Chapter 61
The Impact of Project Stakeholders' Relationships on Project Performance

Jingru Li and Lan Qiu

Abstract More and more researchers begin to study the impact of relationship between stakeholders on project performance. Base on the literature review, this paper summarizes the definition of stakeholders, the definition and classification of stakeholders' relationship. Then the two main perspectives of present research on relationship – supply chain management and social network are introduced and discussed. Based on the discussion, the study offers orientation for the future research, which should be from the social network perspective.

Keywords Stakeholders • Relationship • Project performance

61.1 Introduction

To improve the level of project management in engineering is a core problem, but in fact, poor performance occurs frequently, such as time delays, cost overruns and quality defects. So finding the key influencing factors on cost, quality and time – the iron triangle performance is helpful for project management. Recently, researchers pay more attention to the impact of stakeholders' relationship on project performance. Wood [1] regard partnering is one of the most significant means for improving project performance. Larson [2], Ankrah and Langford (2005), Chen [3] also show that stakeholders' relationship has a distinct effect to project performance. Chan et al.[4,5], Jha and Iyer [6,7] have studied the performance of success project and found that cooperation, commitment, communication, conflict and interaction between project participants are the key factors to influence project performance. Therefore, it is necessary to summarize and discuss how the relationship between stakeholders impacts on project performance.

J. Li (✉) • L. Qiu
College of Civil Engineering, Shenzhen University, Shenzhen, People's Republic of China
e-mail: lijr2000@szu.edu.cn; qiulan2000@163.com

J. Wang et al. (eds.), *Proceedings of the 17th International Symposium on Advancement of Construction Management and Real Estate*,
DOI 10.1007/978-3-642-35548-6_61, © Springer-Verlag Berlin Heidelberg 2014

61.2 Stakeholders' Relationships

61.2.1 Project Stakeholders

American economist Freeman [8] defines stakeholders as any group or individual who can affect or is affected by the achievement of the organization's objectives. Project Management Institute [9] defines project stakeholders as organizations and individuals who actively participate in projects, or the positive and negative stakeholders. According to the above definition, construction project in the entire process involves stakeholders such as investors, owners, designers, contractors, subcontractors, suppliers, supervisors, consultants, government, loan syndication, community, and other users. However, according to Lena et al. [10], most researches on supply chain concerned only about the relationship between owner and contractor, few studies on subcontractors and suppliers, and the rare studies on all stakeholders.

61.2.2 Relationships

Relationship literally means the interaction between things or the states or the nature of the links between people and people, people and things. In China, it is often understood as the interpersonal relationship, emphasizing contact between the individuals.

Relationship as academic terminology in relationship marketing is a link between two or more objectives, people and organizations, or social connection because of the basis for common interests, interests and resources [11]. It mainly focuses on the relations between individuals and organizations in the consumer market. But in the commercial market, IMP group considers the relationship as repetition of plot and emphasizes the company relationship. Hakansson and snehota [12] define the commercial market relationship as commitment of two companies which have mutual interaction between them.

In construction domain, conception of relationship has no uniform definition. Generally, the researches on relation are rarely defined this concept, and many literatures refer to the Construction Industry Institute's (CII) definition of partnering: "A long-term commitment by two or more organizations for the purpose of achieving specific business objectives to maximize the effectiveness of each participant's resources". Xu [13] in his doctoral thesis defines the relationship as the connection between the project participants who were driven by the complementary resources and common business interests based on project contract network. Liu [14] shows that the relationship between stakeholders in a project is an interdependent and mutual collaboration working partnership in the process of completing task. This relationship is dynamic, multivariate, role based on network relations, namely the project governance social network.

61.2.3 Relationship Classification

According to CII, construction projects relationship can be classified into traditional antagonistic relationship, partnership and strategic partnership. With the development of construction industry and the more intense competition, presently in the big city such as Shenzhen, the relationship of general project stakeholders is a partnership and the traditional opposite relationship slowly fade away.

Specially for project, there are three kinds of relationships, including the relationship between organization and organization, organization and personals, and between personals. Generally, we are concerned with the first kind of relationship.

61.3 The Impact of Project Stakeholders' Relationships on Project Performance

The project can not separate from the values, norms and environment of stakeholders' relationship, because project depends on different resources such as money, time, knowledge, reputation, trust, relationship through which to obtain information, knowledge and other resources [15]. Researchers have researched the impact of project stakeholders' relationships on project performance mainly from two perspectives: supply chain management and social network.

61.3.1 Partnership Based on the Supply Chain Management

The supply chain management has originated in manufacturing. Christopher [16] indicates that a supply chain is a network of organizations involved through upstream and downstream linkages in the different processes that deliver value in the form of products and services to end users. Christopher [17] defines supply chain management as the management process of the relationships between different customers and suppliers to deliver better value at less cost. Through the adoption of supply chain management, industry sectors have achieved significant improvement in performance.

