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# Developing a trust inventory for construction contracting

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**Abstract**

Trust is central to every transaction that demands contributions from the parties involved. In construction, trust has been identified to be the key driver in fostering cooperation. By operationalizing a trust framework that includes system-based, cognition-based and affect-based trust, a trust inventory is proposed. The reliability and stability of the inventory were then validated through the test–retest methodology. The proposed trust inventory can be used to assess trust pattern akin to the assessment of conflict handling style and the measurement of depression through the use of the Rahim's Organizational Conflict Inventory and the Inventory of Measuring Depression respectively. Supporting view on the appropriateness of the trust framework and the potential uses of the trust inventory were obtained from a confirmatory qualitative study with two senior construction professionals.


*Keywords:* Trust inventory; Construction contracting

## 1. Introduction

Trust is central to every transaction that demands contributions from the parties involved (Williamson, 1975, 1981, 1993; Lewicki and Bunker, 1995, 1996). The 2008 financial turmoil resulting from the credit crunch that has troubled the global financial markets is an illustrative example of how the absence of trust paralyzed the banking credit system. The British Prime Minister, Gordon Brown, wrote in The Times on 10th October 2008 "... *Until only a few weeks ago, few, if any, appreciated the real significance of the money markets within the wider global financial crisis and the importance of trust in these markets. But the freezing of the market for medium-term funding reflects a total loss of trust between banks.* ... This paralysis of lending from loss of confidence jeopardizes the flow of money to every family and every business in the country". Analogously, if parties in the construction supply chain do not trust each other, their skepticism may not completely paralyze the operation but will certainly create unnecessary enquiries and checking procedures, resulting in serious bottlenecks and inefficiency (Latham, 1994).

Changes are common during the construction phase of a project. In a distrusting environment, developers always assess the submission of the contractor with respect to change orders with an opportunistic lens. Likewise, contractors often inflate their submission in anticipation of hostile and skeptical evaluation. This scenario is extremely common in construction with a dispute being the ultimate outcome.

Trust is a fundamental ingredient or lubricant of social interaction (Gambetta, 1988) and its positive impact on communication (Giffin, 1967), leadership (Atwater, 1988), management (Scott, 1980), negotiation (Bazerman, 1994), game theory (Milgrom and Roberts, 1992), performance (Cummings, 1983), labor relations (Taylor, 1989), self-managed work teams (Lawler, 1992), construction project management (Wood and McDermott, 1999; Kadefors, 2004; Wong and Cheung, 2004, 2005; Wong et al., 2006; Wong et al., 2003, 2008) and owner/contractor relationships (Pinto et al., 2009), has been well documented.

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Notwithstanding, having a trusting contracting environment is an exception rather than the norm. In the connection, creating a trusting contracting environment has been identified as a major reform that can revitalize the construction industry. The notable progress in this regard is the use of partnering. By promoting trust, partnering has been identified as an effective tool to alleviate adversarial relationships (Bayliss et al., 2004; Wong et al., 2005; Cheung et al., 2003; Wong and Cheung, 2004, 2005; Kwan and Ofori, 2001). In fact, trust has been named as one of the most important pillars supporting the success of partnering (Wood and McDermott, 1999; Wong and Cheung, 2004; Pinto et al., 2009). In construction contracting, trust has been generically operationalized as *the willingness of project team members to share information*. This definition highlights the mutual dependence of contracting parties and a trusting environment can foster appropriate information sharing so that both can honor their commitments. Furthermore, Hannah (1991) attributed trust as a contributing factor to participants' satisfaction in his study of US. construction projects. CII (1993) concluded that trust-related procedures could provide maximum cost savings in construction project. Wong et al. (2008) affirmed the correlation of trust to 'performance', 'acting with integrity' and 'demonstrating concern'. A trust model was thus developed to fit in the nature of risk allocation in the construction industry (Zaghloul and Hartman, 2003). In this connection, trusting relationship can facilitate project cost reduction. Recent studies including some conceptual frameworks on trust and project relationships between client and contractor have been reported (Smyth, 2003; Huemer, 2004; Kadefors, 2004). They suggested that the presence of trust is crucial to overcome the adversarial outlook of construction industry although there is little empirical study to support this view. More recently, Wong et al. (2008) proposed a three-trust type framework for construction contracting. This study aims to develop this framework into a trust inventory (hereafter the proposed inventory). The three trust types included in the framework are system-based, cognition-based and affect-based. System-based trust found on performance and faith in the system. Cognition-based trust is built on knowledge and understanding. Affect-based trust addresses feelings and emotions, thus tends to be more personal. These three types of trust co-exist and are mutually dependent. A system is only as good as its weakest point; hence a trust building project manager must install credible system and care for the team members. Although trust has been advocated as the key factor in enhancing efficiency of the construction industry, there has yet reported attempt in developing an instrument to evaluate trust status. This study aims to fill this gap. Measurement instrument is often described as inventory. Notable examples include Organizational Conflict Inventory (Rahim, 1983), Organizational Culture Inventory (Cooke and Szumal, 1993) and Inventory of Interpersonal Problems (Horowitz, 1988). Upon completion of the proposed trust inventory, the level of trust by types can be evaluated. At project level, regular periodic evaluations shall provide longitudinal data on inter-organizational trust status. This information shall inform project management actions. Another use of the inventory is to provide trust status measure organizational studies where trust is a variable.

## 2. The study

There are three stages of work to develop an inventory (Table 1). The same developmental process has been used to develop measurement scale for managerial trust (Butler, 1991), organizational trust (Cummings, 1983) and interpersonal trust (Johnson-George and Swap, 1982). Stage I involves the development of a theoretical trust framework. Stage II operationalizes the framework into an inventory to be tested in Stage III. In essence, the elements of trust in the framework are firstly operationalized into trust behavior statements. The inventory is then validated by a test–retest (Stage III). The validation involves the checking of reliability and constructs validity.

### 2.1. Stage I: a trust framework for construction contracting

Trust has been one of the key research areas in the fields of social science (Luhmann, 1979; Lewis and Weigert, 1985; Rousseau et al., 1998; Kramer, 1999; Yamagishi, 1988), economics (Zucker, 1986; Glaser et al., 2000), and organizational behavior (McAllister, 1995; McKnight et al., 1998; Whitener et al., 1998; Hartman, 2000; Farris et al., 1973). Key research foci include the bases upon which trust can grow and the developed scales. For the purpose of this study, a summary of the published trust scales is provided in Table 2.

McAllister (1995) developed a scale to assess the interpersonal trust. Ding and Ng (2007) investigated the reliability and validity of the Chinese version of McAllister (1995)'s two-dimensional trust scale with a group of architectural design professions in Hong Kong. These scales are used at interpersonal setting. More recently, instead of adopting a single scale, the authors after reviewing a number of trust studies (e.g. Luhmann, 1979; Lewis and Weigert, 1985; Rousseau et al., 1998; Hartman, 2000; Kramer, 1999; McAllister, 1995), proposed a framework for inter-organizational trust in construction contracting (Wong et al., 2008). The following sections detail the development work of the proposed trust inventory for construction contracting.

The authors have proposed a trust framework for construction contracting that includes three types of trust; system-based, cognition-based and affect-based (Wong et al., 2008). System-based trust focuses on formalized and procedural arrangements (Lewis and Weigert, 1985). These arrangements can build trust and strengthen communication channel between contracting parties because of the certainties derived from the system. Cognition-based trust develops from the confidence built upon objective