Are Relational Contracting Principles Applicable to Public Construction Projects?

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Abstract:
The need for relational contracting in the construction industry is high because of the barriers arising from its highly fragmented nature. While relational contracting principles are less difficult to apply in private sector projects, it is not known if public sector projects can enjoy the full benefits of relational contracting. This paper aims to provide answers to this question. Difficulties of implementing relational contracting principles in public construction projects were firstly discussed. A theoretical framework including a basic model, an integrated stakeholder network, and three categories of measurement items were then identified. Although the theoretical framework and accompanying hypotheses are still required to be tested by a following survey, the proposed findings would guide the application of relational contracting in public projects, thus contributing to better relationships in the construction contracting environment, and thereby boosting project outcomes.

Keywords:
relational contract, public construction project, network embeddedness, relationship

1 Introduction

The relationships between contracting parties in a construction project include formal liaisons and relational links. Formal contracts set out the rights, responsibilities and liabilities of the parties. But in a formal contract, contracting parties act in an atomized manner, looking out for their own interests (Williamson, 1975). Formal contracts do not support contractual incentives or flexibilities that are required in ever-changing construction scenarios, and in the face of uncertainty and complexity (Rahman and Kumaraswamy, 2002). Barriers also arise from the highly fragmented industry and business nature, where there is dichotomy between design and construction. This lack of integration gives rise to adversarial relationships. The need for relational contracting in the construction industry is hence high.

Relational contracting principles may be mobilized to offer contractual incentives/flexibilities, improve relationships among contracting parties, and lubricate any transactional frictions. Relational contracting is based on recognition of mutual benefits and win-win scenarios through more cooperative relationships between contracting parties, and underpins various approaches, such as partnering, alliance, joint venturing, long term contracting, joint risk sharing mechanisms and other collaborative working arrangements (Rahman and Kumaraswamy, 2004a). Relational

contracting allows mutual future planning and considers contracts to be relationships among the parties, in the process of projecting exchange into the future (Macneil, 1974).
While relational contracting principles are less difficult to apply in private sector projects (Kumaraswamy, 2010), it is not known if public sector projects can enjoy the full benefits of relational contracting. This is because public clients are not in a position to offer any future relationships, since most projects must be procured through competitive bidding (Rahman and Kumaraswamy, 2004b). Public clients also cannot be seen to have a 'hand-in-glove' relationship with other contracting parties from the private sector, since this may imply cronyism. The possible side-effects of closer relationships include perceived break-down of carefully crafted contractual checks and balances, and dangers of sliding from partnering-type collaboration to corruption (Rahman and Kumaraswamy, 2004a).
According to a survey by Construction Institute of ASCE, it was found that cost estimating is usually a much bigger problem in public construction than in private construction (Minchin et al., 2010). The problem is that the lack of possible relational contracting approaches in public projects may have contributed to projects being completed above budget, behind schedule and to unacceptable level of quality. Yet, public projects are highly visible, and need to achieve the basic triple project goals because tax payers' money is involved. The knowledge gap in how public projects can capitalize upon and adopt relational contract principles is therefore seen. This paper directly address this issue by drawing heavily on 'network' considerations in developing a conceptual framework for managing transactions in public sector construction projects.

