

THE ECONOMICS OF TRUST IN BUYER-SELLER RELATIONSHIPS: A TRANSACTION COST PERSPECTIVE

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ABSTRACT

What is the relationship between economics and trust in purchasing relationships? To address this important research question, we use transaction cost analysis (TCA) to evaluate the impact that relationship specific assets, uncertainty, and frequency (e.g., the transaction cost dimensions) have on the level of trust between buying and selling firms. This proposed framework was tested using a sample of established buyer-seller relationships. The results support our proposed framework and the impact that the three transaction cost dimensions have on trust. Shortly stated, our findings suggest that economic as well as social factors should be considered in future trust studies.

INTRODUCTION

Relationship researchers (Anderson & Narus, 1984; 1990; Dwyer et al., 1987; Lambe, et al., 2000; Nevin, 1995) have long recognized the impact that trust plays in the achievement of strategic objectives and ultimately, the performance of buyer-seller business relationships. Research (Anderson & Weitz, 1989; Doney & Cannon, 1997; Dwyer et al., 1987; Ganesan, 1994; Geyskens et al., 1999; Morgan & Hunt, 1994) suggests that the degree to which both parties trust each other plays a major role in the quality of the relationship that exists between them. For this reason, interorganizational trust is an important research topic that deserves continued academic consideration. In this paper, we use transaction cost analysis (TCA) (Williamson, 1975; 1985; 1996) to better understand the role that various economic factors play in the level of trust between buying and selling firms.

TCA has been used in much of the relationship literature to study the governance decisions of buying, and to a lesser extent, selling firms (O'Donnell, 2009). In particular, TCA identifies three factors, relationship specific investments (RSAs), uncertainty, and frequency that impact the governance mechanisms used by organizations to control the opportunistic behaviors of their respective exchange partners (Williamson, 1991). These mechanisms reduce the relationship's economic efficiency by generating higher transaction costs. As a result, TCA, as it has been applied in much of the current literature, is focused on how organizations may protect themselves from the potential opportunism of their exchange partner (Rindfleisch & Heide, 1997).

Consistent with TCA's emphasis on protection and control, prior TCA-based research (Wathne & Heide, 2000; Jap & Ganesan, 2000; Rokkan, et al., 2003; Wuyts & Geyskens, 2005; Gundlach & Murphy, 1993; Heide, et al., 2007; Lusch & Brown, 1996; Wathne & Heide, 2004) is focused on the effectiveness of various governance mechanisms such as contracts, supplier

relationship specific investments, and supplier qualification in different relationship settings. However, in addition to these more “formal” mechanisms, relational mechanisms have also been proposed to reduce opportunism and encourage cooperative behaviors. Since trust sits at the heart of relational governance (Lambe et al., 2001) we will use it as our dependent variable.

In this study, we extend the current literature by using TCA to study trust (rather than control) in buyer-seller relationships. More specifically, we evaluate the impact that RSAs, uncertainty, and frequency (e.g., the three transaction cost dimensions) have on the level of trust in buyer-seller relationships. Much of the TCA-based relationship research to date has largely focused on the effect that the RSA and uncertainty dimensions have on relationship governance leaving frequency largely unexplored (David & Han, 2004; O’Donnell, 2009). Thus, this study represents an important contribution to the extant literature by developing and testing the impact that all three transaction cost dimensions have on buyer-seller trust in one model.

BACKGROUND AND HYPOTHESES

Trust

Trust is a construct that has been used in psychology, sociology, management, and marketing to address the degree to which relationship participants behave in a manner consistent with the best interest of their respective partner (Duffy, 2008; Wilson, 1995). Morgan and Hunt (1994) suggest that trust is the cornerstone of successful relationships. Prior research (Anderson & Narus, 1990; Anderson & Weitz, 1989; Doney & Cannon, 1997; Dwyer et al. 1987; Ganesan, 1994; Geyskens et al., 1999; Hewett et al., 2002; Hultman & Axelsson, 2007; Morgan & Hunt, 1994; Mukherji & Francis, 2008; Seppanen et al., 2007) suggests that trust encourages relationship enhancing behaviors such as cooperation, shared values, commitment, and satisfaction and discourages relationship detracting behaviors such as conflict, uncertainty, and opportunistic behavior. Because of the important role that trust plays in successful buyer-seller relationships (Doney & Cannon, 1997; Hewett et al., 2002; Morgan & Hunt, 1994; Wilson, 1995), we selected it as our dependent variable.

