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Investigating Stakeholder Concerns during Public Participation

ABSTRACT

Developing major infrastructure and construction (MIC) projects is complicated, since it involves multifaceted policy issues. As a result, appropriate participatory mechanisms have been increasingly employed to improve the legitimacy of the project decision process. Yet it cannot always guarantee a mutually acceptable solution since the expectations and requirements of multiple stakeholders involved can be diverse and even conflicting. Overcoming this necessitates a thorough identification and careful analysis of the expectations of various stakeholder groups in MIC projects. On the other hand, though most project stakeholder concerns are consistent across the globe, contextual differences may lead to diverse priority levels being attached to these factors. This research, therefore, aimed to examine the perceptual differences between paired stakeholder groups from mainland China mega-cities and Hong Kong in rating their concerns over MIC projects. The research findings are expected to benefit both the Central Government of China and the Government of Hong Kong SAR for coping better with the rapid expansion of MIC projects in the territory and the increasing expectations of social equality, and therefore achieving the much desired harmonious development of the community.

KEYWORDS

Infrastructure Planning, Public Policy, Social Impact

1. INTRODUCTION

With a desire to increase the chance of success of major infrastructure and construction (MIC) projects, it is increasingly common to invite the public to participate in the planning and design processes. Though an effective participatory program can be beneficial to the relevant parties (i.e. the decision makers and general public) in many ways, its implementation makes the project decision-making process more complicated, especially with the increasing number of stakeholders involved and their growing tendency to defend their own interests. Failing to address and meet the concerns and expectations of stakeholders may result in project failures (Atkin and Skitmore, 2008). The very first step in avoiding this is to thoroughly identify the expectations of various stakeholder groups in MIC projects. On the other hand, although most project stakeholder concerns are consistent across the globe (Li, 2013), contextual differences may lead to diverse priority levels attached to these factors. As a result, two first-tier cities in mainland China (i.e. Beijing and Guangzhou) together with Hong Kong were selected and the perceptual differences between paired stakeholder groups from these administrative systems (with different social, economic, cultural and political backgrounds) in rating their concern factors examined in this study. The research findings are expected to benefit both the Central Government of China and the Government of Hong Kong SAR and construction industry at large for successful implementation of participatory mechanisms in local and cross-border MIC schemes in future, especially with the growing integration of construction industry between mainland China and Hong Kong.

2. THEORIES OF STAKEHOLDER PARTICIPATION

2.1 The Concepts

The concept of *public participation* is one of growing interest all over the world, especially with the recent global trend toward increased involvement of the public in the process of agenda-setting, decision-making and policy-formation (Rowe and Frewer, 2004; 2005). In Arnstein's (1969: 216) well-known ladder of citizen participation, public participation is interpreted as a channel for "*the redistribution of power that enables the have-not citizens … to be deliberately included in the future*". In contrast, Ng *et al.* (2013) emphasise that real participation involves a full partnership with citizens. An effective public participation program can be beneficial to both parties (i.e. decision makers and the public) in many ways: through participation, the public can retain some element of control over decisions, which may affect them directly or indirectly (Loh and Civic Exchange, 2002); decision makers, on the other hand, can benefit from wider public input when deliberating, deciding and doing (OECD, 2009; Goven and Langer, 2009) and therefore achieve effective governance (Enserink and Koppenjan, 2007; Mohan, 2012).

Though public participation in principle involves every person, it is not always possible to reach all individuals and some are not interested in being involved. Therefore, involving project stakeholders is more practical for contemporary MIC projects due to the stringent cost-effectiveness and time-saving requirements and social interests involved (Creighton, 2005; Bryson *et al.*, 2013). The *stakeholder* concept, first introduced by researchers at the Stanford Research Institute in the 1960s, concerns those groups without whose support the organization would cease to exist (Olander, 2007; Yang and Shen, 2014). The term was given little, if any, consideration until the mid-1980s, after Freeman's (1984: 46) book, *Strategic Management: a Stakeholder Approach*, widened the stakeholder definition to include "*any group or individual who can affect, or is affected by, the achievement of the organization's objectives*". The implementation of stakeholder theory has been far extended from its original application in corporate strategic management to a number of fields of enquiry, and construction project management is no exception (Atkin and Skitmore, 2008). During the last decade, more empirical studies have been conducted of construction stakeholders (Yang and Shen, 2014; Li *et al.*, 2012; Atkin and Skitmore, 2008; El-Gohary *et al.*, 2006; Bourne and Walker, 2005; Olander and Landin, 2005) and the findings of these studies have helped to form a theoretical foundation for this research. As a result, *stakeholders* are defined, in this study, as "those who can influence the project process and/or final results, whose living environments are positively or negatively affected by the project, or who receive associated direct and indirect benefits and/or losses". These include: government/project initiators; the general public/end-users; pressure groups such as non-governmental organizations (NGOs) and mass media; and the 'project-affected groups'. As the primary decision maker, the majority of government representatives would like to get the project approved for various reasons, not least the political agenda and budgetary considerations. Nonetheless, owing to internal differences, a government may not easily arrive at common consensus about promoting a particular scheme (Ng *et al.*, 2012). In addition to politically affect the delivery of the proposed scheme, the government departments need to comprehensively evaluate the technical feasibility and economic viability of each project option due to the stringent cost-effectiveness requirements involved. On the other hand, the people affected by the project are more concerned about the compensation, disturbance, inconvenience and losses and urged that other parties be sensitive to their grievances. In contrast, Ng *et al* (2012) suggested project-affected groups respecting the will of the general public/ end-users, as many MIC facilities would help boost the economy and improve the quality of life. After all, from the perspective of the general public and end-users, the overall economic and social values or impacts brought by the proposed scheme are their prime consideration. A project

with more economic and social benefits than costs will certainly gain support from the general public and end-users and vice versa. Equally, the general public and end-users should be patient with the project-affected groups as they are the sufferers in the project. One should not forget about the pressure groups and regulators who serve to oversee the government accountability in terms of environmental friendliness and value-for-money of the project. It is good practice for the pressure groups to maintain a platform of information exchange with the general public/end-users and the affected groups so that they can have a less biased standpoint to supervise the government and project initiators.

The development and acceptance of construction stakeholder theories, on the other hand, reveals that the critical role of stakeholders in construction undertakings have been more and more recognized by construction practitioners. Atkin and Skitmore (2008) believe that the successful completion of MIC projects is dependent on meeting the expectations of stakeholders throughout the project lifecycle. This requires modern project manager to be adept at coordinating multiple stakeholders as well as balancing their various interests during the entire project management process in order to achieve a positive project outcome (Chinyio and Olomolaiye, 2010a). As a result, many governments world-wide are increasingly encouraging the involvement of stakeholder groups in their MIC projects as a means of improving the openness, transparency and accountability of the decision-making process and thus increasing the projects' long-term viability and benefits to the community. Through effective and efficient construction stakeholder participation, the required MIC facilities are expected to be properly planned, designed, built, operated and demolished to serve the well-being of various parties (Woltjer, 2009)[1].

