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Research on Multidimensional Connotations of Megaproject Construction Organization Citizenship Behavior

Abstract Based on a literature review and the context characteristics of construction megaprojects (CMPs), a multidimensional connotation model of CMP citizenship behavior was proposed, including definitions, actors, and dimensions. Organizational citizenship behavior includes Cooperation Behavior (CoB), Collaboration Behavior (CIB), Innovation Behavior (IB), Voice Behavior (VB), Conscientiousness & Dedication Behavior (CDB), Benefit Defense Behavior (BDB) and Guanxi (Relations) Maintenance Behavior (GMB). Actors were divided into three levels that were project managers (individual), participant agents (group) and project organization (network).

Keywords: construction megaproject (CMP), organizational citizenship behavior, connotation, grounded theory

1 Introduction

There are many world famous Chinese construction megaprojects (CMPs), such as South Water to North and Qinghai-Tibet Railway. Generally, they were attributed to our country's special institutional and systemic advantages, as well as strong construction abilities. At the same time, all participant hyper-normal construction behaviors are directed by reason, for example, overcoming the key difficulties in construction technology and management, conquering extreme terrible climate conditions and collective rushing for schedules under special cases. Lots of construction practices and research suggested that participant high subjective initiative and innovation/creativity going

beyond the contract scope was a critical success factor for CMP (He, 2013; Maier & Branzei, 2014). This kind of voluntary hyper-normal behavior is named organizational citizenship behavior (OCB) in firms.

Compared with general construction projects, CMPs face challenges of greater complexity, longer construction duration, and greater uncertainty. A report entitled "Complex project management: global perspective and strategy agenda for 2025" published by the International Centre for Complex Project Management (ICCPM) said the traditional project management method with its predictable, fixed, relatively simple and rigid rules could not be applied to complex projects. It is very necessary to improve complex projects organizational adaptabilities, which means that normal construction based on contracts could not guarantee CMP success. He (2013) pointed out, CMPs need technical and management innovation, to motivate individual initiatives and to promote one's values. Especially current systems of contract management, law and rules are imperfect in the Chinese architecture, engineering and construction (AEC) industry. OCB participants play prominent roles in solving some strategic problems such as CMP innovation, conflicts and schedules, which can be proved by Labor Contests conducted on lots of CMPs, such as the Qinghai-Tibet Railway, the Hangzhou Bay Sea-Crossing Bridge, and Expo 2010 Shanghai. Some institutes like the China Federation of Trade Unions called for academic research about Labor Contests in order to normalize this kind of positive behavior. Likewise, it is very necessary to study construction megaproject organizational citizenship behavior (CMPOCB) for project management theory and practice (Maier & Branzei, 2014; Braun, Ferreira & Sydow, 2013).

2 Connotation of organizational citizenship behavior

The initial construct of citizenship behavior stemmed from "willingness to cooperate" and "innovation and spontaneous behavior that benefit organizational objectives" (Barnard, 1938; Katz & Kahn, 1978). Katz and Kahn

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(1978) pointed out that three categories of behavior are required to achieve high-level organizational effectiveness. First, people must join and remain in the organization; second, they must perform dependably the roles assigned to them; and third, they engage in occasional innovative and cooperative behavior beyond the requirements of role but in the service of organizational objectives. If staff engaged only in the first and second behaviors, an organization would be unstable and fragile. This was the earliest description of OCB. Based on research, Organ (1988, 1997) first proposed and defined OCB construct as “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization.” He pointed out that OCB consists of a mutual giving and taking, inviting some future recompenses. The point is that the rewards that accrue to OCB are at best indirect and uncertain.

At first, OCB included only two behaviors: helpfulness and general compliance (Smith, Organ & Near, 1983). Organ later extended the concept of OCB given by Smith, et al. (1983), and proposed Five Dimension Taxonomy also known as the Five Factor Model, which included altruism, conscientiousness, sportsmanship, civic virtue and courtesy. Based on questions about Organ’s argument, Graham (1986) and Van Dyne, Graham and Dienesch (1994) extended political philosophy perspective to civic citizenship and applied the political categories of obedience, loyalty, participation and reputation diffusion to citizenship behaviors in organizational settings.

