For the balance of stakeholders' power and responsibility –

A collaborative framework for implementing social responsibility issues in

construction projects

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Abstract

Purpose – This paper describes the development of a collaborative framework for balancing stakeholder power and social responsibilities in construction projects. To resolve the problems of unclear responsibility that is common in construction projects, the framework is designed to help stakeholders identify their roles in various issues and to facilitate collaborative endeavors by elucidating their responsibilities.

Design/methodology/approach – The framework was designed using a scientific appraoch based on a problem-solution paradigm. It was developed as a model that would provide strategies for responding to various issues and that would also balance stakeholders' responsibilities with power. A case study was conducted to validate the framework in an ongoing real estate project in China.

Findings – The effectiveness of the framework was validated from the case study, which found that the engagement of stakeholders was improved by adopting the framework. It was also found that use of the framework led to enhancement of communication and trust, and better collaboration through a collective form of responsibility.

Originality/value – The study provides valuable insights into stakeholder collaboration on social responsibility issues in construction projects. The dynamic nature of stakeholders is addressed, and an easy-to-follow framework is offered for use in construction projects.

Keywords: *social responsibility, stakeholder power; project management;*

1. Introduction

Although the concept of corporate social responsibility (CSR) has been extensively studied and practised, research on social responsibility of construction projects is still in its infancy (Zeng et al., 2015). The process and end product of construction projects causes environmental pollution, exploitation of unrenewable resources, and disturbance to local communities (Barthorpe, 2010; Othman, 2009). The United Nations Environment Program (UNEP) reported in 2014 that the whole lifecycle of buildings is responsible for 10% of global energy consumption, 30%-40% of greenhouse gas emissions, 40-50% of raw material use, and 12% of water use. It is therefore clear that implementing social responsibility at construction project level is crucial for achieving sustainable development within the construction industry. However, limited attention has been paid to stakeholders' social responsibility in a project environment.

Social responsibility is a self-regulating approach to pursuing organisational success by responding to contemporary social demands (Schultz et al., 2013; Sheehy, 2015). It extends the narrow contractual and legal requirements to voluntarily contribute to a better society and cleaner environment (Carroll, 1991; Davis, 1967). Social responsibility issues are the measures practised by project stakeholders to meet their social responsibility objectives. Some issues have drawn broad governmental attentions such that building energy efficiency ordinances have been crafted in many countries as a regulative requirement (Young, 2014), and some overnments have enacted legislation requiring a project environmental impact assessment before approval to commence construction (Ding, 2008). However, social responsibility advocates proactive action on a voluntary basis. It calls for a shift of governments' role from a regulator to fostering an environment for partnership and collaboration (Albareda et al., 2007). An example of social collaboration is the green building initiative, which has been successfully promoted in many countries under the collaboration of governments, NGOs (such as LEED in the US and Green Star in Australia), investors, and consumers. The blossoming of environmental hearings and public participation also reflects the awakening awareness of civil society to influence the behaviour of projects. According to the new governance model proposed by Rhodes (1996), self-organised inter-organisational collaboration is more suitable for a diverse globalised society.

Project social responsibility requires a collaborative co-governance system involving governments, companies, and the public (Ma et al., 2017). Construction projects are complicated and dynamic, involving multiple stakeholders including governments, contractors, developers, consultants, suppliers, NGOs, and public institutions (Karlsen, 2002). These stakeholders hold different interests and changing power on project objectives (Aaltonen & Kujala, 2010). They have different abilities to raise claims, acquire necessary supports, and achieve desired objectives (Cook, 1977). The exercise of formal and informal power is essential to determine exchanges of necessary resources (Alberg Mosgaard et al., 2016). Therefore, collaboration will be ineffective if all participants are assumed to have equal responsibility or power (Aas et al., 2005).

Stakeholder management tools such as salience model (Mitchell et al., 1997), stakeholder circle (Bourne & Walker, 2008), power/interest grid (Olander & Landin, 2005), and

stakeholder network (Rowley, 1997) have been developed by researchers. The majority of them take an instrumental view for the maximisation of a company's benefit, while no practical tools have been developed to guide stakeholder collaboration. Facilitating collaboration is not just about selling the idea, but more about providing a systematic framework for the improvement of communication, openness, and transparency in stakeholder interactions (Alberg Mosgaard et al., 2016; Selsky & Parker, 2005). Shelbourn et al. (2007) suggest that operational processes that enable discussing common goals and priorities, identifying key stakeholders, and promoting trust and communication, are essential for achieving effective collaboration in construction projects.

Society is characterised by dynamics, high density of interactions, and high connectivity (Schultz et al., 2013). It calls for the transition of social responsibility research from individual organisations to a collaborative perspective (Peloza & Falkenberg, 2009; Ruan et al., 2013; Schultz et al., 2013). Project stakeholders are embedded in invisible structures that limit their understanding. To help them identify their roles and collaborate with each other, this research developed an operational framework to implement social responsibility issues.

2. Methodology

The debate is ongoing as to whether the knowledge produced from management research is relevant to practice (Van Aken, 2004). Linking theoretical knowledge and professional practice in reality is essential to obtaining the implications of theories (Montaño, 2012). Van Aken (2005) proposed that Mode 2 knowledge should be produced to design solutions for real problems in management. A design science approach is commonly used to generate such "knowledge linking an intervention or artefact with an expected outcome or performance in a certain field of application" (Van Aken, 2004, p. 23).

This study followed adopts the design science research approach proposed by Peffers et al. (2007). First, the obstacles to stakeholder collaboration in construction projects were identified from both organisational and project levels. Second, the possible solutions to these problems were explored based on the discussion of related management and sociology theories. Third, a framework was developed using the regulative cycle by Van Strien (1997). The regulative cycle provides a scientific and rigorous structure to develop problem-directed scientific interventions. A case study was carried out in an on-going residential development project to validate the framework.

