

Causes of Business-to-Government Corruption in the Tendering Process in China

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Abstract: Business-to-government (B2G) corruption is thought to be a common phenomenon in the Chinese construction sector, especially in public construction projects, inducing many accidents and losses. As a precursor to its reduction, or elimination, this paper examines the reasons for B2G corruption by identifying the causes and their relative influence in the tendering process. To do this, a total of 24 causes were first identified through literature review and through the results of semistructured interviews with nine top construction enterprise managers in China's construction market. An opinion questionnaire survey was used further to rank and analyze the causes. A factor analysis also was used to reveal six major underlying causal dimension of B2G corruption, comprising: (1) flawed regulation systems, (2) negative encouragement, (3) lack of professional ethics and codes of conduct, (4) illegitimate gains, (5) lack of competitive and equitable bidding practices and procedures, and (6) the influence of *guanxi*. Concluding remarks include the study's potential contribution to practice and regulations in the fight against corruption in the Chinese construction industry. DOI: 10.1061/(ASCE)ME.1943-5479.0000479. © 2016 American Society of Civil Engineers.

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Introduction

The construction industry has been identified as the most corrupt in the world (de Jong et al. 2009; Hardoon and Heinrich 2011) and almost all phases of construction projects have become problem areas (Chan et al. 2010; Stansbury 2005). The most seriously affected is the tendering phase (Agbiboa 2012; Bowen et al. 2012; Oyewobi et al. 2011; Ray et al. 1999), which starts with a request for proposals and ends with the contract award (Halaris et al. 2001; Kerridge et al. 2000). Approximately 35% of respondents of a recent United Kingdom survey by the Chartered Institute of Building (CIOB 2013), for instance, believe that the tendering process is the most vulnerable to corruption. For Europe as a whole, direct loss because of corruption in the tendering process for road and rail construction, water and waste construction, and urban and utility construction is estimated to be 17, 7, and 20% of project prices, respectively (EU 2013), whereas in Japan, corruption in the

tendering process is said to be responsible for 16–33% of the costs of procurement (McMillan 1991).

As the world's largest construction market, China has experienced increasingly serious corruption problems in the tendering process (Zou 2006). According to China Business Weekly (2014), there are Chinese Yuan *Renminbi* (CNY) 10 trillion (U.S.\$1.6 trillion) public construction projects calling for tenders annually, with an estimated corruption cost of CNY 800 billion (U.S.\$128.4 billion) being incurred during the tendering process, i.e., 8% of the total procured value. The National Bureau of Corruption Prevention reported 21,766 cases of corruption in the public construction sector between 2009 and 2012, of which 3,305 occurred during the tendering process, accounting for 15.2% of all reported cases (Xinhua Net 2012). In the same years in Beijing, as many as 65% of construction corruption cases occurred in the tendering process (Zhao 2012).

Business-to-government (B2G) corruption is ubiquitous in the tendering process (Luo 2004), involving government officials and construction personnel who conduct exchanges within a patron-client relationship (Wang 2014), such as in disclosing important project information to help a specific construction enterprise win the tender. By doing so, they gain illegal benefits at the expense of the whole of society. According to Wangyi Net (2014), approximately 20 senior government officials were involved in corruption during the tendering process of railway construction projects, helping 23 giant state-owned constructors win 57 express railway projects with a total investment of CNY 178.8 billion (U.S.\$28.79 billion) in return for more than CNY 3.1 billion (U.S.\$0.499 billion).

A number of studies have been conducted to identify the reasons for construction B2G corruption. Some point out that this is because the government in China controls many construction projects, especially the larger ones, and officials at various levels possess considerable power to monopolize these projects (Gao 2011; Walder 1995). Other factors include lack of supervisory institutions and transparency (Le et al. 2014a, b), information asymmetry (Xiang et al. 2012), the complexity of projects (Chan et al. 2004; Zou et al. 2007), and cultural issues (Li 2011; Luo 2008).

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However, although dozens of tendering B2G corruption cases are uncovered each year, there is very little certainty as to why B2G corruption occurs much more frequently in the tendering process than in other project stages (Zhang et al. 2015). A more detailed analysis is needed to help reduce and ultimately eliminate corruption at this stage; therefore, the purpose of this study is to identify and analyze the causes of B2G tendering corruption in Chinese construction projects.

