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Interpersonal trust and inter-firm trust in construction projects

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Working relationships are important in effecting project performance and cooperation is believed to be a behavioural consequence of trust. Trust, being a quality of relationships, involves people interacting at interpersonal and inter-firm levels. This is investigated through 10 partnering and non-partnering projects, using a validated trust scale. A case study approach is used to collect qualitative data through a quantitative approach to help understand the concept of trust. Data were collected from clients, contractors, consultants and subcontractors. Clients and contractors have a tendency to trust individuals whereas contractors and subcontractors have a tendency to trust firms. Inter-firm trust is better understood than interpersonal trust; but both are associated with keeping commitments and demonstrating cooperation, even though interpersonal trust is considered more important. Partnering does not necessarily exhibit more trust than non-partnering projects whereas clients and contractors have different emphasis on interpersonal and inter-firm trust. Therefore, to promote trusting relationships in multi-parties is to fulfil not only the technological and economical goals, but also the moral and social goals as expressed in people relationships such that a socially safe working place can be created. For this reason, middle managers need to know about trust because they face more relationship problems than others.

Keywords: Interpersonal trust, inter-firm trust, relationship, partnering, project.

Introduction

Construction activities often involve uncertainty, exposure to high risk, the need for quick decisions, an orientation towards conflict and imperfect information. To bring together people with different professional backgrounds, different years of experience and different strengths to work together is never easy. Adversarial relationships and defensive behaviour tend to surface. Partnering in construction has been presented as a potentially important way of improving project performance through encouraging better integration and cooperation between contractual partners (Hong Kong Housing Authority, 2000). It is considered on the one hand as a platform for providing sustainability strategies (Matthews *et al.*, 1996), and on the other, as a change in traditional relationships to a shared culture without regard to organizational boundaries (CII, 1989). The

question is what is to change and what should be done to change. Given the view of the 'new' relationship described in partnering as being based on trust, dedicated to common goals, and understanding of each other's individual expectations and values, we investigate trust as a relationship at inter-firm level and interpersonal level and attempt to review whether partnering projects display more trust than non-partnering projects.

Quality of relationship

Relationships are generally described as good or bad, positive or negative, close (intimate) or distant (non-intimate) and, for functionally based relationships, task-oriented or non-task-oriented. This shows that the quality of a relationship falls into one of two extremes and only a continuum is able to reflect its intensity. Trust is regarded as a quality of relationship that can have an impact on project performance. A good interpersonal relationship involves trust and

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confidence in others (Duck, 1990). It has the characteristics of enjoyment, trust, mutual assistance, respect and understanding, like those of a friendship. The other extreme of trust is 'distrust' whereas the middle of the continuum is a neutral position that we can refer to as 'no trust'. Trust at work involves a task to accomplish. Getting the work done involves others and this demands cooperation to have the task accomplished. Bolton and Bolton (1996) describe the keys to good relationships at work as respect, fairness and honesty without considering the 'friendship' element in the relationships. Respect is essential to building constructive and ongoing relationships, but it may have nothing to do with competence or incompetence because it can be affected by manners or cultural norms. Fairness relates to how people are treated and concerns justice in the distribution of rewards. However, it is difficult to achieve absolute fairness, and generally, a mutually beneficial outcome is desirable in most cases, particularly in business dealings. Regarding honesty, Bolton and Bolton (1996, p. 116) state that 'True honesty is not something that comes easily. It is a rigorous moral achievement' and it takes time to assure oneself whether the other is honest. Williams (2001) suggests that people's perception of others' ability, benevolence and integrity would determine the others' trustworthiness. In all task-focused relationships, task-related rules are endorsed more strongly than interpersonal rules (Argyle and Henderson, 1985; Anderson and Narus, 1990) except for some universal rules such as respect for privacy, public criticism and debt repayment or returning favours. Although task-focused relationships also involve interpersonal exchange, task rules are rewards-oriented and the goal of the relationship is primarily to cooperate in the production of a discrete product or service.

Interpersonal trust and inter-firm trust

Trust at an individual level has a dyadic relationship. Two persons who have worked together before and have knowledge about each other may or may not have interpersonal trust. The attributes of interpersonal relationships are communicated to fulfil a variety of functions, such as to explain, justify or excuse behaviour, as well as to assign blame and instil guilt (Hogg and Vaughan, 2002). Effective communication can sustain good relationships. Through communication, uncertainty is eliminated or minimized within a comfort zone where people can talk, negotiate and compromise such that the relationship would not be ruined. The resultant behavioural outcome is that the

party will exercise cooperative or collaborative behaviour when trust is present. If this does not happen, then distrust will be present and conflict arises. When people have no intention to cooperate, compromise or come to any agreement, only certain external forces or influence will help to remove or minimize the effect of conflict situations, which may lead to deadlock, third-party intervention or even litigation where a ruling or regulatory regime has to be strictly followed. In a global society the probability of working with strangers increases. Trusting people begins with trusting ourselves (Solomon and Flores, 2001). While building trust may take many transactions, and many commitments and expectations fulfilled, and in the absence of personal history and relationships, we are relying on reputation, in the form of institutional trust. So whom we can trust, the firm or the person? A firm, in effect a wholly constituted institution, run and moved by individuals and collective human actions and decisions, is about the evasiveness of the question of responsibility. Block (1987) points out that problems would surface if we take a bureaucratic mentality not to take responsibility for what is happening. A firm, governed by a control mechanism in predicting behaviour, involves human relationships. It requires negotiating agreement or negotiating trust in the process because there is interdependence. Negotiating trust as viewed by Block is an act of eliminating bureaucracy, while interpersonal trust somehow falls in between the two, the firm and the individual. Based on the temporary nature of projects, the work itself becomes a one-off experience and there is no bond to encourage these people to work together again in the future. The benefit of the learning process is lost and a new relationship needs to be cultivated again in a new project. This is similar to 'swift trust' in a temporary system where there is little interpersonal exchange and the focus is more on action (Meyerson *et al.*, 1996) because a long-term relationship is not expected.

The guiding principle for organizational relationships is the maintenance of the interdependence of the two parties' goals (Blois, 1998). Exchange theory has been used to explain business or trading relationships. It states that people will stay in a relationship if the balance of rewards and costs is as good as they think they can get from the various alternatives open to them, making allowances for the costs of making the change (Argyle and Henderson, 1985). Work relations between firms are affected by the supports and restraints of the working environment, and they require incentives to sustain working relationships. If we contend that positive relationships will bring health and happiness, good work relations will do the same.