3. Obstacles to stakeholder collaboration when implementing social responsibility issues in construction projects

3.1 The organisational level: limited resources and complicated issues

Businesses are expected to respond to contemporary social problems beyond narrow economic, technical, and legal requirements (Davis, 1973). According to the ISO 26000, social responsibility encompasses organisational governance, environmental protection, human right, labour practices, fair operation, consumer issues, and community involvement and development. Martinuzzi et al. (2011) contended that although construction currently

focuses on occupational health and safety and the environment, more challenges are expected to emerge such as resource efficiency, emission reduction, and housing issues. In projects, stakeholders need to discuss the strategies to fulfil their social responsibilities. The implementation of social responsibility means the policies, measures, schemes, and activities undertaken by stakeholders. In construction projects, such practices include green building design, sustainable report initiatives, environmental management systems, public participation, and green procurement. The scarcity of resources make it impossible for one organisation to respond to all the issues (Jamali, 2007). Because stakeholders have different resources, they should be engaged differently. At the organisational level, it is crucial to find out how to strategically respond to the complicated issues arising from a project lifecycle. Categorizing the issues into different priorities to maximise the outcomes is one of the effective approaches. The framework developed in this study provides stakeholders with optimal strategies to respond to various issues in construction projects.

3.2 The project level: unclarified responsibility and self-sufficient stakeholders

Projects are temporary organisations to complete unique goals at a given period (Packendorff, 1995), and project stakeholders not only hold different interests or project objectives (Jonker & Nijhof, 2006) but they tend to devote scarce resources to achieve their goals (Cheng et al., 2001). Due to the discretionary basis of social responsibility, accountability for these issues is usually not clearly stated in the contracts. Therefore, stakeholders are less likely to voluntarily share resources and make joint efforts, which is especially true when the issues bring extra costs and risk exposure; they tend to shirk their responsibilities and pass the buck to others. This happened with pollution of the Pearl River in Guangdong Province, China. Factories and construction projects, such as the construction of a dam and power station along the riverside, caused the pollution. According to a report by Greenpeace in 2009[1], the rate of the qualified drinking water from the river was only 67.8%. The government, developers, and contractors did not take effective control measures on time because they did not think they were responsible for the pollution. When powerful stakeholders chose to neglect their responsibilities, powerless people are the ones who have to suffer the consequences and eventually have to pay to fix the problem. In this case people in the area of the river suffered and the government had to build a water treatment station at taxpayers expense. It would have been a different story if stakeholder responsibilities had been clearly stated at the beginning of the projects. Therefore, this study's framework also aims at identifing stakeholder responsibilities.

4. Solutions to the problems

4.1 Strategic matrix for categorising social responsibility issues

The instrumental view suggests that organisations should strategically satisfy the interests of various stakeholders (Donaldson & Preston, 1995). Managers can develop different strategies based on the evaluation of stakeholders' power, legitimacy, and urgency (Mitchell et al.,

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[1] Greenpeace(2009), "Poisoning the pearl river", available at:
http://www.greenpeace.org/international/en/publications/reports/poisoning-the-pearl/

1997). Categorizing stakeholders in a power/interest matrix is a very popular tool in strategic management (Scholes & Johnson, 2002). This matrix model, modified from Mendelow (1981), evaluates how likely stakeholders will be to try to influence and whether they have the ability to succeed. The model has been widely applied, especially in the construction project context (Olander, 2007; Olander & Landin, 2005; Polonsky, 1996; Polonsky & Scott, 2005; Savage et al., 1991).

The strategies suggested by the classical matrix are to put the stakeholders with both interest and power as the priority, while disregarding 'unimportant' demands (Deegan & Blomquist, 2006). The classical matrix is designed for stakeholder issues. According to Clarkson (1995), there is a difference between stakeholder issues and social issues. The former enables stakeholders to achieve organisational excellence, while the latter balances the benefits of multiple stakeholders. Because of the difference, the classical matrix model needs to be modified to deal with social responsibility issues. The new matrix focuses solely on the benefits of one focal organisation (Eesley & Lenox, 2006; Friedman & Mason, 2004). A collaborative view is taken by considering stakeholders as mutually dependent for the achievement of common goals (Co & Barro, 2009; Peloza & Falkenberg, 2009; Roberts & Bradley, 1991). Instead of being static, stakeholder power/interests are dynamic, homogeneous, and contextual (Windsor, 2011). As the classical matrix evaluates general power/interest rather than focusing on specific contexts (Mainardes et al., 2012; Neville et al., 2011), the new matrix incorporates stakeholder dynamics and balances strategies for social issues.

The connotations of stakeholder power and interest need to be revisited for modifying the classical model. First, power has a long history in sociological inquiries (Blau, 1964; French Jr & Raven, 1959). Turner (2005) defined power as the ability of one social actor to manipulate or influence others' behaviours towards its intentions. With sufficient power, social actors can achieve their desired outcomes regardless of resistance (Brass & Burkhardt, 1993; Pfeffer, 1992). According to the resource dependent theory (RDT) by Emerson (1962), power stems from dependent relationships on critical resources. Because of the dependency of other stakeholders, powerful stakeholders hold the leverage over others to alter their behaviour (Frooman & Murrell, 2005; Liu et al., 2015; Sánchez-Medina et al., 2015; Thijssens et al., 2015).

Stakeholder interest means the possibility that they will raise their demands or exert their influence (Olander & Landin, 2005; Scholes & Johnson, 2002). The different interests come from stakeholders' different expectations and values towards project objectives (Atkin & Skitmore, 2008). An investigation by Li et al. (2012) reported that the public pays greater attention to land use and the environment, while governments emphasise economic development and NGOs are concerned about green and sustainability issues. Stakeholder interests are determined by organisational demography, perceived stakeholder power, and perceived gains from the issues (Lindgreen et al., 2009).

