

Inter-firm trust: two theoretical dimensions versus a global measure

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ABSTRACT

Trust is an essential construct of actor bonds in the IMP framework (Håkansson and Snehota 1995), and is also known to be important for inter-firm relationships (Håkansson and Snehota 1995; Morgan and Hunt 1994).

Trust has been conceptualised as a multi-dimensional construct in previous business-to-business research, with the two dominant theoretical dimensions of benevolence or goodwill on the one hand (Ring and Van de Ven 1992) and confidence, credibility or predictability that a partner may be relied upon, on the other (Anderson and Weitz 1989). These theoretical dimensions are recognised in early inter-firm research by Schurr and Ozanne (1985) who used the inter-personal definition of trust developed by Blau (1964) and Rotter (1967).

However, some doubt has arisen as to whether these theoretical dimensions exist, with Doney and Canon (1997) finding that they could not discriminate empirically between the dimensions of benevolence and credibility. In addition, most papers have resorted to a global operationalization of trust, so discounting the question of dimensionality.

After a review of some elements of trust and its measurement in the inter-firm literature, this paper presents empirical evidence that trust can be treated as a global measure for inter-firm research. This evidence is based on a survey of 83 principals and distributor/agent firms from Australia, New Zealand, Malaysia and Singapore. All firms were involved in the business applications computer software industry, where development of trust is a key element of successful inter-firm interaction.

The paper concludes by discussing the implications for future inter-firm research and theory development on trust formation.

INTRODUCTION

There is a strong tradition in the Social Sciences that places trust as one of the three main coordinating mechanisms shaping social structures (Bonoma 1976; Bradach and Eccles 1989). Trust is also known to be important for inter-firm relationships (Geyskens et al. 1998),

with associations found between trust and relationship satisfaction (Anderson and Weitz 1989), adaptation (Hallen et al. 1991) and relationship performance (Medlin et al. forthcoming; Zaheer et al. 1998). Within the IMP framework, trust is an essential construct for describing actor bonds (Håkansson and Snehota 1995).

Trust has been conceptualised as a multi-dimensional construct in past business-to-business research with two theoretical dimensions generally considered (Geyskens et al. 1998). These dimensions are *honesty/reliability/expectancy* and *fairness/benevolence*. The first dimension rests upon a belief that the other party has the expertise and ability to perform (Anderson and Narus 1990; Dwyer et al. 1987), while fairness or benevolence is a belief that the other party will treat the risking party well under new conditions (Andaleeb 1995; Anderson and Narus 1990).

However, within inter-firm research it is unclear whether these two theoretical dimensions should be measured separately or as one global measure (Geyskens, et al. 1998). For example, in their empirical study, Doney and Canon (1997) found that they could not discriminate between the dimensions of benevolence and credibility. This supports Larzelere and Houston's (1980) argument that the dimensions are so interwoven that in practice they may not be separated. That is, expectations of benevolence, mutuality, or collective interest are built upon questions of openness and honesty in the relationship. If this were so, a global measure of trust incorporating both dimensions would be more appropriate for future studies of other inter-firm constructs. Conversely, separate operationalization of the two dimensions would allow examination of inter-firm trust formation.

This paper examines elements of the business-to-business literature on trust and measurement and then presents some evidence that trust at the inter-firm level of analysis can be measured with a global construct. The last section of the paper discusses the implications of this result for future research.

LITERATURE REVIEW

Researchers have suggested that explanations of economic production require an elaboration of the human element (cf Coleman 1984). From the outset, therefore, one is faced with the role of human perception and cognition in understanding causal associations leading to economic outcomes. Furthermore, these associations exist across different analytical levels from the individual to the firm, its relationships and networks (cf Chan 1998; Håkansson and Snehota 1995; House et al. 1995; Rousseau 1985). However, trust is first and foremost a psychological construct and its use in inter-firm research has always presumed that firms exhibit trusting behaviour based upon the perceptions and cognition of the management group or that of informed respondents. Thus, measures of inter-firm trust have all been developed from social psychology theory (see figure 1), or have relied upon other authors who based their measures on such theory (shown by italics in Figure 1).

