

## MULTIPLE LEVELS OF TRUST AND DEPENDENCE ON SUPPLIER-DISTRIBUTOR COORDINATION: AN EMPIRICAL TEST

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*Coordination between suppliers and distributors is required for successful management of marketing channels. Research indicates that trust and dependence positively impact coordination. However, research is scarce about how two levels of analysis (interfirm and interpersonal) of trust and dependence operate together in achieving coordination. The conceptual model positions each interfirm construct as mediator of its related interpersonal construct. Two interfirm variables were tested, interfirm trust and interfirm dependence. And two interpersonal variables were tested, interpersonal trust and interpersonal dependence. As hypothesized, results show that interfirm trust mediates interpersonal trust and that interfirm dependence mediates interpersonal dependence with the outcome – coordination.*

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### INTRODUCTION

Almost 40 years ago, Alderson (1965) pointed out the importance of joint activities between firms in achieving optimal performance and voiced the need for a comprehensive theory that matched the development of competitive theory. Consequently, numerous marketing research streams have included some aspect of interfirm activities in their models and/or empirical studies including channel behavior (e.g., Anderson and Narus 1990; Frazier 1983; Gultinan, Rejab and Rodgers 1980; Skinner, Gassenheimer and Kelley 1992; Robicheaux and El-Ansary 1975) and supply chain research (Ellram and Cooper 1990; Tyndall et al. 1998). Some of this research suggests that both trust and dependence are antecedents to joint interfirm activities.

For example, empirical research shows that trust and joint activities between firms are positively related, yet the direction of causality has been controversial (Wilson and Nielson 2001; Weitz and Jap 1995; Wiertz et al. 2004). Based on a cross-sectional methodology, this study takes the position of those researchers who sug-

gest that trust is at least somewhat necessary before interfirm joint activities take place (Deutch 1962; Duarte and Davies 2004; Morgan and Hunt 1994; Smith and Barclay 1999; Pruitt 1981; Wiertz et al. 2004). Boersma, Buckley and Ghauri (2003) point out that competence-based trust can start simply from public information (knowledge of a partner's previous history and/or reputation in the marketplace) and can be the basis of a coordinative activity with another firm. From another perspective, Wiertz et al. (2004) explain that any joint activity entails at least some increased vulnerability and firms will not accept this increased vulnerability without believing in the integrity of each other. This study positions interfirm trust as antecedent to coordination and predicts a positive relationship.

Although it is generally accepted that there is a direct relationship between trust and joint activities, there is considerable ambiguity concerning the role of trust at different levels of analysis (i.e., interfirm and interpersonal) with important outcomes (Zaheer, McEvily and Perone 1998). In support, Doney and Cannon (1997) conclude that marketing research either focuses on interfirm trust or interpersonal trust but not both. However, some recent empirical studies differentiate two levels of trust on important channel outcomes.

Zaheer, McEvily and Perrone (1998) find that interfirm trust is a key positive driver of negotiation costs and performance, whereas interpersonal trust has a positive impact on these outcomes through the mediation of interfirm trust. Similarly, Doney and Cannon (1997) find interfirm trust has a positive direct effect on a firm's likelihood of doing future business with another firm, whereas interpersonal trust has an indirect positive effect through interfirm trust. In contrast, Bendapudi and Leone (2002) find that interpersonal trust may have a stronger direct effect than interfirm trust on a firm's intentions to leave a vendor relationship under specific conditions (e.g., when a customer cannot separate the deliverable from the key contact person, the product is a commodity, or the product can be customized by several other firms). Similar to these recent studies, this study differentiates trust at two levels of trust (interpersonal and interfirm); and as posited by Payan and Tan (2003), this study tests if interfirm trust mediates the impact of interpersonal trust on the outcome of coordination.

In addition to the antecedent of trust, Payan and Tan (2003, p. 124) note that a significant amount of research shows interfirm dependence has a positive association with coordination-oriented intentions, including: "...(1) supply chain solidarity (Bowersox and Closs 1996), (2) willingness to negotiate functional transfer, share key information and participate in joint operational planning (Bowersox and Closs 1996), (3) long-term orientation (Ganesan 1994), (4) readiness to respond to another firm's requests (Keith, Jackson and Crosby 1990) and (5) commitment to the relationship (Andaleeb 1996; Kumar, Scheer and Steenkamp 1995)." This would suggest that in addition to the above, dependence would also have a positive association with actual coordinated joint activities between firms.