In light of the foregoing discussion, this study developed a new power/interest matrix model for stakeholders to strategically respond to various social responsibility issues (see Figure 1). Social responsibility issues can be categorised into four segments based on the evaluation of power and interest. Different strategies and roles are suggested for stakeholders to implement the issues in each category. On issues where stakeholders have strong power and interest (in the first quadrant), they can take the lead to initiate and coordinate all the related parties. Regarding strong power and low interest issues (in the second quadrant), stakeholders are suggested to collaborate by sharing resources to respond to the claims. On issues with weak power and high interest (in the third quadrant), stakeholders are encouraged to align with others and claim their rights. Lastly, on the issues with both low power and interest (in the fourth quadrant), stakeholders can standby and just be followers. This new matrix is an important part of the framework.
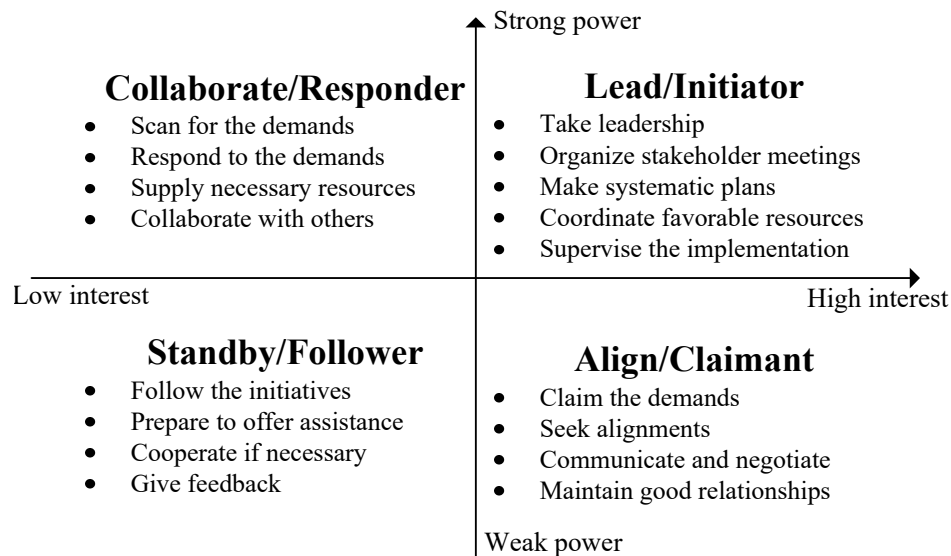
Strong power

Collaborate/Responder
- Scan for the demands
- Respond to the demands
- Supply necessary resources
- Collaborate with others

Lead/Initiator
- Take leadership
- Organize stakeholder meetings
- Make systematic plans
- Coordinate favorable resources
- Supervise the implementation

Low interest — **High interest**

Standby/Follower
- Follow the initiatives
- Prepare to offer assistance
- Cooperate if necessary
- Give feedback

Align/Claimant
- Claim the demands
- Seek alignments
- Communicate and negotiate
- Maintain good relationships

Weak power

Figure 1. the new matrix model for categorising social responsibility issues

4.2 Structural network for engaging stakeholders for collaboration

Structures are needed for stakeholders to implement social responsibility issues in order to clarify responsibilities. Roberts and Bradley (1991) defined collaboration as "a temporary social arrangement in which two or more social actors work together toward a singular common end, requiring the transmutation of materials, ideas, and social relations to achieve that end" (p.212). The structural features that facilitate stakeholder interactions are essential for successful collaboration (Savage et al., 2010). The empirical results by Aviv et al. (2003) indicate that a structural group has a higher performance than an un-structural group. Especially in construction projects, team structures are more important because stakeholders are often temporarily united for a particular aim. The reason that structures can enhance team collaboration is because it can clarify role boundaries and enable systematic interactions (Valentine & Edmondson, 2014). More importantly, it forms a collective responsibility that makes stakeholders jointly responsible for the consequences (Valentine, 2014).

Aas et al. (2005) pointed out that the most significant criticism of the collaboration theory is that all parties are assumed to have equal status. This it is not the case. Some stakeholders with claims or interests may not have the enough power to influence (Mitchell et al., 1997), while powerful stakeholders may be reluctant to take responsibility voluntarily (Olander, 2007). An investigation by Loosemore (1999) showed that project stakeholders with little power are often forced to take more responsibility, which brings them financial stress and anxiety. This imbalance of power and responsibility is demonstrated by many studies (Aas et al., 2005; Arnaboldi & Spiller, 2011).

Balancing power with responsibility is the fundamental philosophy for determining the roles of stakeholders. Power needs to be balanced and constrained by taking commensurate responsibility to sustain that power and avoid power abuse (Davis, 1967; Enderle, 2006). Therefore, powerful stakeholders are supposed to take the leaders role to implement the issues. It is also a practical way because powerful stakeholders possess critical resources and are more capable of obtaining support from others (Aaltonen et al., 2008; Aaltonen & Kujala, 2010; Bourne & Walker, 2005, 2006). Developing collaboration structures based on power can drive effective resource exchanges. Management research focuses mainly on organisational efficiency, power research sheds light on equity and wider public benefits (Clegg et al., 2006), but research on combining the two to address power in organisations is lacking.

Stakeholder power structures are dynamic and complicated (Heravi et al., 2015; Olander & Landin, 2005). Rowley (1997) introduced a network model to describe the complex stakeholder environment. This network map is widely praised as having the potential to produce valuable insights (Mok et al., 2015; Vance-Borland & Holley, 2011; Yang & Zou, 2014). Luoma-aho and Vos (2010) proposed an 'issue arena' claiming that stakeholders' interactions are in the context of various issues. Frooman (2010) supported the idea to integrate issues into a stakeholder network. This study developed a stakeholder-issue network to visualise stakeholder power structures, by connecting stakeholders and social responsibility issues as network nodes.