Inter-firm relationships can be established through strategic alliances and partnering. There exists a formal

agreement to put two or more firms together to work jointly for a purpose, at the project or business level, depending on the content of the agreement. Strategic alliances are voluntary cooperative inter-firm agreements aimed at achieving competitive advantage for the partners (Gulati, 1998; Das and Teng, 2000), whereas partnering is a relationship-based agreement dedicated to common goals and an understanding of each other's individual expectation and values (CII, 1989). Trust is emphasized in both cases to ensure the partnership functions effectively and efficiently. This requires effective interaction at a working level among many people with diversified expertise and interests. An inter-firm relationship may also exist at an informal level where no formal agreement is made. This is where a high degree of trust can normally be found. The relationship there is usually strongly embedded with personal trust among the decision-makers or key persons of the firms. This kind of trust is usually subtle and unspoken. It also reflects the behavioural pattern of the stakeholders and can be called goodwill. In referring to the relationship between the main contractor and specialist trade contractors, Sozen and Kayahan (2001) suggest that goodwill is the most effective and least costly means of safeguarding exchange and enhancing performance. Powell (1992, p. 393) in his paper, 'Conflict in the context of education in building ethics', states that 'Trust pertains to relationship, the future, confidence, morality and mutuality'. As the ability to be trustworthy and to trust is essential to building human relationships, a relationship exchange is implicit. It goes upward or horizontally to the actors who have the power of reward or influence in the exchange of trust (Figure 1).

The cultural aspect of interpersonal trust and inter-firm trust

An individual is invariably influenced by the national culture and subsequently the task culture in his/her working environment. Trust is viewed as an integrative component enabling a short-term perspective to become viable for the long term, and the long-term orientation is also regarded as a cultural factor (Hofstede, 2001). Trustworthiness is a predominant feature of Chinese-Chinese business transactions. A survey about Chinese culture and partnering conducted by Kwan and Ofori (2001) shows that trust and friendship as well as mutuality and respect to be important values that affect contractors' business relationship with others. Chinese tradition emphasizes harmonious relationships among stakeholders.

'Trust' is a word known by all and is a term with many meanings (Williamson, 1993). It can have the

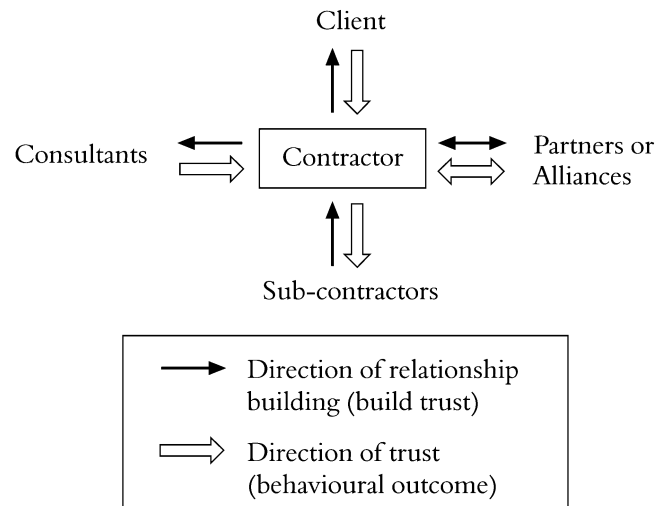


Figure 1 Relationship and trust related to a contractor

meaning of belief, confidence and integrity in a personal sense, while denoting reputation, credibility and the ability to keep promises in a functional sense, which can apply to both an individual and a firm. Lun Yu (論語) states that '信近於義', which means that its definition is close to that of *integrity*. Therefore, trust in the Chinese context can be referred to as '誠信', which includes also the meaning of trustworthiness and compliance. 信, 信任, 相信 are the usual ways of expressing trust, like in the context of 'I trust you', 'can you be trusted', with an implication that there is a reliance on one another, where one is vulnerable and at risk if the other does not perform. This implies 'interdependence' like that described by Axelrod in respect of cooperation (1984, 1997). Since the research was carried out in Hong Kong, both English and Chinese terms were used to catch the meaning of the term to differentiate the nature of trust. In Chinese, trust is one of the five tenets of Confucianism and as a single character it can be '信: 誠也; 相信, 信任'; and as part of other words as in the 'terms' like 信任 (trust, confidence), 信用 (credibility), 信譽 (reputation), 信守 (abide by, keep a promise), 誠信 (integrity), and 信賴 (trustworthy, reliable), has similar meanings and would form the bases of trust in defining interpersonal trust and inter-firm trust.

The general distinction of interpersonal trust and inter-firm trust in the author's pilot study¹ (Lau, 2005) demonstrates that interpersonal trust emphasizes integrity and reliability whereas inter-firm trust emphasizes credibility and reputation. They are interrelated but one is not dependent on the other. For interpersonal trust, integrity (誠信) generally refers to an individual quality, and in Chinese it signifies honesty and confidence, and thus no cheating should be involved in the action responding to a situation involving

perceived benefits. Integrity therefore gives rise to an ethical expectation from others, and trusting a person with integrity means that his/her actions are consistent with their words (Shaw, 1997). Reliability (信賴) refers to what can be trusted, and reflects the notion of reliance in expressing complete confidence, like that of credibility; but when there is no choice, reliance becomes dependence (Hart, 1988). Regarding inter-firm trust, *credibility* (信用) means the ability of a firm to fulfil its obligations and commitments, and is therefore an expression of complete confidence in someone to perform and achieve results (Shaw, 1997). *Reputation* (信譽) is normally regarded as a positive attribute dependent on a firm's past behaviour (Wilson, 1995). It encourages commitment to future business transactions. Barney and Hansen (1994) consider reputation to be a signal that indicates a strong form of trust and an asset in which firms are willing to invest by engaging in trustworthy behaviour (Wilson, 1995; Chiles and McMackin, 1996), it is sometimes extended to mean that business partners are perceived to be in compliance with the norms of equity after transactions are completed (Ring and Van de Ven, 1992).

Trust in Chinese society is generally believed to be built on reputation and relationship (Cheng and Pang, 2003). Relationship is traditionally understood as interpersonal, starting in the family and extended to 'friends' and others. The relationship structure is therefore an important mechanism for building trust. Reputation is considered impersonal and one will have to rely on reputation if there is no knowledge of the others.