Despite the desired benefits of involving the project stakeholders in MIC schemes, in many cases the process is far from satisfactory (e.g., Moore and Warren, 2006). Such a dilemma can be ascribed to a whole range of reasons and the conflicting nature of the diverse stakeholder concerns involved is one of the most important (Yang *et al.*, 2014; Leung *et al.*, 2013; Olander, 2007). The value of stakeholder participation is therefore questioned since it cannot always guarantee a mutually acceptable solution among the various stakeholders (or or stakeholder groups) with diverse/conflicting interests in MIC projects. Instead, authorities are concerned that an overactive citizenry may lead to social disorder and confrontation. In these circumstances, they may choose to fast-track the participatory process – rendering the whole public participation exercise a mere formality (Shan and Yai, 2011). To avoid this necessitates a comprehensive understanding of the nature of conflict: though conflict is inevitable as each stakeholder (or stakeholder group) has its own history, character, gender, culture, values, beliefs and behaviours that influence its actions and motivation (Randeree and Faramawy, 2011), it is still vital that the needs of project stakeholders are carefully analysed and thoroughly addressed so as to maximise the benefits that can be derived from stakeholders while minimising the possible downsides that can arise by their association (Chinyio and Olomolaiye, 2010b). Stakeholder participation does not aim to eliminate the differences between various parties; instead, it tries to make clear the different sources, causes and effects of these differences in order to reduce confrontation between decision-makers and other stakeholder groups and increase the chance of arriving at a

[1] Delivering MIC facilities is not always the only solution, e.g. traffic problems can be handled by changing travel mode and reducing private car-based trips instead of building transportation infrastructure. Public opinions are crucial to determine the best option for the identified problem or proposed vision and therefore should be widely solicited through roving exhibition, public forum, etc. (CEDD and PD, 2011). For the research purpose, this study only considers the situation of MIC projects being proposed as the optimal solution and focuses on stakeholder participation in schemes of this type.

consensus (Landin, 2011; Atkin and Skitmore, 2008).

2.2 Stakeholder Participation in MIC projects in Mainland China and Hong Kong: An Overview

Despite overall improvements in public participation, numerous issues still exist when engaging stakeholders in making project decisions, with no exception to the participatory practice in developed countries such as the United States and the United Kingdom (Table 1). There are even more barriers to participation in developing countries where participatory decision-making is still in its infancy. IAPP (2008:77) identifies major problems of stakeholder participation in South Africa, comprising low literacy, misunderstandings, failure to meet expectations, resource limitations, lack of transparency, a "blame culture", personal disadvantages, discrimination, lack of interest, dissemination of information, etc. The low participatory effectiveness in developing countries such as Thailand, Bulgaria, Bangladesh, Turkey, etc., on the other hand, could be attributed to a lack of diversity in participatory techniques (Xie *et al.*, 2014).

Similarly, stakeholder participation in China is still very rudimentary, the key issues being the attitude and capacity of local government, the level of community organization, the legal framework and the transparency, openness and accountability of the process (Enserink and Koppenjan, 2007). In contrast, Tang *et al.* (2008) and Li *et al.* (2012) both argue that ineffective participatory practice in China is rooted in the traditional Chinese *culture of compliance*, prompting the majority of stakeholders simply remaining silent during participation. For the construction industry in China, the current participatory mechanism at the project level exists only as part of the EIA (Environmental Impact Assessment) process, resulting in many controversial MIC projects, such as the Nu River Dam, the Yuan Ming Yuan Lake Drainage scheme, the Xiamen PX project, etc. (Zhang and Jennings, 2009; Moore and Warren, 2006). The Western-style participatory mechanisms (whole-project-cycle process) are increasingly recognized by Chinese construction practitioners since the existing EIA-based participation has led to many problems in terms of bureaucratic structure, public capacity, process management, legislation, personnel, etc. (Table 2). Li *et al.* (2012) further discuss the current level of participatory decision-making in MIC projects in China and attribute the lack of stakeholder participation to an intertwined mix of traditional culture and values, uneven progress in the adoption of participatory mechanisms, the risk of not meeting targets and lack of confidence in the competence of the public.

As a Special Administrative Region (SAR) of China, Hong Kong is likely to be an exception to the generally low participatory enthusiasm in the country – its citizens are more willing to take part in the decision-making process, especially when the issues are related to their living environment and standard of living. This, according to Lee and Chan (2008), can be ascribed to a more democratic atmosphere in the city and a higher education level of Hong Kong citizens. Cheung (2011) has further pointed out that the number of public participation exercises conducted by the government has increased since 1997 and statistically, a total of 226 participatory exercises covering various issues were conducted between 1997 and 2009 – an annual average of more than 17 such exercises. The government clients of Hong Kong require stakeholders to be engaged for a variety of public transactions (e.g. the provisions of MIC projects) to increase the likelihood of project success. For any MIC project developed in Hong Kong, the responsible authority is statutorily mandated to conduct stakeholder participation exercises in various forms (e.g. exhibitions, public forums, focus meetings, community workshops, etc.) – creating more chances for multiple stakeholders to exchange

views and identify mutual goals, so that decisions reflect the interests and concerns of the community at large (Ng *et al.*, 2013). Several guidance documents for stakeholder participation for MIC projects have been issued by the government of Hong Kong Special Administrative Region, including: (i) Civil Engineering and Development Department's (CEDD) Technical Circular No. 02/2009: Public Consultation/Engagement Guidelines; (ii) Environment, Transport and Works Bureau's (ETWB) Technical Circular (Works) No. 34/2003: Community Involvement in Greening Works; and (iii) ETWB's Technical Circular (Works) No. 4/2006: Delivery of Capital Works Projects.

Developing MIC projects is complicated since it involves multifaceted policy issues, such as regulations and land acquisition, as well as resource extraction and allocation (Ng *et al.*, 2013). Employing appropriate participatory mechanisms improves the legitimacy of the decision process, yet it cannot always guarantee a mutually acceptable solution and may instead lead to confrontation and dispute (Shan and Yai, 2011), since the expectations and requirements of multiple stakeholders involved can be rather diverse and even conflicting (Leung *et al.*, 2013). This is especially the case for Hong Kong with limited/scarce land resources, the diverse/changing needs of its sophisticated community, market changes, rapid economic growth and increasing demands for sustainable city developments (Tam and Tong, 2011). Should stakeholders fail to reach a consensus during participation at the early stage of a MIC project (e.g. planning phase), it may not be worthwhile pursuing the project further, as this could increase the chance of failure or even induce intense opposition (Lee and Chan, 2008; Olazabal *et al.*, 2010) as evidenced in the recent cases of the Guangzhou-Shenzhen-Hong Kong Express Rail Link project and the Hong Kong-Zhuhai-Macao Bridge project (Leung *et al.*, 2013; Ng *et al.*, 2012). Despite the relatively rich experience of Hong Kong in adopting participatory mechanisms (Cheung, 2011), it is naive in the extreme to simply transplant a Hong Kong approach into mainland China since the social, economic, cultural and political contexts of the two administrative systems can be rather diverse. To overcome this and facilitate the cross-border integration of construction industry necessitates a comprehensive identification and a thorough comparison of Hong Kong and mainland China stakeholder concerns throughout the whole participatory process in MIC projects. In doing so both the Central Government of China and the Government of Hong Kong SAR expect to cope better with the rapid expansion of MIC projects in the territory and the increasing expectations of social equality, and therefore achieve the much desired harmonious development of the community.

