

CHANGING DIMENSIONS OF TRUST IN GOVERNMENT: AN EXPLORATION IN ENVIRONMENTAL POLICY IN HONG KONG

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SUMMARY

This study reports the findings of a 3-year investigation into dimensions of trust in governmental capacity to deal with environmental risks (air pollution, sustainable development, waste, and water). We explore if levels of trust in Hong Kong correspond with the two-dimensional structure identified in the research of Poortinga and Pidgeon. Findings of this multi-method study (survey and focus group) conducted between 2005 and 2008 point towards largely low but unchanging levels of trust in the Hong Kong government. By contrast, the number of dimensions of trust reduced over the study period, pointing towards growing levels of scepticism. This leads us to conclude that, in relation to environmental risks, Hong Kong is characterised by cynicism. These findings reflect a wider argument that there are two underlying dimensions of trust—reliance and scepticism. The implications of these findings are discussed, and strategies to address low levels of trust are outlined. Copyright © 2014 John Wiley & Sons, Ltd.

KEY WORDS—trust in government; risk regulation; environmental policy; Hong Kong

INTRODUCTION

Trust has become a widely debated topic in the social sciences, with attention from many disciplines (Giddens, 1990; Williamson and Craswell, 1993; Fukuyama, 1995; Coulson, 1998; Sztompka, 1999; Korczynski, 2000; Gilson, 2003). Within public administration and policy, trust is seen as analogous to glue that binds together relationships between different stakeholders. At the societal level, trust is accepted as a necessary ingredient for successful social interactions. In public sector institutions, trust is essential for the functioning of government—managerial discretion is necessary for public employees to conduct their day-to-day work and deliver services, particularly as public services have become more complex. Society–government trust relations are a necessary precursor to the functioning of government because trust ‘... now refers to more down to earth matters such as the reliability of service delivery or the expectation that policy will correspond to one’s wishes’ (Bouckaert and Van de Walle, 2003, p. 334). This suggests that within public administration, an understanding of the nature of trust is critical to an effective functioning government, and particularly important in complex policy arenas that cut across traditional policy boundaries.

This article is concerned with the following research questions: What are the dimensions of trust and have these varied over time? Has the trustworthiness of government changed over time, and if so has it improved or deteriorated? If changes in the level and dimensions of trust have occurred why might this be so? And, how might trust in government be restored? Our primary contributions are descriptive and empirical: to address the ‘...dearth of information on the institutional level of trust between government agencies and the public’ (Kim, 2005, p. 615). In answering these questions, the article seeks to make a contribution by employing Poortinga and Pidgeon’s (2003) work on dimensions of trust and risk regulation and aims to replicate this in a different context. Lastly, the study aims to improve measurement by using tried and tested measures, to replicate a body of work and to extend it to a new setting and to do this over time using survey data and qualitative focus-group interviews.

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These questions are examined in the field of environmental policy, and the study is located in Hong Kong (e.g. Mottershead, 2004; Gouldson *et al.*, 2008; Lo, 2008). Environmental policy has become a critical area for service delivery around the globe. In Hong Kong, there are long-standing concerns about the management of solid waste, water quality, and air quality that date back to the 1970s. The rate of growth of the city has been phenomenal, and this has resulted in questions about sustainable development. As environmental quality has deteriorated, so risks have grown: for example, air pollution is linked to a range of respiratory diseases in the territory (Loh *et al.*, 2008). Service delivery in these areas is of paramount interest to society. Alongside these major policy concerns and risks, Hong Kong is a Special Administrative Region of China that has partial democracy and an executive-led government. Although the government of Hong Kong lives by the motto 'small government, big business', it carries authority in policy decisions because legislators in the Hong Kong Legislative Council act as scrutinisers of executive-led policy. A second facet of being an administrative region of China is that Hong Kong also faces cross-border challenges in relation to environmental policy (Hills *et al.*, 1998). A consideration of questions of environmental policy, rather than say housing policy, has implications for relationships with the Guangdong authorities and thus the management of policy between juxtaposed jurisdictions. Consequently, the role of the government and its capacity to affect the lives of its citizens are high.