As with trust, there is little research concerning the role of dependence, or alternative sources of power, at different levels of analysis (i.e., interfirm and interpersonal). Zemanek and Pride (1996) indicate that marketing research concerning dependence or power relationships be-

tween firms focuses on the interfirm level and rarely on the interpersonal level of analysis. This study differentiates dependence at two levels (interpersonal and interfirm) and tests if interfirm dependence mediates the impact of interpersonal dependence on coordination.

In sum, this study tests a conceptual model that includes both the interpersonal and the interfirm levels of analysis of trust and dependence with coordination between distributors and suppliers. Although there is recent research that does differentiate interpersonal trust from interfirm trust on the outcomes of negotiation costs and performance (Zaheer, McEvily and Perrone 1998), purchase choice and the likelihood of doing future business together (Doney and Cannon 1997) and a firm's intentions to leave a vendor relationship, there are no studies that illuminate the role of trust at these two levels of analysis on coordination. In addition, there are no empirical studies that distinguish between the role of interpersonal and interfirm dependence in impacting important interfirm outcomes. This study focuses on coordination as an outcome because of its importance in managing channels of distribution and supply chains (Ellram and Cooper 1990; Tyndall et al. 1998). Coordination is also used in this study rather than cooperative attitudes and/or behavioral intentions (e.g., likelihood of doing future business together), in part, due to surprisingly low correlations among attitudes, intentions and behaviors (Belk 1985; Hini, Gendall and Kearns 1995). In other words, a positive behavioral intention does not necessarily result in the desired behavior. Furthermore Mayer, Davis and Schoorman (1995, p. 729), suggest that a true reflection of the impact of organizational trust is the level of risk taking associated with displaying actual joint behaviors rather than the less risky "willingness to engage in behavior."

## CONCEPTUAL MODEL

### Interpersonal Trust and Interfirm Trust

Even though there is broad general agreement about the importance of interfirm trust as an alternative coordinative mechanism to markets

or hierarchy (e.g., Braddach and Eccles 1989; Ouchi 1979; Ring and Van de Ven 1994), definitions and operationalizations of trust are not consistent (Dahlstrom and Nygaard 1995). Despite the inconsistencies, it appears that most studies include two conceptual aspects of trust in a single unidimensional measure (Geyskens, Steenkamp and Kumar 1998). As suggested by Payan and Tan (2003) and consistent with Zaher, McEvily and Perrone (1998), this study conceives of trust as the expectation that either the key boundary-spanning individual (interpersonal) or the partner firm (interfirm) (1) can be relied on to fulfill obligations and (2) will act and negotiate fairly when the possibility for opportunism is present. This study refers to *interpersonal trust* as the extent of a boundary-spanning individual's trust in his/her counterpart in a partner firm and *interfirm trust* as the extent of trust placed in the partner organization.

As posited by Payan and Tan (2003, p. 122) trust in key boundary-spanning individuals from another firm can lead to trust in that firm. Some suggest that the trustworthiness of a key individual can be used as a cue to the trustworthiness of the firm that employs that individual (Strub and Priest 1976). Others also suggest that there is a psychological transference process that may take place (Doney and Cannon 1997). In other words, high levels of trust in an individual may be transferred to trust of the firm that employs that individual. In addition, the sentiments and behaviors displayed by indi-

vidual boundary-spanners may become institutionalized routines that are taken-for-granted expectations of the firm that employs these boundary spanners (Zucker 1977). Taken together, these explanations would suggest that interpersonal trust operates through interfirm trust in its effect on exchange outcomes. See conceptual model in Figure 1.