3. STAKEHOLDER CONCERNS DURING PARTICIPATION IN MIC PROJECTS

Stakeholder theory is widely recognised as a management theory (Reynolds *et al.*, 2006) and successful management needs to ensure that all the stakeholder interests and needs are consistently understood, considered and reflected in the developed alternatives (Manowong and Ogunlana, 2010). According to Teixeira (2006), the public's top health care concerns comprise rising costs, lack of access and declining quality. Some of the known major stakeholder concerns in other sectors are identified, e.g. education finance, access to education, teacher training, etc. for the education sector (ILO, 2002); environmental pollution, forest ownership and utilisation, economic returns of forest products, etc. for the forestry sector (Liu et al., 2004); resettlement of peasants, employment opportunities, poverty alleviation, etc. for the agriculture sector (World Bank, 2007).".

The decision making process of contemporary MIC projects is becoming increasingly complicated, especially with the growing number of stakeholders involved and their

developing tendency to defend their own interests[2] (Li, 2013). Stakeholder satisfaction is therefore considered by many as a timely supplemented criterion for measuring project success in addition to the traditional measures of time, cost and quality (PMI, 2004; Wang and Huang, 2006; Yang *et al.*, 2011). Failing to address and meet the concerns and expectations of stakeholders may result in project failures. As a result, IFC (2007) lists the common concerns of stakeholders during construction, relating to issues such as land acquisition, livelihood resources, indigenous people, biodiversity, water resources, infrastructure capacity, waste, disturbance impact, workers and labour camps, negative socio-economic impacts, etc. On the other hand, many government departments in different countries and regions and studies worldwide have identified the major stakeholder concerns in MIC projects, as summarised in Table 4.

4. RESEARCH SCOPE AND METHODOLOGY

4.1 Research Scope

This research study focuses on the participatory process of contemporary major infrastructure and construction (MIC) projects. Schemes of this type are those with significant traffic or environmental impacts, of strategic and regional significance and of high sensitivity[3], such as the Guangzhou-Shenzhen-Hong Kong Express Rail Link project (Hong Kong and mainland China), the Hong Kong-Zhuhai-Macao Bridge project (Hong Kong and mainland China), the West Kowloon Cultural District project (Hong Kong), the New Central Harborfront project (Hong Kong), etc.

In reality, all stakeholders are interested in satisfying their needs, with no exception for MIC schemes (Manowong and Ogunlana, 2010). As such, it is necessary to carefully analyse and thoroughly address the expectations of different stakeholder groups in order to increase the prospects of arriving at a consensus during public participation and therefore ensuring successful project delivery. Serving and satisfying stakeholders' needs is however not an easy task since the stakeholder concerns associated with a proposed MIC project can change throughout the whole project cycle (even for similar stakeholder concerns, their relative importance can alter periodically during different project stages). It is therefore necessary to define a specific time frame during which stakeholder concerns are identified and ranked. This study concentrates on the conceptual stage of a MIC project, during which project stakeholders provide their visions, desires and concepts, as well as sustainability principles and indicators for the development of concept plans.

4.2 Research Methodology

Questionnaire surveys and interviews are standard methods commonly used for construction management research. This study combines these methods to collect and analyse information and data concerning stakeholder participation both locally and internationally so as to achieve the research objectives.

[2] These interests can be either quantitative (e.g. a compensation plan for those who have to be relocated due to the development of a MIC project) or qualitative (e.g. maintaining local characteristics for the general public) and are often conflicting (e.g. the development of the whole community at the cost of project-affected-people in terms of their life quality).
[3] In determining the project sensitivity, different issues that may be relevant to the project should be considered, as recommended and listed by CEDD (2009: 2).

4.2.1 Questionnaire survey

A questionnaire survey is an effective method for obtaining a large sample size for quantitative data analysis (Cheung, 2009) and was therefore adopted in this research for collecting the required information from an identified four stakeholder groups[4]. As a result, a structured questionnaire (both in English and Chinese) was developed to study the relative importance of the identified stakeholder concerns (Table 4) during the conceptual stage of a MIC project in mainland China and Hong Kong. As suggested by Wang *et al.* (1999) and Li *et al.* (2005), a 5-point Likert scale (1 = "least important" and 5 = "most important") was incorporated for measurement purposes. An alternative option of "not-applicable" was also provided.

A pilot study was organised before undertaking the main survey. 12 experts were invited and the original version of the questionnaire was fine-tuned based on their suggestions, e.g. the original 7-point Likert scale was replaced by a 5-point Likert scale to facilitate the participation of respondents with diverse educational backgrounds from the general public and project-affected group. English and Chinese versions were prepared, since the survey was to be conducted in Hong Kong, Beijing[5] and Guangzhou[5].

Different sampling approaches were used to ensure the usefulness and reliability of the survey findings, including purposive sampling and systematic random sampling. Potential respondents from government departments, project affected groups and pressure groups (e.g. NGOs) were selected purposively based on the criteria that they should have a minimum of two years of working or research experience in construction and infrastructure-related industries or in relevant disciplines or have previously been involved in the participatory exercise of at least one project. The general public representatives were chosen according to a systematic random sampling approach, i.e., at a fixed location in Hong Kong (e.g. the Central Ferry piers), Beijing (e.g. the China World Towers) and Guangzhou (e.g. the Tianhe Sports Centre), every twentieth passenger was invited to participate in the survey. If an individual refused to respond, the next twentieth person was approached.

As a result, a total of 1618 questionnaires were dispatched in Hong Kong, Beijing and Guangzhou (referred as mainland China thereafter), with 376 returned by means of mail, email, fax or by street survey (Table 5). Based on the findings of Akintoye (2000) and Dulaimi *et al.* (2003), such an overall response rate (23.2%), response rate for survey in Hong Kong (24.0%) and in mainland China (22.3%) are all regarded as acceptable for a survey of this kind. The profiles of the respondents are provided in Table 6. The higher percentage of experienced respondents[6] in Hong Kong (76.9%) compared to mainland China (66.7%) was anticipated. Stakeholder participation in mainland China is less prevalent than in the West which, according to Li *et al.* (2012a) and Liu *et al.* (2004), is attributable to the traditional Chinese *culture of compliance*. In comparison, the citizens of Hong Kong pay more and more attention to the developments that relate to their living standards and build environment and

[4] I.e. (1) government/project initiators; (2) the general public/end-users; (3) pressure groups such as the non-governmental organisations (NGOs) and mass media; and (4) the project-affected groups.

[5] As members of the "big four" first-tier cities in mainland China (the other two are Shanghai and Shenzhen), Beijing and Guangzhou are undergoing similar and relatively high level of urbanization and economic development (Lin and Gaubatz, 2015; Wang *et al.*, 2015). As a result, these two cities were selected to ensure representativeness and comparability.

