The influence of owner power in fostering contractor cooperation: Evidence from China

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Abstract

Trust and power are considered to be two necessary mechanisms for promoting cooperation among construction partners. In this paper, trust is regarded as a mediator between power and cooperative performance. A model of the relationship between trust and power is developed and tested using the results of an empirical study based on a sample of Chinese contractors. The results show that an owner’s expert power can influence a contractor’s cognition- and affect-based trust in the owner and that coercive power has little direct impact on the formation of trust. However, coercive power is found to moderate the relationship between expert power and cognition-based trust, in that the relationship is more positive when the level of coercive power is lower. Moreover, affect-based trust has a significantly greater positive influence on cooperative performance than cognition-based trust. These findings are interpreted in light of Chinese culture, and provide some suggestions for how owners can exercise power to foster cooperation with their contractors.

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Keywords: Power; Cognition-based trust; Affect-based trust; Cooperative performance

1. Introduction

The joint effort of partner organizations is a necessary foundation for achieving successful construction projects. While cooperative relationships among project stakeholders, such as owners, contractors and consultants, play an important role in project performance, the construction industry experiences greater levels of conflict than other industries, owing to the adverse interests of the project parties (Black et al., 2000; Ellison and Miller, 1995; Hawke, 1994). Over the past few decades researchers have identified a large number of cooperative mechanisms. For instance, Chen et al. (1998) summarize the main cooperative mechanisms as follows: superordinate goals, group identity, accountability, communication, reward structure and incentives, and trust. Although these factors are pivotal for understanding and managing cooperative relationships, the extant research on these mechanisms has been mainly conducted in Western contexts and does not focus on the inter-organizational relationships among project partners. To further develop a cooperative atmosphere among construction participants, a number of methods, particularly the trust-based partnering approach, have been advocated in recent studies (e.g., Cheng et al., 2004; Wong and Cheung, 2005).

While trust may induce cooperation among project partners, so may a number of other factors. Kadefors (2004) argues that cooperative behavior may also give rise to fear or coercion. For instance, contractors often obey extra requests from owners that are not in line with the contracts, as they are concerned about the owner’s coercive power to reduce their benefits. Indeed, as the owner can decide whether, when and how to use coercive power to affect the contractor (Tedeschi et al., 1972), the use of coercive power to gain cooperative behavior appears to be a convenient option for the powerful organization (Pretty and Ward, 2001). The traditional theoretical views often state that coercive power and trust are negatively related, in the sense that...
penalties can lead to conflicts and the deterioration of trust (e.g., Ratnasingam, 2000). Thus, trust and coercive power appear to be substitutive. As a result, trust and coercive power cannot coexist in reinforcing the cooperation between project partners.

However, empirical findings on the relationship between trust and coercive power in non-Western cultures are somewhat mixed. The perception of power is necessarily associated with individual beliefs and the cultural context. As Freire (1970) states, those who have or exercise coercive power do so with the acceptance of their peers and the compliance of those who believe themselves to be powerless. In particular, a recent study conducted in a Chinese context demonstrated that trust and coercive power can jointly promote collaborations between suppliers and consumers (Yeung et al., 2009). Following this stream of research, we decided to conduct our research in a Chinese context.

In this study, we attempt to provide a more holistic understanding of the trust–power relationships among Chinese construction project partners by exploring several relevant limitations of the extant literature. First, coercive power cannot be the only form of power that an owner possesses. Therefore, the present study also examines the role of expert power. Due to the pivotal role it plays in forming trust among partners in the construction industry. In addition, the hypotheses for examining the role of trust are developed in relation to the two central values in Chinese culture: hierarchy and guanxi (Hwang, in other reference to trust development in the present study also examines the role of expert power, due to the pivotal role it plays in forming trust among partners in the construction industry. In addition, the hypotheses for examining the role of trust are developed in relation to the two central values in Chinese culture: hierarchy and guanxi (Hwang, 1987). Second, few studies have explored the links related to different forms of trust within a project context. We propose that affect-based trust plays a more significant role than cognition-based trust in developing cooperation between Chinese contractors and their owners. We empirically test an integrated model that represents the relationship between the owner’s power and the contractor’s trust, and the effect that this relationship has on the overall cooperative performance.

In the following sections, we first define the concepts of power and trust as used in the current literature. Next, we present our hypotheses by considering the effects of power and trust on cooperative performance. We then explain the methodology used in the empirical part of our study, and present the results. Finally, we draw and discuss conclusions from our findings and offer suggestions for further research.