In the organizational relationship area, Sarkar, Echambadi, Cavusgil and Aulakh (2001, p 362) define trust as “the level of confidence shared by the parties regarding each other’s integrity.” This “mutual” definition of trust addresses both parties’ perspective rather than the more traditional approach of examining trust from the perspective of only one of the parties. In this study, we use Sarkar’s et al. definition because it is more relevant in a relationship setting. In particular, we evaluate the degree to which the parties: 1) are honest and truthful with each other; 2) treat each other fairly and justly; and 3) find it necessary to be cautious when dealing with each other. Based on our review of the trust literature, we felt that these three factors capture the essence of trust between buying and selling firms.

TCA and Trust

Transaction cost analysis (TCA) is a framework that has been used extensively in the marketing and management disciplines to model the governance of buyer-seller relationships (Rindfleisch & Heide, 1997; Geyskens et al., 2006). TCA is built on two behavioral assumptions, bounded rationality and opportunistic behavior (Williamson, 1975; 1985; 1996).

The first, bounded rationality, assumes that humans have limited information processing capabilities and as such, are unable to develop complete formal and informal contracts (Buvik & John, 2000; Radner, 1968). This results in incomplete contracting which provides either or both parties opportunities to take advantage of contractual gaps to further their own position. The second assumption, opportunistic behavior, compounds this threat by assuming that there are individuals who may resort to deception to further their own self-interest (Williamson, 1985). Unfortunately, it is difficult to identify partners who are inclined to act in an opportunistic manner forcing both parties to develop governance mechanisms that discourage such behaviors resulting in the creation of transaction costs (Dyer, 1997; North, 1990). These costs have the effect of reducing exchange efficiency and over many transactions, the performance of the relationship.

The behavioral assumptions of bounded rationality and opportunism are operationalized in TCA by three sources of transaction costs (Williamson, 1975; 1985; 1996); relationship specific assets (RSAs), uncertainty, and frequency. Each of these factors is assumed to impact the governance decisions of both parties in a relationship setting. Relationship specific assets (RSAs) are specialized investments in relationship assets that have limited transferability to other alternative uses without incurring substantial reduction in their value (Williamson, 1996). For this reason, when a party makes an investment in RSAs, they are essentially locking themselves in a particular relationship making them susceptible to being taken advantage of by their partner (Williamson, 1996; Wathne & Heide, 2000; Besanko, et al., 2000).

The second factor, uncertainty, involves how much each of the parties know about the other and then, given what they know about that party, how likely they are to behave in an opportunistic behavior if given an opportunity. Uncertainty is reduced when both parties know a lot about each other and as such, are better able to predict each other's behaviors. In addition to their exchange partner, the environment itself, or more specifically, the volatility of the environment faced by the parties represents an additional source of uncertainty by creating gaps in contractual agreements that could be used by either or both parties to enhance their own self-interest (Buvik & John, 2000; Cannon, et al. 2000). The final factor, frequency, involves the number and size of the transactions that both parties expect to occur between them in the future. Opportunistic behaviors are more likely to occur in relationships involving single rather than multiple transactions.