[6] Those with more than five years working or research experience in construction and infrastructure-related industries or in relevant disciplines or have previously been involved in the participatory exercise of at least two projects.

are more willing (and more able) to be involved in making project decisions through participation. As a result, stakeholder participation in a variety of government transactions (e.g. delivering MIC projects) in Hong Kong is being increasingly encouraged by several public clients for ensuring smooth project delivery. Through this, public managers at all levels of the HKSAR government and the general public alike have gained previous experience in stakeholder participation (Li *et al.*, 2012b). In contrast, it is still surprising to see 66.7% of the respondents from mainland China with theoretical knowledge and practical experience with participatory mechanisms (Table 6) – indicating the general acceptance of both the Central Government of China and the Chinese people regarding Western-style stakeholder participation and their constant efforts towards the adoption of international best participatory practices. The relevant knowledge/experience of the respondents from both Hong Kong and mainland China also confirmed the authenticity of the responses obtained.

4.2.2 Validation interview

To validate the results obtained from the questionnaire survey, a series of semi-structured interviews were conducted with 36 experts from different sections of the community. These include representatives from the government, private sector, project affected groups, pressure groups (NGOs), the general public and academia. They were all purposively selected[7] and Table 7 summarises their profiles. To facilitate and expedite the interview process, all the interviewees were sent a package of information in advance which included the purpose of the interview, background information, instructions for the exercise and a brief description of the research findings. Only neutral explanations and feedback were provided during the interviews to minimise the potential influence of the interviewers. The ways the results were interpreted by the interviewees were analysed and are reported in the following section.

5. DATA ANALYSIS AND SURVEY RESULTS

Various tools were used for data analysis, including (1) the mean score ranking technique; (2) Kendall's concordance analysis; (3) Spearman's rank correlation test; and (4) independent 2-sample t-tests.

5.1 Ranked Stakeholder Concerns

The mean score ranking technique was adopted for the data analysis, within various stakeholder groups being categorised according to the mainland China or Hong Kong origins of the respondents. Based on the five-point Likert scale (1 = least important and 5 = most important) as described earlier, the mean score of each concern (Table 4) was calculated and then used to determine the relative rankings in descending order of importance (Table 8). These rankings help to cross-compare the views of the different stakeholder groups from mainland China and Hong Kong on their concerns with MIC projects. The scale intervals are interpreted as follows: (i) "not important" (mean score $\leqslant$ 1.5); (ii) "fairly important" (1.51 $\leqslant$ mean score $\leqslant$ 2.5); (iii) "important" (2.51 $\leqslant$ mean score $\leqslant$ 3.5); (iv) "very important" (3.51 $\leqslant$ mean score $\leqslant$ 4.5); and (v) "extremely important" (mean score $\geqslant$ 4.51). Of the seventeen stakeholder concerns, the top three for each respondent group were

[7] The interviewees should have a minimum of five years of working or research experience in construction and infrastructure-related industries or in relevant disciplines or have previously been involved in the participatory exercise of at least two projects.

analysed further.

As highlighted in Table 8, ‘F11 Prevention and mitigation measures against air, water and noise pollution’ was considered by the general public group from mainland China as their top concern in the delivery of MIC projects. Despite the raised public awareness of environmental protection in China, their engagement in environmental impact assessment (EIA) of MIC projects is still quite small and ‘*most of the time even becomes a mere formality*’, as commented by a member of the general public. On the other hand, ‘F8 Availability of amenities, community and welfare facilities’ received the highest mean score (4.95) from the Hong Kong general public. All the seven validation interviewees agreed with the findings and emphasised the importance of a balanced and mixed land use for a city such as Hong Kong with scarce land resources. ‘*Hong Kong being a city is unlike a city due to the monotonous space use and facility provision*’, illustrates the point. Concern factor ‘F6 Access to work and locations of activities’ was ranked second by both respondents from mainland China and Hong Kong, and first overall. Both administrative systems ranked this concern relatively highly, indicating its importance irrespective of geographical differences. This is a surprising result for respondents from Hong Kong in view of the relatively mature public transit system in the city. This might be due to the fact that the number of private cars has increased rapidly since 2010 at a rate of approximately 5% per year.

Unsurprisingly, the government representatives from both mainland China and Hong Kong perceived ‘F3 Economic benefits to government and local citizens’ as the most important incentive for launching MIC projects. While the transportation and environmental issues associated with MIC project construction were emphasised by the mainland Chinese respondents, the Hong Kong government representatives paid more attention to the adaptability of development to changing needs (F1). As revealed from the validation interviews, ‘*highway expansion may seem like a solution to traffic problems but unfortunately it is not. Limiting the number of private cars works instead.’* On the other hand, a new "Green Building Evaluation Standard (GBES)", released by the Ministry of Housing and Urban-Rural Development of China, has been put into practice since January 1, 2015. The major adjustments in the updated version are in the scope of applicable building and the methodology of rating. ‘*Ambitious targets were set for governments at different levels, requiring anywhere from 30% to 80% of new construction to be GBES-certified. Accordingly, various forms of policy support in building energy efficiency and green building have been widely implemented, e.g. education and awareness programs, fiscal policy support for green building investment, etc.’*, as further explained by some Chinese government representatives.

The same factors were selected by both Chinese and Hong Kong pressure groups as their top concerns. These are: ‘F10 Green and sustainable design and construction’, ‘F5 Value-for-money of the proposed project(s)’ and ‘F15 Conservation of local cultural and historical heritage’. ‘*The efficiency of spending public money in constructing MIC projects is an aspect that most citizens neglect. It is our responsibility to shift their awareness’*, claimed representatives of Hong Kong pressure groups. On the other hand, respondents from mainland China complained that a majority of the Chinese cities were built similarly during China's rapid urbanisation process. ‘*Cloned cities filled with high-rise buildings are gorgeous body without spirit and temperament’*, sadly pointed out an executive director of a Chinese non-profit organisation.

Of all the stakeholder concerns, only ‘F16 Compensation and relocation plan/strategy’ falls into the category of ‘extremely important’ (mean score $\geqslant$ 4.51) in the mainland China and

Hong Kong surveys. As the real and only sufferers of the projects, project-affected groups need far more than just monetary compensation. Most of the interviewees stated that '*money can't buy happiness and we would rather maintain our former lifestyle.*' Other top concerns of the Hong Kong project-affected groups comprise 'F12 Building design in terms of aesthetics, density, height and visual permeability' and 'F14 Unique local characters'. '*The extremely high urban density of Hong Kong is suffocating me,*' stated a Hong Kong interviewee. On the other hand, respondents from mainland China paid more attention to traffic issues (F6). '*The adverse impact on transportation should be minimised during the course of any MIC project*' and '*a timely participatory traffic impact assessment should be conducted for achieving this*'.

5.2 *Internal Consistency within each of the Respondent Groups*

Being based on four stakeholder groups from mainland China and Hong Kong, Kendall's concordance analysis was conducted to measure the agreement of concern ratings within each group. If the Kendall's coefficient of concordance (W) is significant at a pre-defined significance level of, typically 5%, a reasonable degree of consensus amongst the respondents within the group on the ratings of concern factors was indicated (Chan *et al.*, 2009; Cheung *et al.*, 2012). This is only applicable however when the number of attributes is between 3 and 7 and that of respondents between 3 and 20. The Chi-square value is used as a near approximation instead if the prerequisites are not satisfied as in the current research. The results are summarised in Table 9. For all stakeholder groups the computed Chi-square values were far above the critical value, confirming the consistency within each stakeholder group[8]. The completed questionnaires were therefore considered to be valid for further analysis.