Literature Review

B2G Corruption

Generally speaking, corruption is defined as the abuse of entrusted power for private gain and can be divided into two categories: business-to-business (B2B) corruption and B2G corruption. B2G corruption occurs between businesspersons and government officials, whereas B2B corruption occurs between businesspersons (Fan 2002; Lindskog et al. 2010). Compared with B2B corruption, B2G corruption has received widespread public attention because rent-seeking government officials who regulate the market can abuse their power by bypassing laws and regulations (Melese 2002).

The construction sector includes projects initiated by both governments and private sectors (Stansbury 2005), involving numerous parties, various processes, different phases of work, and a great deal of inputs (Takim and Akintoye 2002). All participants could be involved in corruption, including government officials, funders, project owners, contractors, consultants, suppliers, and business and professional associations (Bowen et al. 2012). Many forms of corruption are practiced, the most frequently mentioned being client abuses (May et al. 2001; Williamson et al. 2004), bribery, fraud, collusion (Zarkada-Fraser 2000; Zarkada-Fraser and Skitmore 1997, 2000; Zarkada-Fraser et al. 1998), bid rigging, embezzlement, kickbacks, and conflicts of interest (Le et al. 2014b).

The tendering process is particularly vulnerable; for example, more than 50 forms of corruption being found by the India Central Vigilance Commission (2002). B2G corruption also affects tendering activities with special severity because it is these that determine which enterprises win construction projects.

The situation in China is no different; existing corruption cases suggest that winning construction projects sometimes depends on relationships with officials to gain a competitive advantage (Alutu 2007). There is also a wide variety of B2G corruption in the tendering process in China, which makes anti-B2G corruption efforts an almost impossible task (Li et al. 2013).

Causes of Corruption in Construction

Beginning with the ancient Egyptians, there is absolute agreement that corruption is a cancer on society that needs to be removed (Araia 2013). In pursuit of this, a wave of theoretical and empirical research has been conducted on its causes (Myint 2000).

Theoretically, as Jain (2001) points out, there are three prerequisites for corruption: (1) bureaucratic discretionary power; (2) the association of this power with economic rents; and (3) deterrence as a function of the probability of being caught and penalized. According to the Fraud Triangle Theory, corruption opportunity, need or pressure, and rationalization are the three legs of corruption (Bowen et al. 2012). Corruption opportunity acts like a magnet to attract parties with the potential capacity to engage in corrupt activities (Bowen et al. 2012). For corruption need or pressure, there are two distinct forms: corruption committed knowingly and deliberately for personal or corporate gain, and

corruption committed reluctantly in the belief that it is necessary to be conducted (GIACC and TI 2008). Corruption rationalization is the individual's attempt to justify past and future corrupt deeds to him or herself and others, and to alleviate moral anxiety via the fields of psychoanalysis and social psychology (Zyglidopoulos et al. 2009). In addition, it may occur as a result of internal factors, external factors, or situational factors (Zarkada-Fraser 2000; Zarkada-Fraser and Skitmore 2000).

Many causes of corruption have been identified empirically in the construction industry, including the deregulation of the infrastructure sector, large flows of public money, fierce competition, lack of transparent selection criteria for projects, political interference and discretion, the monopolistic nature of service delivery, tight margins, close relationships between contractors, and the complexity of institutional roles (de Jong et al. 2009; Gunduz and Önder 2013; PricewaterhouseCoopers 2003; Rodriguez et al. 2005; Sohail and Cavill 2008; Stansbury and Stansbury 2007). Moreover, the nature of construction projects, such as the complex contractual structure, the diversity of skills, the numerous levels of bureaucracy for obtaining official approvals and permits, could facilitate corruption and make it difficult to detect and prevent (Fukuyama 2005; Krishnan 2009; Stansbury and Stansbury 2006).

There are additional corruption causes in China because of its unique circumstances, including a construction market that has much trade monopoly and regional protectionism, government interference in public construction projects without constraint (Ren and Sun 2005), and a flawed regulatory system without a positive industrial climate (Le et al. 2014a).