5. Development of the framework

A collaborative framework was developed consisting of the new power/interest matrix for prioritising the various issues, and the stakeholder-issue network to visualise the structures. The framework contains five cyclic steps according to Van Strien's (1997) regulative cycle. See Figure 2.
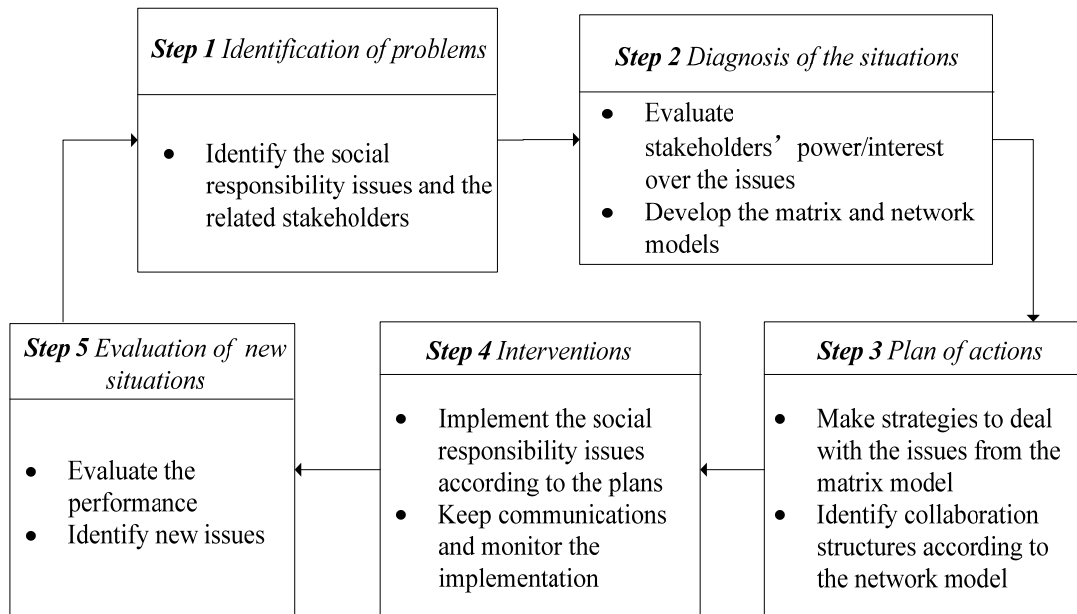
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┌──────────────────────────────────┐     ┌──────────────────────────────────┐
│ Step 1 Identification of problems │     │ Step 2 Diagnosis of the situations│
│                                   │     │  • Evaluate                        │
│  • Identify the social            │────▶│    stakeholders' power/interest    │
│    responsibility issues and the  │     │    over the issues                 │
│    related stakeholders           │     │  • Develop the matrix and network  │
│                                   │     │    models                          │
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┌─────────────────────┐  ┌────────────────────┐  ┌────────────────────────┐
│ Step 5 Evaluation of│  │ Step 4 Interventions│ │ Step 3 Plan of actions │
│    new situations   │  │                     │  │                        │
│                     │  │ • Implement the     │  │ • Make strategies to   │
│  • Evaluate the     │◀─│   social            │◀─│   deal with the issues │
│    performance      │  │   responsibility    │  │   from the matrix model│
│  • Identify new     │  │   issues according  │  │ • Identify collaboration│
│    issues           │  │   to the plans      │  │   structures according │
│                     │  │ • Keep communications│ │   to the network model │
│                     │  │   and monitor the   │  │                        │
│                     │  │   implementation    │  │                        │
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Figure 2. The collaborative framework for implementing social responsibility in construction projects

Step 1. *Identification of problems*: Representatives from all stakeholders, including main contractors, developers, government departments, communities, NGOs, subcontractors, labour councils, and employees, raise their social responsibility issues and say which stakeholders are related to these issues. This can be conducted in stakeholder briefings or meetings.

Step 2. *Diagnosis of the situations*: Representatives of the stakeholders identified from step 1 are then be invited to evaluate their interest and all stakeholders' power over the issues. This step can be done by paper-based or online anonymous questionnaires. The issues will are then categorised into different segments and strategies suggested to deal with these issues for each related stakeholder. Meanwhile, a stakeholder-issue network is also developed for visualising the structures for collaboration.

Step 3. *Plan of action*: Stakeholders make their action plans for implementing social responsibility based on the suggestions. This step is for revitalising stakeholder collaboration by reminding powerful stakeholders to accept their responsibilities and empowering powerless stakeholders to safeguard their benefits.

Step 4. *Interventions*: Stakeholders then take action to exercise their strategies and collaborate with each other in dealing with the identified issues. The framework is a mutual support process, from which stakeholders can identify the problems of the affected stakeholders and then seek to develop an optimal plan to meet the demands.

Step 5. E*valuation of the new situation*: The framework is an iterative process. Through the

framework, stakeholders work together to maintain effective communication, resource exchange, and continuing feedback. The outcomes and new situations need to be re-evaluated to identify new issues or problems. Stakeholders should iteratively implement the framework from project planning stage to demolition or reconstruction, thereby providing a spiral of improvement in project social responsibility performance.

6. Validation of the framework

6.1 Background of the case study project

Validation of the framework was through a case study conducted in June 2015. The project is a housing project located in Dongguan, Guangdong province, one of the most dynamic regions in the south-east coastal area of China. The developer was one of the biggest privately owned Chinese real estate companies. The site covered about 61,000 square metres of floor space involving 1196 units. The construction process contained two phases that commenced from 2014. When the case study was conducted, the first phase construction had been completed, which comprised 12 low-story townhouses, and the second phase comprising 11 high-rise apartment blocks was ongoing. Before construction, the land was an open space close to a botanic garden located at the centre of a remote district in the city. The project actually helped to improve the local environment by constructing a well-designed garden and an artificial lake. As the completed project would include new stores and living facilities for the development of the area, there were no objections from the local community.

The case project was selected for several reasons. Most importantly, residential development is a typical project type and has attracted a significant amount of investment in recent years. It can provide wide implications for many similar projects. In addition, driven by the governmental policies, the project leaders are motivated to implement social responsibility in their project. The project did not have stakeholder engagement routines, stakeholder communication channels were absent, and the project leaders were very interested in building a strong stakeholder partnering network to increase the project social performance.

6.2 Process of the case study

Implementation of the case study followed the framework steps to identify the social responsibility issues, diagnose the situations, and make corresponding plans at the organisational and project level (see Table 1). Because it was a cross-sectional study, no actual interventions or follow-ups were conducted. Feedback from the participants was used as the evidence to validate the effectiveness and applicability of the framework. In order to obtain genuine data and reduce social desirability bias, all the interviews and questionnaires in the case study were conducted upon a nondisclosure and anonymity basis.

First, we collected the social responsibility issues to be implemented in the project through face-to-face interviews with two senior managers responsible for the project: the managing director of the project, and the project manager. They had comprehensive knowledge about the project, as well as an understanding of social responsibility. They were asked to raise social responsibility issues that they considered as important at that given stage of the project.

