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Conflict or Consensus: An Investigation of Stakeholder Concerns during the Participation Process of Major Infrastructure and Construction Projects in Hong Kong

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CONFLICT OR CONSENSUS: AN INVESTIGATION OF STAKEHOLDER CONCERNS DURING THE PARTICIPATION PROCESS OF MAJOR INFRASTRUCTURE AND CONSTRUCTION PROJECTS IN HONG KONG

Abstract

Public participate in the planning and design of major public infrastructure and construction (PIC) projects is crucial to their success, as the interests of different stakeholders can be systematically captured and built into the finalised scheme. However, public participation may not always yield a mutually acceptable solution, especially when the interests of stakeholders are diverse and conflicting. Confrontations and disputes can arise unless the concerns or needs of the community are carefully analysed and addressed. The aim of the paper is to propose a systematic method of analysing stakeholder concerns relating to PIC projects by examining the degree of consensus and/or conflict involved. The results of a questionnaire survey and a series of interviews with different entities are provided, which indicate the existence of a significant divergence of views among stakeholder groups and that conflicts arise when there is a mismatch between peoples' perception concerning money and happiness on the one hand and development and damages on the other. Policy and decision-makers should strive to resolve at least the majority of conflicts that arise throughout the lifecycle of major PIC projects so as to maximise their chance of success.

Keywords: Stakeholder concerns, participation, major infrastructure and construction projects, Hong Kong.

INTRODUCTION

The development of any major public infrastructure and construction (PIC) project, from initiation to hand over of completed construction, can be controversial and may affect the many different, sometimes discrepant, interests involved both positively and negatively. The representatives of these interests are referred to as the project's stakeholders (Olander, 2007). Construction project management is a discipline which focuses on the process of planning and involves the management of a complex array of activities. Thus, its professionals need to be capable of coordinating relationships with diversified stakeholders, especially with the growing tendency of stakeholder groups to try to influence the implementation of PIC projects according to their individual concerns and needs (Atkin and Skitmore, 2008; Olander and Landin, 2008).

In addition to the project initiators/government as decision-makers, PIC projects attract the interest of many other stakeholder groups with needs and expectations of the project, including the general public/end-users, pressure groups and other affected people (termed here *the project affected group*). Numerous project failures resulting from insufficiently addressing their concerns and meeting their expectations throughout the project lifecycle are detailed in the literature (e.g. Morris and Hough, 1993). Such failures occur primarily because the groups have the resources and capability to stop the projects (Atkin and Skitmore, 2008). A recent example is the express rail link project designed to extend the high speed railway service from Guangzhou and Shenzhen in mainland China to Hong Kong. This project attracted an unprecedented response from many groups, including affected residents, the younger generation born after the 1980's (referred to as *the after 80's*), politicians, regulators and professionals, over the issues of family values, environmental impact, cost-effectiveness and

value-for-money. This was notwithstanding an extensive public inquiry conducted by the government demonstrating the social and economic benefits of the project for Hong Kong (Liang, 2010).

Instead of merely placating the community without actually involving them in the decision process, Arnstein (1969) urges policy makers to solicit public participation to evoke citizens' power through partnership, power delegation and citizen control. However, public participation does not automatically guarantee a mutually agreeable solution as the interests of various stakeholders vary and are often conflicting (Atkin and Skitmore, 2008). Without thoroughly analysing and properly managing these various concerns and needs, severe conflicts and controversies can be expected, which may then cause cost and time overruns (Olander, 2007). This paper, therefore, provides a systematic way to analyse stakeholders' concerns over PIC projects by examining their degrees of consensus and/or conflict. A brief review of the stakeholder concept and participation theory is presented followed by an introduction to the research design and process used. The survey results are then provided to reveal the consistency and differences of stakeholders' concerns. A series of validation interviews are described in which more in-depth views concerning the current dilemma of conflicting stakeholders and ethical demands are examined. Finally, a proposed future research agenda concludes the paper.

LITERATURE REVIEW

The Stakeholder Concept

The stakeholder concept, first introduced by researchers at the Stanford Research Institute in the 1960s, concerns those groups without whose support the organisation would cease to exist (Olander, 2007). The concept has gained widespread acceptance since 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 organisation's objectives"*. Nowadays, references to stakeholders are commonplace both in academic texts and mainstream media and government communications (Friedman and Miles, 2002).

The implementation of stakeholder theory has been far extended from its original application in strategic management to a number of fields of enquiry including, more recently, construction project management (Atkin and Skitmore, 2008). According to the Project Management Institute (PMI) (2008), project stakeholders are individuals and organisations that are actively involved in a project or whose interests may be affected as a result of project execution or completion. Winch (2002) and Takim (2009) classify stakeholders in the construction industry into two categories: (i) *internal* stakeholders, who have legal contact with the client and those clustered around the client on the demand side (employees, customers, end-users and financiers) and supply side (architects, engineers, contractors, trade contractors and material suppliers); and (ii) *external* stakeholders, comprising private actors (e.g. local residents, landowners, environmentalists, and archaeologists) and public actors (such as regulatory agencies, and local and national government).