Furthermore, corruption is often viewed as a cultural problem, especially in developing countries (Sohail and Cavill 2008). In China, *guanxi*, the informal personal relationships that facilitate the exchange of favors between people (Bian 1997; Leung et al. 2005; Lovett et al. 1999), is embedded deeply in the culture (Li and Sheng 2011). *Guanxi* is the key to analyzing and understanding Chinese conduct and provides a lubricant (Gold and Guthrie 2002; Hui and Graen 1998; Standifird and Marshall 2000) that helps the Chinese to get through life; it is even called *guanxi capitalism* (Lu et al. 2008). However, like two sides of a coin, *guanxi* has its good and bad points (Warren et al. 2004), with many scholars equating *guanxi* with bureaucratic corruption and bribery (Koo and Obst 1995; Sanyal 2005; Smeltzer and Jennings 1998; Steidlmeier 1999; Su and Littlefield 2001; Su et al. 2003).

Thus, having good *guanxi* with government officials means being prioritized to win projects because good *guanxi* simply indicates that the government trusts you have the ability to accomplish the task (Guo and Miller 2010). Resorting to *guanxi* to win construction projects has become a latent rule in China (Ren 2012). Consequently, *guanxi* provides a fertile environment for corruption to flourish (Hoskisson et al. 2000; Tsui et al. 2004).

Table 1 shows a total of 15 root causes of construction corruption identified from the literature review, including legal and regulation factors, market factors, project factors, and personal factors.

Although various causes of corruption have been identified in the construction industry, there has been very limited focus specifically on B2G corruption (Zhang et al. 2015). Additionally, previous research has focused primarily on the whole construction industry, whereas few studies have been attempted of the tendering process (Zhang et al. 2015), leaving the causes of B2G corruption at this stage largely unknown. Given that B2G corruption at the tendering stage has a severe negative impact on the effectiveness of government investment and quality of construction projects, and on the unique legal, cultural, and economic system in China, the underlying reasons for B2G corruption in tendering stages need further investigation.

Table 1. Causes of Corruption in Construction Projects

Causes	Bowen et al. (2012)	Zarkada-Fraser (2000) and Zarkada-Fraser and Skitmore (2000)	Le et al. (2014a)	Sohail and Cavill (2008)	Zou (2006)	Zhang et al. (2015)
1. Flawed regulation system	X	X	X	X	X	X
2. Regional protectionism	—	—	—	—	—	X
3. Abuse of power	X	—	—	X	X	—
4. Absence of penalties	—	X	—	—	—	—
5. Lack of rigorous supervision	—	—	X	—	X	—
6. Lack of a positive climate	X	X	X	—	X	—
7. Lack of transparency	—	—	—	X	—	—
8. Fierce competition	—	X	X	—	—	X
9. Complex market	—	—	—	X	X	—
10. Large flow of public money	—	—	—	X	—	—
11. High margins	—	—	—	—	—	X
12. Economic survival	X	—	—	—	—	X
13. Personal greed (moral)	X	X	X	—	X	—
14. Professional code	—	X	X	X	X	—
15. Relationship/ <i>guanxi</i> influence	X	—	—	X	—	X

Research Methods

The research process consisted of three steps. First, a thorough literature review was conducted to identify a preliminary list of 15 causes of corruption in construction. Second, further causes were identified by interviewing selected practitioners. Finally, a questionnaire survey was used to prioritize and categorize these causes.

To ensure the reliability of the results, semistructured interviews were conducted with practitioners that: (1) have at least 10 years working experience in the construction sector; (2) hold senior positions in their organizations; and (3) have higher education degrees. As a result, nine practitioners were selected, comprising two construction company chief executive officers (CEOs), three vice CEOs, and four project managers, all of whom had more than 10 years working experience in the construction sector and were frequently involved in the tendering activities of numerous public construction projects. The combination of experts from different backgrounds provided a balanced view of the research topic and a range of perspectives from different firms. Given that the majority of the literature on corruption is focused on the recipients (government officials), this study examines the issue from the bribe-givers' (construction firms) point-of-view (Gao 2011; Li and Ouyang 2007). Each semistructured interview took approximately half an hour. The 15 causes of B2G corruption were presented to the interviewees at the beginning of the interviews and they were requested to identify the causes of B2G corruption according to their own experience using these as a reference. Content analysis was used after the interviews to analyze the transcripts and identify the causes involved. Content analysis is often used to determine the major facets of a set of data by simply counting the number of times an activity happens or a topic is depicted (Fellows and Liu 2009; Xia and Chan 2012; Ye et al. 2014). A further nine causes were identified after taking into account the interviewees' comments, making a total of 24 causes of B2G corruption in the tendering process.

