



# Why do individuals engage in collective actions against major construction projects? —An empirical analysis based on Chinese data

Bingsheng Liu<sup>a</sup>, Yan Li<sup>a</sup>, Bin Xue<sup>b</sup>, Qian Li<sup>c</sup>, Patrick X.W. Zou<sup>d</sup>, Ling Li<sup>a,\*</sup>

<sup>a</sup> College of Management and Economics, Tianjin University, 92 Weijin Road, Nankai District, Tianjin 300130, PR China

<sup>b</sup> Department of Architecture and Civil Engineering, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong SAR, PR China

<sup>c</sup> North China University of Water Resources and Electric Power, 36 Beihuan Road, Zhengzhou, Henan Province 450045, PR China

<sup>d</sup> Department of Civil and Construction Engineering, Swinburne University of Technology, Hawthorn, Victoria 3122, Australia

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## Abstract

Collective actions against major construction projects are becoming common because of the public's increasing civil rights awareness and environmental consciousness. Thus, it is important to explore the critical factors responsible for collective actions against major construction projects. This study initially developed 25 indicators inducing collective actions based on a comprehensive literature review. An empirical study with 127 samples was conducted using questionnaire surveys and semi-structured interviews from projects located in Central China. Furthermore, ranking analysis and factor analyses were implemented to conclude that collective actions in major construction projects can be explained by a six-dimension critical factor system: benefits to the public, characteristics of project performers, layout of projects, living quality of the public, perceptions of the public, and influence from the authority. This study contributes to government administration for collective actions against major construction projects and serves as a useful reference for further studies of this type.

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## 1. Introduction

Major construction projects play significant roles in the strategic development of a society, such as satisfying humanistic, economic and societal needs and elevating a country's social image (Jia et al., 2011; Wang et al., 2017). In general, major construction projects are initiated by the government, are multidisciplinary, and require a substantial deal of planning, coordination, team effort, and involvement of multiple stakeholders (Patanakul et al., 2016). In China, major

construction projects usually refer to those that play important roles in impacting economic, political, cultural, and ecological environments, such as major hydroelectric projects, major industrial projects, and major real estate development projects (Zhu and Shan, 2011). These projects typically have long schedules, extensive lifespans, and significant social impacts (Sun and Zhang, 2011). These characteristics often result in an adversarial climate that may lead to conflicts or collective actions among governments, project participants, and the public. If not handled properly, these conflicts may ultimately escalate. This situation may increase project costs by delaying the project, lead to reputation damage for the project developers, and increase the possibility that the project will be cancelled by the government (Cuppen et al., 2016).

\* Corresponding author.

E-mail addresses: [liqian@ncwu.edu.cn](mailto:liqian@ncwu.edu.cn) (Q. Li), [pwzou@swin.edu.au](mailto:pwzou@swin.edu.au) (P.X.W. Zou), [liling@tju.edu.cn](mailto:liling@tju.edu.cn) (L. Li).

In recent decades, the public has become increasingly educated, informed, and empowered, and the number of collective actions against construction and engineering projects has escalated significantly (Teo and Loosemore, 2014). Individuals with shared interests, values, and experience often gather together in demonstrations and community protests to achieve collective goals (Hanna et al., 2016b; Martijn, 2015; Teo, 2013). These actions may influence the decision-making process in support of these individuals' rights, but they may also have serious effects on project performances (e.g., project delay, project cost overrun and productivity decrease) and local society (e.g., public security and social morality) (Alkhalid, 2011; Hanna et al., 2016b; Teo, 2013). As a result of the significant impacts of collective actions on major construction projects, research on the causes of collective actions is increasingly becoming valuable.