In the relationship literature, TCA has been primarily used to predict the governance mechanisms that exchange partners may use when facing one or more of the above sources of transaction costs (Rindfleisch & Heide, 1997; O'Donnell, 2009). More specifically, prior research has provided important insights into the effectiveness of various governance mechanisms in terms of controlling opportunism and improving relationship performance. For example, investments in RSAs (Wathne & Heide, 2000; Jap & Ganesan, 2000; Rokkan, et al., 2003; Buvik & Anderson, 2002), explicit contracts (Wuyts & Geyskens, 2005; Young & Wilkinson, 1989; Gundlach & Murphy, 1993; Jap & Ganesan, 2000; Heide, et al., 2007; Cannon, et al., 2000; Buvik & John, 2000; Heide, 2003; Lusch & Brown, 1996), relational norms (Dwyer et al., 1987; Heide & John, 1992; Rokkan et al., 2003; Heide & John, 1992; Gundlach et al., 1995; Noordeweir et al., 1990), monitoring (Heide et al., 2007), and partner qualification programs (Stump & Heide, 1996; Wathne & Heide, 2004) have received considerable academic attention in terms of their ability to govern buyer-seller relationships and the individual behaviors of the parties. Thus, based on our review of the relationship literature, much of the

TCA-based research has been focused on the impact that these sources, more specifically, the RSA and uncertainty have on the control of buyer-seller relationships (O'Donnell, 2009).

In this paper, we would like to shift the TCA paradigm from that of examining the effectiveness of different formal mechanisms (e.g., contracts, supplier RSAs, supplier qualification, and so forth) in relationship governance to that of less-formal, more relational ones (Lambe et al., 2001). Prior research supports this approach (Cannon et al., 2000; Heide & John, 1992; Heide et al., 2007) with the strength of these mechanisms being evaluated by the level of trust that exists between the two parties. For this reason, we evaluate the impact that RSAs, uncertainty, and frequency have on trust in buyer-seller relationships. In so doing, this study provides insights into the factors that enhance trust leading to lower transaction costs and higher relationship efficiencies. The hypotheses associated with each of these transaction cost dimensions are identified as follows.

Relationship Specific Assets (RSAs). Two specific aspects of RSAs are examined in this study: 1) the degree to which the parties' capabilities complement each other (Complementary Capabilities) and 2) the degree to which both parties have made substantial investments in RSAs (Mutual Investment Level).

A firm's capabilities refer to its knowledge of and ability to perform key activities such as brand development, product design, manufacturing, and technical support (Grant, 1998). Consistent with the resource-based view (RBV) of strategy (Barney, 1991; 2001; Wernerfelt, 1984), a firm's success is largely determined by the unique capabilities it possesses. Moreover, the more the firms' capabilities complement each other, the greater their ability to realize mutually beneficial outcomes through their joint efforts (Jap, 1999). For example, if one party possesses superior skills in developing and marketing new products and the other party has a well-established distribution network in a particular target market, this would dramatically enhance their ability to successfully introduce a new product in that target market. Since these outcomes could be lost if either or both parties were to attempt to take advantage of the other, this will discourage opportunism and encourage cooperative behaviors resulting in higher levels of trust.

H1 Trust is positively related to the degree to which the capabilities of the buying firm and the selling firm complement each other.

Relationship specific investments (RSIs) are investments that have considerable value in a particular relationship but have dramatically lower value when used in other relationships (Rindfleisch & Heide, 1997). For this reason, RSIs tend to "lock" the investing party into a particular relationship due to their limited transferability making it susceptible to being exploited by its partner (Bensanko, et al., 2000; Wathne & Heide, 2000). However, when both parties have made substantial RSIs (e.g., mutual RSIs), a state of mutual dependence is created that discourages opportunism from both parties (Jap & Ganesan, 2000; Stump & Heide, 1996; Stump & Joshi, 1998; Wathne et al., 2001; Gundlach et al., 1995) and encourages a closer relationship between them (Heide & John, 1992) resulting in higher levels of trust (Heide, 1994; Lusch & Brown, 1996).

H2 Trust is positively related to the degree to which both the buying firm and the selling firm have made substantial investments that are specific to the relationship.