2. Theoretical background of power and trust

As a wide range of disciplines recognize the relationship between power and trust, the meaning of the terms largely depends on the situation and the problem under investigation. In the following subsections, we review the literature relating to the construction industry, and develop the conceptual framework for this study.

2.1. The owner’s power in construction projects

Power is at the heart of all inter-organizational relationships (Cox, 2001). According to Brown et al. (1995) and Goodman and Dion (2001), a project partner’s power can be defined as the partner’s ability to influence the decisions of the other organizations in the project alliance. French and Raven (1959) group the underlying common dimensions of power into the following five categories: expert, referent, legitimate, reward, and coercive power. Table 1 provides a definition and construction example for each of the foregoing forms of power. In this study, we focus on expert and coercive power because these categories have been specifically developed to address the power between project partners in the Chinese construction industry. Moreover, we focus on the contractor’s perception of the owner’s power, as the owner, being the less dependent firm and, therefore, having little to lose, has few restraints on its punitive actions (Peters and Waterman, 2004).

In our pilot study, the professional employees of the contractors we interviewed stated that expert power was a necessary element for the cooperative owners. Owners often employ consultants to help with the project management of construction projects. However, there is some confusion between expert and referent power, a cooperative contractor will have a higher perception of an owner’s reputation (referent power) when the owner has a high level of expert power. Furthermore, since most huge construction projects in China are developed by government or state-owned firms unrelated to construction industry as well as most projects are one-off type, Chinese contractors care more about owner’s financial states rather than...
reputation. Similarly, legitimate power is hardly perceived by contractors, as most projects in China are one-off opportunities and business considerations dominate the cooperative process. In addition, community norms, structures and procedures are institutional arrangements which matter specifically in mature industries when swift trust is in demand (Bachmann and Inkpen, 2011). In this sense, owner with experts familiar with such institutional arrangements is particularly important to trust building.

Meanwhile, reward power is seldom applied in the Chinese construction industry, whereas coercive power is now commonplace owing to the stern competitive environment for contractors. Indeed, coercive power is more likely to be used to influence others because of the high power distance in Chinese culture (Kale and McIntyre, 1991). Many empirical works including power also take coercive power as a vital independent factor (Hart and Saunders, 1997; Zhuang et al., 2010). Thus, in the following sections, we focus solely on coercive power and expert power.

2.2. Bases and types of trust

Drawing on elements of various theoretical studies, Rousseau et al. (1998, p.395) define trust as, “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intention or behavior of another”. One key defining feature of trust is that the trusting party is willing to be vulnerable to the trusted party, despite their uncertainty regarding motives, intentions, and prospective actions (e.g., Arnott, 2007; Schoorman et al., 2007). Thus, trust can be regarded as a psychological state rather than a type of behavior.

McAllister (1995) further differentiates between two broad forms of trust, namely, cognition- and affect-based trust. Cognition-based trust is a rational form of trust that is based on the trusting party’s knowledge of the trusted party’s competence and responsibility (Butler, 1991). In contrast, affect-based trust is based on the non-calculative components of the trusting party’s own emotional bonds with the trusted party. Although the focal objects of inter-organizational and interpersonal trust are different (Zaheer et al., 1998), and market-based exchanges may emphasize economic factors rather than identification between the trusting parties (Rousseau et al., 1998), affect-based trust still influences the cooperative performance of strategic alliances. For instance, Lui and Ngo (2004) empirically demonstrate that affect-based trust can reduce the transaction costs in architect–contractor partnerships in Hong Kong.

In this study, the classification of trust is also adapted to the project context. For instance, from a client perspective, the conditions of trust are divided between behavioral intentions (affect-based trust) and behavioral abilities (cognition-based trust) (Gustafsson et al., 2010). In addition, the classification of trust also draws on traditional Chinese discourse. In Chinese, the compound word “xin-ren” is the equivalent of “trust”. Here, “xin” refers to the trustworthiness of the trusted party, while “ren” emphasizes their dependability and reliability (Chua et al., 2009).