The following section reviews the concept of trust and examines its dimensions. Methods (research context, data sources, and measures) are discussed prior to the presentation of the findings. In conclusion, the study points to relatively stable but low levels of trust in Hong Kong, noting that the dimensions of trust have changed. Further, the dimensions of trust identified in Hong Kong increasingly conform to the two dimensions noted by Poortinga and Pidgeon (2003) and others. Implications for research and policy are also considered in conclusion.

TRUST IN GOVERNMENT AND ITS DIMENSIONS

For public administration, trust is concerned with relationships between actors and institutions. The focus is on a degree of risk being accepted by one party, in that the other party is honest, is reliable, has integrity, and therefore can and will carry out the task entrusted to it (Yang, 2006). Or put another way, trust is 'the willingness of a trustor to be vulnerable based on the belief that the trustee will meet the expectations of the trustor, even in situations where the trustor cannot monitor or control the trustee' (Kim, 2005, p. 621; also Hoffman, 2002). For stakeholders to trust a government, it would be expected for the government to make positive policy interventions (Bouckaert and Van de Walle, 2003). As such, trust in government or institutions is normative and concerned with the '...extent that citizens are willing to follow government decisions even without sufficient information under the assumption that those decisions are legitimate and protect their interests' (Kim, 2005, p. 617).

Trust is a relative concept that will change through time and is moderated by a range of variables, including national cultures (Hardin, 2002). Trust does not work in isolation, but with other variables and within a balance of trust and distrust. Low levels of trust do not *per se* equal distrust, and healthy levels of trust involve a degree of distrust. Furthermore, its relative status might mean that it is difficult to compare trust measured in many contexts and rather that what matters is movement in trust from a baseline. However, high levels of continued distrust are potentially unproductive and costly to society as it can stigmatise certain individuals, institutions, and technologies while creating disillusionment and cynicism in the population. As a relative concept, trust shares similarities with many others in public administration. For example, innovation is a process by which new ideas, objects, and practices are created, developed, or reinvented and which are new for the unit of adoption (Walker, 2008). In a similar vein, Andrews *et al.* (2006) observed that public service performance beauty is in the eye of the beholder—that is, the many stakeholders of public organisations.

A major thrust of the recent literature has been on changing levels of trust, typically in a downward direction (Edelman, 2005; Keele, 2007). This has led to an increased focus on trust and its relationship with social capital, its impact on economic activity, and democratic, civic, and political participation. The general belief is that a decline in social capital, and therefore trust, is detrimental to a society as a whole (Putnam, 2000; Brewer, 2003; Keele, 2007). Research in this vein has examined social interactions (Tschannen-Moran and Hoy, 2000), social uncertainty and complexity (Bouckaert and Van de Walle, 2003), social capital (Paxton, 1999; Keele, 2007), and a healthy and flexible economy and democracy (Fukuyama, 2001).

Public administration has examined trust as a basic ingredient of social capital in that it helps create networks between people in a community and helps to make networks function smoothly (Brewer, 2003; Keele, 2007). Wang's (2002) examination of accountability finds that responsiveness, public consensus, and stakeholder trust are strengthened in accountable administrations that were able to identify, assess, and satisfy public needs. Brewer (2003) illustrates that high levels of social capital (measured by social trust, social altruism, equality, tolerance, humanitarianism, and civic participation) appear to be related to economic performance, effective political institutions, and low rates of crime and other social ills. Trust is also shown to be an outcome of good management and high organisational performance (Vigoda and Yuval, 2003; also Bouckaert and Van de Walle, 2003; Yang and Holzer, 2006). Research points to no quick institutional fixes to the problems of low trust or social capital and civic participation, but rather that it reflects the entire heritage of a society, extending beyond political institutions.

Substantial work has been undertaken on trust in the field of environmental policy, typically exploring issues of risk management and communication (e.g. Brom, 2000; Johnson and Scicchitano, 2000; Maeda and Miyahara, 2003; Priest *et al.*, 2003). One important focus of this work has been upon dimensions of trust (Frewer *et al.*, 1996; Metlay, 1999; Poortinga and Pidgeon, 2003), building upon half a century of scholarship (Hovland *et al.*, 1953). As a multi-dimensional construct, the key characteristics of trust have been shown to include benevolence, care, credibility, competency, concern, consistency, fairness, honesty, integrity, openness, and reliability (Renn and Levine, 1991; Kasperson *et al.*, 1992; Metlay, 1999; Kim, 2005). Although concern with the level of trust is important, the underlying dimensions of trust and change in them are an important topic of exploration and mark the point of departure for our study.