**H<sub>1</sub>:** Interpersonal trust has a positive direct effect on interfirm trust.

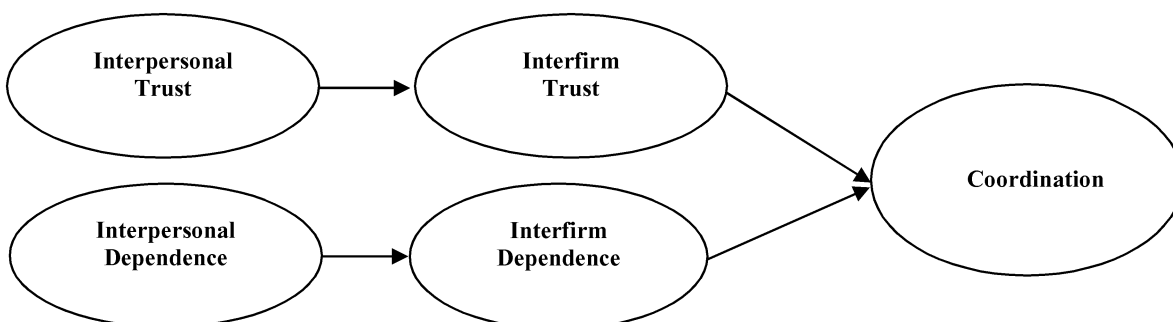
**H<sub>2</sub>:** Interfirm trust mediates the effect of interpersonal trust on coordination.

### Interpersonal Dependence and Interfirm Dependence

*Interfirm dependence* refers to a need to maintain a relationship with a channel firm to achieve its goals (Frazier 1983) and *interpersonal dependence* refers to a need to maintain a relationship with key boundary-spanning individual from that firm. Drawing from Emerson's (1962) work, dependence typically captures the value that a firm derives from another firm (or individual) and the number of viable alternatives that the dependent firm has for achieving that value elsewhere. Consistent with dependence theory, this study uses these two aspects of dependence in a single unidimensional measure at both the interpersonal level and interfirm level of analysis.

Payan and Tan (2003, p. 122) state, "...dependence between supply chain firms

**FIGURE 1**  
Conceptual Model



motivates the willingness of firms to participate in coordinative behavior over time (Bowersox and Closs 1996; Ganesan 1994; Keith, Jackson and Crosby 1990).” Theoretically, when Firm A is dependent on Firm B, Firm A will value the relationship and will want to maintain it (Andaleeb 1996) and Firm A is more likely to participate in joint activities with Firm B (Keith, Jackson and Crosby 1990). Unfortunately, not much is known about how interpersonal dependence operates with interfirm dependence in impacting coordination. One study does show that there is a positive relationship between interfirm dependence and interpersonal dependence (Westphal, Boivie and Chng 2004). This study finds that when a firm is highly dependent on another firm, there is also evidence of high levels of interpersonal dependence of key boundary-spanners from that firm. Similar to the hypothesis that trust in key boundary-spanning individuals from another firm can lead to trust in that firm, it is conceivable that dependence on key boundary-spanning individuals from another firm can lead to dependence in that firm. If one is dependent on an individual from another firm, one derives value from the business relationship. Similar to the hypothesized relationship of interpersonal trust and interfirm trust, dependence on a key individual results in dependence on the firm that employs that individual. Therefore,

- H<sub>3</sub>:** Interpersonal dependence has a direct positive effect on interfirm dependence.
- H<sub>4</sub>:** Interfirm dependence mediates the effect of interpersonal dependence on coordination.

#### A Rival Model

It is recommended that when using structural equations modeling, a rival model be tested in addition to the proposed model (Morgan and Hunt 1994). A rival view would be a direct path from interpersonal trust and interpersonal dependence to coordination in addition to the direct paths of interfirm trust and interfirm dependence to coordination proposed by this study’s conceptual model. A limited number of business-to-business studies suggest that inter-

personal relationships may transcend the interfirm level of the relationship under certain conditions. As mentioned previously, Bendapudi and Leone (2002) find that interpersonal trust has a direct impact on a firm’s intentions to leave a vendor relationship under specific conditions (e.g., when a customer cannot separate the deliverable from the key contact person, the product is a commodity, or the product can be customized by several other firms). And Haytko (2004) find that advertising agency account managers focus predominately on interpersonal relationships when dealing with clients. In sum, these studies would suggest a direct relationship between interpersonal constructs (trust and dependence) and coordination rather than the mediation model previously proposed in this article.