Moreover, culture can affect the perception of what constitutes trust (Schoorman et al., 2007). Many cultural researchers have proposed that Chinese culture is characterized by familial collectivism (Bond and Hwang, 1986; Yang, 1992). Not only are the norms for family relationships highly salient, the principle is also taken as a template for relationships in other domains such as professional or business relationships (Redding and Wong, 1986; Yang, 1998). One important feature of family relationships is that individuals in a family are mutually dependent on one another for resources and support, ranging from labor to finances. Hence family ties tend to combine affective closeness with instrumental concerns. Similarly, the trust in China also mirrors the features of this culture (Chua et al., 2009). It is thus not so surprising that cognition-based trust for the Chinese is directly associated with economic benefits, whereas Western norms of trust are excluding instrumental benefits (Silver, 1990).

3. Research hypotheses

3.1. The impact of power on trust

Mayer et al. (1995) state that the antecedents of trust arise from three distinct but related dimensions relating to perceptions of ability, benevolence, and integrity. They further argue that viewing the trustee in terms of ability and integrity seems to be well accepted at the level between organizations (Schoorman et al., 2007). Moreover, Meyerson et al. (1996) point out that the ability of a team member is a key attribute influencing the trust among members of a temporary team. As project alliances are always established for particular goals within a given schedule, project partners are principally selected in terms of their ability to effectively meet those objectives (Webber, 2002). A firm will not trust a partner that has not demonstrated a consistent ability to meet its needs (Hurley, 2006). Thus, the knowledge, competence and expertise of partners play an increasingly important role in forming trust within contemporary organizations (Rousseau et al., 1998).

In a project alliance, expert power is manifest in the commitment among project members who possess similar levels of perceived knowledge, skills or expertise (French and Raven, 1959). Organizations with high levels of expert power have the advantage of being able to promote both cognition- and affect-based perceptions of trust among their partners. For instance, changes are common during the construction phases of complex building projects, and the work of accessing the change orders mainly depends on the owners’ professional knowledge. On the one hand, owners with greater expert power can access the change orders more efficiently, and facilitate the payment of contractors more quickly. On the other hand, while expert power may enable the owner to monitor the construction work at a lower cost (Reuer and Ariño, 2002), it may also increase the cost of hiding self-interest activities and limit the incentives for opportunism. Although a lack of opportunism is not necessarily accompanied by the presence of goodwill (the latter being a core principle of the generally accepted definition
of affect-based trust), expert power does provide an atmosphere of safety, which makes affect-based trust more accessible.

In addition, contractors may also need professional advice from outside partners (Maurer, 2010). The expert power of owners thus increases the level of formal and informal communication between owners and contractors. These interactions, in turn, strengthen the interpersonal ties and positive affective emotions between the two parties. The main aim of exercising expert power is to change the target’s attitude or behavior by providing the target with suggestions or benefits on the condition that they are compliant (Gaski, 1984). Therefore, we hypothesize:

H1a. The cognition-based trust of Chinese contractors is positively influenced by their perception of the expert power of owners.

H1b. The affect-based trust of Chinese contractors is positively influenced by their perception of the expert power of owners.

Coercive power is realized through threats to withdraw, decrease or delay business unless the contracting party does not obey requests such as speeding up the construction process or adjusting the price. Forms of coercion that owners may exercise include slow payment for warranty work, unfair distribution of risk, rejection of warranty work, threat of termination, and forcing contractors to make advance payments. The more likely an owner is perceived to use these forms of punishment, the stronger their coercive power.

The perception of coercive power normally arises when a contract includes penalties for failing to achieve the stated objectives (Parkhe, 1993). A contractor performance checklist will determine whether or not the owner will need to apply coercive power. Such checklists include performance indicators on project quality, timeliness of delivery, safety records and how contractors resolve disputes. The use of coercive power by an owner will entail an economic loss for the contractor and lower the contractor’s expectation of gaining benefits from the owner. Moreover, improving project performance to meet an owner’s requirements also means that the contractor will have to provide extra inputs. The main aim of exercising coercive power is to change the target’s attitude or behavior by threatening the target with loss if they are not compliant (Gaski, 1984). As a result, the use of coercive power by an owner will diminish the contractor’s cognition-based trust in the owner.

Traditionally, coercive power has also been regarded as an obstacle to building affect-based trust, because the use of coercive power may result in unwanted side effects, such as conflict (Gaski, 1984) or defensive behavior (Zand, 1972). As Deutsch (1973, p.88) notes, “Without the other’s (affect-based) trust as an asset, power is essentially limited to the coercive and ecological types, the types that require and consume most in the way of physical and economic resources”.