In China, the number of collective actions has soared over the past years due to the nationwide social transformation and upgrading. According to the official investigation conducted by the Chinese Academy of Social Sciences (Li and Tian, 2014), the total number of collective actions involving >100 people between 2000 and 2013 was 871, and more than half of these collective actions were triggered by major construction projects; in other words, there were >440 cases. The main reasons the public had participated in collective actions in China include (1) personal rights protection, such as "Wukan protests" (Zhou and Qi, 2014), and (2) public environmental pressure, such as the "Kunming PX event" in Yunnan Province (Zhu and Yu, 2015) and the "Ningbo PX event" in Zhejiang Province (Liu and Sun, 2014; Wang, 2015; Zhu and Yu, 2015). When these conflicts occur, the public (especially those who are directly influenced, such as local residents) take measures such as demonstrations, sit-ins and occupations to express their dissatisfaction. When collective actions occur, the Chinese government usually takes actions such as investigation, persuasion, mediation, and administrative measures to control and coordinate (Wang and Yin, 2016). These collective actions always have adverse impacts on major construction projects. When these actions are implemented inappropriately, they may become very expensive in terms of finances, personnel, time, and opportunity costs and may damage relationships among project stakeholders.

Studies on collective actions are abundant, particularly in the fields of behavioristics, social psychology, and sociology (Le Bon, 1995; Martijn et al., 2008; Patanakul et al., 2016; Rai and Fiske, 2011). Most existing literature comprises case studies and public opinion surveys, which have identified numerous factors and have provided novel ideas through diverse perspectives. Klandermans (2013) noted that individuals may engage in collective actions to improve their personal conditions (individual action) or the condition of their wider community (also see Ellemers, 1993; Tajfel and Turner, 1979). Scholars have also focused on more proximal socio-psychological determinants of individuals. Martijn et al. (2008) studied the motivations of members of society to engage in collective actions based on psychological factors (i.e., perceived injustice, perceived efficacy and social identity)

(also see Brunsting and Postmes, 2002; Klandermans, 1984; Martijn, 2014; Martijn, 2015) and explained how specific psychological states become collective actions. In a case study on renewable energy projects, Dan (2007) determined that the location of projects may lead to public opposition. Mukhopadhyay (2015) showed that the visual effects of projects and the transparency of project information to the public may also influence public opinion. With regard to conflicts between different interest groups, many scholars have attributed these conflicts to the diverse interests of different interest groups and the regulation of the relationships between these interest groups (Acharya et al., 2006; Awakul and Ogunlana, 2002; Mitkus and Mitkus, 2014). Alternatively, collective actions may be the result of social conflicts.

Although the previous literature has identified factors that may induce collective actions (Acharya et al., 2006; Hanna et al., 2016a; Liu et al., 2016; Teo and Loosemore, 2014), limitations exist with regard to the complex environment of major construction projects. First, the factors that induce collective actions that have been summarized in previous studies are simplified and generalized; they can apply to collective actions of all forms but not specifically to construction projects. Second, these research studies are typically more qualitative and less quantitative in identifying the degree of significance of these factors. To overcome these limitations, this study aims to propose specific factors responsible for collective actions against major construction projects by combining the impact factors of collective actions proposed by previous research studies and the specific characteristics of major construction projects (Acharya et al., 2006; Awakul and Ogunlana, 2002; Hanna et al., 2016b; Liu et al., 2016; Zhang, 2011). Based on the perspective of the General Theory of Conceptual Systems (Chavchanidze, 1974), we classify the factors into three categories: subjects, objects and interactions. In particular, we clarify the significant roles of stakeholders (i.e., subjects) related to projects and their behaviors, the characteristics of specific events (i.e., interactions), and the apparent impacts of projects on the environment, society, and economy (i.e., objects) that may induce collective actions (Aaltonen et al., 2010; Ekung and Effiong, 2014; Ekung et al., 2014; Teo, 2013; Vanclay, 2002). We selected China as our research setting and explore the key factors and the ways they lead to collective actions in major construction projects using both qualitative evaluation and quantitative analysis.

## 2. Literature review

Collective action has been a subject of long-standing interest in many fields, including sociology, political science, and psychology (Klandermans, 1984; Martijn et al., 2008; Rai and Fiske, 2011; Thomas et al., 2009). According to the level of severity of the impact on society, collective actions can also be classified as social protest, collective violence or social unrest. Social protest can be described as a public expression of dissent or critique that is often combined with claims that affect the interests of particular groups in society (Hanna et al., 2016a; Hanna et al., 2016b). It is an effective strategy to improve

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