Many researchers studied OCB from different perspectives grounded on the above mentioned research. For example, George and Brief (1992) argued that OCB should include voice and self-development, which originated from Organ’s individual initiative and initial construct, respectively. In the Podsakoff, MacKenzie, Paine and Bachrach (2000) research review, participation and civic virtue had similar connotations that were combined into civic virtue, courtesy, altruism, and help were all merged into help, so OCB was summarized into seven dimensions: help, sportsmanship, loyalty, compliance, individual initiative, civic virtue and self-development. Farth, Zhong and Organ (2004) conducted indigenous research in China and found a new connotation present only in the Chinese context: defend company resources and harmoniousness. Despite such a variety in connotations, the position that these cooperative and helpful behaviors facilitate effective role performance is the theoretical cornerstone of the major conceptualizations of OCB (Rubin, Dierdorff & Bachrach, 2013). The OCB connotation evolution was in Figure 1.

Figure 1 shows that cooperation and innovation in the original construct were gradually omitted by researchers because OCB has different connotations in different contexts. Most research focuses on firms where there is routine of a task while the main research only focused attention on the individual level, so cooperation was translated as individuals’ mutual help. CMP is a unique, novel and temporary effort, which depends on participant cooperation. Cooperation and innovation, therefore, should be the main connotation of OCB in CMP context.

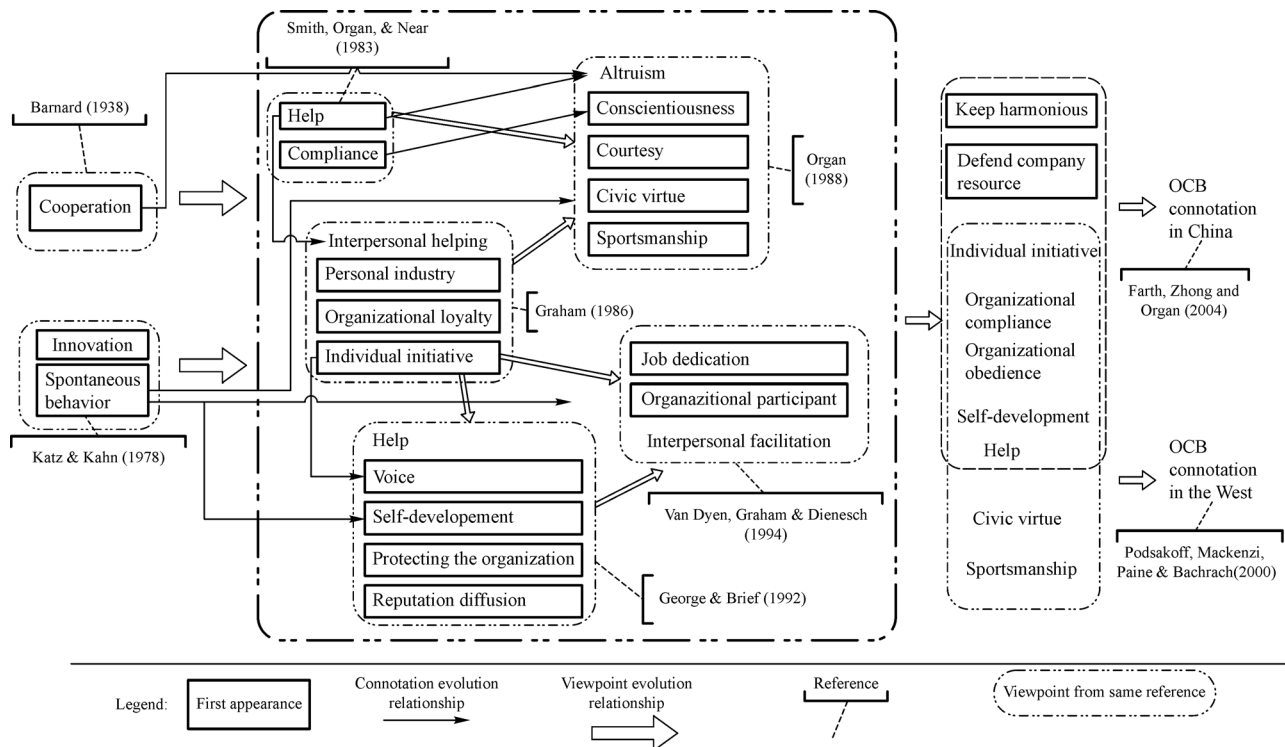


Figure 1. Evolution of OCB connotation.