However, the negative relationship between coercive power and affect-based trust may not be as significant in a Chinese context as it is in Western cultures. Specifically, we propose that Chinese contractors are more compliant to owners’ coercive power, because this is in line with the Confucian belief that “higher ups govern, lower ranks obey” (Beamer, 1998, p.54). According to the Confucian view of hierarchy, it is a leader’s position in the power hierarchy that influences employee behavior (Hwang, 2008). Similarly, the relationships between contractors and owners in China may also mirror the features of this hierarchy. Following the above logic, owners with more authority will be perceived to have more coercive power. Therefore, contractors will show more obedience to owners who are perceived to have more authority (Chen et al., 2012). Thus, the owner’s coercive power is unlikely to induce sufficient negative emotion to damage the contractor’s affect-based trust. Therefore, we hypothesize:

H1c. The cognition-based trust of Chinese contractors is negatively influenced by their perception of the coercive power of owners.

H1d. The affect-based trust of Chinese contractors is not influenced by their perception of the coercive power of owners.

3.2. The impact of cognition-based trust on affect-based trust

Inter-organizational and interpersonal forms of trust have different focal objects (Zaheer et al., 1998) and market-based exchanges may emphasize economic factors rather than identification between parties (Rousseau et al., 1998). The trust forming process also highlights the fact that affect-based trust develops on a cognitive base (Li, 2008). It is widely accepted that repeated exchanges can strengthen trust when the exchange parties are satisfied with the outcome of the exchanges (Uzzi, 1997). Specifically, as affect-based trust is characterized by greater investments of time and emotion than cognition-based trust (Rempel et al., 1985), some level of cognition-based trust must be met first to prove that the investment is worthwhile (McAllister, 1995). Empirical research supports the positive link between cognition-based trust and affect-based trust (Chua et al., 2009; McAllister, 1995). We thus hypothesize:

H2. Chinese contractors’ affect-based trust in their owners is positively influenced by their cognition-based trust in the owners.

3.3. The impact of trust on cooperative performance

Affect-based trust contributes to decreasing the transaction cost as well as increasing the production effectiveness of construction projects (Cheung et al., 2011; Pinto et al., 2009; Smyth et al., 2010). According to Williamson (1996), most types of transaction cost are linked with the investments to avoid opportunism among the partners. Within an affect-based trust environment, project members have little fear of their partners’ self-interest. Accordingly, this type of environment reduces the transaction costs of the project alliance, such as monitoring and enforcement costs. In addition, affect-based trust is considered vital for fostering farther-reaching cooperative behaviors (Kramer, 1999). If affect-based trust is present, project partners may spontaneously engage in constructive communications without fear of the risk of disclosing information (Kadefors,
This, in turn, increases the likelihood of the project partners jointly improving processes or resolving disputes, thereby enabling the project goals to be conducted more effectively (Chow et al., 2012; Wong et al., 2008).

Few studies have examined the role of cognition-based trust in project cooperation performance. Organizations with cognition-based trust will only commit to a shorter relationship when they can be rewarded. To attain the expected economic benefits, the trusting party will make compromises to the trusted party. Thus, cooperative behaviors may also be triggered by self-interested calculations. However, Hess and Story (2005) contend that the relationship commitment that is derived from affect-based trust is the ultimate relationship disposition. Although affect-based trust takes longer to develop than transactional relationships, its benefits are more enduring.

In addition, long-term commitments are particularly relevant to the Chinese context, where reciprocity is strongly endorsed and relationships are highly valued. The traditional Chinese concept of personal relationships, guanxi, is prevalent in all aspects of Chinese life and is recognized as a key factor for success when doing business in China (Hwang and Staley, 2005). Guanxi is defined as “an informal, particularistic personal connection between two individuals who are bounded by an implicit psychological contract to follow the social norm of guanxi such as maintaining a long-term relationship, mutual commitment, loyalty, and obligation” (Chen and Chen, 2004, p.306). According to Chen and Chen (2004), high-quality guanxi is composed of two fundamental types of trust, cognition and affect-based trust, with affect-based trust being more important in determining the nature and strength of the relationship. Thus, affect-based trust should have a significant effect on business relationships in a relationship-oriented society such as China. Empirical research also supports the view that relational thinking has a stronger impact on cooperative behavior than rational considerations (Zhao et al., 2008). Therefore, we hypothesize:

H3a. The cooperative performance of a Chinese contractor is positively influenced by their cognition-based trust in the owner.

H3b. The cooperative performance of a Chinese contractor is positively influenced by their affect-based trust in the owner.