Research on dimensions of trust increasingly points towards two underlying constructs, based on the argument that trust is not as complex as many portray (Metlay, 1999). Frewer *et al.* (1996) identified two dimensions—general trust evaluation of an information source (competence and caring) and a more complex dimension encompassing elements of vested interest and accountability. Metlay (1999) also argues that trust is based on two distinctive components—*affective beliefs about institutional behaviour (or 'trustworthiness')* and *perceptions of an institution's competence*. Other research such as those of Hovland *et al.* (1953) and Jungermann *et al.* (1996) also substantiate this two-dimensional structure. Poortinga and Pidgeon (2003) argue that trust exists on a continuum—at one end is uncritical acceptance and at the other rejection. They apply this continuum to the two dimensions of trust they identify in their research: 'general trust (reliance)' and 'scepticism'. The reliance factor drew upon dimensions including competence, care, fairness, and openness. Scepticism was typified by credibility, reliability, and integrity or vested interests. These two dimensions are combined in a two-by-two matrix (Figure 1).

Poortinga and Pidgeon (2003) suggest that the ideal category is 'critical trust', which shows a healthy balance between trust and scepticism. 'Acceptance' suggests too much acceptance of government, whereas 'distrust' exists when general trust and scepticism are both low. 'Rejection or cynicism' of or about government is a deeper distrust where '...one not only has no trust, but one is also sceptical about its intentions' (Poortinga and Pidgeon, 2003, p. 971).

In this study, we are interested to know if levels of trust in environmental policy in Hong Kong correspond with the two-dimensional structure identified in the literature—Poortinga and Pidgeon (2003) examined climate change, mobile phones, radioactive waste, genetically modified food, and genetic testing in the England. We also seek to

		Scepticism	
		High	Low
General Trust (Reliance)	High	Critical Trust	Acceptance (Trust)
	Low	Rejection (Cynicism)	Distrust

Figure 1. A typology of trust in government.

extend the extant literature by adopting a longitudinal and multi-method study. A longitudinal approach permits a baseline to be presented from which the dynamic nature of trust can be examined. An exploration of change over time helps to draw out the relational nature of trust and public perceptions of the trustworthiness of the government.

RESEARCH CONTEXT AND METHODS

Research context

Hong Kong is located on the south-west coast of China, on the eastern side of the Pearl River estuary adjoining Guangdong Province. It is a Special Administrative Region of the People's Republic of China, extending over an area of 1100 km². It had a population of 6.95 million at the end of 2007, and under the 'one country–two systems' model, it enjoys a high degree of autonomy in domestic policy matters. The government leads policy, and the elected Legislative Council has the capacity to challenge and influence the development and implementation of policy.

Hong Kong's environmental problems include badly polluted marine waters, poor air quality, widespread and serious noise pollution, and a serious solid-waste disposal problem (Hills and Barron, 1997; Hills *et al.*, 2004). For example, as the city has expanded, and manufacturing grown apace in the neighbouring Guangdong province, air quality has deteriorated (Loh *et al.*, 2008). This has raised the spectre of managing externalities across boundaries, and cross-border pollution presents a number of challenges (Hills *et al.*, 1998). However, the Hong Kong government has not risen to these challenges and has not readily engaged with sustainable development. Agenda 21 has not been adopted, and the task of developing a strategy for the territory has been given to an arms-length advisory body, the Council for Sustainable Development. The institutional and legal framework to manage environmental policy maintains strong overtones of the command-and-control regime developed in the early 1980s, although there is some evidence of the growing use of partnership and stakeholder engagement (Tsang *et al.*, 2009; Walker and Hills, 2012).