Trust in the context of partnering projects

'Trust' has been included in the literature of different disciplines and in construction partnering or strategic alliance frameworks (Rowlinson and Root, 1997; Bresen and Marshall, 2000; Kwan and Ofori, 2001; Liu and Fellows, 2001; Swan *et al.*, 2002). The tangible benefits of partnering are a reduction in the number of disputes, a reduction in the value of claims, time savings, cost savings and improvement in quality, whereas the non-tangible benefits are harmony at work and good working relationships. This mindset stipulates that the trust relationship in partnering is mainly a form of inter-firm trust that calls for cooperation and collaboration (Ring and Van De Ven, 1992; Dyer and Chu, 1997). In Hong Kong, partnering is contractor-led. The partnering arrangement is first initiated as a marketing tool for building relationships, but is then used as a bridging stone for establishing long-term relationships and a 'management tool' in the production

process. If a partnering agreement is incorporated in the contract, then an attempt is made to create a working relationship in which knowledge-based trust can be built. Repeated transactions in the form of further contracts then help to sustain a long-term relationship (Fontenot and Wilson, 1997). Knowledge-based trust allows the client to predict the contractor's behaviour and to make quicker decision in choosing a contractor aside from budgetary criteria.

Trust is essential in contracting, and the question is: 'Does partnering bring inter-firm trust, and if so, how can we test the existence of trust and determine the trust level?' Four factors are considered here for inter-firm trust: keeping commitments; predictability and knowledge of others; honest negotiations; and avoiding taking excessive advantage (Rempel and Holmes, 1986; Cummings and Bromiley, 1996).

Trust demands keeping commitments

In searching for a mutual objective, partners have to explain their reasonable expectation (Bennett and Jayes, 1998) and expectation is one of the components of trust relations. With a committed workforce, it is possible to acquire benefits such as increased opportunity for innovation and the continuous improvement of quality products and services (CII, 1989).

Trust involves predictability and knowledge about others

Bennett and Jayes (1996, p. 12) state that: 'You should mainly partner with people that you have worked with before or people who have had experience with partnering'. The benefit of doing so is an improved understanding leading to improved productivity arising from designers, managers and clients having worked together for several years. This has been identified in EPSRC research which shows productivity improvements that range from 50% to 200% (Bennett and Jayes, 1996, p. 13). Knowledge of members increases predictability and reduces uncertainty.

Trust demands honest negotiations

Open book arrangements, under which confidential information is made available to other stakeholders, demand trust between partners or even among partnering firms. Only commitment from the top management can make this possible and bring successful implementation of partnering. The findings so far indicate that a saving in project costs can be up to 10% of total cost for project partnering; and for strategic partnering, the saving is expected to be up to 30% (Bennett and Jayes, 1998).

Trust means to avoid taking excessive advantage

Partnership creates a relationship that is expected to yield a higher standard of conduct, and is not just a purely conventional construction contract where only commercial issues are addressed. In addition, a partnership contract also touches on the conduct or 'trust' expected to be embedded in a commercial relationship rather than just spelling out the main issues of payment and how to tackle problems when they arise. In law, this conduct is known as a fiduciary duty, which is a trust relationship between a trustor and a trustee.

The contract is regarded as a hard fact. It describes how the relevant parties should work in relation to procedures and the action to be taken when certain problems arise. In other words, it tells one how to behave. The business and legal relationships created begin and end in calculus-based trust (Lewicki and Bunker, 1996). It prescribes 'punishment' for a party who does not conform to the terms of the contract. Behavioural consistency is sustained by the threat of 'punishment'.

However, interpersonal trust should not be disregarded in a partnering context. Dyer and Chu (1997) suggested that institutional environment had an important influence on the development of inter-firm trust. They believed that personal ties are also important in inter-firm relationships while inter-organizational routines are credible signals of commitment if one has confidence in the stability of the firm's routines and personnel. They believed that inter-firm trust cannot be created by individuals acting on their own; and individual actions are a starting mechanism for inter-firm trust if these individuals can influence organization-wide processes and routines.

Levels of trust may generally be described as high, medium and low. There is no universal agreement as to what constitutes a high or low level of trust. As interpersonal trust is generally expressed in terms of whether the other is reliable (Rotter, 1967), a high level of trust is believed to be anchored on the positive conclusions about the other's motive drawn from past experience and by faith in what the future holds. This implies that one is unlikely to call the other's motives into question in a conflict situation. A medium level of trust in a relationship thus refers to a situation when there is some uncertainty about the other's intentions, and one is alert for signs of risk. It is likely that manipulative and coercive power tactics are used in a conflict situation when a medium level of trust exists, and more stringent criteria are adopted to evaluate the other's motives. This is a form of risk-avoidant strategy to fill the gap of uncertainty. With a low level of trust, there is hardly any confidence and people tend to be

sceptical, while little care is shown in the relationship. The level of trust is usually used to evaluate the extent of trust prevalent in a particular setting. Shaw (1997) provides a scoring system to measure trust in organizational management to widen the margin among people. Although this is an arguable approach if all people are involved, it yet provides an indication of the intensity of trust. According to Kao and Ng (1992), a high level of trust implies that one is confident and psychologically secure as well as more relaxed, less suspicious and defensive about the organization one has chosen to trust. One example of a high level of trust is the Japanese system of lifetime employment, which offers a secure working environment. The Chinese family business also retains a high level of trust among members of in-groups and offers another example of personal trust. When a business is exposed to high risk and uncertainty, a high level of trust is required so that the organization concerned can be less hierarchical and more flexible in responding to change. When the environment is more stable and the organization is more in control, a comparatively low level of trust is required. In mechanized production, where trust is built into the control procedures, little personal trust is required and therefore reliance on personal trust is minimized. In automated production, where people are required to be responsive and adaptive, a higher level of trust is required. This indicates that different degrees of trust may be required in different situations, different working environments or even different industries. Fukuyama (1995), on the other hand, argues that the level of trust in a society differs among nations because of the different cultures.

Inter-firm trust is expressed generally in terms of the confidence over what is expected from the other firm (Das and Teng, 1998; Gulati, 1998). Goodwill is normally regarded as a high level of trust; credibility and reputation (knowledge of others) possibly form the other levels of trust. Yamagishi and Yamagishi (1994) claimed that knowledge-based trust is simply a by-product of close and stable relations, and is conceptually distinct from assurance, which is believed to be a risk-free relationship where the other's cooperation is warranted. This study is therefore also directed to determine the different levels of interpersonal trust and inter-firm trust to reflect the intensity of trust.