Uncertainty. Two types of uncertainty will be examined regarding their impact on trust: 1) environmental dynamism and 2) mutual information level. Environmental dynamism involves changes in the environment that occur frequently and are difficult to predict (Achrol & Stern, 1988). Environmental changes may represent both an opportunity and a threat to the relationship. Prior research suggests (Buvik & John, 2000; Joshi & Campbell, 2003) that, in establish buyer-seller relationships (which is the case for the relationships used in this study), both parties are expected to address environmental changes by coordinating their activities and by working more closely together (Jap, 1999). Dwyer and Welsh's (1985) research supports this position finding that channel members rely more on collaborative relationship structures when faced with rapidly changing environments to acquire the flexibility needed to respond to those changes (Lawrence & Lorsch, 1967; Mahoney & Pandian, 1992; Thompson, 1967; Wernerfelt & Aneel, 1987). Therefore, when faced with higher levels of environmental dynamism, both parties are expected to work more closely together to create the flexibility needed to adapt to environmental changes (Jap, 1999; Norris & McNielly, 1995) resulting in higher levels of trust.

H3 Trust is positively related to the level of environmental volatility faced by buying and selling firms.

When the parties know a lot about each other (e.g., a high level of mutual information), they are better able to predict their respective partner's behavior under different situations resulting in higher levels of trust. Moreover, as the parties continue to share relationship specific information with each other, increasing levels of inter-party transparency should enable them to better identify the opportunistic behaviors of their respective partner (Wathne & Heide, 2000). Another benefit of this increased transparency is that it enhances the parties' ability to identify ways to reduce process redundancies and to better identify and capitalize on mutually beneficial process and market opportunities. For example, through a mutual understanding of each other's production systems, both parties will be better able to identify ways to improve manufacturing efficiencies and product quality. Furthermore, they will be better able to identify ways to reduce process redundancies including the potential that either party could make decisions that unknowingly has a negative effect on its partner. Since these benefits could be lost if either or both parties were to behave in a self-interested manner reducing the potential for opportunism. As a result, we hypothesize that when the parties know a lot about each other, they should trust each other more.

H4 Trust is positively related to the degree to which both the buying firm and the selling firm are knowledgeable about each other that is relevant to the relationship.

Frequency. Frequency involves the number and size of the transactions that both parties expect to occur between them (Pilling et al., 1994). If both parties expect that their relationship will involve multiple transactions over an extended period of time, they are less likely to behave opportunistically and more likely to exhibit cooperate behaviors (Heide & Miner, 1992) resulting in higher trust. In this study, we examine two specific aspects of frequency: 1) exchange volume alignment and 2) future growth expectations.

Exchange volume alignment involves the degree to which the parties have similar expectations regarding the number and size of the transactions that will occur between them. If the firms have similar exchange volume expectations, the parties are more likely to share similar mindsets regarding the future of the relationship enabling them to predict their partner's responses resulting in higher levels of trust.

H5 Trust is positively related to the degree to which the exchange volume expectations of the buying firm and the selling firm are aligned.

Future growth expectations involve the degree to which both parties expect that their relationship will continue to grow. When both parties expect that the scope of their relationship will continue to expand in the future, they are more likely to work together to realize mutually beneficial outcomes (Heide & Miner, 1992; Noordeweir et al., 1990). Since these benefits could be lost if either or both of the parties were to behave opportunistically, such mutually shared expectations regarding the future of the relationship should encourage cooperative behaviors (Buvik, 2002; Dyer & Singh, 1998) resulting in higher levels of trust.

H6 Trust is positively related to the future growth expectations of buying and selling firms.

METHODS AND FINDINGS

To test our hypotheses, we contacted local chapter presidents of the National Association of Purchasing Management (NAPM) and asked for their chapter's support for our study. Five chapters located in major metropolitan centers located in the northeastern U.S.A. agreed to endorse our research and allowed us to solicit the participation of their members by distributing questionnaires at their monthly chapter meetings.

Although we initially wanted to use knowledgeable informants from both firms, informant anonymity concerns such as those experienced by Lambe, Spekman, and Hunt (2002) prevented us from collecting relationship data from suppliers. Therefore, similar to a number of studies (Jap & Ganesan, 2000; Lambe et al., 2002; Sarkar et al., 2001), we used the buyer's perceptions of the relationship. Prior studies have found that purchasing agents and managers provide valid and reliable responses (Cannon et al., 2000; Cannon & Perreault, 1999; Heide & John, 1990; Stump & Heide, 1996) regarding their firm's supplier relationships because of their intimate knowledge of and close involvement in their firm's supplier relationships. The members of NAPM are especially ideal informants because of their strong professional interest and training in the purchasing discipline and the major role that they play in their firms' supplier decisions.