For the survey, a questionnaire was developed on the basis of the 24 causes, with the respondents being requested to rate the importance of each cause on a 7-point Likert-type scale (1 = significantly unimportant; 7 = significantly important). To maximize the number of respondents, help was sought from the Shanghai Construction Consultants Association and the Research Institute of Complex Engineering and Management at Tongji University. These two agencies have extensive contacts with various construction enterprises.

To ensure the quality of the survey results, all the targeted respondents and their enterprises had been involved in a number of public construction projects in the previous three years. Considering that corruption is a sensitive topic and is extremely difficult to obtain data from government officials, the target respondents in this research were those from construction enterprises. A total of 211 questionnaires were sent by e-mail and by onsite distribution over a period of three months; 183 were returned completed, of which 41 were discarded because of incomplete information or obvious contradictions, e.g., the respondents thought it was difficult to understand the questionnaire or ticked the same option for all questions (Fang et al. 2006). The remaining 142 valid replies (67% response rate) were recorded and used for the analysis.

For the analysis, each cause was ranked according to its mean value and the set of most important causes identified by *t*-tests. Then, a factor analysis was conducted to explore the underlying dimensions involved. Factor analysis is a statistical technique commonly adopted to identify a small number of individual factors underlying a set of interrelated variables (Choi et al. 2011). Exploratory factor analysis (EFA) was used to identify the interrelationships between the items by the principal components method (Polit and Beck 2008). This determines the minimum number of factors that account for the maximum variance in the dataset (Xia and Chan 2012). Two essential stages are involved: factor extraction and factor rotation. To test whether the data was suitable for factor analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett's Test were first used (Le et al. 2014a). The KMO is an index for comparing whether the magnitudes of the observed correlation coefficients to the size of the partial correlation coefficients are small. The Bartlett's Test is used to test homogeneity of variance, a necessary condition for factor analysis.

Empirical Results and Data Analysis

Semistructured Interviews

Table 2 summarizes the background of the experts involved in the semistructured interviews, and the 24 identified causes are listed as follows:

1. Higher margin for public investment projects;
2. Investment fund is enough and can be paid easily for public investment projects;
3. Cost of B2G corruption is small compared with its benefit;

Table 2. Background of Experts

Experts	Organization	Position	Years of experience
A	Contractor	CEO	23
B	Consultant	CEO	17
C	Contractor	Vice CEO	11
D	Contractor	Vice CEO	13
E	Consultant	Vice CEO	12
F	Contractor	Project manager	10
G	Contractor	Project manager	36
H	Consultant	Project manager	25
I	Consultant	Project manager	11

4. Long-term benefits could not be achieved without B2G corruption;
5. Tendering activities are often formalities;
6. Reducing risk of the market and competition;
7. Lack of a B2G-corruption relationship disadvantages companies in competition;
8. Decision making for public investment projects is defective;
9. Lack of standardization of government power;
10. Tendering legal system is not sound;
11. Government official power is overcentralized;
12. Tendering activities lack social supervision;
13. Lack of effective judicial administration;
14. Tendering information not disclosed effectively and lacks transparency;
15. Cut-throat competition to win construction projects is widespread;
16. Existing monopoly and market segmentation in the tendering process;
17. Rent cost is too low;
18. It is hard to discover a B2G-corruption relationship owing to its hidden nature;
19. B2G corruption can be conducted with the excuse of traditional culture and *guanxi*;
20. It is hard to win construction projects by strict compliance with the law;
21. Existing large numbers of offsite activities in the tendering process;
22. Lack of trust in the construction sector;
23. Lack of professional ethics; and
24. Lack of specific ethics and code of conduct to guide the action of government officials.

Questionnaire Survey

Table 3 provides detailed background information of the 142 respondents. All were from cities in eastern China, which have approximately 40% of the construction projects in the country (China Statistics Bureau 2013). Ninety percent of respondents held a college degree or above, 40% had more than 10 years experience, and approximately 40% held managerial positions, which were considered sufficient to offer a sound judgment on the questionnaire.