Numerous researches have verified that the relationship between supply chain partners impact obviously on project performance. Ng et al. (2002) concludes that the lack of open communication is one of the major causes of poor project relationship. Chan et al. [5] believes that partners need to establish mutual trust relationship in order to make management more efficient. Lack of trust is a key barrier to collaborative relations [18]. Odeh and Battaineh [19] show that the contractual relationship has significant effect on poor performance. Owning common objective will promote project performance [20].

Meng [21] conducts a questionnaire survey to explore the impact of supply chain relationships on project performance in the UK construction industry. He concludes that the top ten supply chain relationship is common goals, sharing, trust, no-blame culture, teamwork, communication, problem solving, risk allocation, performance evaluation and improvement. The research shows that project stakeholders' relationships have various impacts on project performance. Of them, cost is significantly associated with communication, risk allocation, no-blame culture, performance measurement and problem solving, and slightly significant impacted by trust and common goals; defect is significantly associated with problem solving, and there are marginally significant associations with trust, joint working, common goals and communication; time is only significantly influence by joint working. It finds that supply chain relationship has more significant impact on cost.

Jin and Ling [22] categorize the relationships into 14 risk relationship and 16 tool relationships. The risk relationships include partner's incompetence, partner's exploitation, improper contractual agreement, unfairness in tendering, partner's project personnel lacking interpersonal skills, partner's distrust, insufficient communication, partner's short-term focus, excessive demands from partners, disputes with partners, over interference from partner, cultural conflict and change of partner's personnel; the tool relationships are seeking partner with good record of collaboration experience, establishment of good relationship with local partners, involving contractor in the project early, drafting a clear contract, gaining support of top management, adhere to mutual goals, specify clause to prevent corruption, maintaining efficient communication, appointing staff with interpersonal skills, seeking partner with similar culture, holding workshops for relationship building, solving problem jointly, adhere to defined responsibilities, implementation of a progress evaluation system, empowering staff with authority and cultivate learning atmosphere. The result shows that insufficient communication, over interference from partner, adhere to mutual goals, and empower staff with authority are the four critical relationship-based factors which significantly associate with performance metrics.

Although these meaningful research results have been achieved, there is still lack of systematic investigation on the influence of supply chain relationships on project performance.

61.3.2 Relationships Based on the Social Network Analysis

Social Network Analysis (SNA) originated from psychology and anthropology in the 1930s. Its research mainly covers two topics: position-orientation and relationship orientation [23]. The position-orientation studies the actor's position influences, including centrality, closeness, roles, and structure holes, etc.; the relationship orientation focuses on network relationship characters, including relationship strength, density, and contents, etc.

The SNA views a project as a system environment, which is joined by various relationships. In the project system, stakeholders are connected by anfractuous lines, which represent the relationships among them. The purpose of network analysis is examining how relationship structures impact behaviors, and this theory concerns with the "structure and patterning" of these relationships over time and seeks to identify both their causes and results [24–26].

Some researchers have achieved good results by SNA. Chinowsky et al. [27] constructs an initial social network model of construction project to analyze the project team performance. They find that the construction industry is based on network instability where project participants are regrouped with little regard to past network connections. This instability places the network in a scenario where minimum experience exists between the participants and thus forces the network to rebuild a significant portion of the trust relationship in each project. In addition, construction networks are often required to move from the formation stage to the collaboration stage very rapidly due to schedule constraints. This leaves little time for the participants to build trust prior to the execution of the project tasks. Third, the contractual relationships defined in a project context can serve as barriers to the free exchange of knowledge due to liability concerns. Based on these result, Chinowsky et al. [27] extends the model to illustrate the social networks of four full-service engineering companies. The results shows the relationship of the social network model and the high performance in the project teams.

Ding [28] undertake a quantitatively analysis on the project network evolution for a large construction project, considering the alliance of owners and supervisors and the alliance of contractors and supervisors respectively. The results indicate that stakeholders embedded network in different ways. Namely, supervision unit is an independent decision-making unit or alliance with owners or contractors that will affect the structure characteristic of network. Through SNA, the research analyse project stakeholder relations network evolution and behavior regulation capacity which can reduce the stakeholders' governance role risk and improve project performance.

Li and Le [29] builds up a complex network model to analyze organization role and compare with traditional formal organization structure model for a case of the 2010 Shanghai World Expo. It draws a conclusion that organization's role analysis can not only contribute to the study of the organization's position, function and relations, but also help to establish the project control method to improve project performance.

These researches all indicate that SNA is an important means for organization of construction project to achieve high performance of multi objective management.

61.4 Conclusions

Through summary the definition of stakeholders, the definition and classification of stakeholders' relationship, the relationships of construction project is fully understood. Then the two main perspectives of present research on relationship – supply chain management and social network are introduced and discussed.

In our view, social network methods is a promising research paradigm. First, project organization is a social network and has many stakeholders who embedded the network. Second, stakeholders' relationships are multiple relationships, and influent by structure of the network and other stakeholders' impact. Our future research will build up a social network model to examine the influence of relationship type and structure on project performance.