3 Model construction of multidimensional connotation of CMPOCB

Context often has influence on shaping the meaning underlying organizational behavior (Johns, 2006). CMP is typical temporary organization which has a clear beginning and end according to construction duration. The project task is unique, unrepeatable and of relatively high uncertainty (Hanisch & Wald, 2014). The project manager acts as an agency for uncertainty management, the main obligation of which is to keep task-oriented, deal with uncertainty and accomplish project deliverables (Turner & Müller, 2003; Kuura, Blackburn & Lundin, 2014). There are fewer organizational hierarchies, more ambiguous roles, boundaries, much more informal coordination work between teams, and, various behavioral subjects with heterogeneity in CMP (Hanisch & Wald, 2014).

CMPOCB would be more complicated because of above context features which cannot be explained using a well-known social exchange theory, social identity theory or impression management theory in firms (Blatt, 2008). Previous research has demonstrated that, compared to common project organization, non-repetitive, unique, and complex tasks, which are typical in megaprojects, might stimulate citizenship behavior (Braun et al., 2013). Context factors, like project culture, will impact behavior (Aronson, Shenhar & Patanakul, 2013). Context is a more sufficient

term to describe the meanings of OCB which is inherent in many temporary organizations.

4 Definition of CMPOCB

Based on the above theory achievements and context characteristics, while grounded in text analysis from CMP like Expo 2010 Shanghai, Olympic Arena 2008 Beijing and Qinghai-Tibet Railway, CMPOCB could be defined as “Positive behavior that is discretionary, not directly or explicitly recognized by the formal contracts and project management institution, and that in the aggregate facilitates achievement of construction goal effectively” which was core of the model in *Figure 2*.

5 Behavioral subjects of CMPOCB

At first, it is not like general construction projects, where there are so many implicit tasks like conflicts and coordination to deal with between many participants in CMP where projects managers were key roles, so, individual subjects include all of project managers except common workers; secondly, participating workers are the main actors in construction innovation at group level. For example, the most important units that conducted bridge