Ranking of Corruption Causes

Cronbach's alpha is 0.936, much greater than the cutoff of 0.6 needed to indicate reliability (Carmines and Zeller 1979). The mean and standard deviation of the importance of each ranked cause are shown in Table 4. When two or more causes had the same mean value, the one with the lower standard deviation was considered to be more important (Wang and Yuan 2011). The mean scores of all the causes were over 5.0, indicating that all were considered important.

Table 3. Demographic Profile of Respondents

Personal profile	Categories	Number of respondents	Percentage
Years of experience	15 years	39	27.5
	5–10 years	45	31.7
	10–15 years	30	21.1
	Over 15 years	28	19.7
Position	Staff	88	62
	Project manager level	32	22.5
	Department manager level	11	7.7
Education	Top manager level	11	7.7
	High school or below	28	9.9
	Junior college	58	29.6
	Bachelor's degree	42	40.8
Organization	Master's degree or over	14	19.7
	Contractor	31	21.8
	Quantity surveyor	13	9.2
Ownership	Supervision	42	29.6
	Consultant	56	39.4
	Private enterprises	116	81.7
	State-owned enterprises	20	14.1
	Foreign companies	4	2.8
	Joint enterprises	2	1.4

A series of *t*-tests helped to find the set of most important causes. For the top and second top means of 5.803 and 5.746, the *t*-test (one-tailed) was $p = 0.274$. Next the top and third top were taken, and the order was continued in this way until $p < 0.05$. *T*-test $p < 0.05$ occurred at cause number 8; therefore, the set of most important causes comprised the first seven on the list.

The importance of the first of these causes was unsurprising because it is well known that corruption in the Chinese construction sector is almost out of control (Zou et al. 2007), which leads to a severe external industry environment for construction enterprises. To survive and develop, enterprises are forced to indulge in corrupt activities with government officials. Some directly depend on B2G corruption to win construction projects. In this way, the industrial climate of the whole construction sector has gradually become less positive (Le et al. 2014a), so that construction enterprises have increasingly resorted to B2G corruption to avoid being disadvantaged in competition. In this situation, tendering laws cannot be successfully implemented and winning construction projects by B2G corruption has become the latent rule.

The remaining causes refer to the ease with which corrupt activities are possible in China. Because the whole tendering process involves many offsite activities, corrupt activities are carried out through a B2G corruption relationship in advance, with the tendering process being merely a formality. Government officials, possessing a powerful right of discretion in China, still play an important role in the tendering process. This, together with the lack of judicial administration and difficulty in detection makes corruption relatively easy. Similarly, the cost of corruption to contractors compared with the size of profits involved is relatively small.

Therefore, the ease with which corrupt activities can be carried out because of offsite activities, overly powerful officials, lack of judicial administration, difficulty in detection, relatively low cost, and its ratchet effect on the whole industry making it difficult to win construction projects without B2G corruption, are the primary causes of corruption in construction tendering in China.

Factor Analysis for Underlying Groupings

Table 5 presents the results of the KMO and Bartlett's tests, with a KMO value of 0.901 and Bartlett's significance of 0.000.

Table 4. Ranking of Causes of B2G Corruption

Causes of B2G corruption	Mean	SD
1. Lack of a B2G-corruption relationship disadvantages companies in competition	5.803	1.119
2. Existing large numbers of offsite activities in the tendering process	5.746	1.133
3. Government official power is over centralized	5.739	1.122
4. Investment fund is enough and can easily be paid for public investment projects	5.718	1.006
5. Lack of effective judicial administration	5.718	1.181
6. It is hard to discover a B2G-corruption relationship owing to its hidden nature	5.711	1.069
7. Rent cost is too low	5.662	1.058
8. Reducing risk of the market and competition	5.641	1.100
9. Tendering activities lack social supervision	5.627	1.218
10. Lack of specific ethics and code of conduct to guide the action of government officials	5.592	1.295
11. Long-term benefits could not be achieved without B2G corruption	5.556	1.164
12. B2G corruption can be conducted with the excuse of traditional culture and <i>guanxi</i>	5.549	1.102
13. It is hard to win construction projects by strict compliance with the law	5.500	1.213
14. Cut-throat competition to win construction projects is widespread	5.415	1.106
15. Existing monopoly and market segmentation in the tendering process	5.408	1.162
16. Lack of standardization for government power	5.380	1.281
17. Higher margin for public investment projects	5.345	1.130
18. Tendering legal system is not sound	5.324	1.345
19. Cost of B2G corruption is small compared with its benefit	5.310	1.118
20. Decision making for public investment projects is defective	5.268	1.231
21. Lack of trust in the construction sector	5.254	1.274
22. Tendering activities are often formalities	5.246	1.267
23. Lack of professional ethics	5.225	1.431
24. Tendering information not disclosed effectively and lack transparency	5.056	1.341