H3c. A contractor’s affect-based trust in an owner will have a stronger impact on the cooperative performance of the contractor than their cognition-based trust in the owner.

An overview of the proposed hypotheses and their correlations is presented in Fig. 1.

4. Research methodology

4.1. Sampling and data collection

As the questionnaire response rate of the random sample method makes it extremely difficult to achieve a valid benchmark for statistical analysis in the Chinese construction industry (Fang et al., 2004), the research survey employed in this study adopted the “snowball” approach of distributing questionnaires. We strategically selected six cities in China, Shenzhen, Guangzhou, Shijiazhuang, Wuhan, Nanning and Chengdu, to provide a high degree of geographic and economic diversity. All of these cities are important regional centers with a broad range of construction activities. The sampling time was in 2010, we sent the questionnaire to a number of well-known experts in the local construction industry who have close contacts with other local contractors. With their help, respondents involved were more willing to accomplish the survey. The project managers of contractors were selected as participants, as they are the only employees who are responsible for overall project management and interact with owners on a face-to-face basis. Therefore, the opinions of the project managers are most likely to represent the views of the contractors toward the owners.

Of the 400 questionnaires mailed, 215 useable questionnaires were received (17 from Shenzhen, 34 from Guangzhou, 59 from Shijiazhuang, 43 from Wuhan, 21 from Nanning and 41 from Chengdu), representing a 54% response rate. Fifty-six percent of the responses were from project managers involved in residential projects and 16 percent were involved in community and institutional projects. The remaining responses were related to highway, railway, and recreational facility projects. The average project duration was 22 months. Ninety percent of the project managers were male. Thirteen percent had a high school diploma, 36 percent had an associate’s degree, 60 percent had a bachelor’s degree, and 9 percent had a graduate degree. The average organizational tenure was 11 years.

4.2. Questionnaire design

We conducted an intensive literature review and pilot test to identify the existing measures for the related constructs. We first interviewed 7 project managers to confirmation of the concept and measures of variables and further revised several items in accordance with managers’ feedback (mainly wording). We then sent the questionnaire to a convenience sample of 26 project managers who involved a training program in a university. A total of 15 completed questionnaires were returned, and we conducted a preliminary data analysis to check the reliability. The respondents were asked to indicate the extent of their agreement with statements concerning their particular owner in that time, using a Likert scale ranging between “1”, “strongly disagree”, and “7”, “strongly agree.” An overview of the scale is presented in Table 2.

The control measures included the project type and the project managers’ gender, educational level, and organizational tenure, which have typically been used in related research (LePine et al., 2002). Our analyses indicate that these variables...
Table 2
A list of questionnaire scales.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Descriptions</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperative performance (Cronbach’s α=0.82)</td>
<td>We always conduct extensive communication with the owner.</td>
<td>Crane et al. (1999)</td>
</tr>
<tr>
<td></td>
<td>If the owner has doubts, we always give feedback in time.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>We always jointly solve problems with the owner.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>We always discuss with the owner ways to improve the current progress.</td>
<td></td>
</tr>
<tr>
<td>Cognition-based trust (Cronbach’s α=0.90)</td>
<td>The owner’s work will increase our economic benefits.</td>
<td>Pinto et al. (2009)</td>
</tr>
<tr>
<td></td>
<td>The work of the owner will efficiently decrease our costs.</td>
<td>Rousseau et al. (1998)</td>
</tr>
<tr>
<td></td>
<td>We think the owner makes economic contributions to us.</td>
<td></td>
</tr>
<tr>
<td>Affect-based trust (Cronbach’s α=0.87)</td>
<td>The owner is a fair organization.</td>
<td>Pinto et al. (2009)</td>
</tr>
<tr>
<td></td>
<td>The decisions of the owner are in our interests.</td>
<td>Rousseau et al. (1998)</td>
</tr>
<tr>
<td></td>
<td>The owner always acts kindly toward us.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>We think that the owner is a reliable organization.</td>
<td></td>
</tr>
<tr>
<td>Expert power (Cronbach’s α=0.85)</td>
<td>The people in the owner’s organization know what they are doing.</td>
<td>Zhao et al. (2008)</td>
</tr>
<tr>
<td></td>
<td>We usually get good advice from our owner.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The owner has specially trained people who know what needs to be done.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Our owner’s expertise makes them likely to suggest the proper thing to do.</td>
<td></td>
</tr>
<tr>
<td>Coercive power (Cronbach’s α=0.78)</td>
<td>The owner will retaliate if we did not follow their advice.</td>
<td>Zhao et al. (2008)</td>
</tr>
<tr>
<td></td>
<td>The owner often hints that they will reduce our profit if we do not go along with them.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The owner might withdraw certain needed services from us if we do not go along with them.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If our company does not agree with the owner’s suggestions, they could make things more difficult for us.</td>
<td></td>
</tr>
</tbody>
</table>