Figure 1: Basis of Trust Measures

Inter-firm Study	Dimensions *	Source of Measure Social Psychology source <i>Previous Inter-firm source**</i>
Schurr and Ozanne 1985	Reliability, honesty and fairness	Blau 1964, Pruitt 1981, Rotter 1967
Anderson and Weitz 1989	Expectation/confidence, reliability and risk	Blau 1964, Pruitt 1981, Rotter 1967
Anderson and Narus 1990	Reliability and benevolence	Blau 1964, Rotter 1967
Moorman, Zaltman and Desphande 1992	Reliability, credibility and benevolence	Blau 1964, Pruitt 1981, Rotter 1967, Deutsch 1962, Zand 1972
Morgan and Hunt 1994	Confidence, integrity, reliability	Larzelere and Huston 1980
Ganesan 1994	Credibility/reliability and benevolence	<i>Zaltman and Desphande 1992 **</i>
Kumar, Scheer and Steenkamp 1995	Honesty and benevolence	Deutch 19Larzelere and Huston 1980, Rempel, Holmes and Zanna 1985
Andaleeb 1995	Reliability and benevolence	Larzelere and Huston 1980
Aulakh, Kotabe and Sahay 1996	Confidence, integrity, reliability	<i>Anderson and Narus 1990, Moorman, Zaltman and Desphande 1992</i>
Geyskens, Steenkamp, Scheer and Kumar 1996	Expectation and benevolence	Larzelere and Huston 1980, Rempel, Holmes and Zanna 1985
Doney and Cannon 1997	Credibility and benevolence	Larzelere and Huston 1980, Lindskold 1978

Zaheer, McEvily and Perrone 1998	Reliability, predictability and benevolence	Rempel, Holmes and Zanna 1985, <i>Anderson and Weitz 1989, Anderson and Narus 1990</i>
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* *Note: “and” separates the two dominant dimensions discussed in the studies*

** *Note: Italics show reliance on inter-firm study, rather than social psychology literature*

Trust, for an individual, has been described as a multi-dimensional psychological construct composed of elements such as; expectancy, reliance upon others, faith, surrender of control, consistency, mutuality and utility for risk (Corazzini 1977). Each of these dimensions describes the way trust works as a personal cognitive response with regard to an object that can exist anywhere in *future* human reality (cf Luhmann 1979; Medlin 2002). Accordingly, the object of trust may be a person (Larzelere and Huston 1980; Rotter 1967) or an institution (Lewis and Weigert 1985; Luhmann 1979; Shapiro 1987) and so it is possible to distinguish between inter-personal trust (ie. between individuals in buying and selling organizations) and inter-organisational trust (ie. between an individual and a supplying firm) (Zaheer et al. 1998).

However, trust is more than a psychological construct, for although trust arises through cognition it requires social structure for its formation (Luhmann 1979). That is, acceptance of socially generated meaning is required, before an individual resorts to trust as a means of thinking about business relationships.

Additionally, social structure also requires trust for its formation (Lewis and Weigert 1985; Luhmann 1979), so that trust and social structure are involved in continuous ‘conditioning’ effects. In this sense, Luhman (1979) argues that one must accept a combined psychological and sociological perspective to fully understand trust.

This argument is evident in the empirical results of Zaheer et al. (1998), where the authors were able to distinguish between different types of trust according to the level of analysis. Thus, interpersonal and inter-organizational trust were distinguished, with each having a different impact within an exchange context. In addition, the correlation between the two forms

of trust ($\phi = 0.546$, $t = 3.180$, $p < 0.01$) adds support to the conditioning argument. Doney and Cannon's (1997) study also suggests the need to account for levels of analysis and conditioning.

For inter-firm research, these studies suggest that trust can be viewed as a psychological construct, generated within social structures (ie firms and relationships) by individual and group interpretation of 'past events' (Medlin 2002). This interpretation has lead past researchers to rely upon informed respondents able to judge whether resource and activity allocation by the firm has been underwritten into the future by reliance on trust. This method of measuring inter-firm trust is evidently problematic, for the respondent is asked to inform on complex matters at a firm activity level and hence, to make a generalization. Thus, there is an inherent inter-level interpretation problem in this method. Even with careful screening of respondents, this inter-level interpretation problem is likely to remain; and asking informants to judge constructs at a relationship level further compounds the difficulty.