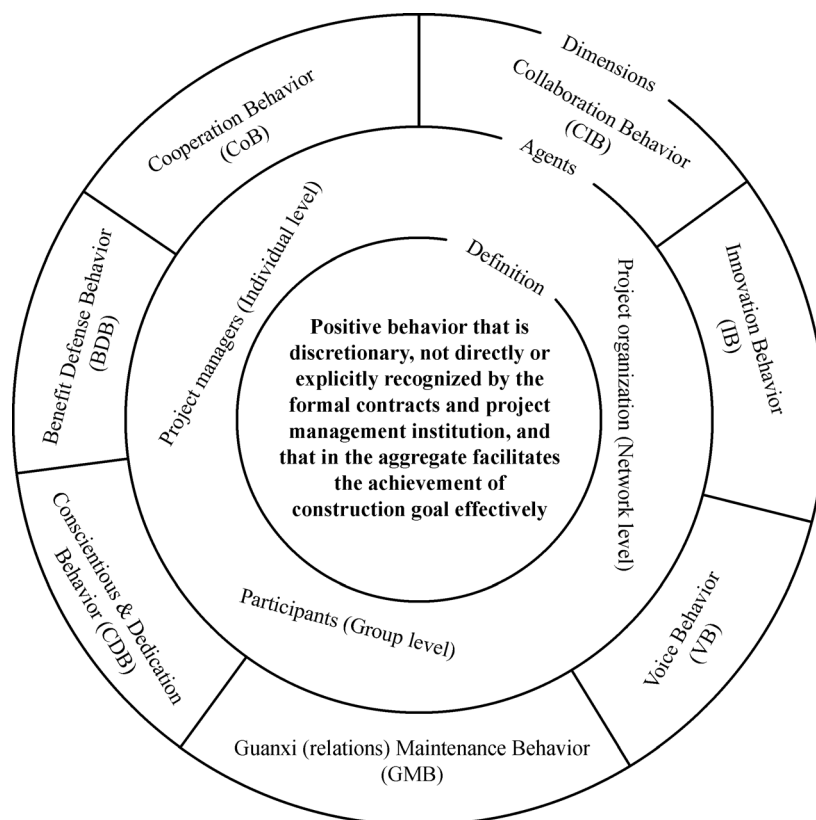


Figure 2. Multidimensional connotation of construction megaproject organizational citizenship behavior.

technical innovation on the Sutong Bridge included designers and contractors (Sheng, 2009); third, CMP is a complicated program. For instance, there were over 400 projects in Expo 2010 Shanghai, and each project organization was a critical behavior subject which then formed a project network together. As a result, behavioral subjects in CMP included individuals (project managers), groups (participation units) and network (projects organizations), which constituted subjects and were part of the model in *Figure 2*.

6 Multi-dimensions of CMPOCB

Grounded in the OCB connotation in a firm context and with CMP situational features, CMPOCB could be translated into six dimensions shown below that are multi-dimensions of the model in *Figure 2*.

7 Cooperation Behavior (CoB)

CMP usually rely on interdependent sets of participants in a joint effort. It is commonly stated that promotional mechanisms are not obvious, there are many benefit conflicts and little trust among participant groups, so maybe altruistic help and sharing behavior disappeared. While some empirical studies have shown that altruism and reciprocal preference appear to be strongly related to cooperation in CMP, as the overall project success is decision-based, participants still like to help each other without promotion as motivation (Aronson et al., 2013; Han, Zhou & Li, 2014; Dai & Yu, 2003); knowledge and resources sharing prevailed and were critical cooperation factors (Braun et al., 2013; Hanisch & Wald, 2014; Dietrich, Eskerod, Dalcher & Sandhawalia, 2010). So help behavior may be conceptualized as “Cooperation Behavior (CoB)” which means “common cooperative efforts that CMP participants conduct together to achieve project and individual goals”.

8 Innovation Behavior (IB)

CMP building is a unique, novel and transient process (Hanisch & Wald, 2014). For instance, the Olympic Arena 2008 in Beijing had to be built before the opening ceremony, and participants must build such special-shaped constructions as the National Stadium (Bird's Nest) in a limited time, while sticking to hi-tech and economical principles, innovation was necessary in order to meet the deadline (Maier & Branzei, 2014). Transition may be necessary and useful to overcome inertia during construction, requiring participants to make technology creation and management innovation within a limited time. Such conditions ignite—even if unintentionally—the building

of team passion and creativity (Braun et al., 2013). Therefore, initiative can be translated into “Innovation Behavior (IB)” that means “construction behavior that is innovative, creative and beyond contractual requirements to perform CMP task”.

9 Guanxi Maintenance Behavior (GMB)

Guanxi (relations) behavior was very popular in CMP. For example, Beijing Urban Construction Investment & Development Co., LTD and sub-contractors for the Olympic Arena 2008 Beijing were embedded in a harmonious network of Guanxi that helped to relax the tension between them to keep relationships in a condition of latency over a longer period of time and to reactivate those relationships when new projects were launched, which is a special OCB content both in contemporary and traditional Chinese contexts (Braun et al., 2013; Farth et al., 2004; Xue, Shen & Ren, 2010). The project partners know that such relationships consist of a mutual giving and taking. They have gained experiences in the past, know each other well enough and remain confident that the other party will act just as they do (Braun et al., 2013). So, “Guanxi Maintenance Behavior (GMB)” should be the main dimension of CMPOCB, which means “behavior that participants engaged to establish and maintain harmonious Guanxi and keep in touch with each other after the end of the CMP”.