2 Features of Public Construction Projects

Clients in public construction projects could be differentiated into clients who have a regular requirement for construction work and infrequent purchase clients. There are usually two ways to develop public projects. The first way such as in Beijing is that the client departments, who want to build their own office building for example, engage consultants and contractors to develop, design and construct the building by themselves. In this scenario, the client departments could be defined as "one-off" clients. They may be "on-off" clients who periodically build a new building. One-off or on-off clients would neither need nor be able to be experts in construction project management and develop future relationships with contractors and consultants. Another common way like in Hong Kong is that the client departments request the relevant work departments to design, call for tenders from private contractors to construct or to design and build the facility. In this case, the work departments could be defined as "ongoing" clients, who have the construction project experience and will have future projects to be constructed. They may have less difficulty to offer future relationships with private contractors. Relational approaches may hence be possible with a long-term relationship founded on regular spending process (Tookey et al., 2001).
Unlike private organizations, government organizations are strictly constrained by many rules and regulations. Even those public organizations that genuinely wish to change are often restricted by standing orders, public accountability and probity constraints (Palaneeswaran and Kumaraswamy, 2000; Chan et al., 2001; Minchin et al., 2010). These preset regulations restrict public officials in some activities and perpetuate a behavior pattern that militates against any kind of trusting relationships with other contracting parties. This pattern pushes both parties back toward a traditionally adversarial approach (Rahman and Kumaraswamy, 2004b). For instance, the public sector has more stringent procedures to follow whenever variations or deviations from contracts occur (Chan et al., 2008).
Organizational boundaries within government departments are typically rigid and impermeable. The departments have well-defined jurisdictions, responsibilities, and a hierarchy of authority. This traditional bureaucratic system of organizing must be overcome to allow public organizations to be partnered effectively (Crowley and Karim, 1995). There is also a lack of communication among such clients. Common knowledge sharing platforms (both internal and external) in public organizations are rare (Palaneeswaran and Kumaraswamy, 2000). This is especially critical in China

as the lack of appropriate mechanisms to inspire the different government departments to communicate actively has reduced the efficiency of project approval (Tai et al., 2009).
Public sector is also burdened by a tedious stepwise decision-making system that often slows project delivery. Hence transforming industry enthusiasm into action for relational contracting in the case of public sector clients is not as easy as with private sector clients (Rahman and Kumaraswamy, 2004a).
The private companies had closer relationships with their suppliers than public clients. The public sector was not active to participate in appointing their own suppliers and left this entirely to the contractor, while by contrast, the private companies played a part in the appointment of their suppliers (Gibb and Isack, 2001). This could be explained by the organizational culture of public bodies. Public organizations are usually restrained by an inertia that may arise from beliefs such as 'that is not our responsibility' (Palaneeswaran and Kumaraswamy, 2000).
The bid behavior in public construction projects is usually under stricter legal regulations. Taking Hong Kong for example, competitive bidding is always required in a public project, while negotiation is more commonly adopted in the private sector (Rahman and Kumaraswamy, 2004b). In theory, some common key procurement principles for public construction projects are public accountability, value for money, transparency (open, equitable and fair competition), propriety/integrity/probity, and confidentiality. Objectives considered in public sector construction contractor selections include proper delivery of good products and/services, minimization of risks and maximization of value for money (Palaneeswaran et al., 2003). However, in practice, public owners usually continue to select the same procurement route as they are in the habit of. They do not consider what procurement route suits each project best, and therefore they do not select the route according to best practice (Lædre et al., 2006). Furthermore, public clients are also restrained by beliefs like 'there is no need to change current approaches/practices that are good enough (or even better than others)', or a 'not invented here' syndrome (Palaneeswaran and Kumaraswamy, 2000). This limitation usually means that a well-performing contractor may not improve its chances of winning the next contract, even with the same public client (Weston and Gibson, 1993).
To sum up, the issues discussed above may be considered as difficulties to successful implementation of relational contracting in public construction projects as presented in Figure 1.

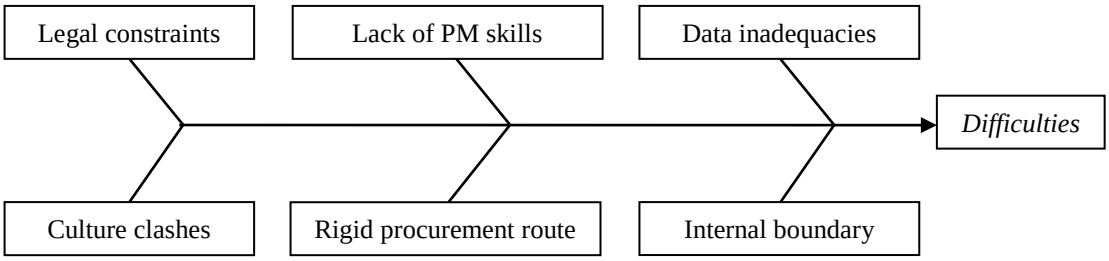

Figure 1: Difficulties of implementing relational contracting in public construction projects