A further problem is apparent when considering benevolence in business markets, for separating self and collective interest is a difficult task (Ekeh 1974). In the case of firms, relying only on expectations of future benevolence as an indicator of trust is problematic when the final outcome must be achievement of the self-interest goals of the firm. Thus, Geyskens et al's. (1998) argument that both honesty and benevolence are necessary for trust to exist, is further supported by the somewhat ambiguous nature of benevolence in business relationships and the final need to rely upon honesty when accepting trust as the means to undertake a risky future.

With social and psychological conditioning in mind, an important question arises concerning benevolence and its role in trust. Whilst benevolence is an attribution of collective interest and mutuality (Larzelere and Huston 1980), to trust is to rely upon benevolence in the expected future. In other words, trust involves a risk concerning the future course of events, simply

because there is no alternative but to rely upon benevolence. This distinction is important for it indicates that trust is about the *future* (Larzelere and Huston 1980), while the past only figures in evaluating whether one might trust. That is to trust, or not, can be evaluated based upon whether honesty or benevolence were displayed in the past, but to finally trust is another matter, involving reliance upon future honesty and benevolence given uncertainty (see Medlin 2002 for time distinctions). Following this argument, trust is an *orientation to the future* and the concepts of honesty and benevolence are most likely intertwined and subsumed within a psychological response to an uncertain future; with the decision to rely upon trust based upon past social constructions and absence of other rational support.

When operationalizing inter-firm trust, the majority of studies have employed one informed respondent and used a global measure, by combining indicators for honesty and benevolence (see Figure 2). There are two types of variation to this operationalization. Morgan and Hunt (1994) operationalized only the honesty dimension (see figure 1), whereas a further three studies developed constructs for the two dimensions of honesty and benevolence and then settled for a global construct when examining their hypotheses (indicated by ** in Figure 2). Each of these variations in operationalization of trust is supported by the argument that the dimensions of honesty and benevolence are intertwined, since using indicators for expectations of honesty amounts to measuring reliance upon future benevolence.

On the other hand, Kumar, Scheer and Steenkamp (1995a, 1995b), in two papers based on one study, prepared separate measures for honesty and benevolence and then combined these with other first order constructs to generate a second order composite construct of 'relationship quality' (labelled 'Composite' in figure 2). In these studies, it was suggested that there was discriminate validity between honesty and benevolence (correlations of 0.72 and 0.62 on two samples, $p < 0.001$). However, the authors present no evidence of trust

dimensionality, for final confirmation of discriminate validity between the two dimensions requires that different associations be found in a nomological net (Malhotra et al. 2002).

Figure 2: Inter-firm Trust Operationalized

	Global Measure	Composite Measure	Two dimensions
Schurr and Ozanne 1985	*		
Anderson and Weitz 1989	*		
Anderson and Narus 1990	*		
Moorman, Zaltman and Desphande 1992	*		
Morgan and Hunt 1994	*		
Ganesan 1994			*
Kumar, Scheer and Steenkamp 1995a,b		*	
Andaleeb 1995	*		
Geyskens, Steenkamp, Scheer and Kumar 1996	**		
Aulakh, Kotabe and Sahay 1996	*		
Doney and Cannon 1997	**		
Zaheer, McEvily and Perrone 1998	**		
Note: ** indicates constructs for two dimensions prepared, but global for hypothesis examination			

Only one study appears to have provided evidence of a nomological distinction between the two dimensions of trust (cf Ganesan 1994). However, a close examination of the way benevolence is operationalized (see figure 3 for indicators) shows constructs, other than trust, being measured. Ganesan (1994) relies upon past events to determine previous benevolence (ie past commitments), while other indicators measure mutuality in the past or present. Hence, one might construe Ganesan's (1994) operationalization as past/present commitment (PPC). A re-examination of Ganesan's (1994) results supports this interpretation, with specific investments leading to evidence of PPC for retailers, while for vendors PPC is associated with satisfaction with past outcomes.

Thus, whether trust is a two-dimensional construct remains an open and important question. Furthermore, whether inter-firm trust should be measured as a global construct or whether further attempts should be made to distinguish between the theoretical dimensions of trust

remains unclear. However, given the discussion above, there are at least three reasons why trust should be treated as a global measure in inter-firm research of other constructs: (i) the inter-level generalization problem; (ii) the ambiguity of benevolence problem, and (iii) the argument that trust is an *orientation to the future*.