For the purpose of this research, stakeholders are defined as "those who can influence the project process and/or final results, whose living environments are positively or negatively affected by the project, and who receive associated direct and indirect benefits and/or losses".

These include: government/project initiators; the general public/end-users; pressure groups such as the NGOs and mass media; and the project affected group.

Stakeholder Concerns

Stakeholders are characterised as having a 'stake' in the proposed project/programme and trying to influence its implementation so as to guard their individual interests (Olander and Landin, 2008). Table 1 lists some of the known major stakeholder concerns in different sectors including health care, education, forestry and agriculture.

< Table 1 >

For PIC projects, the stakeholder groups are more apparent as schemes of this type usually have an impact on the public in general, particularly when social and environmental issues are at stake (Manowong and Ogunlana, 2008). Atkin and Skitmore (2008) believe that successful completion of PIC projects is dependent on meeting the expectations of stakeholders throughout the project lifecycle. Therefore, many government departments in different countries and researchers from all over the world have identified the major stakeholder concerns in PIC projects (Table 2).

< Table 2 >

Participation

Participation is defined by Arnstein (1969:216) as a channel for *"the redistribution of power that enables the have-not citizens … to be deliberately included in the future"*. In principle, public participation involves every person, however 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 PIC projects due to the time and cost constraints involved (Creighton, 2005).

Participation of project stakeholders in different stages of PIC project (e.g. the planning and developmental phases) can be beneficial in several ways and therefore has been advocated by many researchers (Rydin and Pennington, 2000; Tam *et al*, 2009; Li *et al*, 2011). However, public participation in Eastern societies (e.g. China) is less prevalent than in the West – which, according to Liu *et al* (2004) and Li *et al* (2011), is attributable to the traditional Chinese *culture of compliance*. In comparison, Hong Kong citizens are more willing to participate in making decisions, especially those affecting their living environment and standard of living, probably due to the more democratic atmosphere and the higher education levels (Lee and Chan, 2008). Recently, stakeholder participation in a variety of government transactions (e.g. for the provisions of PIC projects) in Hong Kong is being increasingly encouraged by several public clients in order to increase the likelihood of project success.

At least since Plato, however, the disadvantage of public participation is that it can lead to social disorder and conflict. A similar problem arises when it is implemented in PIC projects (Tam *et al*, 2009). Conflict is inevitable as each stakeholder group has its own history, character, gender, culture, values, beliefs, and behaviours which influence its actions and motivation (Randeree and Faramawy 2011). Should the stakeholders fail to reach a consensus during the participation process in the early stage of a project (e.g. planning stage), it may not

be worthwhile to continue as this could increase the chance of failure or even lead to confrontation between decision-makers and local citizens (as evidenced in the recent Guangzhou – Shenzhen – Hong Kong Express Rail Link project) (Lee and Chan, 2008).

Identifying and analysing stakeholder concerns in PIC projects are indispensable tasks during the participation process in order to arrive at a consensus and avoid project failures (Atkin and Skitmore, 2008). This is especially important for a dynamic city such as Hong Kong with its 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 *et al*, 2011).

RESEARCH METHODOLOGY AND PROCESS

As identified in Table 2, many stakeholder concerns exist and therefore a large sample size is needed. Hence, a questionnaire survey was considered to be the most effective means of collecting the required information. To do this, a structured questionnaire was developed to study the relative importance of different stakeholder concerns for PIC projects. The format was determined according to suggestions by Wang *et al* (1999) and Li *et al* (2005) with the incorporation of a 5-point Likert scale (1 = 'least important' and 5 = 'most important') for measurement purposes. An alternative 'not-applicable' option was also provided.

A pilot study, involving 12 experts from four different stakeholder groups, was conducted before undertaking the main survey. This resulted in some changes to the original version of the questionnaire. For example, the original 7-point Likert scale was changed to a 5-point

Likert scale to facilitate the participation of respondents with diversified educational backgrounds from the general public and project affected group. Both English and Chinese versions of the questionnaire were also developed.

To ensure the usefulness and reliability of the survey findings, different sampling approaches were adopted. Potential respondents from government departments, project affected groups and pressure groups (e.g. NGOs) were selected for purposive sampling. With the exception of members from the general public, who were chosen randomly, the key criterion for selecting the respondents was the extent to which they possess adequate knowledge of and practical experience in the existing public participation process.

A total of 851 questionnaires were despatched, with 199 returned by means of mail, email or fax (some responses from the general public, pressure groups and the project affected groups were obtained through street survey conducted in Hong Kong and China), making the total response rate 23.4 percent (Table 3). Such a response is not uncommon for a survey of this kind (e.g. Vidogah and Ndekugri, 1998; Ofori and Gang, 2001) and is regarded as acceptable based on the findings of Akintoye (2000) and Dulami *et al* (2003).