Acknowledgment The present study is part of the Humanities and Social Sciences research project entitled 'Construction project stakeholders' attitude and behavior toward construction waste minimization and transformation mechanism' (11YJAZH047) funded by the Ministry of Education of the people's Republic of China.

References

1. Wood G (2005) Partnering practice in the relationship between clients and main contractors. RICS Research Paper Series, London, 5(2)
2. Larson E (1997) Partnering on construction projects: a study of the relationship between partnering activities and project success. IEEE Trans Eng Manag 44(2):188–195
3. Chen X (2010) A study on the influence of construction project critical success factors on project performance
4. Chan APC, Ho DCK, Tam CM (2001) Design and build project success factors: multivariate analysis. Constr Eng Manag 127(2):93–100
5. Chan APC, Chan DWM, Chiang YH, Tang BS, Chan EHW, Ho KSK (2004) Exploring critical success factors for partnering in construction projects. Const Eng Manag 130(2):188–198
6. Iyer KC, Jha KN (2005) Factors affecting cost performance:evidence from Indian construction projects. Int J Proj Manag 23(4):283–295
7. Jha KN, Iyer KC (2007) Commitment,coordination,competence and the iron triangle. Int Proj Manag 25(5):527–540
8. Freeman E (1984) Strategic management: a stakeholder approach. Pitman, Boston
9. Project Management Institute (1996) Project management body of knowledge. PMI, Newtown Square
10. Lena EB, Jahre M, Sward A (2010) Partnering relationships in construction: a literature review. J Purch Supply Manag 16:239–253
11. Holmlund M (1997) Perceived quality in business relationships. Swedish School of Economics and Business Administration, Helsinki
12. Hakansson H, Snehota I (1995) Developing relationships in business networks. Routledge, London
13. Xu Jin (2010) Project relationship quality impacts on project performance – based on the empirical research of construction engineering project, Chongqing University
14. Liu X (2011) Research on the method of social network risk analysis in project governance, Shandong University
15. Christian J, Staffan J, Mikael L (2005) Project relationships – a model for analyzing interactional uncertainty. Int J Proj Manag 24:4–12
16. Christopher M (1992) Logistics and supply chain management: strategies for reducing costs and improving service. Pitman Publishing, London
17. Christopher M (2005) Logistics and supply chain management: creating value-adding networks, 3rd edn. Financial Times Prentice Hall, Harlow
18. Akintoye A, Main J (2007) Collaborative relationships in construction: the UK contractors' perception. Eng Constr Archit Manag 14(6):597–617

19. Odeh AM, Battaineh HT (2002) Causes of construction delay: traditional contracts. Int J Proj Manag 20(1):67–73
20. Swan W, Khalfan MMA (2007) Mutual objective setting for partnering projects in the public sector. Eng Constr Archit Manag 14(2):119–130
21. Meng X (2012) The effect of relationship management on project performance in construction. Int J Proj Manag 30:188–198
22. Jin X-H, Ling FYY (2006) Key relationship-based determinants of project performance in China. Build Environ 41:915–925
23. Pryke SD (2004) Analyzing construction project coalitions: exploring the application of social network analysis. Constr Manag Econ 22(8):787–797
24. Tichy NM, Tushman ML, Fombrun C (1979) Social network analysis for organizations. Acad Manage Rev 4(4):507–519
25. Galaskiewica J, Wasserman S (1994) Advances in social network analysis: research in thesocial and behavioral science. Sage, Thousand Oaks
26. Scott J (2000) Social network analysis: a handbook. Sage, London
27. Chinowsky P, Diekmann J, Galotti V (2008) Social network model of construction. J Constr Eng Manag 134(10):804–812
28. Ding R (2010) Project governance based on social network analysis research – an example of large construction project supervision. China Soft Sci 6:132–140
29. Li Y, Le Y (2011) Large and complex project organization network model and empirical analysis. J Tongji Univ 6:930–934, Natural Science Edition
30. Cox A, Ireland P, Townsend M (2006) Managing in construction supply chains and markets. Thomas Telford, London
31. Chan APC, Chan DWM, Ho KSK (2003) Partnering in construction: critical study of problems for implementation. J Manag Eng 19(3):126–135
32. Chinowsky P, Diekmann J, O'Brien J (2010) Project organizations as social networks. J Constr Eng Manag 136(4):452–459
33. Iyer KC, Jha KN (2006) Critical factors affecting schedule performance: evidence from Indian construction project s. ASCE J Constr Eng Manag 132(8):871–881
34. Jha KN, Iyer KC (2006) Critical factors affecting quality performance in construction projects. Total Qual Manag 17(9):1155–1170
35. McDermott P, Khalfan M, Swan W (2005) Trust in construction project. J Financ Manag Prop Constr 10(11):19–32
36. Nohria N, Eccles RG (eds) (1992) Networks and organizations. Harvard Business School Press, Boston
37. Zhang H (2009) A social network analysis and construction performance goals set. Sci Technol Prog Policy 21:176–180