According to Kaiser (1974), the KMO index value should be larger than 0.5. It was, therefore, concluded that the correlation matrix was not an identity matrix, that the correlation among the variables was strong, that the variances were sufficiently homogeneous, and, hence, the data were suitable for factor analysis.

Using principle components analysis and varimax methods, the factor analysis generated six factors with eigenvalues greater than 1.0, accounting for 70.54% of total variance explained, which satisfies the criteria that the eigenvalues should be greater than 1.0 and more than 60% of total variance explained (Malhotra 2008; Norusis 1992). To obtain a better understanding of the factor-loading matrix, factor rotation was used, and the factor loadings were sorted by size according to their coefficients. Table 5 indicates the final factors and factor loadings. Each factor was named by combining the meaning of their variables with the highest crossfactor loadings and eliminating those with loadings less than 0.4 (Lee et al. 2004). The six factors with eigenvalues greater than 1.0 were: (1) flawed regulation systems; (2) negative encouragement; (3) lack of professional ethics and codes of conduct; (4) illegitimate gains; (5) lack of competitive and inequitable bidding practices; and (6) the *guanxi* mechanism (Table 6).

Discussion of the Factor Analysis Results

Factor 1: Flawed Regulation Systems

The factor of flawed regulation systems accounted for 14.11% of the total variance explained. This confirmed the conclusion

Table 5. Results of KMO and Bartlett's Test

Parameter	Value
Kaiser-Meyer-Olkin measure of sampling adequacy	0.901
Bartlett's test of sphericity	
Approximate chi-square	2,008.338
Degrees of freedom	276
Significance	0.000

that flawed regulation systems are the primary reason for B2G corruption in the tendering process (Le et al. 2014a). As Kagan (1989) indicated, the regulations themselves are substantively problematic and flawed products for the behavior of corruption and fraud. In China, although the government has actively implemented more than a thousand anticorruption regulations and laws, and, increasingly, competitive and formal market-supporting institutions have been gradually adopted, anticorruption laws and institutions are poorly established (Chen and Wu 2011; Ko and Weng 2012), and the regulations remain undeveloped and flawed.

In the construction sector, vague and ambiguous laws and regulations provide wide discretion in interpreting the meaning of current laws and regulations (Yow Thim and Zonggui 2004). Government construction departments play multiple roles of policy makers, project funding owners, and arrangers, and with considerable discretionary power, making it easy for government officials to interfere in tendering activities. The lack of rigorous supervision aggravates the situation (Ko and Weng 2011; Li et al. 2013). The departments supervising construction projects are sometimes a subsidiary body of the same departments that administrate the tendering department. At the same time, transparency to the public, such as public media, is in need of improvement (Zou 2006). Additionally, although China's tendering laws have been in existence from 2000, they still contain many deficiencies that have a weakening influence on anticorruption because they are flexible and fragmented. More sophisticated and enforceable laws and regulations, therefore, are urgently in need of development (Yow Thim and Zonggui 2004).