< *Table 3* >

Table 4 summarises the profiles of the respondents, with 55 (27.6%) respondents being from the general public, followed by 53 (26.7%) from project affected groups, 46 (23.1%) from Government departments and 45 (22.6%) from pressure groups (e.g. NGO). 77.9% of the respondents had sufficient knowledge of, or gained previous experience in, public participation. This is not surprising as, despite the relatively low participatory level of decision-making

generally in China and Hong Kong due to their unique social, political, cultural and environmental background, the Central Government of China and the Government of Hong Kong SAR have both been faced with the rapid expansion of PIC projects and increasing expectations of social equality. The participatory experience of the respondents also confirmed the authenticity of the responses obtained.

< *Table 4* >

The validity of the survey results was also confirmed through validation interviews with 25 experts representing a cross-section of the community, including the government, private sector, project affected groups, pressure groups (NGOs), the general public, and academia. As shown in Table 5, all the interviewees were of senior management level and with ample hands-on experience in public participation – again indicating the authenticity of their views.

< *Table 5* >

DATA ANALYSIS AND RESULTS

Firstly, the mean score of each criterion was used to rank its level of importance. Independent sample *t*-tests and an ANOVA were then carried out to identify the significant differences among the four stakeholder groups (i.e. the general public, government, pressure groups and project affected groups). The comments raised by the interviewees through the validation interviews are also reported here.

Ranked Stakeholder Concerns

The ranked stakeholder concerns are summarised in Table 6. The scale intervals are interpreted as follows: (i) 'not important' (*mean score* $\leq$ 1.5); (ii) 'fairly important' (1.51 $\leq$ *mean score* $\leq$ 2.5); (iii) 'important' (2.51 $\leq$ *mean score* $\leq$ 3.5); (iv) 'very important' (3.51 $\leq$ *mean score* $\leq$ 4.5); and (v) 'extremely important' (*mean score* $\geq$ 4.51).

< *Table 6* >

Concerns of the general public

Nearly all the criteria (except for F13 with a mean score of 2.07) are considered by the respondents from the general public to be at least Important, with the top three F8 (4.95), F6 (4.82) and F2 (4.78) being 'extremely important'. During the validation interviews, all the five interviewees from the general public agreed with the findings of questionnaire survey and pointed out that the project initiators/government should comprehensively and thoroughly plan future land use before the construction of any PIC projects. Also, they thought that it is especially important for a city with scarce land resources such as Hong Kong to achieve a balanced and mixed land use including offices, residences, retail, welfare facilities, entertainment centres, etc.

Concerns of Government Representatives

The government representatives give high mean scores (≥ 2.8) to all the criteria, with F3 (4.72), F1 (4.67) and F4 (4.48) being their most important concerns. Four of the five interviewees from the government believed maximising economic gains to the government and local citizens through the development of PIC projects to be the most important objective. However, three government representatives considered the economic benefits of these projects to be often over-emphasised, and with sustainability issues being largely ignored.

Concerns of Pressure Groups

For pressure groups, F17 receives the lowest mean score (2.24) while F10, F5 and F15 are the highest with 4.67, 4.58 and 4.47 respectively. All the interviewees from the pressure groups complained that the development level of an area is normally considered solely from an economic perspective and the achievement of quantitative economic targets is currently the only criterion by which the performance of officials are evaluated. This has led to an economic development pattern based on increased energy consumption and air pollution, serious urban decay and loss of cultural identity.

Concerns of Project Affected Groups

F16 (4.79), F12 (4.49) and F14 (4.38) are the most important, with F17 (2.36) the least important, criteria for the project affected groups. The representatives from the project affected groups assert, that compared with other stakeholders, they suffer most as they always experience the direct and negative impacts of PIC projects. Moreover, four of the

interviewees stated that *"our grievances are mostly neglected, not only by the government but also by fellow citizens"*.

Disparity of Opinions between Each Two Stakeholder Groups

In order to obtain a clearer picture of the perspectives of the four different stakeholder groups, independent sample *t*-tests were used to test the significance of any differences in the mean scores of pairs of groups, with $p < 0.05$ (two-tailed) as the cut-off value (Tables 7, 8, 9, 10, 11 and 12). 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 (Wong, 2006).

General Public vs. Government

As shown in Table 7, more than 75% of the overall criteria (13 out of 17) have significant differences in the mean scores of the general public and government respondents. The greatest of these are F8 (*mean difference* = 1.88), F9 (*mean difference* = 1.56) and F6 (*mean difference* = 1.54). Most of the interviewees from general public acknowledge the great effort made by the Hong Kong Government to boost economic development. On the other hand, they disagree with the point made by some officials that economic development is the sole prerequisite for solving social and/or environmental problems. Instead, the current high-density form of development in Hong Kong has created a number of social and environmental problems such as the insufficient provision of public open spaces, a widening gap between rich and poor people, traffic congestion, etc.

< ***Table 7*** >

General Public vs. Pressure Groups

Fifteen criteria were scored considerably differently by the representatives of general public and pressure groups, of which F5 (*mean difference* = –1.61), F13 (*mean difference* = –1.35) and F10 (*mean difference* = –1.34) occupy top three as shown in Table 8. The representatives of the pressure groups accepted the important role that the development of PIC schemes (such as the 10 major infrastructure projects proposed by the Hong Kong SAR Government) has played in bringing economic benefits and job opportunities to Hong Kong people. Meanwhile, they reminded the general public to comprehensively consider the impact of the projects as, according to most of the general public interviewees, the importance of economic and social development overshadows that of environmental protection. In addition, the efficiency of spending public money in constructing PIC projects is an aspect that most citizens neglect, probably due to the culture of compliance and its associated autocratic mode of governance and decision-making. Comments from the general public interviewees that *"I think it is the government's responsibility to ensure public money is spent effectively and efficiently when developing a PIC project"* and *"I can do nothing about the value-for-money of the proposed PIC project"*, illustrate the point.