## METHOD

### Research Context and Sample

The sampling frame consisted of 6049 owners and managers of distribution firms of specialty tools and fasteners in the United States (SIC codes 5072-05 and 5072-13). These individuals were used as key informants because they are the primary decision-makers most knowledgeable about their firm’s interactions with suppliers. Preannouncement letters and prestamped return postcards were mailed to these 6049 owners and managers asking about their willingness to participate and their knowledge concerning the topics covered in the study.

A total of 1038 surveys were mailed to respondents who returned the postcard and indicated that they were both willing to participate and were knowledgeable about the topics in the survey. Following the mail survey methods suggested by Dillman (2000), reminder postcards were sent seven working days later. Three hundred and sixty-three usable surveys were returned, for a response rate of 34.3 percent.

As suggested by Campbell (1955), two items were included in the survey as informant competency checks. The two items asked: (1) how much the informant knew about his/her firm’s

perspective of the study topics and (2) how much the informant knew about specific experiences with a specific supplier. A full 99 percent of the informants had knowledge of their firm's perspective and 98.2 percent also had knowledge regarding experiences with a specific supplier. Consequently, seven cases were eliminated from the database for the purpose of testing this study's hypotheses, leaving 356 usable survey responses for analysis.

Nonresponse bias was checked following the guidelines of Armstrong and Overton (1977). No significant differences were found between early and late responders. As an additional check, 150 letters and prestamped return postcards were sent to a random list of nonrespondents; 32 percent of these postcards were returned. No significant differences between respondents (on responses to two checklist measures on the questionnaire) and nonrespondents (on responses to the two checklist measures on the postcards) were found.

### Measures

Please see Appendix for details of all scale items. Subjects responded to five-point Likert-

type scales for all variables. All of the scales were anchored by 5 ("very strongly agree") and 1 ("very strongly disagree"). The reliability for all scales exceeds the recommended cutoff criteria; i.e., Cronbach's alpha > 0.70 (Nunnally 1978), composite reliability > 0.70 (Fornell and Larcker 1981) and variance extracted > 0.50 (Hair et al. 1998). Please see Table 1 for summary statistics and the correlation matrix for all scales.

*Coordination* refers to the degree of joint activities that take place between firms in a channel of distribution. Items were borrowed and modified from the coordination scale of Guiltinan, Rejab and Rodgers (1980), which measures the work coordination of various functions unique to a franchisee-franchisor context and the joint action construct of Heide and John (1990). Two items were intentionally worded to connote specific behavior ("Our processes and/or procedures are coordinated with those of my contact person's firm" and "Our activities are coordinated with the activities of my contact person's firm") rather than behavioral intentions as discussed in the introduction. And one item, "We attempt to conduct business in unison with our contact person's firm" connotes

**TABLE 1**  
**Correlation Matrix and Summary Statistics\***

Variable	1	2	3	4	5
Interfirm Trust	1.00				
Interfirm Dependence	0.16	1.00			
Interpersonal Trust	0.53	0.20	1.00		
Interpersonal Dependence	0.48	0.38	0.66	1.00	
Coordination	0.25	0.34	0.35	0.35	1.00
Mean	3.66	3.25	3.47	3.46	3.21
Standard deviation	1.31	1.00	.96	1.00	1.06
Composite trait reliability	0.73	0.79	0.86	0.95	0.89
Variance extracted	0.50	0.55	0.76	0.63	0.85

\*Correlations greater than .15 are significant at  $p < .02$ .

the behavioral attempt at general coordination. Items were adapted to reflect general statements of coordination relevant to numerous interfirm contexts.

Recall that *trust*, at both the interpersonal and interfirm level of analysis, is the expectation that either the key boundary-spanning individual (interpersonal) or the channel firm (interfirm) (1) can be relied on to fulfill obligations (or the “reliance” aspect of trust) and (2) will act and negotiate fairly when the possibility for opportunism is present (or the “fairness” aspect of trust). Scale items tapped into these two aspects of trust to form a single unidimensional reflective measure. Specifically, the interfirm trust measure includes two items that tap into the “reliance” aspect of trust (“We can with complete confidence rely on my contact person’s firm to keep promises made to us” and “My contact person’s firm is trustworthy”) and one item taps into the “fairness” aspect of trust (“My contact person’s firm has always been evenhanded in its negotiation with us”). The interpersonal trust measure includes two items that tap into the “reliance” aspect of trust (“My contact person has always been evenhanded with me” and “My contact person is trustworthy”) and includes one item that taps into the “fairness” aspect of trust (“I have faith in my contact person to look out for my interests even when it is costly to do so”). These items were taken directly from the multi-item reflective measure of both interpersonal and interfirm trust developed by Zaheer, McEvily and Perone’s (1998) study.