Factor 2: Negative Encouragement

B2G corruption is a passive response to the challenges raised by the changing economic and legal environment in China, such as the ambiguity of prequalifying criteria, owners' deliberately splitting larger projects into smaller ones, and bid rigging (Huang and Rice 2012), in providing an alternative strategic mechanism to normal bureaucratic channels for winning public construction

Table 6. Causal Factors of B2G Corruption

Factors	Factor loading	Variance explained (%)
Factor 1: Flawed regulation systems	—	14.114
Lack of effective judicial administration	0.808	—
Government official power is overcentralized	0.730	—
Tendering activities lack social supervision	0.692	—
Tendering legal system is not sound	0.675	—
Decision making for public investment projects is defective	0.473	—
Lack of standardization of government power	0.447	—
Factor 2: Negative encouragement	—	12.658
It is hard to win construction projects by strict compliance with the law	0.722	—
Lack of a B2G-corruption relationship disadvantages companies in competition	0.655	—
Existing large numbers of offsite activities in the tendering process	0.631	—
Long-term benefits could not be achieved without B2G corruption	0.546	—
Tendering activities are often formalities	0.523	—
Factor 3: Lack of professional ethics and code of conduct	—	12.195
Lack of professional ethics	0.866	—
Lack of trust in the construction sector	0.806	—
Lack of specific ethics and code of conduct to guide the action of government officials	0.708	—
Factor 4: Illegitimate gain	—	12.171
Higher margin for public investment projects	0.805	—
Cost of B2G corruption is small compared with its benefit	0.763	—
Investment fund is enough and can easily be paid for public investment projects	0.750	—
Reducing risk of the market and competition	0.608	—
Factor 5: Lack of competitive and inequitable bidding practices	—	11.174
Tendering information not disclosed effectively and lack transparency	0.810	—
Existing monopoly and market segmentation in the tendering process	0.647	—
Rent cost is too low	0.615	—
Cut-throat competition to win construction projects is widespread	0.578	—
Factor 6: The <i>guanxi</i> mechanism	—	8.233
B2G corruption can be conducted with the excuse of traditional culture and <i>guanxi</i>	0.714	—
It is hard to discover a B2G-corruption relationship owing to its hidden nature	0.679	—

projects (Zhang et al. 2015). In this environment, construction enterprises resort to bribing government officials to win projects. In other words, B2G corruption is developed as a defensive approach to curb the lack of a positive industrial climate (Le et al. 2014a). Furthermore, it has become more attractive for firms to establish B2G-corruption relationships for long-term benefits (Luo 2004) because establishing and maintaining B2G *guanxi* costs a large amount of money and energy (Zhang et al. 2015). Additionally, given that corruption is widespread in China, not having B2G-corruption relationships leads to a contractor being competitively disadvantaged. As a result, construction enterprises tend to strengthen their B2G-corruption relationships in defense.

Factor 3: Lack of Professional Ethics and Code of Conduct

As Bowen et al. (2007) pointed out, the disparate nature of the construction industry makes it difficult to monitor behavior on an individual level, which makes the introduction of codes of conduct seem to be the best way to bring about a change in practice. There are three distinct parts to the effective use of a code of conduct as a tool for dealing with corruption: (1) drafting the code; (2) implementing the code; and (3) enforcing the code (Gilman 2005). However, there is still a lack of a clear code of conduct for government officials in China (Liu 2008). In addition, the existing codes need to be improved because they fail to be put into practice, which creates cognitive dissonance and corruption (Li 2011). Moreover, corrupt behavior is an ethical problem (Sohail and Cavill 2008) and the lack of professional ethics leads to the spread of corruption (Zou 2006). Li (2009), for example, found

that engineering students in China receive little professional ethics education, leading to a lack of trustworthiness and responsibility. Furthermore, low levels of trust nurture corruption, which often creates a degree of tolerance toward corruption and nurtures expectations of such conduct. At the same time, distrust fosters a vicious circle of a tolerant or acquiescent attitude toward corruption (Morris and Klesner 2010), elevating the amount of corruption in society and providing justification for furthering such behavior (Xin and Rudel 2004).

Factor 4: Illegitimate Gain

Corruption during the tendering process motivates decision makers to favor an individual contractor, including his ex ante benefits and ex post benefits (Cheung et al. 2012). The ex ante benefit is that enterprises win construction projects and, by ex ante corruption, the number of bidders can be reduced (Tullock 2001). B2G corruption practices occur when government officials abuse their administration power to appoint bidders. In reality, many enterprises in China undertake construction projects beyond their capabilities by borrowing qualifications and obtaining projects without a tendering process (Zhao 2011). For ex-post benefits, corruption can bring outstanding benefits. The net benefit from public investment projects is over 20%, sometimes even more than 50% (Liu 2011), whereas the average for the whole construction sector is approximately 3% (Zhao 2012). Furthermore, only 70–80% of construction enterprises obtain their private sector construction project payments (Zhang 2013). Therefore, as the profit for public construction projects is high and payments are guaranteed by government, many construction enterprises try to win these projects via B2G corruption.