< *Table 8* >

General Public vs. Project Affected Groups

In comparing the results of the general public and project affected groups, significant difference in scores occur for 12 factors (Table 9). Of these, F16 (*mean difference* = –1.96) is

the greatest, followed by F3 (*mean difference* = 1.63) and F14 (*mean difference* = –1.56). Four interviewees from general public pointed out that, as taxpayers, it is unfair for them to share in the increased cost of PIC projects due to the unreasonable compensation and relocation plan put forward by the project affected people. On the other hand, the project affected group complained they are the real and only sufferers of the projects and they would rather maintain their former life style than receive monetary compensation, however large.

< *Table 9* >

Government vs. Pressure Groups

The representatives of government and pressure groups only agree on F11, F12 and F14. Among the other criteria, F17 (*mean difference* = 1.63), F10 (*mean difference* = –1.51) and F3 (*mean difference* = 1.50) are the top three differences between these two groups (Table 10). Three interviewees from pressure groups complained that the essential purpose of constructing PIC projects is to improve the well being of the community and is sometimes distorted by government officials to become a promotion opportunity for their political careers. *"This phenomenon is quite common in China especially in some depressed areas, and the consequent face projects and achievement project do bring a heavy financial burden to the local citizens"*, as mentioned by a member of an environmental group from China. Representatives from the government partly accept the criticism and stated that, as the current autocratic mode of governance and central planning system emphasise only quantitative economic targets, they have no choice.

< *Table 10* >

Government vs. project affected groups

As Table 11 shows, government representatives disagree with the project affected groups on the majority of the criteria. The top three conflicting opinions are F3 (*mean difference* = 1.94), F17 (*mean difference* = 1.51) and F1 (*mean difference* = 1.30). Three of the five interviewees from the project affected groups are not willing to sacrifice themselves for the development of the entire community and, in addition, the government officials sometimes approve PIC projects based on the considerations of their political achievements and future promotion instead of the benefits to the local community. The government representatives were in dilemma as, from their perspective, some sacrifice of a small section of the community is inevitable for the sake of the community as a whole.

< ***Table 11*** >

Pressure Groups vs. Project Affected Groups

For the mean scores provided by the pressure groups and project affected groups, significant differences occur for the nine criteria (Table 12). The largest of these is F16 (*mean difference* = –1.70), followed by F10 (*mean difference* = 1.59) and F5 (*mean difference* = 1.43). All of the interviewees from the pressure groups appreciated the loss of the project affected groups during the development of PIC projects. However, three of them believed that some requirements raised by the project affected people were irrationally concerned with compensation and relocation plans. As a director of an environmental group observed, *"Some of their demands adversely affect the efficiency of spending public money"*.

< ***Table 12*** >

Disparity of Opinions among All Stakeholder Groups

To obtain a comprehensive comparison among all the four stakeholder groups necessitates the adoption of a One-way ANOVA. Levene's test was again used to test for homogeneity. The mean scores of the criteria F16 (*F* value = 180.198), F8 (*F* value = 138.075) and F3 (*F* value = 132.109) emerge as the top three conflicting concerns among the groups (Table 13). Although both the government representatives and project affected groups emphasise the need for compensation and relocation plans when developing PIC projects, their starting points can be different. As stated by four government representatives, *"it is high risk to start a project without meeting the requirements of project affected people, as their opposition or even confrontation can cause the whole project to fail"*. The project affected people, however, believe they deserve to be compensated as their previous life style is substantially changed. Although understanding the sufferings of project affected people, both the interviewees from the general public and pressure groups think it is the government's business to negotiate with the sufferers and therefore maintain the comprehensive and harmonious development of the whole community.

< ***Table 13*** >

Interviewees from the general public and pressure groups considered the balanced land use between commercial, residential and leisure activities to be of great importance for improving the living conditions of the public and the quality of the built environment. However for

government representatives, it is difficult to change the current high-density form of development because of Hong Kong's large population and the scarce land resources.

Most of the interviewees from the government and general public believed the development of PIC projects could stimulate the economy and therefore bring financial benefits to the local community. Representatives of pressure groups complained that economic aspects are currently over-emphasised while social and environmental factors are neglected – and that this undoubtedly opposes the true spirit of sustainable development. It is understandable that most interviewees from project affected groups gave extremely contrary ratings on the benefits to the local people and to themselves as they indeed suffer greatly. *"The compensation fee not always works and what we really want is to maintain our life pattern"*, is mentioned by most project affected people.