3 In Search of a Paradigm

3.1 Pragmatic Paradigm in Practice

Following the increasing complexities of construction projects, there has been a range of initiatives across many countries to introduce an intensive self-examination and widely publicized reform agenda to the construction process in order to improve performance. Initiatives towards deeper collaboration have played a central role in complex projects, such as the UK "Continuous Improvement" programme (Kumaraswamy et al., 2010) and Australia Alliance Contracting (Clifton et al., 2004). However, there have been improvements, yet these seem not to have been continuous (Anvuur et al., 2011). Taking the UK 'Continuous Improvement' programme as example, the 30 percent overall project savings targeted by Egan (1998) have yet to materialize and initiatives have

tended to be project-specific (Smyth, 2010). Therefore, this again reinforces the importance of this research.

3.2 Theoretical Underpinning

There are some companies in the construction industry that attempt to maximize their economic profit. They may be keen in participating in public construction projects with the intention of increasing the revenue. They usually prefer to adopt formal contracts, which contain fairly explicit stipulations of proscribed and prescribed behaviors. Contracting parties in a formal contract are adversarial in nature. This type of organizational strategy choice is therefore governed by rational choice theory (Becker, 1976). The basic idea behind rational choice theory is that people do their best under prevailing circumstances (Green and Shapiro, 1996). It therefore usually represents preferences with a utility function and seeks for the utility maximization. Rational choice theory presumes that the individual decision maker's interest is known and that he/she pursues his/her interests rationally (Becker, 1976). Williamson (1975) stated that in a relatively pure market, parties engage in transactions with minimum interdependence and little expectation for future interaction. The market is operated by 'economic men' who exhibit self-interested behavior, are rational, and are affected minimally by social relations. These 'economic men' make rational choices in transactions involving formal contracts. They rely on institutional arrangement to guard against trouble, select who to transact with based on pure economic motives, ignoring the identity of and past relationships with the individual actor.

However, risk in a construction project is inherent and difficult to deal with. It is difficult for the partners to completely predict the potential problems and outcomes, and have all essential information. The basic assumptions of expected utility maximization under conditions of uncertainty are especially problematic (Machina, 1987). Contracting parties may also be mutually suspicious of each other as each pursues its profit maximization goal. Instead, Granovetter (1985) argued that most behaviors are closely embedded in networks of social relations. Non-rational behavior will be thereafter quite sensible when situational constrains, especially those of embeddedness, are fully appreciated. It is then noted that the decision making aims not only at economic goals but also at sociability, approval, status and power, which however are rarely seen as rational by economists (Hirschman, 1977). In other words, the objective of the behaviors is therefore not only to maximize utility but also to take into account other social goals (Granovetter, 1985).

Jones et al. (1997) proposed that four conditions promote embeddedness among parties: demand uncertainty with stable supply, complex tasks under time pressure, customized exchanges high in human asset specificity, and frequent exchanges among parties embedded in the network. Construction projects are always characterized by high risks, complex tasks, tight schedule, and long period. It is understandable that participators in the contractual structure of a construction project are usually closely embedded in a social network of relations. There is hence a possible governance mechanism among construction firms and the government embedded in a network.