10 Benefit Defense Behavior (BDB)

CMPs are public goods properties, defending CMP's benefit is equated to defending the country, or governmental and public interests. CMP participants, especially construction teams from state owned enterprises (SOE), have a stronger political sense of mission (Farth et al., 2004). For instance, construction teams in Expo 2010 Shanghai stuck to the principle “project interest is above all”. They focused the interest of the whole CMP, even so far as to give up personal interest to assure the overall success of a situation when necessary, and at the same time spreading goodwill and positive affections about the CMP. So, this kind of behavior should be translated into “Benefit Defense Behavior (BDB)” that means “behavior that participants engaged to defend CMP's reputation and interest beyond the narrow interests of the team or company”.

11 Voice Behavior (VB)

CMP present high uncertainties and complexities, and always come across all kinds of emergencies that need to be deal with by creative methods through team efforts. For

instance, “Golden ideas activities” in Expo 2010 Shanghai reduced the cost and energy consumption greatly. Then, took George & Brief’s viewpoint as a reference, voice behavior should be a solo dimension extracted away from initiative (George & Brief, 1992), and translated into “Voice Behavior (VB)” that means “behavior that is spontaneous to search better construction approaches and make constructive suggestions”.

12 Conscientious & Dedication Behavior (CDB)

CMP involved complicated political factors including branding and word-of-mouth effects. The implicit long-term values highly improved the parties’ motivations. There were so many outstanding individuals and collectives in Expo 2010 Shanghai and Qinghai-Tibet Railway, who were very conscientious, rushing for schedules together, selfless dedication and pursuing joint project goals as opposed to individual (company) interests. Therefore, conscientious behavior in CMP was far beyond duty and should be translated into “Conscientious & Dedication Behavior (CDB)” that means “engaging dedicated, bold behavior for optimum results”.

13 Test of CMPOCB connotation based on interviews

This is a short introduction to the test process using grounded theory because of limits to this paper’s length. Based on support from Research Institute of Complex Engineering & Management in Tongji University, our research team conducted 15 semi-structured expert interviews between November 29th in 2014 to January 30th in 2015. These experts had over 12 years of megaproject construction experience including such works as the Hong Kong-Zhuhai-Macao Bridge, Expo 2010 Shanghai, infrastructure construction in Changchun, Shanghai 2nd Ring Road, Nanning Eastern High Speed Rail Station program, Shanghai Disney construction project, and Shanghai Center Building.

In the “raw data” of interview transcripts, many experts stated that there was so much critical communication and coordination between parties that was very important but essentially different from normal, cooperative relations. One example given involved the 2008 Beijing Olympic Arena, where contracts were critical, to be carried out to perfection if possible. Meanwhile general construction contractors’ management was achieving much better results through participants’ spontaneous coordination behavior. Some researchers had used “cooperation” and “coordination” as independent variables in their study (Wei, Yu, Wang & Lai, 2007; He & Luo, 2013). Therefore, in this research, the connotation model of CMPOCB

should include “Collaboration Behavior (CIB)” that means “collaboration and coordination that construction parties conduct about resource, technology and information”. The connotation model of CMPOCB was constructed as shown in *Figure 2*.

14 Conclusions

Prior research has not closely examined participants’ hyper-normal construction behavior in CMP. Based on combinations of OCB theory in firms and CMP context, our study introduced multi-dimensional connotations of CMPOCB and provided a lens to focus on this kind of phenomenon popular in CMP. By breaking through the limitations of traditional project management that usually focused on instruments and methods study, this model defined a CMPOCB concept, behavior subjects and seven dimensions, which was adjusted through grounded theory. It will help to learn about participant positive behavior in construction megaprojects practice, and the result is valuable to establish construction megaproject organizational behavior theory.

Through interviews and observation of various construction models, we found that OCB is a critical success factor for CMP. At the same time context characteristics led to connotation and participant behavior changes that are too complicated to be explained away by mere theory such as behavior modification or monetary bonus pay.

Therefore, this model should to be tested and improved by empirical research. Future studies must also take into serious consideration non-economic motivations such as administrative orders, construction project challenges, and values orientation. Perhaps then we will know how to cultivate this kind of positive behavior and keep its continuous emergence.

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