DISCUSSION

A recurring problem highlighted in the survey is that of the impatient and disrespectful attitude of one stakeholder group towards other groups regarding their concerns over PIC projects. While it is understandable that people wish protect their own interests, there will never be a consensus reached among diversified parties in the absence of an effective dialogue with their counterparts. This indubitably violates the initial purpose of introducing participatory mechanisms to help ensure the proposed PIC facilities are properly planned, designed, built, operated and demolished to serve the well being of the community. To overcome this, it is necessary for each stakeholder group to consider the benefits and costs involved in a comprehensive and thorough manner.

Instead of solely considering economic criteria, government officials should ask themselves whether a PIC project is for political achievement or for the benefit of the wider community. A checklist for government officials should also include the measures taken for risk management and cost control and whether they are sufficient enough to achieve value-for-money. The general public should appreciate the government's effort to boost the local economy and understand that high-density developments are sometimes inevitable in Hong Kong. Meanwhile, they should be patient with the project affected groups as they are the major sufferers. Rather than watch indifferently when negotiations between the government and project affected people are deadlocked, the general public should try to alleviate the tension between the two parties. The main duty of pressure groups is to oversee government accountability in terms of the project's environmental friendliness and value-for-money while simultaneously comprehending dissatisfied voices from the general public concerning the state of the economy and the consequent pressure on the government. Many believe that protecting the environment at the cost of economic decline is unwise. For project affected groups, it seems that they overreact mainly because their grievances are not fully understood by other stakeholder groups. This can be avoided if other parties are more sensitive to the concerns of project affected groups. On the other hand, the project affected groups also need to respect the will of the general public and users as PIC facilities generally help to boost the economy and improve the quality of life. The community as a whole can hardly move forward unless a small section is willing to make a sacrifice. A core issue is for such sufferers to be compensated equally.

CONCLUSIONS

This paper has ranked the concerns of different stakeholder groups in relation to major Hong Kong PIC projects. Members of the general public pay more attention to the planning processes involved which, according to them, should be thoughtful and comprehensive so as to achieve a balanced and mixed land use in Hong Kong. Government officials consider economic benefits to be their primary motivation while pressure groups emphasise the adoption of green technology during the design and construction process in addition to obtaining value-for-money. People affected by the project require adequate compensation and a reasonable relocation plan to cover their associated losses.

Since major PIC projects attract a diverse range of interests from different stakeholder groups, resolving conflicts is a vital issue in reaching a consensus. These interests can be categorised as (i) money and happiness; (ii) development and damage; and (iii) the whole and the part. According to government officials, the current high density development in Hong Kong well suits the status quo, with a high demand for economic development and scarce land resources, and is likely to continue for a long period into the future. However, the populace is equally concerned about traffic congestion and the lack of open space. The relationship between development and damage concerns the controversial issue of how to prioritise economic, environmental and social perspectives in order to achieve sustainability. The current practice of placing economic development at the top of the agenda is not solely a Chinese one and many governments' ignorance of environmental protection during the development process has led to a series of problems including pollution, heat island effect, distortion of micro-climate, etc. Concerning the third relationship between the part and the whole, it is generally accepted that some loss to a small section of society is inevitable during the development of the entire

community. However, a lack of sensitivity to the grievance of those who sufferer as a result of construction work may easily result in confrontations and criticism. This obviously is counter to the philosophy of any responsible government to maintain a harmonious society.

The fact that controversy and confrontation dominate the whole participatory process in Hong Kong indicates that more research is needed, particularly relating to the lack of common ground among diversified stakeholder groups. Given the practical situation in Hong Kong, some agreed goals or values are suggested, including: (i) density instead of sprawl; (ii) an intensive economy with lower carbon emissions and less energy consumption; and (iii) reasonable compensation without impractical requirements.

In view of the importance of the consensus building needed for a PIC project in Hong Kong, more effort should be directed to establishing a multi-objective multi-stakeholder model to facilitate the decision-making process to balance the interests of the diversified stakeholder groups involved to realise the true spirit of public participation in emphasising and respecting the rights of all concerned.

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Table 1: Stakeholder concerns in different sectors

Sectors	***Stakeholder concerns***
Healthcare (Teixeira, 2006)	o Costs to health care o Access to health care o Quality of health coverage o National health care system o Health insurance program o Benefits of the drug and insurance companies
Education (ILO, 2002)	o Education finance (including money for education sector salaries, buildings, books, supplies, training equipment, and enrolments) o Access to education o Quality of instruction o Teacher training o Balanced and effective educational systems o The harmony between education and the needs of the economy. o Salaries and working conditions of teachers and other educational workers o The role of teachers in making decisions on key components of education sector adjustment o Equality of opportunity in career development of women teachers
Forestry (Liu *et al*, 2004)	o Sustainability of forest management o Promotion of forestry sector development o Protection and cultivation of forest resources o Protection of soil and water resources o Protection of natural landscape and historical site o Environmental pollution o Forest ownership o Forest utilisation o Economic returns of forest products
Agriculture (World Bank, 2007)	o Agricultural production and output o Environmental degradation o Resettlement of peasants o Employment opportunities o Poverty alleviation o Cost-effectiveness o Reclamation of irrigated area o Water supply system