We guided the interviewees by suggesting issues that they may have frequently received complaints or requests about. We induced them to think about labour protection, environment, fair operation, community, consumer, organisational governance, and human right. The interviewees were then asked to name the stakeholders that they thought should deal with the identified issues.

Second, to diagnose the situations, one or two representatives from each of the related stakeholder groups were invited to fill in a structured questionnaire. The total of twelve representatives were asked to evaluate their interest in and perception of all stakeholders' power over each of the identified social responsibility issues.

Third, a number of suggestions were provided to the twelve representatives and the two senior managers, along with the implications of each. The participants were then asked to provide the research team with feedback for evaluation.

Table 1 Process of the case study

	Process	Activities	Participants
Phase 1	Identify the social responsibility issues and related stakeholders	Two in-depth semi-structured interviews conducted with senior managers	Managing director for project planning and coordination Project manager for on-site construction management
Phase 2	Diagnose the situations	Twelve questionnaires collected from the representatives	Marketing officer and HSE department officer from the developer company Two field engineers from the main contractor On-site supervisor from the supervisory company Asset manager from the property management company Government liaison officer from housing department Two individual house owners Two neighbourhood committee members
Phase 3	Make action plans and evaluate framework performance	Suggestions provided and fourteen feedback questionnaires collected from all the participants in the last two steps	Two senior managers and twelve representatives from different stakeholder groups

6.3 Suggestions at the organisational level

Six issues were identified in the case project: 1) preventing rock falls; 2) safety training programs for workers; 3) dust control on-site; 4) classification of construction waste; 5) water usage conservation; and 6) monitoring of energy consumption in building operations. When the case study was conducted, the project was in the construction stage, which is why the issues were mostly about construction, safety, on-site environment, and resources. A power/interest matrix was provided to each related stakeholder, which suggested strategies for responding to the issues (see Figure 3). Some of the suggested strategies are discussed below to show he practical way in which the framework helped the stakeholders.

The issue of falling rocks threatened the safety of the workers and visitors. It was caused by the interior decoration of the individual owners of units in the building that had been completed in the first phase. In the case study, the project manager blamed the property management company for their failure to control these individual owners. The property management company did not resolve it because the house owners were their clients. The matrices provided a different picture. It was the developer (matrix 1), the main contractor (matrix 2), the supervisory company (matrix 3), and the government (matrix 5) who were responsible for collaboratively resolving this problem. The developer could raise the concerns by putting it forward in project meetings, the main contractor could take protective measures such as providing protective netting and warning signs, the supervisory company could include it in the safety check items, and the government needs to produce safety regulations specifically for half-delivered projects. To prevent falling rocks is a reletively simple task but it became a safety hazard because of the unclear responsibilities of stakeholders.

Another example is the classification of construction waste. In the project, the waste bricks, concrete, cement, and metal, were either piled on-site or disposed of immediately without proper classification, which was hazardous to the environment. According to the matrix suggestions it should be initiated by the government (matrix 5) and the neighbourhood committee (matrix 7), in collaboration with the developer (matrix 1) and main contractor (matrix 2). The matrices show that only relying on the voluntariness of the developer and main contractor is insufficient; external forces were also important. The government and neighbourhood committee should improve waste classification regulations. The neighbourhood committee can also provide spaces and other support. The developer can also encourage the main contractor to take such measures by offering cost savings from recycled materials.

Another issue was the waste usage of water for irrigating the temporary flower pots. The flower pots needed to be replaced weekly to maintain the liveliness of the garden for attracting new house buyers. The use of water was extravagant and unsustainable. From the suggestions, only the main contractor (matrix 2) had considerable power and interest. The main contractor had direct control over the water supply on-site and the waste usage of water brought them extra costs. An effective strategy is that the main contractor can launch a water conservation champion in the project. Some activities can be carried out, such as changing the flowerpots to long-life plants, using water-saving irrigation, and placing water-saving slogans around the site. The issue was also a concern of the house owners (matrix 6) and

Lin X., Ho M.F., Shen G.Q.P. (2017). For the balance of stakeholders' power and responsibility – A collaborative framework for implementing social responsibility issues in construction projects, Management Decision. (SCI, IF=1.429)
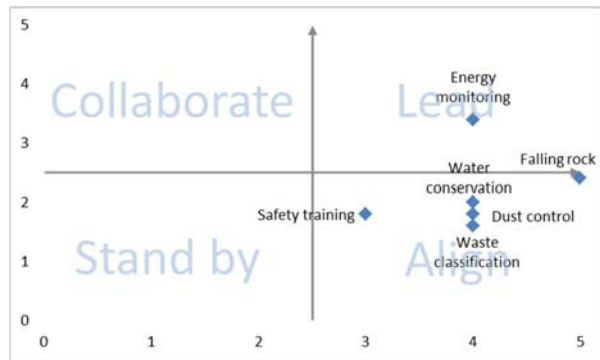
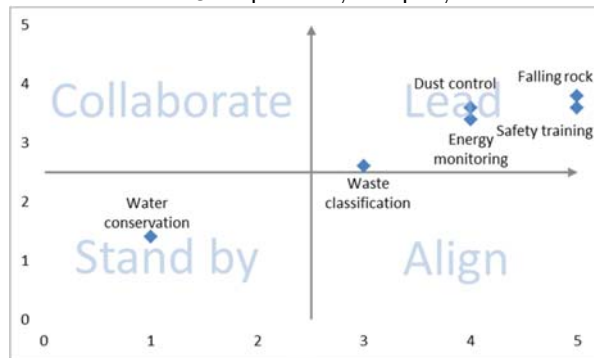neighbourhood committee (matrix 7), though they had limited power to make changes. They were suggested to align with each other or seek external support.
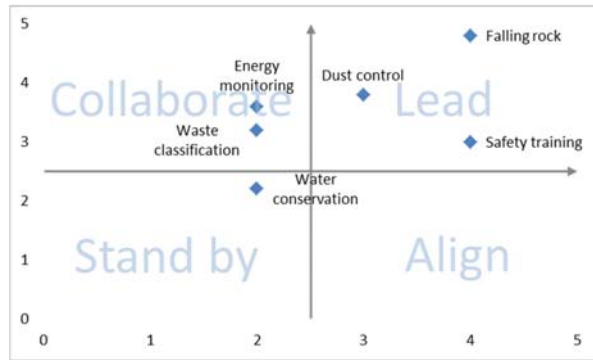
Matrix 1: Developer
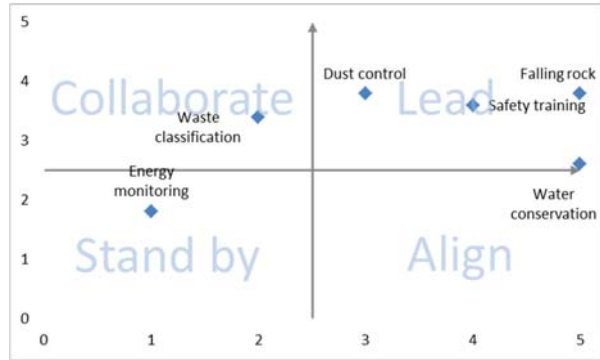
Matrix 2: Main contractor
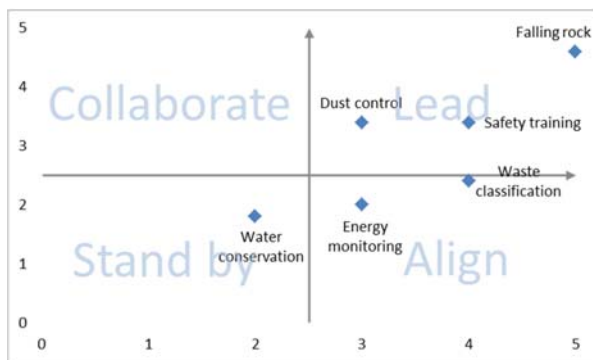
Matrix 3: Supervisory company