5.3 *External Consistency between Paired Respondent Groups*

The Spearman rank correlation coefficient (r_s) was used to measure the agreement between the concern factor scores of mainland China and Hong Kong respondents. Table 10 shows the computed r_s and the low significant value achieved indicates no significant disagreement between the groups.

5.4 *Disparity of Opinions between Paired Respondent Groups*

Independent 2-sample t-tests were used to examine the differences in the mean values of each stakeholder concern between the two locational groups for the four respondent types, with $p < 0.05$ (two-tailed) as the cut-off value (Table 11). Levene's test was also used to determine whether equal variances between the pairs of groups could be assumed – again with $p < 0.05$ as the cut-off value.

5.4.1 General public groups

As shown in Table 11, nearly 30% of the overall concern factors (5 out of 17) have significant differences in the mean scores of the general public respondents from mainland China and Hong Kong. The greatest of these is 'F10 Green and sustainable design and construction' (mean difference = 1.19), where both the Central Government of China and the Chinese people are becoming more and more aware of the significance of environmental protection, especially with the increased occurrence of extreme weather events (e.g. haze, etc.). '*During*

[8] As clarified before, mainland China side only refers to Beijing and Guangzhou and therefore the confirmed consistency is only applicable to the two cities instead of the whole country.

the haze, I keenly realise what I need is nothing but blue sky and fresh air', admitted representatives of the mainland China general public group. In contrast, this concern factor received a relatively low mean score of 3.33 from the Hong Kong, a city with greater public awareness of environmental issues. On the other hand, the ordinary citizens of Hong Kong worried that green buildings may lead to high construction and maintenance cost. For residential buildings, '*the developers, in order to earn more profit, would be very likely to transfer the increased cost to the buyers*'. '*Housing prices are already extremely high in Hong Kong and most of the citizens cannot afford a common apartment, not to mention one with green features*'.

5.4.2 Government department groups

Five concern factors were scored considerably differently by the government department representatives from mainland China and Hong Kong, of which 'F10 Green and sustainable design and construction' (mean difference = 1.54) and 'F6 Access to work and locations of activities' (mean difference = 1.49) occupy the top as shown in Table 11. Traffic problems in Hong Kong are not as serious as in other mega-cities in mainland China such as Beijing, Shanghai, Guangzhou, etc. This might explain why the concern factor of 'F6 Access to work and locations of activities' falls into the category of "important" in Hong Kong, in contrast with "extremely important" in mainland China. During the validation interviews, most interviewees shared the opinion that '*advanced public transportation systems are of critical importance to cope with traffic problems, especially for a city like Hong Kong with dense population and narrow streets'*. The Mass Transit Railway (MTR) extends in all directions and with seamless bus connections. '*Nearly 90% of Hong Kong citizens travel by public transport, which ranks first internationally*', as further explained by a Hong Kong government representative.

5.4.3 Pressure groups

In comparing the results of the pressure groups from the two administrative systems, significant differences occur in 3 factors (Table 11). Of these, 'F6 Access to work and locations of activities' (mean difference = 1.00) is the greatest, followed by 'F7 Creation of a safe, convenient, comfortable and legible pedestrian circulation and transport network' (mean difference = 0.84) and 'F11 Prevention and mitigation measures against air, water and noise pollution' (mean difference = 0.73). All of the interviewees from pressure groups agreed that Hong Kong performs much better than other mainland cities of similar size in terms of urban traffic. As a result, the two concern factors related to traffic issues (F6 and F7) were not identified by Hong Kong pressure groups as of "extreme importance" as in the mainland result. '*In Hong Kong, the car buyers do not have to draw lots before obtaining a car license plate as in Beijing, Shanghai, Guangzhou, etc.*'. '*Over the past five years, the number of new private cars has been stabilising at less than 10,000 per year in Hong Kong, while Beijing is around 240,000*'. During the validation interviews, the government of Hong Kong Special Administrative Region was highly regarded for its efforts in coping with traffic problems. As a NGO member commented, '*various indirect measures have been adopted instead of limiting the number of private cars, such as levying a high first registration tax on a motor vehicle, charging high parking fees, etc.*'

5.4.4 Project-affected groups

As Table 11 shows, the project-affected groups from mainland China and Hong Kong agree

on the majority of the concerns. Two conflicting opinions are 'F6 Access to work and locations of activities' (mean difference = 0.80) and 'F12 Building design in terms of aesthetics, density, height and visual permeability' (mean difference = -0.61). For the mainland China project-affected groups, issues relating to compensation and relocation, local characteristics as well as city transportation are their most important considerations. In contrast, the Hong Kong respondents placed a stronger emphasis on density, height and visual permeability when designing buildings, complaining that the current high density development of the city has neglected the feelings of affected citizens. '*With more and more skyscrapers constructed around us, we sometimes forget where we truly live'*. The government representatives' response to this is unsympathetic, pointing to the difficulties in changing the current development form due to Hong Kong's large population and the scarce land resources. In the highly developed context of Hong Kong, it is impractical to protect private views without stifling development opportunities and balancing other relevant considerations. Instead, protecting public views are more emphasised, particularly those easily accessible and popular to the public or tourists. '*In future, we will implement more participatory mechanisms when evaluating the overall visual impact of a proposed development, so as to avoid degradation in the visual quality and character of the surrounding area as far as possible*', interviewees from Hong Kong government department groups responded.

6. CONCLUSIONS

This paper presents the findings from a questionnaire survey conducted in both mainland China and Hong Kong to rate the importance of various stakeholder concerns over major infrastructure and construction (MIC) projects. The differences between four paired stakeholder groups (i.e. general public, government departments, pressure groups and project affected groups) from the two administrative systems are also examined and interpreted through the follow-up validation interviews. As the survey results indicate, members of the mainland general public pay more attention to environmental protection and advocate thorough engagement in the environmental impact assessment (EIA) of MIC projects. In contrast, the Hong Kong general public representatives place greater emphasis on the planning processes involved when delivering MIC projects, which they believe should be more thoughtful and comprehensive so as to achieve a balanced and mixed land use in Hong Kong. While government officials from both administrations consider economic benefits to be the primary motivation, both pressure groups also agree on the need for the extensive application of green technology during the design and construction process. Unsurprisingly, people affected by projects in both Hong Kong and mainland China demand adequate compensation and a reasonable relocation plan to cover their associated losses.