To assess each respondent's ability to provide valid information, we asked respondents to rate on a Likert scale (1 = not very knowledgeable and 7 = very knowledgeable) their knowledge of the supplier relationship that they had reported on. Similar to Lambe et al. (2002), we eliminated informants who rated themselves at a level of 5 or less. For these reasons, we concluded that the relationship data reported by our respondents was appropriate for this study.

Survey Instrument and Sample

In the questionnaire we asked informants to provide information regarding a relationship that existed between their firm and the supplier of a key product of their firm's primary business. This was done to reduce the likelihood that the sample would be composed of an excessive number of relationships involving incidental purchases. The survey underwent two rounds of pretesting. In the first round, three buyers of a local automotive specialty firm were used to evaluate the clarity of scale items and the overall organization of the survey instrument. In the second round, four members of two local NAPM chapters were provided copies of the revised

survey and asked to complete them. These individuals were later interviewed to identify areas of confusion as well as ways to improve the survey's quality and clarity. We used their comments and recommendations to further refine the survey. The survey instrument was also evaluated throughout the data collection process by asking informants to provide feedback regarding the clarity of scale items and instructions; no major problems were identified.

Survey packets that included a cover letter, a self-addressed postage paid envelope, and a link to an on-line version of the survey were distributed at the meetings of our focal NAPM local chapters. The on-line survey tool used to administer and track responses was Questionpro (www.questionpro.com). A reminder was provided at subsequent meetings and in the monthly newsletters for each chapter. Overall, 197 surveys were distributed of which 49 paper and 31 on-line survey responses were received (i.e., a total of 80 survey responses) for a response rate of 40.61 percent. No significant differences were found between the paper and on-line responses for any of the items used in this study. Of the surveys that were completed, four were later removed for excessive missing data resulting in a final sample of 76 or a final response rate of 38.56 percent.

The average age of the relationships was 13 years (e.g., our sample mostly consisted of established buyer-seller relationships). The average annual sales of the buying firms in 2004 were \$75 million with a range of less than \$1 million to more than \$1 billion. Relative to firm size, 48 percent of the buying firms were small (less than \$100 million in annual sales), 26 percent medium (annual sales of \$101 million to \$1 billion) and 26 percent large (annual sales exceeding \$1 billion). The firms in our sample represented a wide range of industries and product classifications with 26 percent providing consumer products and services, 63 percent industrial products and services, and 11 percent distributors.

Measurement of Constructs

We focused on two key aspects of RSAs: complementary capabilities and mutual investments. The complementarity of the buying and selling firms' capabilities was measured by a four-item, Likert scale (1 = "strongly disagree" and 7 = "strongly agree") modified from Jap (1999) that evaluated the perceived degree to which the firms possess complementary strengths and abilities that enable them to realize outcomes that are beyond each firm's individual reach. This variable was computed as the sum of the individual item responses. The scale exhibited good internal consistency with a Cronbach's alpha value of .83 (Nunnally, 1978; Peterson, 1994).

Mutual investments involve the degree to which the firms had made investments in RSAs. In particular, mutual investments were measured by a two item, Likert scale modified from Rokkan et al. (2003) that asked informants to rate the degree to which both parties had made substantial investments of time and resources to develop the relationship. Mutual investments were computed as the sum of the individual item responses. Overall, the scale exhibited good internal consistency with a split-half reliability value of .85.

Two aspects of uncertainty were examined in this study, environmental uncertainty and mutual information level. Environmental uncertainty involves the degree to which the firms' environment is constantly changing and as such, difficult to predict (Archol & Stern, 1988). Informants were asked to rate on a Likert scale their level of agreement/disagreement with three statements modified from Jap (1999) regarding the volatility of the market demands, practices,

and conditions under which the focal relationship operates. Environmental dynamism was computed as the sum of the individual item responses. The scale exhibited good internal consistency with a Cronbach's alpha of .87 (Nunnally, 1978; Peterson, 1994). Mutual information level evaluates the degree to which both firms were perceived to know a lot about each other that was relevant to the relationship. This construct was evaluated by a one item, Likert scale.