The questionnaire items were originally written in English, and translated into Chinese by a project management professor in China. The Chinese version was then back-translated into English by a different project management professor and the translation checked against the original English version for accuracy. Based on the feedback from the interviews, we modified and deleted some items, to make the questions more understandable and relevant to business practices in Chinese construction field. Following the suggestion of Podsakoff et al. (2003), we used Harman’s one-factor test to test for common method bias. The results show that several distinct factors related to all the variables, indicating that common method bias is not a significant problem in our research.

4.3. Measurement development

We selected existing instruments with demonstrated construct validity and when possible, chose which had been validated with Chinese samples and construction field respectively. For constructs which had not adapted to Chinese situations, we adapted or developed new items according to our understanding of the constructs as well as the interviews with construction practitioners. In addition, we conducted a series of analyses to test the reliability and validity of the constructs.

Following Narasimhan and Jayaram (1998), we first employed exploratory factor analysis (EFA) to test the unidimensionality of the constructs, and then used Cronbach’s alpha to assess reliability. EFA was used with principal component analysis for data deduction, and varimax rotation with Kaiser normalization was used to clarify the factors (Loehlin, 1998). Cronbach’s alpha was then computed to test the internal consistency of each construct. All the measurement items had strong loadings on the constructs they were supposed to measure and low loadings on the other constructs, while the Cronbach’s alpha values were all above 0.7. The unidimensionality and reliability of the questionnaire are therefore confirmed.

With the help of the AMOS 7.0 software package, we also used confirmatory factor analysis (CFA) to justify the factor structure. The model fit indices were \( \chi^2 = 175.72 \) (d.f.=90, \( \chi^2/d.f. = 1.96 \)), IFI=0.93, RMSEA=0.06, IFI=0.97, TLI=0.95, CFI=0.97, indicating that the model is acceptable (Hu et al., 1992). We then constructed a constrained CFA model to assess the discriminant validity, in which the correlations among constructs were fixed to 1. The model was then compared with the original unconstrained model, in which the correlations among the constructs were freely estimated. All the differences of \( \chi^2 \) were significant at the 0.001 level (\( \chi^2 = 228.59 \)), thus demonstrating the discriminant validity of the model. Table 3 presents the correlations, means and standard deviations for the constructs used in this study.

4.4. Structural equation modeling and results

Structural equation modeling (SEM) was employed to estimate the causal relationships among the constructs. The goodness of fit indices of the theoretical model were...
trust, as stated in H2. The path coefficients in Fig. 2 also confirm that cognition-based trust influences affect-based H1b. A positive and highly significant path coefficient further and the standardized coefficients for the paths.

The contractor’s trust in the owner, thereby supporting H1a and contractor’s perception of the owner’s expert power increases both cognition-based and affect-based trust, indicating that the threshold values (Hu et al., 1992). Fig. 2 shows the SEM χ² = 246.57(d.f. = 129, χ²/d.f. = 1.91), IFI = 0.96, RMSEA = 0.07, GFI = 0.93, TLI = 0.94, CFI = 0.95, which are better than the threshold values (Hu et al., 1992). Fig. 2 shows the SEM and the standardized coefficients for the paths.

Fig. 2 reveals that expert power has a positive impact on both cognition-based and affect-based trust, indicating that the contractor’s perception of the owner’s expert power increases the contractor’s trust in the owner, thereby supporting H1a and H1b. A positive and highly significant path coefficient further confirms that cognition-based trust influences affect-based trust, as stated in H2. The path coefficients in Fig. 2 also show that affect-based trust has a strong positive impact on cooperative performance, supporting H3b. However, the coefficients for the path from cognition-based trust to cooperative performance are not significant and do not support H3a. Moreover, the two coefficients are significantly different from each other, indicating support for H3c.

