1993) that constrain and orient its members.

Perhaps our most striking finding is that interpersonal and interorganizational trust operate quite differently within relational exchange. Interorganizational trust is associated strongly with lowered costs of negotiation and conflict, but interpersonal trust is not related to conflict and showed a seemingly anomalous positive association with negotiation costs. These findings imply that the effects of trust in the interorganizational context are distinct at the individual and organizational levels of analysis.

**Interorganizational Trust and Performance.** Our hypotheses about the links between trust and performance at both levels of analysis are partially supported. Although interorganizational trust is related strongly to costs of negotiation and the level of conflict in the dyad, the relationship between trust and performance is not mediated by negotiation costs and conflict, contrary to what we had hypothesized. Further, although we did not hypothesize a direct effect of trust on performance, our empirical results in fact reveal a direct link between *interorganizational* trust and performance, though not between interpersonal trust and performance.

Given their strong theoretical rationale in the organizational economics literature, the lack of support for the positive performance effects of eased negotiations and reduced conflict is somewhat surprising. Nonetheless, before concluding that the trust-performance relationship is

a direct rather than a mediated one, we note that eased negotiations and reduced conflict resulting from interorganizational trust may in fact be *enabling* conditions allowing exchange partners to pursue a variety of bilateral governance mechanisms—such as exchange of personnel and shared decision making—that lead to improved performance.

The preceding point notwithstanding, we believe the strong direct relationship between interorganizational trust and performance is a noteworthy and meaningful finding. It indicates that the performance of interfirm exchange is in fact associated with the level of interorganizational trust. Such a link has often been suggested in previous work on interfirm exchange, but relatively little empirical support for this relationship exists. A key implication of this finding is that firms in exchange relationships may derive competitive advantage from relationships imbued with high levels of interorganizational trust. Interestingly, the basis for the performance enhancement does not appear to be based on efficiencies gained from eased negotiation processes. Rather, we speculate that the enhancement of transaction value (Zajac and Olsen 1993)—such as cooperation in the exploration of new information and coordination technologies, new market opportunities, and product and process innovation—may account for the link between interorganizational trust and exchange performance. As one of the industry participants we interviewed put it:

It is necessary to get away from a “remedy-oriented” contract which includes all contingencies. We need to focus on what can go right instead of what can go wrong.

Our findings rule out negotiation processes as a mediating link, but future research should ascertain the role of these and other value-enhancing exchange processes.

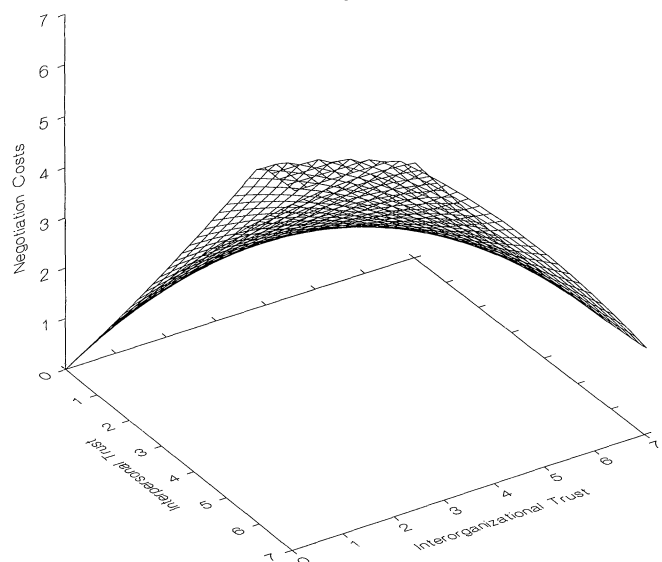
Although the entire chain of proposed theoretical relationships is not supported, our hypotheses about the link between interpersonal and interorganizational trust and the links between trust and the costs of negotiation and conflict are partially supported. These findings are consistent with transaction-cost-based explanations for the role of trust in exchange (Bromiley and Cummings 1995), while also emphasizing the positive outcomes from interfirm exchange (Zajac and Olsen 1993). Similarly, the negative relationship between interorganizational trust and the level of conflict in the dyad can be attributed to the willingness of the parties to grant one another greater leeway when differences arise. In low trust situations, suspicion of the partner’s motives may result in dysfunctional conflict and impede effective exchange processes. Taken together, the findings support the conclusion that

interorganizational trust acts to smooth negotiation processes and thereby reduce the transaction costs of interfirm exchange.