Table 2: Stakeholder concerns in PIC projects shortlisted from the literature

Stakeholder concerns in PIC projects	*PD, 2003[1]*	*PD, 2006[1]*	*CEDD, 2008[2]*	*WKCDA, 2010[3]*	*URA, 2001[4]*	*M-NCPPC, 2001[5]*	*Tang et al, 2008*	*Lu et al, 2002*	*Wang et al, 2007*	*Tanaka, 2005*	*Palerm, 1999*	*Tam et al, 2009*	*Amado et al, 2009*
F1. Adaptability of development to the changing needs	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
F2. Availability of local job opportunities			✓				✓	✓	✓		✓		✓
F3. Economic benefits to government and local citizens	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓
F4. Harmonious development of different local economic activities		✓	✓	✓		✓	✓	✓	✓		✓	✓	✓
F5. Value-for-money of the proposed project(s)				✓		✓			✓	✓	✓	✓	✓
F6. Access to work and locations of activities	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
F7. Convenience, efficiency and safety for pedestrian, private and public transport users	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
F8. Availability of amenities, community and welfare facilities and provision of public open space	✓	✓	✓	✓	✓	✓				✓		✓	✓
F9. Being functional and acceptable in terms of tariff to diversified social groups			✓	✓					✓		✓		✓
F10. Green and sustainable design and construction		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
F11. Prevention and mitigation measures against air, water and noise pollution	✓	✓	✓	✓		✓	✓	✓		✓	✓		
F12. Building design in terms of aesthetics, density, height and visual permeability	✓	✓	✓	✓	✓	✓				✓		✓	✓
F13. Harmonization of the proposed project(s) with local natural setting	✓	✓	✓			✓		✓	✓	✓	✓		✓
F14. Unique local characters	✓	✓		✓	✓	✓	✓			✓		✓	✓
F15. Conservation of local cultural and historical heritage	✓	✓	✓	✓	✓						✓		✓
F16. Compensation and Relocation plan/strategy				✓	✓		✓		✓		✓		✓
F17. Identity of our city and international reputation				✓		✓	✓	✓	✓	✓		✓	✓

PD[1]: Planning Department, HKSAR Government
CEDD[2]: Civil Engineering and Development Department, HKSAR Government
WKCDA[3]: West Kowloon Cultural District Authority, HKSAR Government
URA[4]: Urban Renewal Authority, HKSAR Government
M-NCPPC[5]: The Maryland-National Capital Park and Planning Commission, USA

Table 3: Response rate

Group	***No. of questionnaires***		***Percentage return (%)***
	Sent	*Return*	
General public	227	55	24.2
Government department	223	46	20.6
Pressure groups (NGOs)	192	45	23.4
Project affected groups	209	53	25.4
Total	**851**	**199**	**23.4**

Table 4: The profile of the respondents

Group	***No. of respondents***	***Percentage in overall respondents***	***No. of those with sufficient knowledge and practical experience of public participation***	***Percentage of experienced respondents***
General public	55	27.6%	27	49.1%
Government department	46	23.1%	40	87.0%
Pressure groups (NGOs)	45	22.6%	38	84.4%
Project affected groups	53	26.7%	50	94.3%
Total	**199**	**100%**	**155**	**77.9%**

Table 5: Profile of the interviewees

Group	***No.***	***Position***	***Organisation***
Government Department	A	Deputy Director	Provincial Bureau
	B	Director	Municipal Commission
	C	Deputy Director	Municipal Commission
	D	Deputy Director	Provincial Bureau
	E	Deputy Director	Municipal Bureau
General Public (*who are currently or have previously been participants of public participation activities)*	F	The Lay Public	N.A.
	G	The Lay Public	N.A.
	H	The Lay Public	N.A.
	I	The Lay Public	N.A.
	J	The Lay Public	N.A.
Project Affected Group (*who are currently or have previously been affected due to the development of PIC schemes)*	K	Project affected people	N.A.
	L	Project affected people	N.A.
	M	Project affected people	N.A.
	N	Project affected people	N.A.
	O	Project affected people	N.A.
Private Sector	P	Project Manager	Real Estate Corporation
	Q	General Manager	Construction Company
Professional Organisations / Universities	R	Associate Professor	Educational Institution
	S	Deputy Director	National Research Centre
	T	Director	Research Centre
Pressure Groups (NGOs)	U	Member	NGO
	V	Director	Environmental Group
	W	Member	Environmental Group
	X	Member	Environmental Group
	Y	Director	Environmental Group

Table 6: Rankings of respondents' opinions of stakeholder concerns in PIC projects