The Relational Contract Theory was originally developed by Macneil (1974, 1978, 1980, 1983). The theory states that informal agreements and unwritten codes of conduct exist among contracting partners, and these are sustained by the value of future relationships (Macneil, 1978). It allows mutual future planning and considers contracts to be relationships among the parties, in the process of projecting exchange into the future (Macneil, 1974). Macneil (1983) summarized ten common contract behavior norms: (1) role integrity; (2) reciprocity; (3) implementation of planning; (4) effectuation of consent; (5) flexibility; (6) contractual solidarity; (7) the restitution, reliance and expectation interests; (8) creation and restraint of power; (9) proprietary of means; and (10) harmonization of the social matrix. Norms applicable to the ends of the relational/discrete behaviors are not simple mirror images. It is worth noting that contractual relationship is not absolutely relational or completely discrete, but exists on a spectrum, which ranges from relational to discrete. Moving a contractual spectrum ranging from relational to discrete does not just give greater or less emphasis to some of the norms, but also transform them (Macneil, 1983; Blois, 2002). The five

norms of enhanced importance in ongoing contractual relations are role integrity, preservation of the relation, harmonization of relational conflict, propriety of means, and supracontract norms.

4 Relational Contracting Framework for Managing Public Projects

Two arguments can be drawn from the foregoing discussion. Firstly, public bodies should be differentiated from private companies due to the identified issues presented in Figure 1. Secondly, the two variations in strategic focus will reflect the variations in contracting pattern, i.e. pursuing economic profit only leading to formal contracts and pursuing the balance of economic and social goals leading to relational contracts.

4.1 Network Considerations

In light of the first argument, Figure 2 therefore illustrates how typically multifarious stakeholders in a public construction project need to be integrated. The client body/department/organisation that commissions the built facility and other relevant functional departments like financial department, legislative department, and consulting department are considered in one network; while private contractor, sub-contractors, consultants and suppliers would form another network.

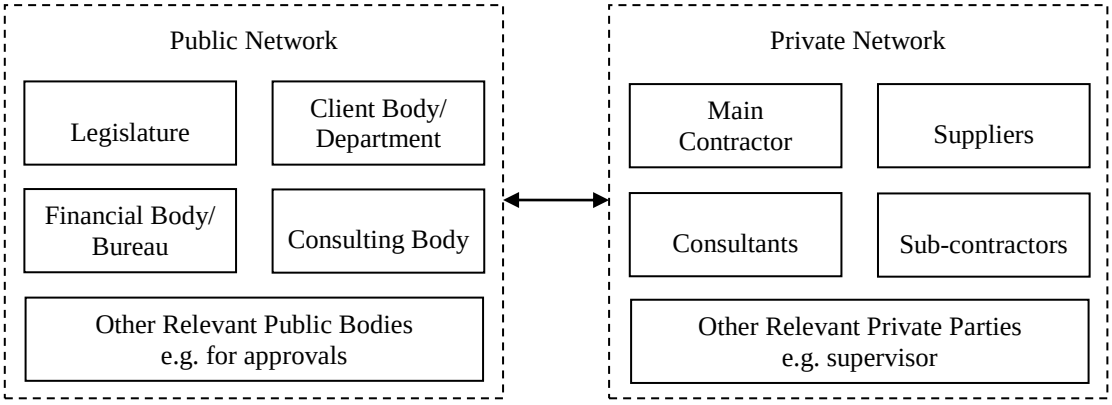

Figure 2: Integrated stakeholders in public construction projects

It is more appropriate to develop two separate networks so that the client department could avoid providing a mistaken impression of having a "hand-in-glove" relationship with private companies. In cities with adequate public accountability and transparency, the difference between relational contracting behaviors and cronyism/corruption is obvious. However, in those cities where public accountability and transparency are not apparent, resistance from the public to adopt relational contracting principles may be encountered.

In addition, one-off or on-off client departments are considered to have less project management knowledge and experience. They therefore need help of other members in the public network, especially the consulting department, to learn about the capability and past performance of bidders in order to choose a reputed contractor. Taking Hong Kong for example, a qualification certificate system is usually adopted in public construction projects such as the List of Approved Contractors for Public Works and the List of Approved Suppliers of Materials and Specialist Contractors for Public Works. In Singapore, the Building and Construction Authority also has a system to register contractors to undertake public works. This is in addition to licensing contractors to undertake large and complex projects. Given the rich project experience of on-going client departments, they can procure the project via competitive bidding and choose any appropriate private partner so as to introduce competition and prevent the "egg-chicken" problem (i.e. a new contractor needs to complete more projects to be reputed but needs to be reputed first to win a contract).