Matrix 4: Property management company

Matrix 5: Government
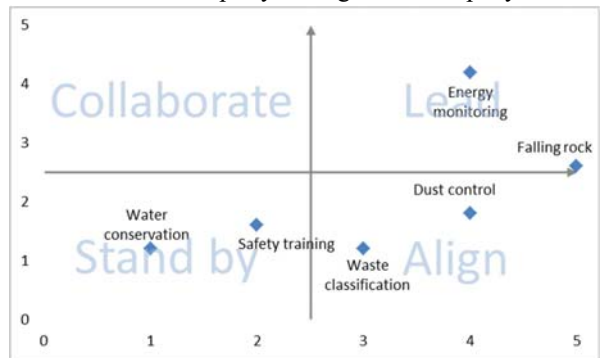
Matrix 6: House owners
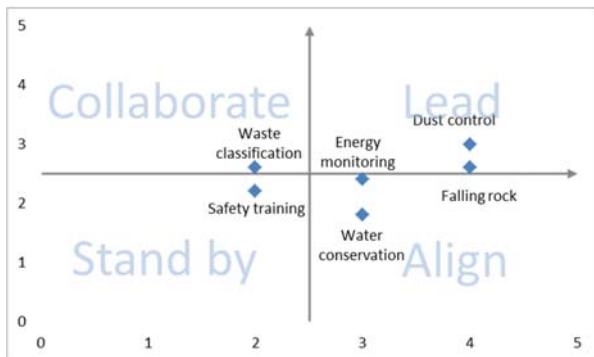
Matrix 7: Neighborhood committee

Figure 3 Power/interest matrix for each stakeholder

6.4 Suggestions at the project level

A stakeholder-issue network was developed to visualise stakeholder power structures (see Figure 4, generated by NETMINER). In the network, the stakeholders are represented by round nodes, and the social responsibility issues are square nodes. The links between them show the above average power between the stakeholder and issue. The sizes of the stakeholder nodes indicates their overall power on all of the issues. The matrices and network are inter-related with complementary functions. Project leaders should combine these two tools to make action plans integrating both individual and holistic perspectives. The matrices emphasise each stakeholder group, while the network provides a holistic structure.
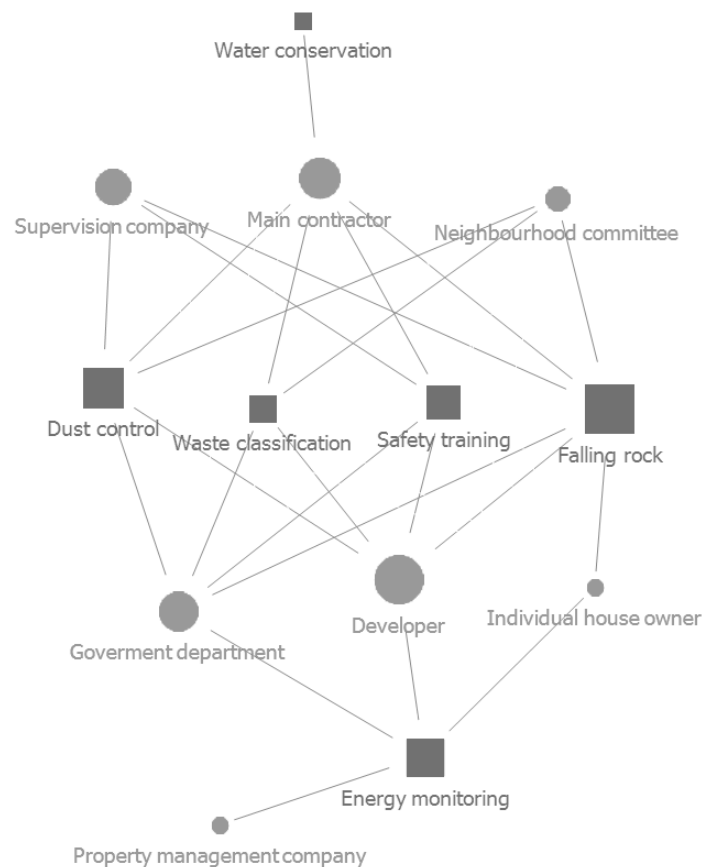

Figure 4 Stakeholder-issue network in the case project

The network provides a holistic view of the clusters and isolations of stakeholders based on their power. The main contractor, neighbourhood committee, and supervisory company are clustered because their responsibilities over the issues are similar. These three stakeholders form a subgroup that can communicate and collaborate regularly and closely. Another subgroup is the government, developer, and individual house owners. In each subgroup, the most powerful stakeholders should organise regular meetings to discuss the relevant issues.