The research case study

The case studies reported here focused on interpersonal trust and inter-firm trust in the relationship channels using:

- (1) structured questionnaires to evaluate interpersonal trust and inter-firm trust with validated trust scales to determine the trust status at interpersonal and inter-firm levels;
- (2) structured questionnaires to elaborate the meanings of interpersonal trust and inter-firm trust as understood by the practitioners in a project environment.

The questionnaires were so designed to determine the level of interpersonal and inter-firm trust in partnering and non-partnering projects with a scoring system. The scoring system was adopted from the trust scale validated by researchers in organizational behaviour and psychology such as Rotter (1967), Cummings and Bromiley (1996) with a general understanding that the level of interpersonal trust was a measure of whether one's expectation of others could be met; whereas the level of inter-firm trust was about the desirable behaviour expected of one another in the relationship channels.

Ten projects, some partnering and some non-partnering, were selected for case studies to obtain a balanced view of trust as it had been assumed that trust might still exist where there was no partnering. Data were collected from the key participants of each project from the client, the consultant, the contractor and the subcontractor firms. Forty responses were collected, representing a response rate of 50%. Seven of the projects incorporated partnering whereas the other three were non-partnering (see Table 1).

Scale used to measure trust

Interpersonal trust

The Interpersonal Trust Scale was based on Rotter's work in 1967 and 1971. It had been widely adopted for use as it specifies both the theoretical and operational definitions of the term. The scale was designed in a

Likert scale of 1 to 7 to measure one's expectation that the behaviour, promises or statements (verbal or written) of other individuals can be relied upon (Wrightsmann, 1991).

Inter-firm trust

The Inter-firm Trust Scale was based on Cummings and Bromiley's (1996) instrument in a Likert scale of 1 to 7 to measure inter-organizational trust from the behavioural perspective in terms of keeping commitments, negotiating honestly and avoiding taking excessive advantage, where their empirical studies had proved that these behavioural statements were quite highly correlated to the three dimensions of trust— affective, cognitive and behavioural intention. Six questions adapted from Rempel and Holmes' trust scale (1986) were added to test the predictability of the behaviour of a partnering firm in reflecting knowledge-based trust.

Result of the trust score

The results were analysed with descriptive statistical methods and the relative importance index. There were 25 questions each to measure the level of interpersonal trust and inter-firm trust, with a maximum score 175 and a minimum score of 25. The highest interpersonal trust scores (ranging from 102 to 107) were found in Project No.8, a non-partnering project with a public client. It seemed that participants showed high interpersonal trust owing to its openness of information, accountability on procedural matters and its commitment to payment. It might also be due to the fact that only clients and consultants were involved in providing responses for this project. Project No.2, a partnering project with a corporate client, had very balanced trust scores (ranging from 87 to 89) and this suggested that the participants had been working in a task manner.

Table 1 Case study research projects

Project	Project title	Characteristic	Client
Case 1	Residential building	Partnering	Public
Case 2	Facility building	Partnering	Private
Case 3	Industrial building	Partnering	Corporate*
Case 4	Commercial building	Partnering	Private
Case 5	Refurbishment	Non-partnering	Public
Case 6	Residential building complex	Partnering	Public
Case 7	Refurbishment	Non-partnering	Corporate*
Case 8	Civil engineering	Non-partnering	Corporate*
Case 9	Residential building complex	Partnering	Private
Case 10	Civil engineering	Partnering	Corporate*

Note: *A corporate client refers to an institutional client who has accountability to the government and yet operates on its own.

Table 2 Interpersonal trust scores for research projects

Proj. No.	Characteristics	Client	Individual scores for interpersonal trust	Range of scores	Average score	Percentage w.r.t. the maximum score
1	Partnering	Private	80, 83, 88	80–88	84	48%
2	Partnering	Corporate	87, 88, 89, 89	87–99	88	50%
3	Partnering	Private	58, 79, 84, 98	58–98	80	46%
4	Partnering	Private	84, 84, 86, 102	84–102	89	51%
5	Non-partnering	Corporate	51, 84, 88, 97, 107	51–107	85	49%
6	Non-partnering	Corporate	78, 97	78–97	88	50%
7	Partnering	Corporate	73, 80, 84, 85, 86, 90, 90	73–90	84	48%
8	Non-partnering	Public	102, 103, 107	102–107	104	59%
9	Partnering	Public	83, 87, 94, 97	83–97	90	51%
10	Partnering	Public	84, 85, 87, 111	84–111	92	53%

The lowest interpersonal trust scoring ranges were found in Project No.3, a partnering project with private clients. The highest scores (102 and above) of interpersonal trust came from two clients, three consultants and one contractor; while the lowest trust scores (51 and below) came from two contractors. This suggested that contractors might be more ‘guarded’ in their trust as a result of the commercial nature of the project and that they placed more emphasis on financial commitment to the work.

The respondents had higher inter-firm trust scores on keeping commitments and predictability, and comparatively lower scores for negotiating honestly and avoiding taking excessive advantage (Table 3). Comparing the scores of inter-firm trust with interpersonal trust, they generally had higher inter-firm trust (average mean score 104) than interpersonal trust (average mean score 88). This might be because the questions for inter-firm trust were more situational specific, whereas the questions for interpersonal trust were generally focused on testing whether the other was reliable. In addition, there was an implication that evaluating inter-firm trust was less complex than evaluating interpersonal trust in which psychological

aspects predominate with respect to issues like culture and demographic factors.

Comparing the interpersonal trust scores of different participants in the project team (see Table 4), it was found that client and consultant as a group; client have higher interpersonal trust scores than contractor and subcontractor, as a group, contractor. This means that client and consultant tend to trust the individuals. In view of the inter-firm trust, contractor scores the highest and consultant scores the lowest, whereas the scores for client and consultant are more or less the same. This indicates that the client group would trust the individual rather than the firm, whereas contractor group would trust the firm rather than the individual.

In an overview, client maintains an equal importance for interpersonal trust and inter-firm trust, while subcontractor maintains a comparatively low interpersonal trust and a comparatively high inter-firm trust. In view of 22 clients (including consultants) and 18 contractors (including subcontractors) in the respondents, it can be observed from Table 3a that collectively clients have higher interpersonal trust whereas contractors have higher inter-firm trust.