In addition, as coercive power has an insignificant impact on both cognition- and affect-based trust in the structural equation model, it seems that H1c should be rejected and H1d accepted. To confirm the above conclusions, we establish two groups of regression models to further examine whether there are interactive effects between coercive power and expert power on cognition and affect-based trust, respectively. With the help of SPSS 18.0, we first predict cognition-based trust from expert power and coercive power, and the results show a significant interaction (β = -0.07, ΔR² = 0.01, p < 0.05). It indicated that expert power is more positively related to cognition-based trust when the owner displays a lower, rather than higher level of coercive power. In other words, while coercive power may not directly damage contractor’s trust, it may reduce the positive relationship between expert power and cognition-based trust. Hence, H1c can be partly accepted. We then predict affect-based trust from expert power and coercive power. The results are not significant (β = -0.04, ΔR² = 0.00, p > 0.10), thereby demonstrating that coercive power does not affect the relationship between expert power and affect-based trust. Thus, H1d is also accepted. Table 4 shows the results of the regression analysis.

### 5. Discussion and conclusion

Although trust is regarded as a critical factor in increasing cooperation among project partners, our knowledge of the factors that influence trust is still limited. In this study, we attempt to provide some insight into the mechanisms of power and trust in China from a construction contractor’s perspective, particularly in regard to the relationships among expert/coercive power, cognition- and affect-based trust, and their effects on cooperative performance. The following discussion outlines the details of theoretical and practical implications of our findings.

#### 5.1. Theoretical implications

The results of this study show that the expert power of an owner should be regarded as the most important factor in improving a contractor’s trust. Expert power can affect a contractor’s trust in two ways, by leading the contractor to either gain more confidence in the business success of a project or trust in the owner’s reliability. It is not surprising that expert power has a stronger impact on cognition-based trust than affect-based trust, since the owner’s expertise leads a direct impact on business profit rather than emotional identification. Furthermore, when a contractor accepts an owner’s influence because of the owner’s knowledge or expertise, the contractor will be more likely to identify with and internalize the owner’s behavior (Morgan and Hunt, 1994; Zhao et al., 2008). This feeling of similarity can increase the contractor’s positive emotion toward a powerful owner and further promote the development of affect-based trust.

We acknowledge that the direction of causality between trust and expert power is open to debate. For example, one may

### Table 3

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperation performance</td>
<td>5.17</td>
<td>1.15</td>
<td>1.06</td>
<td>1.15</td>
<td>1.06</td>
<td>1.15</td>
</tr>
<tr>
<td>Cognition-based trust</td>
<td>3.12</td>
<td>0.99</td>
<td>0.59***</td>
<td>0.59***</td>
<td>0.59***</td>
<td>0.59***</td>
</tr>
<tr>
<td>Affect-based trust</td>
<td>4.09</td>
<td>1.29</td>
<td>0.65***</td>
<td>0.77***</td>
<td>0.77***</td>
<td>0.77***</td>
</tr>
<tr>
<td>Expert power</td>
<td>3.96</td>
<td>1.10</td>
<td>0.50***</td>
<td>0.70***</td>
<td>0.74***</td>
<td>0.74***</td>
</tr>
<tr>
<td>Coercive power</td>
<td>4.53</td>
<td>1.14</td>
<td>-0.09</td>
<td>-0.11</td>
<td>-0.07</td>
<td>-0.12</td>
</tr>
</tbody>
</table>

*** p < .001.

### Table 4

| Regression analyses on cognition- and affect-based trust with expert/coercive power effects. |
|---------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| Dependent variable                                           | Cognition-based trust | Affect-based trust |
|                                                              | Step 1 | Step 2 | Step 1 | Step 2 |
| Intercept                                                     | 0.43 | -0.858 | 0.32 | -0.47 |
| Control variables                                             |       |        |       |       |
| Prior relationship                                            | 0.06* | 0.06* | 0.04 | 0.04 |
| Key predictors                                                |       |        |       |       |
| Expert power                                                  | 0.62*** | 0.95*** | 0.87*** | 1.07*** |
| Coercive power                                                | -0.06 | 0.15 | 0.04 | 0.20 |
| Interactions                                                  |       |        |       |       |
| Expert power × Coercive power                                 | -0.07* |        | -0.07* |        |
| No. of observations                                           | 215 | 215 | 215 | 215 |
| Overall model R²                                               | 0.51 | 0.52 | 0.56 | 0.56 |
| R² Change                                                     | 0.01 | 0.01 | 0.01 | 0.01 |

* p < .05; *** p < .001.
argue that a high level of trust will lead to higher perceptions of expert power, rather than vice versa. This is a common problem in empirical studies of trust (Dyer and Chu, 2000). We have offered theoretical arguments to support our view that expert power leads to trust. However, we would expect some degree of reciprocal causality among these variables.