Frequency involves the number and amounts of the economic transactions that the firms expect to occur between them in the future. In this study, frequency was limited to exchange volume alignment and future growth expectations. Exchange volume alignment evaluates the degree to which the parties are perceived to have similar expectations regarding the amounts of the purchases that will occur between them in the next year. In contrast, future growth expectations evaluates the degree to which the firms expect that the number of exchange transactions between them will increase in the future. Both constructs were measured using single item, Likert scales.

Trust, our dependent variable, was measured by a four item, Likert scale modified from Sarkar et al. (2001) that evaluated the perceived level of integrity, fairness, and dependability of the firms participating in the relationship. Trust was computed as the sum of the individual item responses. The scale exhibited good internal consistency with a Cronbach's alpha value of .84 (Nunnally, 1978; Peterson, 1994). The specific items used in our scales are specified in the appendix of this paper.

Analysis

To evaluate the potential for multicollinearity, we initially examined the correlations among our variables (Hair et al., 1998). A review of the correlations shown in Table 1 revealed that no unusually large correlations existed between any of the independent variables. As an additional test of multicollinearity, variance inflation factors (VIFs) were calculated for each independent variable. The largest variance inflation factor was 2.040 (for *Mutual Investment Level*), which was smaller than the maximum limit of 10 identified by Neter, Kutner, Nachtsheim, and Wasserman (1996). As a result, multicollinearity did not appear to be a problem.

Table 1
MEANS, STANDARD DEVIATIONS, AND CORRELATION MATRIX

Variable	1	2	3	4	5	6	7
Mean	5.25	5.39	5.51	5.46	5.41	5.07	5.06
Standard Deviation	1.08	0.87	1.12	1.16	1.13	1.19	1.41
1. Trust	1.00						
2. Complementary Capabilities	.56	1.00					
3. Mutual Investment Level	.49	.52	1.00				
4. Environmental Dynamism	.05	.36	.27	1.00			
5. Mutual Information Level	.59	.45	.66	.24	1.00		
6. Exchange Volume Alignment	.56	.57	.48	.22	.50	1.00	
7. Future Growth Expectations	.09	.26	.19	.08	.13	.17	1.00

Correlations greater than 0.19 are significant at $p < .05$ for $N=76$.

We used hierarchical regression models to evaluate the relationship between trust and the three transaction cost dimensions (e.g., the RSA, uncertainty, and frequency) examined in this study. This enabled us to evaluate the marginal effects that the three dimensions, as evaluated by our TCA antecedent variables (e.g., complementary capabilities, mutual investment level, environmental dynamism, mutual information level, exchange volume alignment, and future growth expectations) have on trust. Moreover, hierarchical regression allowed us to examine the statistical significance that each antecedent variable has on trust as well the explanatory power of the overall model.

FINDINGS

The results of the hierarchical regression analysis are shown in Table 2. The analysis used in this study consisted of four models. Model 1 evaluated the impact that the RSA dimension (as evaluated by complementary capabilities and mutual investment level) has on trust. Model 1 explained about 37 percent ($R\text{-squared} = .368$; $\text{adjusted } R\text{-squared} = .351$; $p < .01$) of the variance in trust which suggests that the RSA dimension is significantly related to buyer-seller relationship trust.

Table 2
HIERARCHICAL REGRESSION – THE INFLUENCE OF
TCA ANTECEDENT VARIABLES ON TRUST

TCA Variables	Trust			
Relationship Specific Asset (RSA)				
H1: Complementary Capabilities	.41** (3.75)	.42** (4.02)	.29* (2.49)	.34** (3.05)
H2: Mutual Investment Level	.29** (2.64)	.07 (.59)	.21 (1.97)	.05 (.46)
Uncertainty				
H3: Environmental Dynamism		-.22* (-2.42)		-.22* (-2.45)
H4: Mutual Information Level		.41** (3.55)		.34** (2.99)
Frequency				
H5: Exchange Volume Alignment			.31** (2.75)	.23* (2.17)
H6: Future Growth Expectations			-.08 (-.85)	-.07 (-.83)
Change in R-squared		.126	.065	.148
F-value for change in R-squared		8.83	4.10	12.12
F-value significance		.000	.021	.000
R-Squared	.368**	.494**	.434**	.531**
Adjusted R-Squared	.351	.466	.402	.490

* p < 0.05; ** p < 0.01

N=76 in all models. For each variable, the reported values are standardized betas with corresponding t-values in parentheses (except as noted).