Factor 5: Lack of Competitive and Equitable Bidding Practices

Stansbury and Stansbury (2006) indicated that greater transparency increases the difficulty in concealing corruption. The construction sector is a typical market with incomplete information because of the opaqueness of bidding information. In China, there is serious information asymmetry, such as irregular publishing of information, little information being released, and insufficient transparency in selection criteria. That is, although the tendering laws in China outline rules and requirements on examining the qualifications of bidders and bidding scoring methods, approximately 90% of tendering documents do not detail their corresponding contents (Le et al. 2014c).

In this situation, disclosure of confidential information can create space for rent seeking and bring benefits for government officials. The rent cost for both government officials and construction enterprises is low, which can induce unfair practices and injustice for other disadvantaged groups. Furthermore, because of the great financial and tax contributions involved, local protectionism in the construction sector is said to be rampant (Fan 2012). According to a survey conducted by the Development Research Center of the State Council of China, construction-sector local protectionism is ranked fourth of 36 industrial sectors (Li et al. 2004). In this situation, local construction enterprises are sheltered from other external enterprises and compete unfairly. Thus, external enterprises have to depend on B2G corruption to overcome entry barriers to enter regional markets. Furthermore, to sustain their competitive advantage and extract more rents from the regional market, local enterprises also have to indulge in corrupt practices with government officials. Because of the lack of transparency and competition because of protectionism, its value and control by government officials is increasing (Ades and Tella 1996).

Factor 6: Guanxi Mechanism

Chinese *guanxi* is a cultural value acceptable in the Chinese market, and its abuse can lead to unethical practices, such as dishonesty, bribery, and corruption (Maximiano 2007). Thus *guanxi* provides a fertile environment for corruption to flourish in China (Hoskisson et al. 2000; Tsui et al. 2004). Firstly, *guanxi* is covert by nature and, by using the social institution of reciprocity and custom of gift-giving via *guanxi*, the process of corruption serves as a tacit expression of this (Li 2011) to reduce the risks involved. Secondly, *guanxi* is a Chinese tradition that can distort norms by falsely presenting certain illicit behaviors as standard and normatively acceptable practices. In this situation, B2G corruption is not some haphazard aggregation of sporadic acts, but follows certain rules and codes of conduct (Zhan 2012). Therefore, *guanxi* helps to overcome the moral and cognitive barriers to corruption (Li 2011).

Conclusions

The focal point of this study is to understand the underlying influences on B2G corruption in tendering in China. To win construction projects, many bidders establish a variety of B2G-corruption relationships with government officials. However, little is known of their causes. In this study, a total of 24 factors were identified through a combination of literature review and semistructured interviews. On the basis of a survey of 142 Chinese construction industry practitioners, six underlying factors were revealed: (1) flawed regulation systems; (2) negative encouragement; (3) lack of professional ethics and codes of conduct; (4) illegitimate

gains; (5) lack of competitive and inequitable bidding practices; and (6) the *guanxi* mechanism.

The findings of the study provide some practical implications for preventing B2G corruption in developing countries generally. The primary factor in China is the ease with which B2G corruption is possible. To correct this, as it is the flawed regulation system that has the biggest impact on B2G corruption, priority needs to be given to improvements in the tendering environment, including revising the tendering laws, strengthening supervision, increasing penalties, and greater policing of the regulations. Another important factor for anti-B2G corruption is to establish and improve a unified and orderly national construction market system for fair competition, so that bidders win construction projects solely on merit.

The findings of this study imply that the causes of B2G corruption in tendering are quite complicated and varied. Many of the causes identified, such as the flawed regulation system, lack of professional ethics and codes of conduct, and lack of competitive and equitable bidding practices are common in other developing nations, and likely have equal emphasis. The influence of the *guanxi* mechanism is unique to China, however, and further investigation of its role in B2G corruption is needed to provide additional help for an increased understanding of the causes of B2G corruption and improving the effectiveness of anticorruption measures.

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