Figure 3: Ganesan's (1994) Benevolence Measures

Indicator	Present Attribution
Vendor's benevolence	
This resource's representative has made sacrifices for us in the past	Past commitment
This resource's representative cares for us	Present mutuality
In times of shortage, this resource's representative has gone out on a limb for us	Past commitment
This resource's representative is like a friend	Present mutuality
We feel the resource's representative has been on our side	Past mutuality
Retailer's benevolence	
The buyer representing this retailer has made sacrifices for us in the past	Past commitment
The buyer representing this retailer cares for my welfare	Present mutuality
In times of delivery problems, the buyer representing this retailer has been very understanding	Past commitment

The next section of this paper presents empirical evidence in support of a single global measure for inter-firm trust.

AN EMPIRICAL EXAMINATION OF TRUST

While any evidence of trust dimensionality relies upon finding constructs that display different associations with each dimension, the first empirical step is always the preparation of construct measures. In the study reported here, a number of steps were taken to ensure that trust could be examined in a conducive environment, with a variety of other constructs (see Medlin et al. forthcoming). However, it was not possible to examine the dimensionality question, as only a global inter-firm trust measure could be prepared. While this meant the primary research objective could not be achieved, the study remains useful in providing insights into directions for future research.

The remainder of this section of the paper describes the methodology and then presents the details for a global construct for inter-firm trust.

METHODOLOGY

A survey of 83 principals and distributor/agent firms from Australia, New Zealand, Malaysia and Singapore was conducted as part of a broader study. All firms were involved in the business applications computer software industry, where development of trust is a key element of successful inter-firm relationships.

The definition of a business relationship as “a working relationship between two firms, on a continuing basis” (Larson 1992) was used to screen inter-firm alliances. This definition encompassed principal/distributor arrangements, principal/agent arrangements and gentlemen agreements. All of these relationships were formed by mutual agreement, with no aid or direction from a parent company or other party. Thus, forms of hierarchical coordination were removed as factors in the formation of these relationships.

The software industry was chosen for its network nature, which meant that relationships were the common modus operandi (Coviello et al. 1998). Copyright breaches and pirating in the computer software industry mean that principals generally seek to establish long terms relationships with known and trusted partners. Opportunistic and short term strategies would be highly discouraged in a situation where providing the software immediately exposes the principal to the risk of intellectual property theft. Thus, this industry setting is appropriate for examining the construct of trust. A second, but less important reason was that the innovative nature of the computer software industry, combined with the education level of participants, meant that country culture would be less important in explaining partnership interaction. In addition, by conducting the study with relationships across a cultural divide, the effect of participants’ own cultural and social norms upon the way a relationship was conducted were

reduced in terms of its significance. Finally, firms in Malaysia and Singapore also use English as the main business language, avoiding the need for translating the survey instrument.

Focusing on one industry had the effect of controlling for industry culture. This is consistent with the approach undertaken in previous business relationship studies. Consequently, and since they operate in a similar industry environment, the firms are more likely to reveal relative strengths/weaknesses in relation to their competitors than would firms operating in a number of different industrial sectors. In addition, the use of a single industry leads to more robust empirical results, as firms would rely on similar skills in order to perform in that given environment.

Sampling Frame

In an initial step, a comprehensive list of software exporting firms (312 Australian, 175 New Zealand) was obtained from a commercial database. A one-page facsimile was then used to identify those firms involved in any type of distribution arrangement, ranging from gentlemen agreement to memoranda of understanding. This process resulted in a final list of 128 Australian/New Zealand firms identified as having relationships with Malaysian/Singaporean distributor/agent firms. Each firm in this sample was then contacted and the person responsible for managing the Malaysian/Singapore relationships was identified. The ability of the manager to be a key informant (Campbell 1955) was established and a qualification process applied to collectively nominate the partner firm in the other country. Details of the manager on the other side of the relationship were also obtained. Surveys were finally mailed to the key informants in both firms. Eventually, information on 83 relationships (from 45 principals and 38 agents/distributors) were collected and analysed, representing a response rate of 32%. In this study, both sides of the principal/distributor relationship have been included, but the dyad data has not been matched.