The results of the independent 2-sample t-tests show many similarities between the concerns of the paired Hong Kong and China stakeholder groups, there are significant differences over issues of green construction and urban traffic, with remarkably different underlying reasons. That 'F10 Green and sustainable design and construction' received much higher score in mainland China may not necessarily indicate a diminished public awareness of environmental protection in Hong Kong, but a greater concern for the extra costs involved in what is already extremely expensive housing. That housing prices in mainland China are currently escalating at an alarming rate, however, leaves some room for doubt over this conclusion and further research would benefit from a more detailed investigation into this aspect

That the concern factor of 'F6 Access to work and locations of activities' is less emphasised

by the Hong Kong respondents is less difficult to explain. The huge increase in motor vehicles in mainland China in recent years – now estimated at over 300 million – has resulted in a serious problem of traffic congestion in all major cities. Although big steps are being made to provide improved public transport, especially in the form of metro systems, these are relatively very recent and yet to make much impact. Hong Kong on the other hand, performs noticeably well in its urban traffic flow due to its well-established advanced public transportation systems and long experience in controlling the amount of vehicles by a variety of local financial and fiscal disincentives.

All in all though, the differences between the stakeholders from the two fundamentally distinct administrative systems – one a fast developing socialist controlled market regime, the other with a capitalistic free market spirit – are surprisingly few. The reasons, as revealed from validation interviews, are deep and cultural. In general, the mainland Chinese 'culture of compliance' holds when it is believed that the government is being fair and reasonable. Individual sacrifices can be expected when they benefit and harmonise the community as a whole. Such is the attraction of communism in the hearts and minds of so many Chinese people. But, in situations that are not seen as fair or reasonable and seemingly not aimed at the community as a whole, the 'culture of compliance' is very quickly replaced (by sometimes violent) crowd anger and discontent. Hong Kong people are equally capable of such anger and discontent, as evidenced by recent "Occupy Central" and other protest gatherings at seeming injustice. In terms of stakeholder involvement in MIC projects therefore, it would seem that a common need for both those in mainland China and Hong Kong to avert possible injustices. Whether such injustices are more likely with one administrative system or the other is an open question at the moment. Certainly, it seems the opportunities for the stakeholders to be involved differ greatly between the two systems, but this is also as yet undefined and an opportunity for further research.

In view of the importance of the consensus building needed for a MIC project, more efforts will be directed to identifying conflicting concerns of different stakeholder groups in a particular context. Through this, the interests of various stakeholder groups involved are expected to be balanced as far as possible when making project decisions and therefore realizing the true spirit of public participation in emphasizing and respecting the rights of all concerned.

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Table 1: Problems of Stakeholder Participation in Project Decision-making in Developed Countries

Source: IAPP, 2008; EIPP, 2009

Country	Problems of Stakeholder Participation in Project Decision-making
United Kingdom	• More disadvantaged and poorer communities lack confidence to voice out their concerns during public participation; • Self-perception of lay public that they can hardly contribute due to their insufficient knowledge, especially on the technical side; • Communities may lack experience of engaging in the formal settings for meetings; • Governments are sometimes not willing to publicly bring forward difficult and controversial issues; • The top-down decision mechanism may discourage the interested individuals (or groups) from taking part in any participatory activities; • Need for engagement efforts that are customised to individuals or groups; • Government officials believe that the project decisions involved are too complex for non-specialists (e.g. the lay public) to comment on and therefore consider public participation process as not only worthless but also costly and time-consuming; • A platform of information exchange has not been well established between the different sectors of the society; • Lay public doubt whether the government really want to engage with them in delivering MIC projects; • Insufficient resources are provided to support the aspirations of government for participation.
United States	• Lack of organisational resources; • Lay public lack enthusiasm to become involved in the decision process of MIC projects; • Both organisers and participants of the participatory exercise lack understanding of problems and possible outcomes; • Insufficient measures are adopted by the organisers to ensure representativeness of the participants involved; • Instead of encouraging interested individuals (or groups) to voice out their concerns, government emphasise more on compliance; • Sometimes the decisions are pre-determined; • Dissatisfaction and distrust of citizens in the current political system; • Racial discrimination during the public participation process can get in the way of good decision-making; • Evaluation mechanisms for assessing the effectiveness of the participatory exercise or even the whole project are still lacking; • Some public participation activities are poorly designed which could adversely affect the their effectiveness and efficiency; • Need for governance skills; • Lack of incentives for staff.

Table 2: Barriers to Effective Participation in the Construction Industry in China

Source: Li, 2012 and Li et al., 2012a

Category	***Description***
Bureaucratic Structure	• Most of the government representatives are not used to the participatory approach as the administrative culture is traditionally organised in a strictly hierarchical way and the government always act as the leading role in the top-down management framework. • The institutional weaknesses of environmental branches in China at all administrative levels lead to insufficient resources, understaffing and lack of training, which has a negative impact on public participation in EIA for construction projects. • The legal advocates including public and private sector attorneys, NGOs, prosecutors and other governmental advocates, and legal aid centres have not played a significant role in the supervision of the public participation exercise in EIA in China to date. • The role that the Chinese NGOs are currently playing in the public participation practices is rather minor and limited in bringing public pressure on development projects.
Public Capacity	• Due to the insufficient support of environmental experts and environmental NGOs, the public still lack environmental consciousness and knowledge and their competence to contribute in any way to EIA is still questioned.
Legislation	• Defined standards (e.g. appropriate representativeness of the participants) are still missing which may create loopholes for government officials, developers, and concerned work units. • The Provisional Measures for Public Participation in Environmental Impact Assessment and the Measures on the Disclosure of Environmental Information provide technical support rather than operable articles. • A definite regulation of the legal obligations concerning about public participation is still missing. • Legislation on the supervision of the participatory process and on the penalty for improper activities during the participation process is still insufficient.

Table 2: Barriers to Effective Participation in the Construction Industry in China (cont'd)

Li, 2012 and Li et al., 2012a

Category	***Description***
Process	• The general public are only involved in the EIA process of construction projects rather than throughout the whole project cycle. • Access to information is restricted though Article 4 of the *EIA Law* requires EIA reports to be made public available and the *Provisional Measures for Public Participation in EIA* require a more systematic and accessible disclosure process (Articles. 8-11). • The time for releasing project information (before EIA is conducted) is too late as many important decisions have been made and participation therefore becomes *ex post facto.* • The place of participation is not always convenient or easily accessible. • The representativeness of the participants involved in public participation programs can not be guaranteed. • Only experts are involved in the early stages of the decision process. • Public participation occurs for too short a period which means people do not have enough time to go through all the project-related information and to understand them especially when they are written in overly technical language. • The general public raise their comments mainly through reports, letters and visits, and the interactive techniques adopted during the participation process are still insufficient. • Timely response to the public is still lacking, which may adversely affect government accountability. • The Western mode of public participation is simply copied without considering the actual situation of China.
Personnel	• Practitioners with sufficient experience in the planning and organising participatory exercise are still lacking in government organisations, construction companies and environmental impact assessment units. • Legal experts in public participation are still lacking.
Others	• The traditional Chinese culture of being conservative negatively affects the effectiveness and efficiency of the participatory exercise. • Overemphasised economic development leads to the neglect of environmental protection and therefore has an adverse impact on public participation in EIA.