Table 3a Inter-firm trust scores for research projects

Proj. No.	Project types	Characteristics	Client	Inter-per. mean trust score	Inter-firm trust mean score				
					Mean score	KC	NH	AA	PD
1	Building	Partnering	Private	84	102	26	26	22	24
2	Building	Partnering	Corporate	88	110	28	24	27	27
3	Building	Partnering	Private	80	104	26	25	25	24
4	Building	Partnering	Private	89	106	28	24	23	27
5	Refurbishment	Non-partnering	Corporate	85	106	27	24	25	25
6	Building	Non-partnering	Corporate	88	107	26	27	25	26
7	Refurbishment	Partnering	Corporate	84	100	26	23	22	25
8	Infrastructure	Non-partnering	Public	104	104	27	23	25	24
9	Building	Partnering	Public	90	96	27	21	19	25
10	Infrastructure	Partnering	Public	92	104	28	22	22	28

Notes: * The scores for NH have been adjusted to obtain a direct comparison with other scores. KC, NH, AA, PD: see Table 3b.

Table 3b Inter-firm trust scores

Subscales for inter-firm trust	Average score
Keep commitments (KC)	111
Predictability (PD)	106
Negotiate honestly (NH)	99
Avoid taking excessive advantage (AA)	98
Overall mean	104

Meaning of interpersonal trust and inter-firm trust

Respondents were asked similar questions regarding the basis for interpersonal and inter-firm trust. These questions were designed to identify the characteristics or components of the two different types of trust. The relative importance index (RII) in Table 5 and Table 6 showed that cooperation, commitment and a positive relationship were important for both interpersonal and inter-firm trust. The other items regarded as important for interpersonal trust included experience, face-to-face communication and integrity. This meant that interpersonal trust needed direct contact and communication and not just frequent interaction and a long working relationship. Direct contact was required for interpersonal trust but not quite so for inter-firm trust. The RII was low for both interpersonal and inter-firm trust in situations where one has to refer to a third party or other sources for information (0.569 and 0.544); one has to depend on another (0.546 and 0.558); and when others exercise control (0.564 and 0.553). It appeared that the respondents were cautious about the sources of

information and would prefer to have knowledge of others through personal contact, direct experience and communication. It indicated that inter-firm trust could have been considered to be more objective as it was mostly based on information about the other firm, which was a form of knowledge-based trust. Reward and punishment were ranked very low in the RII for both interpersonal and inter-firm trust, and this implied that these were the lowest form of trust, reflecting actions based on compliance rather than relationships.

In inter-firm trust, behavioural consequence in the form of cooperation was more important than a positive relationship. In interpersonal trust, on the other hand, a positive relationship was regarded as more important than cooperation. To distinguish such outcome it is prudent to explain the antecedent of cooperation. Cooperation can be viewed from the transaction exchange theory and the social exchange theory. In transaction economics, an obvious stimulus for cooperation is the availability of economic rewards, with the consideration that perceived benefits equal and exceed its cost. Therefore the presence of a mechanism to curb opportunism is important from the economic perspective. When cooperation is derived not from external awards or other perceived benefits, it is of socio-psychological nature, with the antecedent of interdependence (Phua, 2004). Cooperation, being considered beyond economic benefits, is largely social in context. To maintain a relationship means that the interests of all parties involved in the relationship are to be served (Lau, 2005). This makes clear that the

Table 4 Scores for interpersonal trust and inter-firm trust of the project members

Interpersonal trust				Inter-firm trust			
Client	Consultant	Contractor	Subcontractor	Client	Consultant	Contractor	Subcontractor
73	78	51	79	86	95	90	85
80	80	58	84	91	96	90	91
84	83	83	88	93	99	92	103
84	86	84	90	97	100	93	106
85	86	84	90	99	100	101	116
85	88	84		107	102	103	
97	88	87		108	102	103	
97	89	87		109	103	103	
107	94	87		110	112	104	
107	102	89		111	113	105	
	103	97			115	123	
	111	98			120	124	
		102				124	
89.90	90.66	83.92	86.20	101.10	95.33	104.23	100.20
Average for clients		Average for contractors		Average for clients		Average for contractors	
90		85		98		102	

Note: The bold numbers indicate excessively high and low scores.

Table 5 Relative importance of interpersonal trust

Basis of interpersonal trust	Total score	Mean	Relative imp. index
Your experience of working with the other person	154	3.949	0.790
The commitments demonstrated by the other person	149	3.821	0.764
The positive relationship you have already built with the other person	148	3.795	0.759
The cooperation demonstrated by the other person	145	3.718	0.744
The integrity within the person	145	3.718	0.744
The willingness to cooperate with the other person	139	3.658	0.732
Face-to-face communication you have with the other person	138	3.539	0.708
The agreement (mostly verbal) that you have with the other person	131	3.447	0.689
Your knowledge of the other person	132	3.385	0.677
The length of time you have been working with the other person	124	3.180	0.636
The frequency of interaction with the other person	123	3.154	0.631
The action that the other person has taken	122	3.128	0.626
Your general impression of the other person	119	3.051	0.610
The value-added service provided by the other person	119	3.051	0.610
The balance of risk with the other person	115	2.949	0.590
The way the other person works	112	2.947	0.589
What you have learnt about him/her from sources you can trust	111	2.846	0.569
Your knowledge of the third party who can influence the other person	110	2.821	0.564
The control you can exercise over the other person	110	2.821	0.564
The dependence of the other person	101	2.730	0.546
The other person's general public image	103	2.641	0.528
What you have learnt about the other person from a third party that you trust	98	2.513	0.503
The reward and/or punishment given to the other person	98	2.513	0.503

Note: The bold text distinguishes data in the high range (0.70–1.00)—medium (or average) range (0.590–0.699)—low range (0–0.589).

interpersonal and inter-firm relationships have different emphases.

The RII showed that interpersonal trust was either more important or more obvious than inter-firm trust (with the highest RII being 0.790 for interpersonal trust vs 0.749 for inter-firm trust), but the lowest RII for both were relatively equal (with the lowest RII being 0.503 for interpersonal trust vs 0.513 for inter-firm trust). Table 7 presents an indicative level of the different types of trust with respect to the RII in three groups ascribed as high, moderate and low levels of trust (high=0.7 and above; moderate=0.590–0.699; low=0.500–0.589; and no trust at 0.499 and below). These ranges were assigned to reflect a comparable level of importance for both interpersonal trust and inter-firm trust for easy reference in the later discussion.