RESULTS

Indicators were prepared for the two dimensions of honesty and benevolence, based upon the original interpretations and indicators given by Larzelere and Houston (1980). However, contrary to Larzelere and Houston (1980), separate measures were prepared by discriminating between the original indicators (see figure 4) on the basis of the definitions for benevolence and honesty provided by Anderson and Narus (1990).

Figure 4: Indicators for the Two Dimensions of Trust

Benevolence
The other party can be counted on to help this firm if the need arises
Our firm can rely upon the partner firm
Our firm expects that the future relationship with the partner firm will be good
Honesty
The other party is truly sincere in their promises
Our partner is perfectly honest
Our partner firm is perfectly credible

In the empirical study, informants were asked to respond on a nine-point scale ranging from strongly agree to strongly disagree. Construct measures for each dimension were then prepared by addition of responses. The Cronbach alphas for each construct were sound (benevolence $\alpha=0.8698$, honesty $\alpha=0.8866$). However, discriminate validity between the benevolence and honesty constructs was poor, with an inter-construct correlation of 0.877 ($p>0.01$) and with inter-item correlations greater across constructs for some items (see Appendix 1). These results suggest for this sample, benevolence and honesty are intertwined and that a global measure of inter-firm trust was most appropriate.

To further explore dimensionality, factor analysis was conducted on all six indicators using the Principal Component method, to identify the 'real' factors present in the data (Kline 1992). One factor explaining 75.739% of data variance was found, with loadings on each indicator in the range of 0.840 to 0.898. It was not possible to discriminate between the dimensions of

honesty and benevolence by rotating to a simple structure (Kline 1992). The final global inter-firm trust measure, composed of all six indicators, provided a Cronbach's alpha of 0.9350.

In conclusion, the empirical evidence from this sample supports the use of a single global trust measure composed of two strongly correlated theoretical dimensions. However, the small sample size suggests that the study should be replicated (Kline 1992). Furthermore, as no attempt was made to find different associations between benevolence and honesty constructs with a third or fourth construct, it remains unclear whether delineating two separate dimensions for trust is worthwhile in future research.

FUTURE RESEARCH

Measurement of inter-firm trust is an inherently difficult task. Earlier, the problems respondents face in measuring inter-firm trust were identified as: (i) the intertwinement of honesty and benevolence dimensions (Larzelere and Huston 1980), (ii) the inter-level generalization problem; (iii) the ambiguity of benevolence problem, and (iv) the argument that trust is an *orientation to the future*. That so many issues are involved in measuring inter-firm trust suggests that considerable research remains to be completed.

There are two inter-related tasks that future research should attempt to achieve. The first is to improve measures of inter-firm trust; while the second requires operationalizing the two theoretical dimensions, so that the ways trust is institutionalized within firms may be examined.

The arguments presented in this paper about the way trust is formed by expectations of future honesty and benevolence, based upon socially constructed and past interpretations of inter-firm activity clearly deserve further research attention. While it is possible that expectations of future honesty and benevolence are so intertwined as to be inseparable, the questions of how trust is psychologically and sociologically composed within firms might only be answered by empirical studies able to distinguish between the two theoretical dimensions of inter-firm trust.

With regard to improvements in measurement, it is possible that the problem of inter-level generalization may be resolved by the use of two or more respondents, after careful screening for their expertise and ability to comment on extra-individual constructs. In addition, given the future orientation of inter-firm trust, measurement may be improved by using indicators that focus attention on the reliance upon trust to handle future uncertainties. For example, while the empirical evidence presented here was limited in its ability to discriminate between honesty and benevolence, future research might benefit from the more discriminating indicators developed by Kumar, Scheer and Steenkamp (1995).

Finally, future research requires theory development about the antecedents and results of firms relying upon trust when interacting with each other, for distinguishing between honesty and benevolence requires associations of different strengths be found with other constructs in a nomological net.

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Appendix 1: Inter-item Correlation Matrix

	1	2	3	4	5	6
1	1.000					
2	0.663	1.000				
3	0.692	0.728	1.000			
4	0.739	0.700	0.658	1.000		
5	0.608	0.785	0.649	0.722	1.000	
6	0.697	0.783	0.747	0.737	0.716	1.000

All correlations significant at 0.01 level