Table 4 Stakeholder Concerns in MIC Projects Shortlisted from the Literature

	Stakeholder Concerns in MIC Projects	*PD, 2003*[a]	*PD, 2006*[a]	*CEDD, 2008*[b]	*WKCDA, 2010*[c]	*URA, 2001*[d]	*M-NCPPC, 2001*[e]	*Tang et al., 2008*	*Lu et al., 2002*	*Wang et al., 2007*	*Tanaka, 2005*	*Palerm, 1999*	*Tam et al., 2009*	*Amado et al., 2009*	**Total No. of citations for a certain stakeholder concern**
F1.	Adaptability of development to changing needs	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	12
F2.	Availability of local job opportunities			✓				✓	✓	✓		✓		✓	6
F3.	Economic benefits to government and local citizens	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	11
F4.	Balanced development of different local economic activities		✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	10
F5.	Value-for-money of the proposed project(s)				✓		✓			✓	✓	✓	✓	✓	7
F6.	Access to work and location of activities	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	11
F7.	Creation of a safe, convenient, comfortable and legible pedestrian circulation and transport network	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	11
F8.	Availability of amenities, community and welfare facilities and provision of public open space	✓	✓	✓	✓	✓	✓				✓		✓	✓	9
F9.	Being functional and acceptable in terms of tariffs to diversified social groups			✓	✓					✓		✓		✓	5
F10.	Green and sustainable design and construction		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	11
F11.	Prevention and mitigation measures against air, water and noise pollution	✓	✓	✓	✓		✓	✓	✓		✓	✓			9
F12.	Building design in terms of aesthetics, density, height and visual permeability	✓	✓	✓	✓	✓	✓				✓		✓	✓	9
F13.	Harmonisation of the proposed project(s) with the local natural setting	✓	✓	✓			✓		✓	✓	✓	✓		✓	9
F14.	Unique local characteristics	✓	✓		✓	✓	✓	✓			✓		✓	✓	9
F15.	Conservation of the local cultural and historical heritage	✓	✓	✓	✓	✓						✓		✓	7
F16.	Compensation and relocation plan/strategy				✓	✓		✓		✓		✓		✓	6
F17.	Identity of city and international reputation				✓		✓	✓	✓	✓	✓		✓	✓	8
	Total no. of stakeholder concerns from each publication	10	12	13	14	8	13	11	10	8	12	13	10	16	150

[a] PD: Planning Department, HKSAR Government. [b] CEDD: Civil Engineering and Development Department, HKSAR Government.
[c] WKCDA: West Kowloon Cultural District Authority, HKSAR Government. [d] URA: Urban Renewal Authority, HKSAR Government.
[e] M-NCPPC: The Maryland-National Capital Park and Planning Commission, USA.

Table 5: Response Rate

Group	**Survey in Hong Kong**			**Survey in Mainland China**			**Overall**		
	No. of Questionnaires		***Percentage Return***	***No. of Questionnaires***		***Percentage Return (%)***	***No. of Questionnaires***		***Percentage Return***
	Sent	*Return*		*Sent*	*Return*		*Sent*	*Return*	
General public	231	57	24.7%	203	42	20.7%	434	99	22.8%
Government departments	227	49	21.6%	201	40	19.9%	428	89	20.8%
Pressure groups (NGOs)	195	47	24.1%	163	45	27.6%	358	92	25.7%
Project affected groups	213	55	25.8%	185	41	22.2%	398	96	24.1%
Total	**866**	**208**	**24.0%**	**752**	**168**	**22.3%**	**1618**	**376**	**23.2%**

Table 6: Profiles of Respondents

Respondent Profiles	***Group***				***Total***
	General public	Government departments	Pressure groups (NGOs)	Project affected groups	
Profiles of Hong Kong Respondents					
No. of Hong Kong Respondents	57	49	47	55	**208**
Percentage in Overall Hong Kong Respondents	27.4%	23.6%	22.6%	26.4%	**100%**
No. of Those with Sufficient Knowledge and Practical Experience	28	42	39	51	**160**
Percentage of Experienced Hong Kong Respondents	49.1%	85.7%	83.0%	92.7%	**76.9%**
Profiles of Mainland China Respondents					
No. of Mainland China Respondents	42	40	45	41	**168**
Percentage in Overall Mainland China Respondents	25.0%	23.8%	26.8%	24.4%	**100%**
No. of Those with Sufficient Knowledge and Practical Experience	15	31	31	35	**112**
Percentage of Experienced Mainland China Respondents	35.7%	77.5%	68.9%	85.4%	**66.7%**
Overall Profiles					
No. of Respondents	99	89	92	96	**376**
Percentage in Overall Respondents	26.3%	23.7%	24.5%	25.5%	**100%**
No. of Those with Sufficient Knowledge and Practical Experience	43	73	70	86	**272**
Percentage of Experienced Respondents	43.4%	82.0%	76.1%	89.6%	**72.3%**

Table 7: Profiles of Validation Interviewees

Group	***No.***	***Position***	***Organisation***
Government Departments	V1	Deputy Director	Provincial Bureau
	V2	Director	Municipal Commission
	V3	Deputy Director	Municipal Commission
	V4	Deputy Director	Provincial Bureau
	V5	Deputy Director	Municipal Bureau
	V6	Policy Advisor	Provincial Bureau
	V7	Deputy Secretary-general	Municipal Bureau
General Public	V8	The Lay Public	N.A.
	V9	The Lay Public	N.A.
	V10	The Lay Public	N.A.
	V11	The Lay Public	N.A.
	V12	The Lay Public	N.A.
	V13	The Lay Public	N.A.
	V14	The Lay Public	N.A.
Project Affected Group	V15	Project affected people	N.A.
	V16	Project affected people	N.A.
	V17	Project affected people	N.A.
	V18	Project affected people	N.A.
	V19	Project affected people	N.A.
	V20	Project affected people	N.A.
Private Sector	V21	Project Manager	Real Estate Corporation
	V22	General Manager	Construction Company
	V23	Engineering Director	Construction Company
	V24	General Manager	Real Estate Corporation
Professional Organisations / Universities	V25	Associate Professor	Educational Institution
	V26	Deputy Director	National Research Centre
	V27	Director	Research Centre
	V28	Associate Professor	Educational Institution
	V29	Senior Research Fellow	Educational Institution
Pressure Groups (NGOs)	V30	Member	NGO
	V31	Director	Environmental Group
	V32	Member	Environmental Group
	V33	Member	Environmental Group
	V34	Director	Environmental Group
	V35	Member	NGO
	V36	Executive Director	NGO

Table 8 Rankings of Stakeholder Concerns in MIC Projects based on Surveys in Mainland China and Hong Kong