The Hong Kong context may have some limits for the scope of this study, as there are few executive-led governments. However, the Hong Kong regime has been contrasted with the notion of 'administrative rationality' (Dryzek, 1997), with its emphasis on technocratic problem solving and expertise rather than the extensive public engagement exercises seen elsewhere (Hills, 2004; Welford *et al.*, 2006; Gouldson *et al.*, 2008). This is characterised by long-term reliance on the '...government's Environmental Protection Department, essentially a pollution control agency, the enforcement of regulatory policy instruments, the use of environmental impact assessment, reliance on expert advisory bodies to legitimize policy initiatives and decisions, and the use of rationalistic policy analysis techniques' (Gouldson *et al.*, 2008, p. 323). Having said this, progress has been made on some fronts. There has been significant progress in reducing levels of SO₂ and NO_x, for example, all taxis run on liquid petroleum gas, and energy consumption per capita has declined (although Hong Kong is no longer a manufacturing base). This study focuses upon the four aspects of environmental policy in Hong Kong—air quality, water quality, solid waste, and sustainable development—which remain long-term problems.

Unit of analysis

The unit of analysis is the key informant stakeholders drawn from seven groups: academics, business, environmental non-governmental organisations (NGOs), environmental professionals, media, social NGOs, and politicians. Stakeholders were invited to participate in the research on the basis of their 'knowledgeability' (Kumar *et al.*, 1993); that is, they would have a grasp of, and be able to make judgments about, the relative importance of the four areas of environmental policy (a strategy adopted by Metlay, 1999). The focus was on key informants because of their role in the community; not only would they be familiar with the complex research topics, but they also have expert knowledge of decision making and policy making in Hong Kong in relation to our four policy domains (Ellen, 1984; Marshall, 1996). These stakeholders were selected because, in relation to trust in government, the groups have power to influence government, are legitimate voices in society, and have some urgency in the policy issues at hand (Mitchell *et al.*, 1997). Having said this, the topics examined in this article are of central importance to the general public, as the effects of pollution know no boundaries, and a study of the general public on these issues may uncover alternative results.

Data

Our data derive from two surveys undertaken in 2005 and 2007 and focus groups conducted in 2007 and 2008. The 2005 survey was sent to 120 key informant stakeholders sampled from professional organisations, environmental and sustainable development committees, environmental consulting firms, members of social and environmental NGOs, media groups (local newspapers, television, and radio), and academics from environmentally related faculties in local educational institutions. For reasons of confidentiality, the names of the organisations in the sample are not included; to do so would mean that it would be possible to identify individuals. In mid-2007, the sample was expanded to 500 and included the 120 informants surveyed in early 2005. The sample was expanded through a snowball approach based upon the contacts of the then Centre for Urban Planning and Environmental Management at the University of Hong Kong. Sixty-nine responses were received in 2005 and 106 in 2007, giving response rates of 58.3 and 21.2 per cent, respectively. The survey instrument was available in English or Chinese.

The same seven stakeholder groups were targeted for participation in two rounds of researcher-led focus groups—these lasted 1.5 h each. Round 1 was in January 2007 (during the second survey) and the second in February 2008 (following analysis of the survey results). In 2007, five focus groups were conducted, including 37 people (21 from the business sector, 10 environmental NGO, three social NGOs, and two academics); in 2008, the three focus groups involved 17 people (12 from businesses, three environmental NGOs, and two academics). Focus groups were sector specific—business or NGO—with the exception of academics who are attending either. The focus groups were conducted in either English or Cantonese, to allow individuals to have the choice to express themselves in the language of their choice.

Measures

Given that our purpose is to extend the work commenced by Metlay (1999) and the study of dimensionality and trust in risk regulation by Poortinga and Pidgeon (2003), their measures are adopted providing measurement reliability and validity. Table 1 lists the 11 measures used to tap seven aspects of trust: competence, credibility, reliability, integrity, care, fairness, and openness. Each question was posed in relation to air quality, solid-waste management, water quality, and sustainable development, and respondents were asked to ‘rank the following statements about the government regarding the four environmental issues’. Government was defined as referring to ‘the Chief Executive, the Executive Council, the policy-making bureaux including line departments and agencies responsible for policy implementation, and governmental advisory bodies in the environmental field’. Psychological and temporal remedies were used in the design of the questionnaires (Podsakoff and Organ, 1986). Items were randomly distributed in the questionnaire to control for priming effects, and the respondent pool varied between the two dates of our survey.