As previously mentioned, *dependence* at both the interpersonal and interfirm level of analysis, refers to the need to maintain a relationship with either a key boundary-spanning individual (interpersonal) or the channel firm (interfirm). Consistent with dependence theory, this study uses two aspects of dependence (the value that a firm derives from another firm or individual and the number of viable alternatives that the dependent firm has for achieving that value elsewhere) in a single unidimensional measure at both the interpersonal level and interfirm level of analysis. Scale items tapped into these

two aspects of dependence to form a single unidimensional reflective measure. Specifically, the interfirm dependence measure includes one item that taps into the “value received” aspect of dependence (“The work we do with my contact person’s firm is very important to the achievement of our organizational goals”) and two items that tap into the “irreplaceability of the partner” aspect of dependence (“There are few firms who could provide us with comparable output to what we obtain from our contact person’s firm” and “Our total costs of switching from my contact person’s firm to a competing firm would be prohibitive”). The interpersonal dependence measure includes two items that tap into the “value received” aspect of dependence (“The representative of the supplier makes my job easier” and “This representative adds value to my performance”) and one item taps into the “irreplaceability of the partner” aspect of dependence (“There are few people who could easily perform the job of this representative”). This study adapted dependence items for both interfirm and interpersonal constructs to the context of this study from Kumar, Scheer and Steenkamp (1998).

### Results of Confirmatory Factor Analysis

All measures were analyzed for validity following the guidelines suggested by Anderson and Gerbing (1988), Fornell and Larcker (1981) and Singh and Rhoads (1991). All measures were analyzed in a single CFA model using LISREL 8.51 (Jöreskog and Sörbom 1996). Model fit exceeded the standard cutoffs for acceptable fit:  $\chi^2 = 165.07$ , with 80 degrees of freedom, RMSEA = 0.055, NNFI = 0.97 and CFI = 0.98. Convergent validity is indicated when the path coefficients (loadings) for each latent trait factor to their manifest indicators are statistically significant. All items loaded significantly on their corresponding latent factors. Discriminant validity is demonstrated when all latent-trait correlations of the trait constructs are significantly different from 1.00 (Singh and Rhoads 1991). This criterion was met, indicating support for discriminant validity. Using the more stringent procedure recommended by Fornell

and Larcker (1981), for all pairs of measures, discriminant validity was obtained. To test for unidimensionality, each construct was analyzed as a one-factor scale using confirmatory factor analysis (Gerbing and Anderson 1988). In every case, the single factor model had an acceptable fit (i.e., RMSEA < .08, CFI > .95), which indicates that the constructs are unidimensional.

## RESULTS

This study used the method of analysis of structural equations modeling using maximum likelihood estimation by means of LISREL 8.51 (Jöreskog and Sörbom 1996) for both the proposed mediation model and the rival model. The covariance matrix was used as input for the LISREL analysis. The results of the proposed mediation model, including standardized path coefficients (SPC), *t*-values and *p*-values, appear in Table 2 and the same statistics for the rival direct effects model appear in Table 3. The tables show that both models are significant. However the mediation effect proposed in this article is supported, in part, because the results of the mediation model (Table 2) show that all paths as proposed are significant; whereas, the results of the rival model of direct effects (Table 3) show that only one path (interfirm dependence to coordination) is significant.