In Model 2, the uncertainty dimension (as evaluated by environmental dynamism and mutual information level) was added to model 1 to evaluate uncertainty's impact on trust. The R-squared change (.126) over Model 1 (F-value = 8.83; p < .01) supported our assertion that uncertainty is significantly related to trust. Interestingly, when the uncertainty dimension (more specifically, mutual information level) was added to model 1, the effect size of mutual information level decreased from .29 (p < .01) to .07 (not significant). This suggests, consistent with the Social Exchange Theory (SET) literature, that social investments may be more important than economic investments in establishing trust in buyer-seller relationships.

In Model 3, the frequency dimension (as evaluated by exchange volume alignment and future growth expectations) was added to model 1 to evaluate frequency's impact on trust. The R-squared change (.065) over Model 1 (F-value = 4.10; p < .05) supported our assertion that frequency is also significantly related to trust.

Finally, Model 4 consists of all three transaction cost dimensions (e.g., the complete model). Model 4 explained 53 percent (R-squared = .531; adjusted R-squared = .490; p < .01) of the variance in trust. In hypothesis H1, it was predicted that the *complementary capabilities* of the firms would be positively related to *trust*. This hypothesis was supported (b = .34, p < .01). In contrast, the positive relationship hypothesized to exist between the level of the mutual RSAs (e.g., *mutual investment level*) made by the firms and *trust* (hypothesis H2) was not supported.

In hypothesis H3, it was predicted that *environmental dynamism* would be positively related to *trust*. Though the relationship between environmental dynamism and trust was significant (p < .05), the direction of this relationship was negative (b = -.22) rather than positive (as hypothesized). In contrast, consistent with hypothesis H4, *mutual information level* was

positively related to *trust* ($b = .41, p < .01$). Finally, it was predicted in hypothesis H5 that *exchange volume alignment* would be positively related to *trust*. This hypothesis was supported ($b = .23, p < .05$). In contrast, the positive relationship hypothesized to exist between the *future growth expectations* of the firms and *trust* (hypothesis H6) was not supported.

DISCUSSION

In this study, we examined the impact that the three TCA dimensions (e.g., RSAs, uncertainty, and frequency) as evaluated by complementary capabilities, mutual investment level, environmental dynamism, mutual information level, exchange volume alignment, and future growth expectations have on the level of trust between buying and selling firms in established relationships. Our results suggests that in addition to providing valuable insights into the governance decision of buying and selling firms TCA also provides important insights about trust. In fact, based on this analysis, all three TCA dimensions were found to be significantly related to trust in buyer-seller relationships.

Relative to the RSA dimension, we hypothesized and found that complementary capabilities have a positive impact on buyer-seller trust. This suggests that trusting buyer-seller relationships are built upon a foundation of complementary capabilities. Though we originally predicted that mutual RSIs would have had a positive impact on trust, this was not supported in our study. One potential explanation for this result is that we did not consider the firms' relative sizes in our analysis. For example, if both parties make similar sized RSIs but one of the parties is substantially larger than the other, the larger party would still consider itself in a dominant position relative to the smaller and as such, might be more inclined to use this advantage to further their own position in the relationship. Testing this alternative explanation represents an interesting area for future research.