**The Role of Interpersonal Trust.** We found no support for our hypotheses relating interpersonal trust to the costs of negotiation or to the level of conflict in the exchange relationship. In fact, the finding that interpersonal trust related positively to the costs of negotiation is contrary to our initial hypothesis. These results are counterintuitive given that research in the boundary-spanning literature has indicated the importance of boundary-spanning individuals in managing the interfirm relationship (Friedman and Podolny 1992).<sup>8</sup>

To investigate the apparent anomaly of negotiation costs increasing with interpersonal trust, we constructed a three-dimensional surface plot of negotiation costs against interpersonal trust, controlling for interorganizational trust (see Figure 4). Although the pattern is not readily apparent, the surface of the plot is saddle-shaped and rises to the maximum in both the foreground and the background. Examination of the plot confirms the inverted U-shaped relationship between negotiation costs and interpersonal trust. Further, the third dimension of the plot, interorganizational trust, provides a possible explanation for the increasing part of the U-shaped curve. Specifically, where interpersonal trust is low, we find that interorganizational trust remains high. High interorganizational trust appears to *compensate* for low interpersonal trust and thus to explain the low level of negotiation costs. At the same time, the high negotiation costs associated

**Figure 4** Surface Plot of Negotiation Costs with Interorganizational and Interpersonal Trust





with intermediate levels of interpersonal trust are accompanied by lower levels of interorganizational trust as indicated by the high point in the foreground, which corresponds to interorganizational trust at its lowest level and both interpersonal trust and negotiation costs at their highest levels. This pattern of findings indicates that even though the individuals across the dyad may not trust each other, as long as the institutionalized structures accompanying high interorganizational trust are in place, negotiating costs will be kept down. Further, high interorganizational trust and low interpersonal trust can coexist in the same relationship given that boundary-spanning individuals come and go, whereas the institutionalized structures and processes accompanying interorganizational trust are more stable and enduring (Ring and Van de Ven 1994).

We conducted an additional analysis to confirm the curvilinear relationship between interpersonal trust and negotiation costs by regressing negotiation costs on interpersonal trust and its squared term. The results show a positive and significant coefficient for the main term, consistent with the LISREL analysis, and a negative and significant coefficient for the squared term.<sup>9</sup> The negative sign for the squared term indicates an inverted U-shaped relationship between interpersonal trust and negotiation costs. In other words, the costs of negotiation appear to be lowest at both low and high levels of interpersonal trust and are highest at intermediate levels of interpersonal trust representing the inflection point of the inverted U-shaped curve. We calculated the inflection point of the curve to be at 4.30 for interpersonal trust, suggesting that negotiation costs increase with increasing interpersonal trust up to the value 4.30, after which they decline.

Those observations are strong indications that interpersonal trust by itself is insufficient for lowering negotiation costs. Nevertheless, interpersonal trust is by no means unimportant. At the point where interorganizational trust is at its maximum, negotiation costs are higher when interpersonal trust is low, as indicated by the relatively high point in the background. From that point down the upper right edge of the surface, increasing interpersonal trust clearly corresponds to *lowering* negotiation costs. This observation makes it apparent that interpersonal trust plays a distinct, though subordinate, role in affecting the costs of negotiation when examined in conjunction with interorganizational trust.

### Implications

In comparison with interpersonal trust, interorganizational trust emerges as the dominant influence on exchange processes and outcomes. The pattern of results suggests that institutionalized practices and routines for

dealing with a partner organization, as captured by interorganizational trust, transcend the influence of the individual boundary spanner. In considering the role of trust in relational exchange, we argue that firms must recognize the impersonal (Shapiro 1987) structures, processes, and routines that create a stable context within which interpersonal trust can develop and persist (Heide and Miner 1992, Parkhe 1993). The stability of interfirm exchange is not created and maintained solely by boundary spanning individuals, but rather is institutionalized in the interorganizational relationship. As one purchasing manager we interviewed asserted:

Even though I may leave, the relationship [between our firms] will continue since what we've been doing goes beyond one or two people. Over the years, there are a host of people who have worked together.

We do not by any means suggest that the social component of exchange is unimportant. On the contrary, our data indicate that interpersonal trust, *in conjunction with* interorganizational trust, plays a unique role in relational exchange, over and above the effects of governance structure. However, we suggest that when exchange is carried out between organizations with an institutionalized pattern of dealings, the interorganizational context becomes more prominent.

### Limitations and Suggestions for Future Research

Our study makes important theoretical and empirical contributions to the literature on the role of trust in interorganizational relations. However, the validity of the implied causal links of our model is limited by the cross-sectional nature of our research design. We therefore encourage longitudinal research on the development and consequences of trust in interorganizational exchange. Further investigation of our findings based on in-depth case studies would also enhance our understanding of how interorganizational trust builds up over time and its dynamic relationship with interpersonal trust.