Stakeholder concerns in PIC projects		***General public***		***Government department***		***Pressure groups***		***Project affected groups***	
		Mean	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*	*Mean*	*Rank*
F1.	Adaptability of development to the changing needs	4.07	7	**4.67**	**2**	3.27	14	3.38	11
F2.	Availability of local job opportunities	**4.78**	**3**	4.28	4	3.69	6	3.74	6
F3.	Economic benefits to government and local citizens	4.40	4	**4.72**	**1**	3.22	15	2.77	16
F4.	Harmonious development of different local economic activities	3.40	11	**4.48**	**3**	3.49	9	3.21	12
F5.	Value-for-money of the proposed project(s)	2.96	14	3.63	10	**4.58**	**2**	3.15	14
F6.	Access to work and locations of activities	**4.82**	**2**	3.28	12	3.53	8	3.55	9
F7.	Convenience, efficiency and safety for pedestrian, private and public transport users	3.98	8	3.80	8	3.44	10	4.17	4
F8.	Availability of amenities, community and welfare facilities and provision of public open space	**4.95**	**1**	3.07	15	3.76	5	3.53	10
F9.	Being functional and acceptable in terms of tariff to diversified social groups	4.36	5	2.80	17	3.69	7	3.87	5
F10.	Green and sustainable design and construction	3.33	13	3.15	14	**4.67**	**1**	3.08	15
F11.	Prevention and mitigation measures against air, water and noise pollution	4.16	6	3.96	6	3.89	4	3.68	8
F12.	Building design in terms of aesthetics, density, height and visual permeability	3.36	12	3.24	13	3.36	12	**4.49**	**2**
F13.	Harmonization of the proposed project(s) with local natural setting	2.07	17	2.98	16	3.42	11	3.19	13
F14.	Unique local characters	2.82	16	3.43	11	3.33	13	**4.38**	**3**
F15.	Conservation of local cultural and historical heritage	3.53	9	3.76	9	**4.47**	**3**	3.72	7
F16.	Compensation and Relocation plan/strategy	2.84	15	4.26	5	3.09	16	**4.79**	**1**
F17.	Identity of our city and international reputation	3.45	10	3.87	7	2.24	17	2.36	17

Table 7: Stakeholder concerns with significant difference between general public and government

Stakeholder concerns in PIC projects	***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.*
F1	Y	3.448	.066	-4.744	99.0	.000	-.60	.127
F2	N	6.383	.013	5.096	83.3	.000	.50	.098
F3	N	12.332	.001	-2.941	97.2	.004	-.32	.108
F4	Y	.159	.691	-9.393	99.0	.000	-1.08	.115
F5	Y	2.679	.105	-5.342	99.0	.000	-.67	.125
F6	N	10.952	.001	16.016	79.6	.000	1.54	.096
F8	Y	1.500	.224	33.874	99.0	.000	1.88	.056
F9	Y	2.982	.087	13.324	99.0	.000	1.56	.117
F13	N	5.192	.025	-8.644	97.6	.000	-.91	.105
F14	Y	.061	.805	-5.306	99.0	.000	-.62	.116
F15	N	17.008	.000	-2.418	98.8	.017	-.23	.097
F16	Y	.015	.902	-13.312	99.0	.000	-1.42	.107
F17	Y	.598	.441	-2.741	99.0	.007	-.42	.151

Note: 2-tailed sig.<0.05

Table 8: Stakeholder concerns with significant difference between general public and pressure groups

Stakeholder concerns in PIC projects	***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.*
F1	Y	3.777	.055	6.237	98.0	.000	.81	.129
F2	N	12.125	.001	10.392	76.3	.000	1.09	.105
F3	N	12.527	.001	10.718	97.4	.000	1.18	.110
F5	Y	1.322	.253	-13.455	98.0	.000	-1.61	.120
F6	N	28.923	.000	14.009	81.5	.000	1.28	.092
F7	Y	1.245	.267	4.405	98.0	.000	.54	.122
F8	N	66.796	.000	10.344	50.9	.000	1.19	.115
F9	Y	.469	.495	6.471	98.0	.000	.67	.104
F10	Y	2.867	.094	-11.641	98.0	.000	-1.34	.115
F11	Y	.335	.564	2.655	98.0	.009	.27	.103
F13	Y	1.533	.219	-11.998	98.0	.000	-1.35	.112
F14	Y	.001	.975	-4.218	98.0	.000	-.52	.122
F15	Y	.040	.843	-8.605	98.0	.000	-.94	.109
F16	Y	1.737	.191	-2.303	98.0	.023	-.25	.110
F17	Y	.145	.705	8.990	98.0	.000	1.21	.135

Note: 2-tailed sig.<0.05

Table 9: Stakeholder concerns with significant difference between general public and project affected groups

Stakeholder concerns in PIC projects	***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.*
F1	Y	1.915	.169	4.718	106.0	.000	.70	.147
F2	N	4.461	.037	11.448	99.2	.000	1.05	.091
F3	Y	.044	.835	13.044	106.0	.000	1.63	.125
F6	N	29.874	.000	12.450	85.5	.000	1.27	.102
F8	N	146.305	.000	17.614	69.6	.000	1.42	.080
F9	N	9.209	.003	5.325	105.9	.000	.50	.093
F11	N	15.547	.000	3.745	86.5	.000	.48	.129
F12	N	6.896	.010	-10.616	99.4	.000	-1.13	.106
F13	Y	.565	.454	-9.459	106.0	.000	-1.12	.118
F14	Y	.045	.832	-13.779	106.0	.000	-1.56	.113
F16	Y	2.546	.114	-20.424	106.0	.000	-1.96	.096
F17	Y	.601	.440	7.991	106.0	.000	1.10	.137