H<sub>1</sub> states that interpersonal trust is positively related to interfirm trust. This hypothesis is supported (SPC = 0.79, *t*-value = 15.91, *p* < .01). H<sub>2</sub> states that interfirm trust mediates the effect of interpersonal trust on coordination. Results support this hypothesis because interfirm trust is positively related to coordination (SPC = 0.31, *t*-value = 5.06, *p* < .01) and the total effect of interpersonal trust on coordination is significant (SPC 0.24, *t*-value = 4.98, *p* < .01). In addition, results in Table 3 show that there is not a significant path between interpersonal trust and coordination. H<sub>3</sub> states that interpersonal dependence is positively related to interfirm dependence. This hypothesis is supported (SPC = 0.42, *t*-value = 7.15, *p* < .01).

H<sub>4</sub> states that interfirm dependence mediates the effect of interpersonal dependence on coordination. This hypothesis is supported because interfirm dependence is positively related to coordination (SPC = 0.31, *t*-value = 5.09, *p* < .01) and the total effect of interpersonal dependence on coordination is significant (SPC = 0.12, *t*-value = 4.52, *p* < .01). In addition, results in Table 3 show that there is not a significant path between interpersonal dependence and coordination.

## Post Hoc Analysis

Although the section above supports the hypotheses put forth in this article, one concern surfaced in the examination of the descriptive statistics reported in Table 1. Specifically, the high correlation between interpersonal dependence and interfirm trust (*r* = .48) and the high correlation between interpersonal trust and interpersonal dependence (*r* = .66) may indicate that there are missing links between the trust and dependence constructs in the model proposed in this article. Unfortunately, the literature is silent about the relationship between interpersonal and interfirm levels of trust and dependence. For example, is interpersonal dependence associated with interfirm trust? In general terms, the literature does suggest a positive relationship between trust and dependence (see meta-analysis in Geyskens, Steenkamp and Kumar 1998). Geyskens, Steenkamp and Kumar (1998, p. 39) note that “channels researchers agree that dependence, which is considered to be central to explaining channels sentiments, is causally antecedent to trust.” Some suggest that when a party is dependent on a channel partner, the party is vulnerable to the channel partner. Acceptance of this vulnerability may stimulate the party to believe that channel partner can be relied on to fulfill their obligations and will be fair in their negotiations with the dependent party (components of trust). Because of this theoretical support and due to the high correlations between specific constructs of dependence and trust, two paths were added to the mediation model proposed in this article. Both of these paths are significant as follows (1) a path from interpersonal depend-

**TABLE 2**  
**Results of LISREL Analysis for Interfirm Mediation of**  
**Interpersonal Variables on Coordination**

Path – Mediation Model	SPC	t-Value
<i>Structural Paths</i>		
Interpersonal Trust → Interfirm Trust	0.79	15.91*
Interpersonal Dependence → Interfirm Dependence	0.42	7.15*
Interfirm Trust → Coordination	0.31	5.06*
Interfirm Dependence → Coordination	0.31	5.09*
<i>Model Fit Statistics</i>		
$\chi^2$	184.73	
<i>d.f.</i>	84	
RMSEA	.058	
NNFI	.96	
CFI	.97	
* $p < .01$ . Notes: N = 356.		

ence to interfirm trust (SPC = .28,  $t = 4.51$ ,  $p < .01$ ) and (2) a path between interpersonal dependence and interpersonal trust (SPC = .72,  $t = 14.24$ ,  $p < .01$ ).

### DISCUSSION

The empirical findings reported in this study have important implications to interfirm relationships because as pointed out by Haytko (2004, p. 314), “little research has been published that studies, in depth, the nature and influence of personal relationships on interorganizational relationships.” This study is the first to hypothesize and test the role of interfirm trust and interfirm dependence as mediators of their interpersonal counterparts on coordination. This study supports limited findings that the level of interfirm trust emerges as the key driver of important interfirm outcomes, whereas interpersonal trust has an impact on outcomes through the mediation of interfirm trust (Doney and Cannon 1997; Zaheer, McEvily and Perone 1998). The same pattern emerges for in-

terfirm dependence and interpersonal dependence. In other words, interfirm dependence mediates the impact of interpersonal dependence on coordination. This suggests that when attempting to coordinate activities with a partner firm in a channel, interfirm trust and dependence transcend the trust of and dependence on an individual boundary-spanning member from that same partner firm. This is consistent with the findings that interpersonal relationships have a less important role than interfirm exchange variables on intentions to switch business partnerships (Wathne, Biong and Heide 2001).