There are two marginalised nodes in the network. Only the main contractor company had a strong power link on water conservation, so engagement with the main contractor actions is crucial. Likewise, the property management company held strong power about energy monitoring.

The network served as a visualisation tool for the project manager to coordinate stakeholders to deal with these issues. It was easy to find out who are linked with one particular issue. The engagement priorities are based on the power degrees. The suggestions of stakeholders' roles from the matrices were also useful. For example, to realise energy monitoring of the buildings, the project manager can easily spot the powerful stakeholders, which are government, developer, end customers, and the property management company. The project manager can engage with them differently based on the size of their nodes. The developer is the leader in initiating energy monitoring. The project manager can also communicate with the government to see if any support can be obtained. The property management company can collaborate as an advisor to persuade individual owners to install energy monitoring devices.

6.5 Feedback from the participants

The effectiveness of the framework was validated by a great deal degree of positivity from the participants. From the fourteen returned feedbacks, eight agreed that the framework could facilitate the implementation of social responsibility, ten thought the framework could enhance stakeholder communication, and eleven thought the framework could facilitate collaboration. However, nine participants believed that the framework could not easily be applied in construction projects. They listed some reasons in the open-ended question, including time consumption, the difficulty of engaging all stakeholders, and the reluctance of powerful stakeholders to take on extra burdens. However, even the nine pessimists could not deny the effectiveness of the framework, because any procedures need time to be formalised in an organisation before they are fully accepted by the staff. Furthermore, since the representatives involved were mainly operational employees, they may have limited commitment and understanding of what social responsibility really entails. It is also hard for them to welcome procedures, which they know will mean extra work for them. More discussions about this reluctant attitude are made in the following discussion section. Many participants commented that the framework would improve business reputation and enhance public relations. One participant suggested that instead of only focusing on companies, some individuals or public institutions, such as the media, communities, and labour unions, should also be involved. Also, that engagement with external stakeholders should be from the beginning of projects, in order to discuss what measures can be implemented to meet their expectations.

7. Discussion

The content of social responsibility in construction projects may vary with project type and scope. However, whether mega-infrastructure or commercial building, social effort requires effective collaboration. Collaborative practices need to be improved to address social and

environmental issues (McDonald & Young, 2012). According to the feedback, a majority of participants agreed that the framework could support stakeholder collaboration and improve project social performance. The case study feedback supports development of the framework and some actual changes made to the project as a result of using the framework also demonstrated its positive impact. For example, immediately after the suggestions were provided, the main contractor installed a protective net for all the completed buildings to catch falling rocks. The main contractor had thought that the responsibility was transferred after the buildings were completed and delivered. However, according to Enderle's (2006) social responsibility philosophy, the main contractor still has responsibility to avoid safety hazards on site. The framework also enhanced stakeholders' commitments to social responsibility, since before the case study the representatives considered that they only had a responsibility to follow the drawings and contracts. From the framework, they came to understand social responsibility as a shared goal in project objectives.

The framework helps to clarify responsibility among stakeholders. Based on the case study results, stakeholders have different interests in social responsibility issues. For example, the property management company and individual house owners considered energy monitoring as important. If the framework were not applied, this issue would be overlooked or suspended because the developer had no interest; the framework suggests that powerful stakeholders have the power to take action. The framework is a means of transforming social responsibility from a vague slogan to concrete action plans that can be easily understood and practised. Through distributing responsibility, conflicts between finite resources and complex demands can be mitigated.

A significant contribution of the framework is the engagement of the public sector to collaborate with project insiders. Cross-sectoral collaboration to address complex social issues has been extolled as having many advantages and it has become a phenomenon across nations (Savage et al., 2010). The case study results identify the leading role of governments on project social responsibility. An investigation by Lin et al. (2017) demonstrates that governments hold the central power among external project stakeholders to determine whether social responsibility is practised in construction projects. Governments have the power to legislate social and environmental requirements for the compliance of companies. However, legislation is not the optimal way to promote social responsibility because corporations often adopt responsive rather than proactive strategies (Lin et al., 2014). In the global society, governments are encouraged to use soft policies to facilitate open dialogue between business, government, and civil society (Albareda et al., 2007). The framework facilitates this transition by involving government representatives as leaders of stakeholder teams to communicate and create shared values.

Societal co-governance requires the involvement of multiple external stakeholders besides governments, including NGOs, media, and communities (Steurer, 2010). From the case study results, the community had limited power to influence the behavior of the developer and main contractor. When we asked the two senior managers about NGOs and labour unions during the interview, they said that they barely had any interaction with these organisations. It shows

that public governance in China relies mostly on governmental power while non-governmental forms of regulations are relatively inactive. According to Enserink and Koppenjan (2007), the key issues of public participation in China are the attitude of governments, the maturity of community organisations, the legal framework, as well as the lack of a transparent, open, and accountable participation process. The neighbourhood and house owner committees are important representatives of the grassroots power to influence urban planning and environmental policies (Read, 2003). In addition, the rise of Internet techniques also encourages and empowers grassroots activism in China (Sima, 2011).

The framework also has an effect through building trust among stakeholders. Trust is important for stakeholders to genuinely share information and resources, especially when facing controversial issues (Alberg Mosgaard et al., 2016). Trust among stakeholders can be nurtured through the framework. By putting all the concerned issues on the table, it reduces the risks that powerful stakeholders shirk from their responsibilities by sacrificing benefits of the 'silent' stakeholders at little or even no costs. It also provides a transparent common ground for communications and negotiations. Also, by implementing the framework, individual stakeholders' reluctant attitudes to social responsibility can be changed (Secchi & Bui, 2016). It transpired from interviews with the two senior managers that before the case study they perceived social responsibility as troublesome, conflicting, and compromising. The framework changed their impression by showing them that social responsibility can be common goals to enhance trust, cohesion, and collaboration among stakeholders.