Stakeholder Concerns in MIC Projects	***General Public***						***Government Departments***						***Pressure Groups***						***Project Affected Groups***					
	Mainland China		***Hong Kong***		***Mainland China & Hong Kong***		***Mainland China***		***Hong Kong***		***Mainland China & Hong Kong***		***Mainland China***		***Hong Kong***		***Mainland China & Hong Kong***		***Mainland China***		***Hong Kong***		***Mainland China & Hong Kong***	
	Mean	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*
F1. Adaptability of development to changing needs	4.00	9	4.07	7	4.04	7	4.63	7	4.67	2	4.65	2	3.31	13	3.28	14	3.29	14	3.34	12	3.38	11	3.36	11
F2. Availability of local job opportunities	4.38	6	4.79	3	4.62	3	4.10	9	4.27	4	4.19	6	3.69	11	3.68	6	3.68	9	3.68	8	3.73	6	3.71	8
F3. Economic benefits to government and local citizens	4.52	3	4.40	4	4.45	4	4.78	1	4.71	1	4.74	1	3.80	9	3.23	15	3.51	12	2.63	16	2.78	16	2.72	16
F4. Harmonious development of different local economic activities	4.07	8	3.39	11	3.68	10	4.68	6	4.47	3	4.56	3	3.56	12	3.49	9	3.52	11	3.17	14	3.22	12	3.20	14
F5. Value-for-money of the proposed project(s)	3.83	11	2.95	14	3.32	14	4.55	8	3.59	10	4.02	8	4.62	2	4.55	2	4.59	2	3.02	15	3.16	14	3.10	15
F6. Access to work and location of activities	4.74	2	4.81	2	4.78	1	4.77	2	3.29	12	3.96	9	4.53	5	3.53	8	4.02	5	4.34	3	3.55	9	3.89	5
F7. Creation of a safe, convenient, comfortable and legible pedestrian circulation and transport network	3.86	10	3.96	8	3.92	8	4.70	5	3.82	8	4.21	5	4.29	6	3.45	10	3.86	7	3.83	6	4.16	4	4.02	4
F8. Availability of amenities, community and welfare facilities and provision of public open space	4.50	5	4.95	1	4.76	2	3.10	15	3.06	15	3.08	15	4.04	7	3.74	5	3.89	6	3.59	10	3.53	10	3.55	10
F9. Being functional and acceptable in terms of tariff to diversified social groups	4.10	7	4.35	5	4.24	6	2.62	17	2.78	17	2.71	17	3.73	10	3.68	6	3.71	8	3.85	5	3.85	5	3.85	6
F10. Green and sustainable design and construction	4.52	3	3.33	13	3.84	9	4.73	3	3.18	14	3.88	11	4.82	1	4.64	1	4.73	1	3.61	9	3.07	15	3.30	12
F11. Prevention and mitigation measures against air, water and noise pollution	4.83	1	4.18	6	4.45	4	4.73	3	3.98	6	4.31	4	4.60	3	3.87	4	4.23	4	3.51	11	3.67	8	3.60	9
F12. Building design in terms of aesthetics, density, height and visual permeability	3.40	12	3.37	12	3.38	13	3.35	13	3.24	13	3.29	14	3.29	14	3.36	12	3.33	13	3.88	4	4.49	2	4.23	3
F13. Harmonisation of the proposed project(s) with local natural setting	2.24	17	2.09	17	2.15	17	2.95	16	3.00	16	2.98	16	3.82	8	3.43	11	3.62	10	3.27	13	3.18	13	3.22	13
F14. Unique local characteristics	2.74	16	2.82	15	2.79	16	3.25	14	3.45	11	3.36	13	3.24	15	3.34	13	3.29	14	4.41	2	4.36	3	4.39	2
F15. Conservation of local cultural and historical heritage	3.36	13	3.53	9	3.45	11	3.65	12	3.78	9	3.72	12	4.60	3	4.45	3	4.52	3	3.73	7	3.71	7	3.72	7
F16. Compensation and relocation plan/strategy	2.90	15	2.82	15	2.86	15	4.03	10	4.24	5	4.15	7	3.09	16	3.09	16	3.09	16	4.68	1	4.78	1	4.74	1
F17. Identity of city and international reputation	3.33	14	3.44	10	3.39	12	4.00	11	3.88	7	3.93	10	2.51	17	2.26	17	2.38	17	2.27	17	2.36	17	2.32	17

Table 9 Results of Kendall's Concordance Analysis for Stakeholder Concerns in MIC Projects

	General Public			***Government Departments***			***Pressure Groups***			***Project Affected Groups***		
	Mainland China	***Hong Kong***	***Mainland China & Hong Kong***	***Mainland China***	***Hong Kong***	***Mainland China & Hong Kong***	***Mainland China***	***Hong Kong***	***Mainland China & Hong Kong***	***Mainland China***	***Hong Kong***	***Mainland China & Hong Kong***
Number of survey respondents	42	57	99	40	49	89	45	47	92	41	55	96
Kendall's coefficient of concordance (W)	0.322	0.384	0.329	0.324	0.274	0.241	0.279	0.243	0.238	0.218	0.287	0.241
Chi-square value	216.095	350.105	521.845	207.141	215.128	342.849	201.142	182.832	350.071	142.942	252.305	369.587
Critical value of Chi-square	26.300	26.300	26.300	26.300	26.300	26.300	26.300	26.300	26.300	26.300	26.300	26.300
Degree of freedom (df)	16	16	16	16	16	16	16	16	16	16	16	16
Asymptotic significance	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 10 Results of Spearman's Rank Correlation Test between Respondents from Mainland China and Hong Kong for the Stakeholder Concerns in MIC Projects

Comparison	***General Public***		***Government Departments***		***Pressure Groups***		***Project Affected Groups***	
	r_s	Significant Level	r_s	Significant Level	r_s	Significant Level	r_s	Significant Level
Ranking of mainland China respondents vs. ranking of Hong Kong respondents	0.751	0.01	0.574	0.05	0.847	0.01	0.877	0.01

Table 11 Results of Independent 2-Sample T-Test between Paired Stakeholder Groups from Mainland China and Hong Kong for Their Concerns in MIC Projects

Stakeholder Groups	***Stakeholder Concerns in MIC Projects with Significant Differences***	***Equal Variances Assumed***	***Levene's Test for Equality of Variances***		***T-Test for Equality of Means***				
			F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean diff.*	*Std. error diff.*
General public	F4	Y	1.964	.164	2.486	97	.015	.68546	.27570
	F5	Y	.318	.574	3.496	97	.001	.88596	.25345
	F8	N	37.644	.000	-2.457	44.949	.018	-.44737	.18212
	F10	N	5.764	.018	4.774	96.645	.000	1.19048	.24939
	F11	N	22.587	.000	4.128	72.230	.000	.65789	.15936
Government departments	F5	N	5.049	.027	4.140	86.701	.000	.95816	.23145
	F6	N	8.493	.005	7.947	83.490	.000	1.48929	.18741
	F7	N	5.956	.017	3.942	86.572	.000	.88367	.22417
	F10	N	15.688	.000	6.445	79.104	.000	1.54133	.23914
	F11	Y	3.809	.054	3.348	87	.001	.74541	.22262
Pressure groups (NGOs)	F6	Y	3.348	.071	4.143	90	.000	1.00142	.24173
	F7	Y	.229	.633	3.298	90	.001	.84208	.25531
	F11	Y	.432	.512	3.277	90	.001	.72766	.22207
Project affected groups	F6	Y	.041	.839	3.174	94	.002	.79601	.25077
	F12	N	8.064	.006	-2.459	68.115	.016	-.61286	.24922

Note: 2-tailed sig.<0.05

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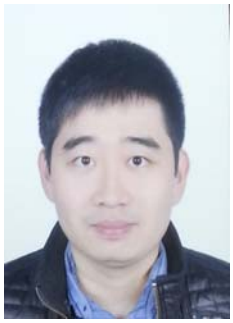

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