4.2 Basic Model

Based on the second argument, it is expected that the strategic focus will reflect the organizational governance and hence the project performance. Here organizational strategy refers to an attempt for pursuing solely economic goal or a balance between economic and social goals. Pursuing economic profit only (that is interpreted by rational choice theory) would lead to formal contracts, while pursuing the balance of economic and social goals (that is interpreted by network embeddedness theory) would lead to relational contracts.

In addition, existing literature suggests a positive relationship between organizational culture and project performance (Denison, 1990; Zheng et al., 2010). Organizational culture refers to shared assumptions, values, and norms (Schein, 1985), which are held consistently and enable the organization to have the ability to alter behavior, structures, and systems in order to survive in the wake of environmental changes (Denison and Mishra, 1995). This study focuses on a narrower concept of organizational culture on relationship.

To summarize, Figure 3 presents the basic model. To limit the scope of this research, organizational strategy and culture are both studied from the issue of relationship only.

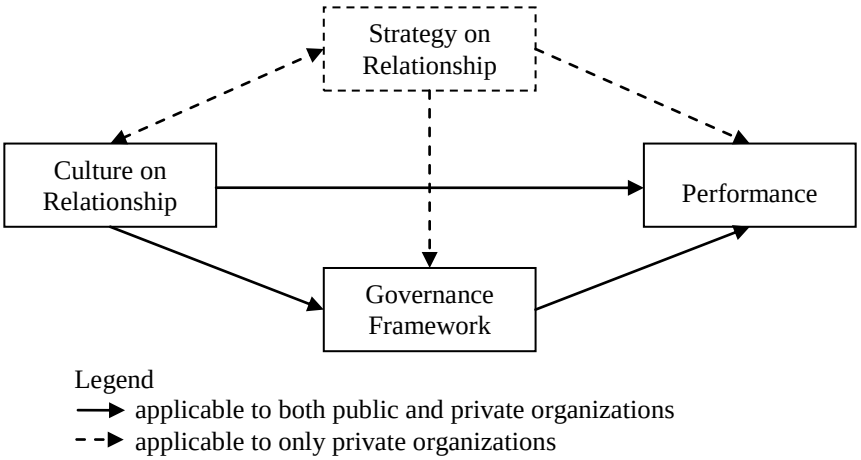

Figure 3: Basic theoretical model

It is worth noting that the objective of public clients in public projects is always not to pursue a maximum economic profit, but instead a maximum value for money towards a balance of multi dimensions. Therefore, "Strategy on relationship" is not a variable to public clients and hence is presented in dashed lines, which means it is only a variable to private construction organizations. More specifically, it is envisaged that:

Hypothesis 1: Private organizations supplying goods/services in public projects that strive towards a relational contracting strategy will achieve better performance than those that pursue economic profit only.

Hypothesis 2: Construction organizations that hold a culture more towards relational contracting behavior will achieve better performance than those that hold a less relational culture.

In the proposed basic model, variables "Strategy on Relationship" and "Culture on Relationship" are both at organizational level, which are in need of a long period to establish. "Governance Framework" is a project-based variable, which includes many other specific constructs like trust and communication and will be further explained in the following section.

4.3 Relational Governance Constructs

To develop a relational governance framework, a literature review is required to identify the elements and success factors of relational contracting approaches, which will be integrated to form relational governance constructs together with the five contract norms of relational contract theory (i.e. role integrity, preservation of the relation, harmonization of relational conflict, propriety of

means, and supracontract norms). Based on the (precedent and subsequent) relationships among constructs, a preliminary governance framework could be thereafter derived.

Measure items relating to success factors and elements of relational contracting approach were identified and presented in Table 1. It is worth noting that these items are divided into three categories, i.e. practices by each contracting party, practices between two of contracting parties, and practices among contracting parties. This means of classification provides the possibility to evaluate the practices by different parties and to develop the public and private networks if necessary.