Because power is a double-edged sword, precautions of power abuse are vital to achieving collaborative endeavours. Developers or other powerful stakeholders may use leverages to manipulate their subordinates into not voicing their real concerns. In the case study, the project manager mentioned that when they sit together to talk about social or environmental issues, everyone just kept silent and agreed with every decision made by the developer. One of the basis of the framework is that stakeholders provide genuine information and raise their issues freely. Measures can be taken to relieve stakeholders' anxiety, such as transparent procedures, creating a climate to communicate freely, and a commitment to shared objectives. The balance of power is an essential element for efficient information sharing.

In the framework, the stakeholder-issue network serves as a visual supplement to reveal the structural features between stakeholders and social responsibility issues. This research applies a renovated stakeholder-issue network advocated by (Frooman, 2010; Luoma-aho & Vos, 2010) that shows insights into how stakeholders are clustered around different issues. 'Team scaffolds' can be constructed based on the network. The grouping of stakeholders can increase communication efficiency by building partnerships, shortening information transmitting distance, and providing regular feedback.

One valued feature of the framework is that it emphasises the dynamics and multiplicity of stakeholders (Windsor, 2011). The traditional stakeholder management theories have been criticised as ignoring this dynamic nature (De Schepper et al., 2014; Fassin, 2011). Along with the rapid development of society, the content of social responsibility may change

consistently. Stakeholder power and interest are also changing. However, the framework is adaptive to these dynamic nature by linking stakeholder attribute with different issues. By identifying the unrevealed power structures, the framework helps stakeholders to quickly find their roles and relations to respond to emerging challenges.

Despite all the merits, it is worth questioning that whether stakeholders will follow the suggestions from the framework to voluntarily take part in social responsibility issues. In the case study, suggestions from the framework were not forced upon the stakeholders, so there was no way of knowing whether everyone was taking the subscribed actions. Formalisation of the framework workflow in an organisational setting needs the support of top management, which means that framework activities should be organised and initiated from top to bottom. Attention should be paid to the impact of bureaucracy. According to Adler and Borys (1996), the coercive form of bureaucracy is often associated with negative views due to the deprivation of autonomy, but the enabling form of formalisation that aims at improving individuals' work efficiency is often embraced by employees. The purpose of the framework is to develop the latter form of workflow to support collaborative endeavours taken by stakeholders. Even though the framework does not coerce compliance, at least stakeholders can communicate and gain a better understanding of their social responsibilities. The framework is intended as a flexible procedures to assist collaborative social responsibility implementation and cope with contingencies, rather than manipulation of stakeholders' behaviour.

Nevertheless, the low acceptance rate in the feedback indicates that at the operational level there is a reluctant attitude towards the framework. The negativity of the feedback does not imply the failure of the framework nor deny its effectiveness. In organisation theory, the application of new frameworks or technologies often faces resistance by users (Aladwani, 2001). However, instead of being regarded as barriers to be overcome, resistance can also be useful and beneficial by finding out the inappropriate aspects of new frameworks or technologies (Waddell & Sohal, 1998). According to Aladwani (2001), there are two sources of employees' reluctant attitudes towards changes: 1) the perception of potential risks and 2) the worries for influences on routine work. It is reasonable that employees resist accepting new procedures which may bring uncertainties and instabilities. Therefore, it is essential for managers to identify employees' worries proactively and take measures to alleviate them. Referring to change management theory, measures such as developing shared vision, leadership support, process focus, and continuous feedback and adjustment can effectively mitigate employees' resistance (Todnem By, 2005).

The reason that the participants considered the framework as "not easy to apply" can be attributed to the overrepresentation of operational workers in the sample. As was mentioned earlier, the reluctant attitude of the workers towards changes led to the underestimation of the framework. From the case study, it was found that the operational workers were only concerned about their work efficiency, rather than the performance of the whole project. In contrast, senior managers are familiar with corporates strategies and have a better understanding of social responsibility. After considering the discrepancies in knowledge and

attitudes, it is recommended that future similar case studies be designed differently. The identification and rating of demanding issues in the project can be collected from the operational workers, but senior managers should be targeted to evaluate the framework. When facing the dilemma of choosing from operational or managerial participants, investigators should notice such discrepancies for avoiding bias. Another limitation of the case study design was that the representatives who evaluated the framework were not involved in the identification of issues in the beginning. This meant that most of the representatives had little interest in the issues they they were tasked with evaluating. This greatly demotivated the representatives because the issues that they might have been interested in were not included. Therefore, it is important that future similar research should ensure that participants in a framework should have a stake in the issues under discussion.

8. Conclusions

This research developed a collaborative framework for project stakeholders to implement social responsibility issues as a self-organised team. According to Reed (2008), the best practices of stakeholder participation includes empowerment and equity, lifecycle involvement, systematic analysis of relevant stakeholders, clear objectives, and appropriate levels of engagement. The framework was validated as being effective for facilitating stakeholder collaboration. Both internal and external stakeholders are involved in a transparent and open dialogue, and trust and partnerships can be built through sharing resources and setting common goals (Karlsen et al., 2008). The suggested roles and structures provide a team scaffold for effective collaboration and by making all stakeholders jointly accountable for project social responsibility, collective responsibility is also developed.

The research contributes to stakeholder dynamics theories. By using a stakeholder-issue perspective to evaluate stakeholders in different contexts, the research addresses the dynamic, complex, heterogeneous, and changing nature of stakeholder interactions (Windsor, 2011). As issues in construction projects change dramatically along with the rapid development of society, the framework helps stakeholders to cope with uncertainty by clarifing their roles so that they may respond quickly to emerging issues. Identifying the concerns and interests of multiple stakeholders can also help project management teams to cope with unforeseeable risks (Olander & Landin, 2008). In addition to construction projects, the framework could also be adopted for use in other types of temporary alliances under invisible power structures, such as land use planning, urban development, and tourism management.

Along with the positive aspects of this study and the resulting framework, there were some limitations to the research that should be noted. One of the limitations was that only the views of the two senior managers were sought for identifying the social responsibility issues instead of collecting views from all the case study participants, which would have allowed for all stakeholders to have an input to the framework. Another limitation was that since the case study was not longitudinal, the cyclic process of the framework could not be tested and continuous scanning could not be carried out after collecting the feedback. It is suggested that

future research could refine the framework by testing it longitudinally in diverse types of projects and by involving more senior managers, which would help with generalising the framework's effectiveness and provide better-informed feedback.

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