Bases of interpersonal trust and inter-firm trust

Respondents were firstly asked to weigh the relative importance of interpersonal trust and inter-firm trust in a scale of 1 to 9. The result indicates that interpersonal trust has a weighting of 0.67 and inter-firm trust a weighting of 0.33, two times higher than inter-firm

trust. Respondents were then asked to rate on a scale of 1 to 7 the terms that best describe interpersonal trust and inter-firm trust. The same six terms with one more term following the ranking order for interpersonal and inter-firm trust confirmed in the authors' pilot study were used in this study to explore the specific components of trust. Analysed by frequency method, the different terms of interpersonal and inter-firm trust have an overall mean above 4 (maximum=5) except for 'reputation' as related to interpersonal trust, as indicated in the present study in Table 8b, which has a mean of 3.7. This means that the respondents agree that these terms are significant² (Lau, 2005) but are somewhat reserved about 'reputation' in interpersonal trust. However, the added component 'faith' (*confidence and faith*, 信心), which extends the meaning of trust to a positive attitude to an uncertain future, has received some emphasis with inter-firm trust and in non-partnering projects. This suggests that a subject is willing to make a commitment in the absence of full knowledge under these circumstances. Table 8 indicates the ranking order and the brief meanings of these terms, as a whole and as in partnering and non-partnering projects. As a whole (see Tables 8a and 8b), the order of these terms was more or less the same, but different orders were observed for partnering and non-partnering projects. For interpersonal trust

Table 6 Relative importance of inter-firm trust

Basis of inter-firm trust	Total score	Mean	Relative imp. index
The cooperation demonstrated by the other firm	146	3.744	0.749
The positive relationship you have built with the other firm	146	3.744	0.749
The commitments demonstrated by the other firm	144	3.692	0.738
The other firm's willingness to cooperate	133	3.500	0.700
Your experience of working with the other firm	133	3.410	0.682
Your knowledge of the leading person or the leading group of the other firm	133	3.410	0.682
Face-to-face communication you have had with the people of the other firm	132	3.385	0.677
The length of time you have been working with the other firm	121	3.184	0.637
The frequency of interaction with the people of the other firm	120	3.158	0.632
The cohesiveness shown by the other firm's workforce	122	3.128	0.626
The balance of risk with the other firm	119	3.051	0.610
The product that the other firm produces	117	3.000	0.600
Your general impression of the other firm	116	2.974	0.595
The value-added service provided by the other firm	116	2.974	0.595
The contract you have with the other firm	116	2.974	0.595
Your knowledge of most of the people of the other firm	113	2.974	0.595
The set rules and procedures implemented by the other firm	113	2.897	0.579
The general public image or brand name projected by the other firm	112	2.872	0.574
The dependence of the other firm	106	2.790	0.558
The control you can exercise over the other firm	105	2.763	0.553
What you have learnt from sources you can trust	106	2.718	0.544
The reward and/or punishment given to the other firm	100	2.564	0.513
What you have learnt about the other firm from a person that you trust	100	2.564	0.513

Note: The bold text distinguishes data in the high range (0.70–1.00)—medium (or average) range (0.590–0.699)—low range (0–0.589).

in partnering projects, it could be observed that it was about a person who had integrity and kept promises, whereas it was not quite so with non-partnering projects. Interpersonal trust in non-partnering projects is similar to our conventional concept of inter-firm trust: credibility and reputation. This suggests that the conventional wisdom about trust—that the firm is not separated from the person—has been maintained in non-partnering projects. For inter-firm trust in partnering projects, it could be observed that credibility was ranked top and confidence was ranked low, whereas it was quite the opposite in non-partnering projects. This suggests that the respondents working with non-partnering projects are more willing to accept risk from the firm and will rely on the trustworthiness of the person, whereas people working with partnering projects tend to rely on the 'integrity' of the person and the firm.

Discussion on the meaning of interpersonal trust and inter-firm trust

According to Table 7, high levels of interpersonal and inter-firm trust display two specific behaviours, cooperation and keeping commitments. This generally

echoes the literature on trust about behavioural outcome. Low levels of interpersonal and inter-firm trust display control and dependence, and are believed to be common for any project organization. When it comes to implementation, some people in the supervisory or monitoring role tend to follow the rules and procedures for strict compliance and forget about the empowerment in their hands, while some are blamed for action without proper empowerment. This leaves a gap in the process where one may have misinterpreted interdependence and dependence between top management and middle management and between middle management and the operation line. The problem will be amplified if the project/institution becomes bigger and more complex and when more parties are involved. It is believed that this gap can only be filled by external rewards, relationship and shared activities (Argyle, 1991). Reputation, as shown in Tables 5 and 6 for interpersonal and inter-firm trust, is taken as a low level trust; it is therefore contended that trust in most people's minds, is personal-based, as described by Solomon and Flores (2001) and Block (1987).

The terms in Table 8 confirms the result of the RII analysis of the meanings of trust. To draw connections for the meanings of interpersonal trust and inter-firm

Table 7 Indicative level of interpersonal trust and inter-firm trust

Interpersonal trust	Inter-firm trust	Level of importance
Experience with others	Demonstrate cooperation	High (RII 0.700–1.000)
Keeping commitments	Willingness to cooperate	
Have positive relationship	Positive relationship	
Demonstrating cooperation or willingness to cooperate	Keeping commitments	
Integrity within the person		
Face-to-face communication		
Agreement	Experience with others	Moderate (RII 0.590–0.699)
Knowledge of the other person	Knowledge of the key person	
Length of time spent working together	Face-to-face communication	
Frequency of interaction	Length of time spent working together	
Action taken	Frequency of interaction	
General impression	Demonstrate cohesive workforce	
Value-added service provided	Balance of risk	
Balance of risk	Quality of product/service	
	General reputation	
	Value-added service provided	
	Contract	
	Knowledge of people of the other firm	
How the other works	Set rules and procedures (how the other works)	Low (RII 0.500–0.589)
Learn about the other from a third party or other sources	Learn about the other from a third party or other sources	
Control exists	Control exists	
Dependence exists	Dependence exists	
General reputation	General reputation	
Reward and punishment exist	Reward and punishment exist	

Table 8 Bases of interpersonal trust and inter-firm trust

Brief meanings of trust	
(1)	Integrity (誠信 sing sun) relates to ethical issues.
(2)	Credibility (信用 sun yung) means the behaviour of a firm to fulfil its obligations and commitments.
(3)	Trust with confidence (信任 sun yan) relates to trusting a person on the moral side.
(4)	Reputation (信譽 sun yuh) is normally regarded as a positive attribute ascribed to a firm based on its past behaviour.
(5)	Confidence with and faith (信心 sun sam) constitute positive expectation vested with a person (self) for another person or for an object/event (others), where there is some knowledge base.
(6)	Trustworthy, reliable (信賴 sun laai) refers to what can be trusted, and reflects the notion of reliance, expressing complete confidence.
(7)	Abide by, keep a promise (信守 sun sau) has the meaning of binding oneself under a particular constraint for the future (Jackson, 1992).

trust at high levels of relative importance to the bases of trust is basically an induction exercise like that of a business research. The purpose is to obtain evidence from the real world to explain a particular phenomenon (Sekaran, 1992; Ghauri, 2002). It therefore follows that interpersonal trust comprises 'integrity', 'confidence', 'faith', 'reliability' and 'keeping promises', while inter-firm trust has the components of 'credibility', 'reputation', 'confidence' and 'keeping promises'.