Note: 2-tailed sig.<0.05

Table 10: Stakeholder concerns with significant difference between government and pressure groups

Stakeholder concerns in PIC projects	***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.*
F1	Y	.128	.721	13.847	89.0	.000	1.41	.102
F2	Y	.836	.363	4.963	89.0	.000	.59	.120
F3	Y	.256	.614	15.392	89.0	.000	1.50	.097
F4	Y	.001	.981	8.612	89.0	.000	.99	.115
F5	Y	.809	.371	-7.822	89.0	.000	-.95	.121
F6	Y	.548	.461	-2.278	89.0	.025	-.25	.110
F7	Y	.031	.860	2.847	89.0	.005	.36	.126
F8	N	38.202	.000	-5.713	60.1	.000	-.69	.121
F9	Y	1.015	.316	-6.739	89.0	.000	-.88	.131
F10	Y	2.928	.091	-14.550	89.0	.000	-1.51	.104
F13	N	21.409	.000	-4.466	87.4	.000	-.44	.099
F15	N	15.513	.000	-6.820	83.5	.000	-.71	.103
F16	Y	1.825	.180	11.114	89.0	.000	1.17	.105
F17	Y	.849	.359	9.994	89.0	.000	1.63	.163

Note: 2-tailed sig.<0.05

Table 11: Stakeholder concerns with significant difference between government and project affected groups

Stakeholder concerns in PIC projects	***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.*
F1	N	16.717	.000	10.045	86.8	.000	1.30	.129
F2	Y	.187	.666	5.084	97.0	.000	.55	.108
F3	N	6.080	.015	17.079	92.0	.000	1.94	.114
F4	N	3.976	.049	11.673	94.2	.000	1.27	.109
F5	N	4.391	.039	3.276	94.1	.001	.48	.146
F6	Y	3.577	.062	-2.203	97.0	.030	-.26	.120
F8	N	63.914	.000	-5.230	87.1	.000	-.46	.089
F9	N	11.394	.001	-8.790	79.1	.000	-1.06	.121
F12	N	10.444	.002	-11.428	96.2	.000	-1.25	.110
F14	Y	.005	.943	-9.077	97.0	.000	-.94	.104
F16	Y	3.237	.075	-5.871	97.0	.000	-.53	.091
F17	Y	.022	.883	9.275	97.0	.000	1.51	.163

Note: 2-tailed sig.<0.05

Table 12: Stakeholder concerns with significant difference between pressure groups and project affected groups

Stakeholder concerns in PIC projects	***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.*
F3	N	6.933	.010	3.878	93.0	.000	.45	.116
F4	N	3.942	.050	2.565	92.4	.012	.28	.110
F5	N	7.723	.007	10.113	90.0	.000	1.43	.141
F10	Y	1.104	.296	12.527	96.0	.000	1.59	.127
F12	N	6.330	.014	-10.280	95.6	.000	-1.14	.110
F13	Y	.122	.727	2.024	96.0	.046	.23	.115
F14	Y	.060	.807	-9.461	96.0	.000	-1.04	.110
F15	Y	.145	.704	6.219	96.0	.000	.75	.121
F16	Y	.006	.939	-18.248	96.0	.000	-1.70	.093

Note: 2-tailed sig.<0.05

Table 13: Stakeholder concerns with significant difference among all the stakeholder groups

Stakeholder concerns in PIC projects		***Sum of Squares***	***df***	***Mean Square***	***F***	***Sig.***
F1	Between groups	61.100	3	20.367	47.809	.000
	Within groups	83.071	195	.426		
F2	Between groups	41.406	3	13.802	51.114	.000
	Within groups	52.654	195	.270		
F3	Between groups	129.237	3	43.079	132.109	.000
	Within groups	63.587	195	.326		
F4	Between groups	46.335	3	15.445	49.667	.000
	Within groups	60.640	195	.311		
F5	Between groups	75.123	3	25.041	55.228	.000
	Within groups	88.415	195	.453		
F6	Between groups	75.688	3	25.229	91.376	.000
	Within groups	53.840	195	.276		
F8	Between groups	100.177	3	33.392	138.075	.000
	Within groups	47.159	195	.242		
F9	Between groups	62.555	3	20.852	68.124	.000
	Within groups	59.686	195	.306		
F10	Between groups	77.906	3	25.969	70.585	.000
	Within groups	71.742	195	.368		
F11	Between groups	6.437	3	2.146	5.547	.001
	Within groups	75.432	195	.387		
F12	Between groups	53.568	3	17.856	66.129	.000
	Within groups	52.653	195	.270		
F13	Between groups	54.563	3	18.188	59.330	.000
	Within groups	59.778	195	.307		
F14	Between groups	67.800	3	22.600	71.150	.000
	Within groups	61.939	195	.318		
F15	Between groups	24.137	3	8.046	27.035	.000
	Within groups	58.033	195	.298		
F16	Between groups	135.171	3	45.057	180.198	.000
	Within groups	48.758	195	.250		
F17	Between groups	93.601	3	31.200	56.673	.000
	Within groups	107.354	195	.551		

Note: sig.<0.05