However, the interpersonal level of trust and dependence should not be ignored because (1) the data do show that interpersonal trust and interpersonal dependence have a positive impact on coordination, albeit indirectly, through the mediation of their related interfirm constructs and (2) as pointed out by Bolton, Smith and Wagner (2003), some business-to-business service relationships appear to derive more



**TABLE 3**  
**Results of LISREL Analysis for Rival Model –**  
**Direct Paths to Coordination**

<i>Path – Rival Model</i>	<i>SPC</i>	<i>t-Value</i>
<i>Structural Paths</i>		
Interpersonal Trust → Coordination	0.22	1.70
Interfirm Trust → Coordination	0.14	0.99
Interpersonal Dependence → Coordination	-0.06	-0.50
Interfirm Dependence → Coordination	0.33	4.64*
<i>Model Fit Statistics</i>		
$\chi^2$	158.67	
<i>d.f.</i>	79	
RMSEA	.053	
NNFI	.96	
CFI	.97	
*p < .01. Notes: N = 356.		

value from interpersonal bonding than from interfirm exchange variables. In support, some studies have noted specific conditions whereby interpersonal constructs transcend their related interfirm level constructs (Bendapudi and Leone 2002; Bolton, Smith and Wagner 2003; Haykto 2004).

### Limitations and Future Research

The validity of causal interpretations in previous sections should be tempered by the cross-sectional design of the data. Some researchers have noted that there is a need for longitudinal studies to elucidate the impact of cumulative interfirm interactions (Geyskens, Steenkamp and Kumar 1998; Jap 1999; Lambe, Spekman and Hunt 2002). For example, a longitudinal study may support the contention of Van de Ven and colleagues (Van de Ven 1975; Van de Ven and Koenig 1975; Van de Ven and Walker 1984) that coordinative behaviors between

firms may lead to higher levels of interfirm sentiments (e.g., trust), which in turn, will result in even higher levels of coordinative behaviors.

Because the sample in this study consists of a single industry, the validity of generalizations from the results may be limited. This limitation should be somewhat restrained by the fact that every respondent represented a unique firm. Nonetheless, replication of this study in different contexts, such as joint ventures and strategic alliances that also rely on coordination for their success, will help to generalize the findings of this study.

A final limitation is that this study asked the same informant to answer both the interpersonal level and interfirm level questions about trust and dependence. It is possible that an informant who felt high levels of trust (or dependence) at an individual level would also feel high levels of trust (dependence) at the corpo-

rate level, even though the informant's firm may not have this same level of trust (dependence) in the other firm. Future research with multiple informants from the appropriate firm would be helpful to discern if this potential bias exists.

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## APPENDIX

Items were measured on 5-point Likert scales anchored by very strongly disagree (1), neither agree or disagree (3) and very strongly agree (5).

*Interfirm trust* (three item reflective measure  $\alpha = .86$ )

1. My contact person's firm has always been evenhanded in its negotiations with us.
2. We can with complete confidence rely on my contact person's firm to keep promises made to us.
3. My contact person's firm is trustworthy.

*Interfirm dependence* (three item reflective measure  $\alpha = .78$ )

1. The work we do with my contact person's firm is very important to the achievement of our organizational goals.
2. There are few firms who could provide us with comparable output to what we obtain from my contact person's firm.

## Multiple Levels of Trust and Dependence . . . .

*Payan*

3. Our total costs of switching from my contact person's firm to a competing firm would be prohibitive.

*Interpersonal trust* (three item reflective measure  $\alpha = .86$ )

1. My contact person has always been even-handed with me.
2. My contact person is trustworthy.
3. I have faith in my contact person to look out for my interests even when it is costly to do so.

*Interpersonal dependence* (three item reflective measure  $\alpha = .85$ )

1. The representative of the supplier makes my job easier.
2. This representative adds value to my performance.
3. There are few people who could easily perform the job of this representative.

*Coordination* (three item reflective measure  $\alpha = .89$ )

1. Our processes and/or procedures are coordinated with those of my contact person's firm.
2. Our activities are coordinated with the activities of my contact person's firm.
3. We attempt to conduct business in unison with our contact person's firm.

Note:  $\alpha$  = Cronbach's alpha scale reliability