It is interesting to note that coercive power has an insignificant direct impact on both affect- and cognition-based trust. Although coercive power is traditionally viewed as an obstacle to building trust, the data show that this negative influence may be insignificant in certain contexts. In a high power distance national culture like that of China (Hofstede, 1991; Wang and Clegg, 2002), people may not feel uncomfortable when a more powerful party exercises coercive power. It is therefore reasonable to assume that Chinese contractors will be more accepting of an owner’s coercive behavior. However, we also show that the coercive power moderates contractors’ perceptions of cognition-based trust. The data demonstrate that coercive power has a negative effect on the positive impact that expert power has on contractors’ perceptions of cognition-based trust. In other words, even within a social culture like China, coercive power still has an indirect impact in decreasing cognition-based trust.

While trust is generally regarded as a key factor in inducing cooperation, few studies have directly examined distinct relationship-based forms of trust (Dirks and Ferrin, 2002). However, this relationship is critical for developing a more nuanced understanding of how these psychological states are translated into behavior. Our empirical work reveals that affect-based trust has a much stronger impact in improving cooperative performance than cognition-based trust. This finding is similar to results of Zhao et al. (2008), who also found that commitments based on economic considerations have little impact on cooperative behaviors. Given the fact that Chinese culture emphasizes the formation of interpersonal connections or ties named “guanxi”, even among organizational members (Hwang, 1987), it is reasonable to assume that affect-based trust plays a salient role in enhancing cooperative performance. Moreover, the statistical results showed that cognition-based trust is significantly related to cooperation when taken as an independent variable alone (Table 3). However, such correlation turns weak when added with affect-based trust as another antecedent variable (SMEs). According to Baron and Kenny (1986), it entails that affect-based trust positively mediates the positive relationship between cognition-based trust and cooperation. We can therefore conclude that cognition-based trust also plays an important role in increasing cooperative performance.

5.2. Managerial implications

Understanding the relationship between power, trust and cooperative performance can help owners develop better strategies for fostering trust and improving cooperation among contractors. First, our study suggests that expert power is an important antecedent of the trust that contractors place in their owners. Owners should thus enhance their expert power by hiring more knowledgeable employees and training their existing staff. We also found that the use of coercive power to threaten contractors may not have as serious a negative impact in China as it does in a Western context, owing to the dominant high power distance culture in China. Thus, exercising coercive power appears to be a reasonable approach for an owner to gain a contractor’s compliance in the short term. However, exercising coercive power is not a good choice if an owner desires to establish a long-term partnership with the contractor, because it has a negative moderating effect on the positive relationship between expert power and cognition-based trust.

Second, although trust is an important explanatory mechanism for improving cooperation, our study suggests that the distinct types of trust are not created equal. Affect-based trust plays a particularly critical role in influencing a contractor’s cooperative performance. Hence, it is critical for owners to exhibit behaviors that may solicit affect-based trust. For instance, Chinese business relationships have strong socio-emotional components, typically involving personal gifts, shared meals, and introductions to family members (Chua et al., 2009), and these components play a pivotal role in forming affect-based trust. Moreover, as affect-based trust is developed on a cognitive base, it is thus recommended that owners exercise reward power, such as offering incentive contracts, to strengthen a contractor’s trust. Given the presence of reward power, coercive power would have less impact in reducing the levels of both cognition-based and affect-based trust.

5.3. Limitations and future research

Notwithstanding the foregoing contributions to academia and practice, this study has several limitations. First, many other factors may influence trust and cooperative performance, such as the level of project uncertainty and the length of the cooperation period. Future studies should therefore seek to determine other drivers of trust and cooperative performance. Second, our use of cross-sectional data raises concerns about the potential impact of common method bias. In-depth case studies are needed to explore the complex nature of the formation and evolution of trust and its likely role in influencing cooperative behaviors in greater detail. Third, the relationships between coercive power and trust should include other psychological factors such as obedience or accommodation. Furthermore, although the relationship between perceived power and trust may differ in different cultural contexts, this study only used data collected from China. Future studies should focus on cross-cultural perspectives, which may provide greater understanding of how to increase cooperation among overseas project partners.

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