Table 1: Measure items under three categories

Category	Measure Items
Practices by each contracting party	Level of innovation/creativity
	Commitment of resources to the project
	Effort in implementing relational contracting practices
	Acceptance of relational contracting practices
	Culture fit to relational contracting practices
	Financial capacity
	Flexibility when situations change
	Knowledge level about project processes
	Long term commitment level to other parties
	Previous experience in relational contracting approaches
	Readiness to compromise on unclear issues
	Reputation in the industry
	Specific inputs on construction methods, materials, etc before they are formally appointed
	Team working attitude
	Top management support for relational contracting practices
	Attitude to continuous improvement
Practices between two of contracting parties	Familiarity/previous relationships
	Mutual trust
	Mutual understanding
	Open and effective communication
	Level of inter-personal relations/cultural harmony (individual level)
	Sharing of project information
	Ongoing social relationship (eg. “guanxi”, social ties and kinship outside of this project)
	Level of reciprocation/face-saving gesture
Practices among contracting parties	Clarity of division of responsibilities among contracting parties
	Acceptance of performance appraisal mechanism for the project
	Alignment of objectives of different contracting parties
	Collective/combined responsibility by a pre-selected group comprising one person from each major party
	Joint coordination and monitoring plans among contracting parties
	Clearly defined equitable risk sharing arrangement among contracting parties
	Flexible/adjustable contracts to address uncertainties
	Commitment level of contracting parties to joint problem solving
	Presence of conducive learning climate/environment
	Acceptance of dispute resolution mechanism for the project
	Clarity of contract conditions (eg. scope of contract, duties & responsibilities)
	Real gain-share/pain-share among contracting parties
	Effectiveness of team building events used in the project

A questionnaire survey will be conducted, as the second stage of this research, to request public clients, private consultants and contractors to rate the extent to which each of the measure items in Table 1 were present, observed, practiced or emphasized in a past project. Respondents will be request to answer the questions based on one specific completed public construction project which they have been involved in. The questionnaire will include three main parts: i.e. background of the selected project, extent of the activities in the selected project, drivers and obstacles in the selected projects.

The respondents will also be requested to evaluate the performance of the project. The data collected will be analyzed to test the basic model, to identify relational contracting constructs with strong impact on the project outcomes, and then to develop the preliminary governance framework. Following the questionnaire survey, the research will validate the theoretical framework and elaborate on the findings by conducting case studies.

The survey will be conducted in the following cities: Singapore, Beijing, Hong Kong and Sydney. As the funding comes from MOE, Singapore is the natural choice to study. Singapore developers, contractors and consultants are predominantly Chinese by race. How Singapore-Chinese carry out relational transactions will be investigated. To move the study beyond Chinese Singaporeans so that the findings have more international application, this study proposes to investigate how indigenous China-Chinese undertake relational transactions. The research will focus on the capital city, Beijing (as it has a significant number of completed public projects after the recent Olympics). Recognizing that Beijing is not truly representative of China, Hong Kong is chosen to contrast contract practices in the capital and a SAR. To check whether the findings are unique to Chinese when compared to western practices, study will be conducted in Sydney to contrast the findings obtained from Singapore and China. Sydney is chosen because it adopts western project management practices. In addition, more Singapore firms are likely to benefit from an Australian finding as they may also export their services to Australia, and less likely to export their services to UK and US.

5 Concluding Remarks

It is found that contractual relationship is not absolutely relational or completely discrete, but exists on a spectrum, which ranges from relational to discrete. The search for a pragmatic paradigm such as project alliance framework in Australia (which although didn't bring in continuous improvements yet) indicates that relational contracting principles are also applicable to public construction projects. There is hence a possible governance mechanism among construction firms and the government in a public construction project. A theoretical framework including a basic model, an integrated stakeholder network, and three categories of measurement items were identified in this paper. The framework will be subsequently tested by the fieldwork using a structured questionnaire survey to ascertain its relevance to boost public construction project outcomes.

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