With respect to uncertainty, environmental dynamism was found, contrary to hypothesis H3, to be negatively related to trust. This suggests that under conditions of high environmental volatility, gaps may be created in any formal or informal agreements between the parties increasing the likelihood that one or both of them could potentially use to further their own self-interest over the best interest of their exchange partner. As a result, both parties would be less trusting of each other. For this reason, other mechanisms may be needed to mitigate this potential in volatile environments. For instance, information sharing mechanisms leading to increased levels of transparency would offset inter-party opportunism by not allowing it to go unnoticed. In contrast, the degree to which the parties know a lot about each other (e.g., mutual information level) has a positive impact on trust. This suggests that, when the goal is to build a trusting relationship, both parties should be open to sharing information about themselves while also attempting to identify ways to learn as much about each other. This may involve sharing information regarding short-term and long-term goals, production processes, production costs, and so forth.

Finally, with respect to frequency, the degree to which the parties have similar expectations regarding the volume of transactions that will occur between them will have a positive impact on trust. When both parties have similar exchange volume expectations, they are in a better position to predict each other's behaviors resulting in higher levels of trust. However, when these expectations are not aligned, the potential for opportunism on the part of the party with lower transaction expectations is greater. Realizing this, the party with higher exchange volume expectations may attempt to protect itself which may be perceived as untrusting behavior

by the other. Both of these effects reduce relationship trust. Surprisingly, the future growth expectations of the parties had almost no effect on trust.

Limitations

A few limitations should be noted in this study. First, our sample was fairly small ($n = 76$). Though we would have preferred a larger sample, the fact that we had significant results with such a small sample has more to do with the large effect sizes of our independent variables rather than the smaller standard errors associated with large samples. Therefore, we expect that the significance of our independent variables should increase as the sample size is increased.

Second, the relationship data used in this study was obtained from purchasing managers and agents in a cross-sectional manner. Though this approach is consistent with previous relationship studies (Jap & Ganesan, 2000; Lambe et al., 2002; Sarkar et al., 2001), additional insights may have been found by collecting data from both the buying and selling firms in a longitudinal manner. Third, though we would have preferred to use multi-item scales, we used single-item scales for mutual information level, exchange volume alignment, and future growth expectations because of our inability at the time to find well-established scales for these constructs. Hopefully, scales for these constructs will be developed and validated in future studies. Finally, though our model explains over 53 percent of the total variance in buyer-seller trust, a great deal of the variance remains to be identified and studied by researchers.

In closing, this study represents an important contribution to the relationship literature by using TCA, more specifically, all three transaction cost dimensions, to extend our understanding of buyer-seller relationship trust. This study supports our assertion that TCA provides important insights about trust. In fact, all three transaction cost dimensions (more specifically, complementary capabilities, environmental dynamism, mutual information level, and exchange volume alignment) were found to impact trust. Moreover, our analysis suggests that complementary capabilities (an economic factor) and mutual information level (a social factor) are two primary drivers of trust in buyer-seller relationships. In short, this study indicates that economic as well as social factors should be considered in future trust studies.

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APPENDIX

Trust* (Cronbach's alpha = .84)

1. Both of us are honest and truthful with each other
2. We treat each other fairly and justly
3. Both of us are cautious in dealing with each other (Reverse coded)
4. We deal with each other in a trustworthy manner

Complementary Capabilities* (Cronbach's alpha = .83)

1. We have separate abilities that, when combined together, enable us to achieve goals beyond our individual reach
2. We have complementary strengths that are useful to this relationship
3. We contribute different capabilities to this relationship
4. Both of us contribute capabilities that are valuable to this relationship

Mutual Investment Level* (Split-half reliability = .85)

1. We (both firms) have made significant investments dedicated to this relationship
2. Both of us have made substantial investments of time and resources to develop this relationship

Environmental Dynamism* (Cronbach's alpha = .87)

1. The market demands on us are constantly changing
2. The market practices in our industry are constantly changing
3. The market conditions that we face are constantly changing

Mutual Information Level*

Overall, we (both firms) presently know a lot about each other that is relevant to this relationship

Exchange Volume Alignment*

We have similar expectations regarding the amounts involved with the purchase transactions that will occur between us in the next year

Future Growth Expectations*

We both expect that the number of purchase transactions between us will increase in the future

* 7-point Likert scale anchored by 1= "strongly disagree" to 7 = "strongly agree"