In our study, we inferred from a specific buyer-supplier setting to interorganizational relationships more generally. Clearly replication of our findings in other interfirm settings, such as joint ventures and strategic alliances, is needed to establish their external validity. Further, we see an interesting extension of the research in cross-national settings where cultural differences may alter the outcomes of trust in relational exchange.

We also encourage more research specifically examining the "downside" of trust in interorganizational relations. Much has been made of the positive effects of trust, but there is clearly potential for abuse of trust by exchange partners. Barnes (1981), for example, suggests that excessive levels of trust can result in exclusive and

dysfunctional reliance on soft rather than hard data to inform decision making.<sup>10</sup> Finally, our understanding of the phenomenon of interorganizational trust and its consequences would be greatly enhanced by a study of contextual antecedents of trust—such as the extent to which exchange partners share similar organizational structures, policies, and mindsets or cultures—and its immediate outcomes such as negotiating costs, conflict, and relationship performance.

### Concluding Remarks

Overall, our research makes several contributions to research on relational exchange by examining the nature of trust in buyer-supplier dyads. Through the use of multiple organizational respondents, our study recognizes the distinction between interorganizational and interpersonal trust. Although associated with each other, these constructs are shown to relate differently to costs of negotiation and conflict in the interfirm relationship. Further, enhanced supplier performance, lowered costs of negotiation, and reduced conflict are shown to be related to high levels of interorganizational trust.

### Acknowledgments

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### Endnotes

<sup>1</sup>Whereas reliability includes an element of trust as *competence* (Barber 1983), predictability simply refers to the degree of consistency in intended behavior.

<sup>2</sup>Clearly, as one reviewer points out, contextual factors other than trust also may affect negotiation costs, such as the extent to which exchange partners have similar organizational structures, policies, and mindsets or cultures.

<sup>3</sup>We define exchange performance as the extent to which the supplier has fulfilled the buyer's requirements in terms of price, timeliness of delivery, input quality, and supplier flexibility.

<sup>4</sup>We believe that in buyer-supplier relationships, though there may be a degree of congruence about what the goals of the relationship are, the buyer organization is the final arbiter of the extent to which exchange goals have been met to a satisfactory degree.

<sup>5</sup>There is a well-established precedent for this approach in the organizational literature. Most importantly, Bagozzi and Phillips (1982)

explicitly detail the use of the multitrait-multimethod (MTMM) matrix with two informants as different methods. As those authors indicate, “[i]nformants one and two are treated as methods” (p. 469).

<sup>6</sup>The test was carried out with data from the same respondent, thereby providing a stronger test of discriminant validity than using data from two different respondents for interpersonal and interorganizational trust, respectively. The latter approach is considered a less stringent test because method and trait variance are confounded.

<sup>7</sup>For each of the models estimated, we report four standard fit indices. The goodness of fit index (GFI) reflects the relative amount of variance and covariance jointly explained by the model. The adjusted goodness of fit index (AGFI) is the same as the GFI, but adjusts for the number of degrees of freedom in the model. The normed fit index (NFI) (Bentler and Bonett 1980) represents the point at which the model being evaluated falls on a scale from a null model (specifying mutual independence among indicators) to a perfect fit. The comparative fit index (CFI) (Bentler 1990) is similar to the NFI, but corrects for small sample size by subtracting the degrees of freedom from their corresponding chi-square values. Each of these indices range from zero to 1.00, with values closer to 1.00 indicating a good fit. A commonly accepted rule of thumb is that a fit index should be greater than 0.90.

<sup>8</sup>In order to verify that these results are not a methodological artifact we performed an additional analysis. We found a near identical pattern of results using partial correlation analyses which is analogous to multiple regression analysis. Specifically, controlling for interorganizational trust we found that the partial correlation coefficient between interpersonal trust and conflict while negative, was nonsignificant (partial correlation coefficient =  $-0.09$ ,  $p = 0.16$ ) and the partial correlation coefficient between interpersonal trust and costs of negotiation was positive and marginally significant (partial correlation coefficient =  $0.15$ ,  $p = 0.066$ ). This pattern of results is quite consistent with those that we obtained using LISREL.

<sup>9</sup>The standardized beta coefficient for the squared term is  $-1.273$  ( $t$ -value =  $-2.85$ ;  $p < 0.01$ ).

<sup>10</sup>We are indebted to an anonymous reviewer for suggesting this point.

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