Discussion of the insights gained from partnering and non-partnering projects

Drawing the different research results together with the project particulars enables an insightful explanation for trust relationships. In view of the trust scores obtained from the project cases if high trust is described as 101 to 175, medium trust 76 to 100 and low trust as 25 to 75, there is no indication that interpersonal trust and inter-firm trust are higher in partnering projects.

Table 8a Order of the bases of interpersonal trust and inter-firm trust in the pilot study (Lau, 2005)

Ranking	Trust in firm-to-firm relations		Trust in person-to-person relations	
1	信任	Trust with confidence	信任	Trust with confidence
2	信用	Credibility	誠信	Integrity
3	信譽	Reputation	信賴	Trustworthy, reliable
4	信守	Abide by, keep a promise	信守	Abide by, keep a promise
5	誠信	Integrity	信用	Credibility
6	信賴	Trustworthy, reliable	N/A	

Table 8b Order of the bases of interpersonal trust and inter-firm trust

Ranking	Interpersonal trust		Inter-firm trust	
1	信守	Abide by, keep a promise	信用	Credibility
2	信任	Trust with confidence	信賴	Trustworthy, reliable
3	信用	Credibility	誠信	Integrity
4	誠信	Integrity	信守	Abide by, keep a promise
5	信賴	Trustworthy, reliable	信心	Confidence with faith
6	信心	Confidence with faith	信任	Trust with confidence
7	信譽	Reputation	信譽	Reputation

Table 8c Order of the bases of interpersonal trust for partnering and non-partnering projects

Ranking	Interpersonal trust for partnering		Interpersonal trust for non-partnering	
1	信守	Abide by, keep a promise	信譽	Reputation
2	誠信	Integrity	信用	Credibility
3	信任	Trust with confidence	信守	Abide by, keep a promise
4	信賴	Trustworthy, reliable	信心	Confidence with faith
5	信用	Credibility	信任	Trust with confidence
6	信心	Confidence with faith	信賴	Trustworthy, reliable
7	信譽	Reputation	誠信	Integrity

Table 8d Order of the bases of inter-firm trust for partnering and non-partnering projects

Ranking	Inter-firm trust for partnering		Inter-firm trust for non-partnering	
1	信用	Credibility	信賴	Trustworthy, reliable
2	誠信	Integrity	信任	Trust, confidence
3	信守	Abide by, keep a promise	信心	Confidence with faith
4	信賴	Trustworthy, reliable	信守	Abide by, keep a promise
5	信心	Confidence with faith	信譽	Reputation
6	信譽	Reputation	誠信	Integrity
7	信任	Trust, confidence	信用	Credibility

Discussions with some of the respondents reveal that they trust public and corporate clients for fair payment and predictable procedures in the construction process. Thus, at the interpersonal level, the scores for partnering and non-partnering projects show no significant difference; rather, the scores are affected by the type of clients involved, as in the public projects.

The average inter-firm trust scores at the project level range from 96 to 110, a fairly narrow range. The

project scores do not vary significantly, indicating that all projects have obtained high inter-firm trust scores except one partnering project (Project No.9). It follows that partnering projects do not necessarily result in a higher level of inter-firm trust than non-partnering projects. Nevertheless, the project that registers the highest inter-firm trust score has adopted an electronic document management system. This electronic document management system was designed by the

contractor to provide a communication platform for all the key players. Drawings, memos, instructions, meeting minutes, reports, etc., that were issued were all uploaded to the computer platform so that the key players can have immediate access to these documents. The information system acted as a collaborative tool and it facilitated better communication and integration of the parties involved.

To draw connections further for the impact of partnering and non-partnering with the data collected from the 10 project cases, it is confirmed that the mean scores obtained from the psychological validated trust scales for interpersonal trust and inter-firm trust are both slightly higher for interpersonal trust and inter-firm trust in non-partnering projects (see Table 9). It can also be observed that a relatively high trust score for avoiding taking excessive advantages of others is seen in non-partnering projects. It seems that people do adjust themselves when there is trust.

Implication for practice in partnering

Three significant issues are highlighted by the case studies. First, partnering projects tend to display more of inter-firm trust than interpersonal trust whereas a non-partnering project tends to display a higher interpersonal trust. Secondly, clients and consultants are more prepared to trust at an individual level, while contractors and subcontractors are more prepared to take on inter-firm trust. Consultants, having an independent role in a project organization, demonstrate a preference to trust the individual rather than the firm. Thirdly, the case results offer a relevant scoring system for evaluating the trust levels relevant to a project environment. This provides an insight into the personal and impersonal aspects of construction management.

The research findings indicate that high trust at interpersonal and inter-firm levels does not necessarily come from partnering projects. In the construction industry, trust may be qualified by the stakeholders, the contract, the pre-qualification process, the forms of guarantee or certain rules and procedures; and the degree of trust would also vary between clients and contractors, between different types of project and

between projects of different sizes. The ranges of trust score and level of importance proposed for interpersonal and inter-firm trust can be adopted for other studies where the same trust scales are used. All this can be added to create a comprehensive trust model to describe a concept as abstract and as complex as trust.

The research shows that the cultivation of trust in a partnering project involves a control mechanism that facilitates timely information exchange among a group of 'strangers' working together. The electronic document management system is considered a tool that facilitates quick responses and therefore supports collaboration and thus better integration. The trust it helps in cultivating is inter-firm trust in a multi-party working situation, and this has worked well with a contractor with a good reputation. But high interpersonal trust is hard to cultivate in a multi-party working situation, even though partnering has been adopted. It is fair to say that inter-firm trust is grounded on the control mechanism such as the open information system, while interpersonal trust is grounded on different foundations including the emotional component such as in 'faith', and a long-term relationship requires a coexistence of interpersonal and inter-firm trust.

In a non-partnering project, trust is believed to emerge as a result of a group of people having previously worked together or having knowledge of each other or the job they do, and there are well-established rules and procedures for timely information exchange. It has been observed that the commitment of project participants is indispensable for maintaining trust among the participants. A change of key participants can affect the operation of a project, as revealed in one project case. In a situation that involves multiple parties, such change will lead to de-motivating those who are continuing with the work and the working relationships among them. As the major function of middle management is communication and coordination, middle managers face more problems affecting working relationships than others. This requires interpersonal trust not only with the working team, but also with empowered managers at the scene. It is noted that contractors prefer to establish a long-term relationship with the client in respect of whom

Table 9 The impact of partnering on interpersonal trust and inter-firm trust

Project characteristics	Interpersonal trust mean score	Inter-firm trust mean score				
		Mean	KC	NH	AA	PD
Partnering	86.5	25.72	26.8	27.5	22.9	25.5
Non-partnering	91.4	26.4	26.8	28.4	25.1	25.1

Notes: KC, NH, AA, PD: see Table 3b.

they have high predictability, and attempt to earn trust at the interpersonal level to ensure that there is no conflicting objective with the client organization.

Specific trusting behaviours are found to be quick responses, actions taken without proper written agreement or prior to formal instructions, and most importantly a problem-solving attitude in providing solutions in design and in technical matters. Such behaviours are directly felt and observable at the frontline in the interaction among consultants and contractors, and can be found in both partnering and non-partnering projects. When it comes to a tri-party or multi-party situation, interpersonal trust does not have its place and instead inter-firm trust appears to be more appropriate.

Inter-firm trust is important for partnering arrangements. The research findings indicate that 'keeping commitments', 'predictability' and 'knowledge of others' are slightly more important than 'honest negotiations' and 'avoiding taking excessive advantage of others'. This reinforces the findings of the authors' other work based on Analytic Hierarchy Process (AHP) (Lau, 2005) when it is used as a mathematical tool to measure the relative importance of the different types of trust that trust relations in the construction working environment are closely related to contractual trust and knowledge trust. Since the projects in this research were mainly project partnering, both clients and contractors should be made aware of the focus if strategic partnering with goodwill, alliance or other forms of inter-firm arrangement are to be developed; and attention should be drawn to the relationship structure of the participants in the project organization. The study provides an insight that the nature of the client organization can affect the development of interpersonal trust.

The temporary nature of a project inhibits the continuity of relationships and limits the benefits of organizational learning. A firm cannot dominate competitive tendering by always being the lowest bidder. Since bidding costs have to be factored into the construction costs, a firm's behaviour is bound to be influenced by the costs and profitability of a project won this way, which will in turn affect the behaviour of individuals acting in the best interests of the firm, revealing conflicts in a multiple-parties working environment. The level of trust in a relationship affects the degree of defensiveness and distortion of messages. An adversarial culture makes people defensive and protective and forms a barrier to trust. The Tang report (2001) recommended a cultural change to transform the construction industry into a modern, efficient, innovative client-oriented, safe and environmentally responsible industry. This should extend to meaning a socially safe working environment in which people can trust one another without facing the risk of being taken

advantage of when the opportunities arise. The construction industry has long been described as fragmented and backward but its operational customs and practice may have their merits. To ease the tensions of a challenging job, it may be a good idea to organize social activities for a group of people whose values are varied but whose commitment is essential to the successful performance of a project. Besides acquiring trusting relationships, joint activity is also one way to share common values of the stakeholders, considering that mutual trust is essential in a multi-party working environment full of different interests, needs, expectations, constraints and risks.

Yet, the implications in practice are not without limitations since the process of partnering has not been considered in this study. It has been suggested by Crane *et al.* (1997) that the partnering model must be tailored to the company's needs, objectives and culture; this should be the focus of another study if trust is investigated in this direction. In addition, knowledge about the partner or the partnering firm cannot sufficiently act as a trust-based relationship as it constitutes a reciprocity-based relationship (Lazar, 1997) and the norm of equity (Ring and Van De Ven, 1992).

Conclusion

The research has provided objective and qualitative insights into the relationship structure and some managerial aspects of trust in a project working environment. It offers psychological validated trust scales to reflect the complex nature of trust in which the moral, social and work dimensions of trust are all embedded in the trust relations. Since the research confirms that trust exists at both the organizational and individual levels, trust has to be built at both, particularly when a strategic relationship is in mind. A conclusion can thus be drawn that partnering does not necessarily display more trust than non-partnering projects, but rather it helps to develop inter-firm trust; and interpersonal trust is still very important even though inter-firm trust is better understood than interpersonal trust. While clients, consultants, contractors and subcontractors have different emphases of interpersonal and inter-firm trust, keeping commitments and demonstrating cooperation are found to be the typical actions expected from trust. The impact of partnering is more of integration and balancing the multi-party interests for enhancing trusting relationships whereas non-partnering would have different means of producing trusting relationships. It can be said that in a non-partnering arrangement, people tend to rely on the trustworthiness of the person and the firm

in which a person is not separated from a firm in terms of trust, whereas such reliance will be based on the 'virtue' of the firm and the person as separate identities when a partnering arrangement is adopted. In other words, trust, is grounded on different value bases. Without examining further the behavioural outcome, it would be difficult to explore trust-related issues such as integrity and reliability, which are sources of confidence to be earned over time. With a view that trust can be affected by the values of individuals, value-based trust will help one understand the similarities and differences between firms and people. Therefore it is in a firm's interest to foster strategic relationships by observing trust relationships at both interpersonal and inter-firm levels with different value bases. For goodwill to be earned, middle managers should understand the value of interpersonal and inter-firm trust.

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Notes

1. From the pilot study with 60 respondents, regardless of whether it is inter-firm trust or interpersonal trust, confidence is the most important element that applies to both firms and individuals. Integrity and reliability are more applicable to interpersonal trust while credibility and reputation are more applicable to inter-firm trust. The correlation test shows that 'trust in firm-to-firm relations' is strongly related to 'trust in person-to-person relations' with a Pearson correlation factor of 0.84 (when $p < 0.001$), which approaches 1. In a paired samples t-test of significance, $t = 0.312$, which is less than $t = 2.201$ for a significance level of 0.05 df with eleven degrees of freedom ($n - 1$). The null hypothesis cannot be rejected and it is concluded that one is not dependent on the other. This means that even though the respondents' perceive trust in firm-to-firm relations as being strongly related to trust in person-to-person relations, statistically, the selected samples do not show a correlation between the two. This proves that the respondents' views of firm-to-firm relations are not affected by their views of person-to-person relations.
2. See note 1.

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