In 2005, a 5-point Likert scale (1 = disagree, 5 = agree) was used, and in 2007, a 7-point scale (1 = agree, 7 = disagree). To permit a comparison between the two years, data were standardised as *z*-scores prior to analysis being undertaken. The items do not all tend in the same direction. High scores indicate a higher level of trust in government for all items bar three. For the measures ‘The government distorts facts in its favour...’ and ‘The government is too influenced by business...’, high scores indicate a lower level of trust. In relation to ‘The government changes policies without good reason...’, low scores equate to more positive assessments and thus, it is assumed, higher levels of trust.

The first round of focus groups explored the meaning and levels of trust in government and the government’s ability to formulate environmental policy. To this end, key informant stakeholder participants were asked: ‘What do you believe are the 5 most pressing environmental issues facing Hong Kong today’, ‘What are the characteristics that make you trust an organization such as the government’, ‘Given your characteristics of trust, how is the government performing with respect to this environmental issue’, and ‘What does the government need to do to increase your overall trust in them and to effectively address this environmental issue?’ The second round of focus groups, building on our prior findings, explored the key dimensions of trust and ties them together with mechanisms and initiatives that would help to improve levels of trust. The stakeholders were asked to prioritise the seven dimensions of trust used in the survey and then asked: ‘What can be done to improve trust in government’ and ‘Do you believe that increased public participation would improve trust in government. If yes, how should this process take place?’ The focus groups were videotaped and subsequently transcribed.

Table 1. Questions, means, standard deviations, and *t*-test results for 2005 and 2007

	2005				2007			
	Air	Waste	Water	SD	Air	Waste	Water	SD
Competence	2.04* (0.93)	2.42* (0.99)	2.25* (0.96)	2.62* (1.51)	2.83* (1.68)	3.20* (1.56)	3.64* (1.83)	2.00* (0.88)
	2.41* (0.93)	2.80 (0.99)	2.70* (1.06)	2.96* (1.57)	3.23* (1.70)	3.69 (1.68)	4.05 (1.73)	2.23* (0.99)
	3.09 (0.95)	3.07 (1.02)	3.11 (0.95)	3.51* (1.74)	4.02 (1.72)	4.05 (1.61)	4.31 (1.64)	2.57* (1.10)
Credibility	3.20 (1.09)	3.06 (0.95)	2.99 (0.94)	4.82* (1.50)	4.77* (1.59)	4.28* (1.42)	4.27 (1.46)	3.46* (1.03)
	2.83 (0.82)	2.87 (0.89)	2.90 (0.88)	4.12 (1.35)	3.92 (1.36)	3.82 (1.23)	3.74* (1.32)	3.10 (1.03)
Integrity	3.68* (1.16)	3.28* (1.13)	3.56* (1.10)	4.29* (1.74)	5.21* (1.68)	5.15* (1.37)	4.91* (1.54)	4.06* (1.06)
	2.73* (1.06)	2.83 (1.08)	2.64* (1.02)	2.98* (1.63)	3.60* (1.89)	3.76 (1.69)	3.96 (1.73)	2.14* (0.95)
Care	2.80 (0.96)	2.81 (0.91)	2.71* (0.89)	3.29* (1.61)	3.77 (1.78)	3.71 (1.55)	3.81* (1.55)	2.50* (1.01)
	2.61* (0.89)	2.60* (0.81)	2.54* (0.79)	3.05* (1.61)	3.25* (1.68)	3.31* (1.51)	3.32* (1.51)	2.31* (0.82)
Fairness	2.74* (0.84)	2.81* (0.83)	2.62 (0.90)	3.75* (1.61)	3.05* (1.61)	3.20* (1.56)	3.43 (1.51)	2.22* (0.89)
	2.37* (1.12)	2.59* (1.01)	2.56* (1.03)	2.97* (1.49)	3.28* (1.67)	3.48* (1.57)	3.60* (1.57)	2.10* (0.93)

2005 items measured on a 1–5 scale; 2007 items measured on a 1–7 scale. Differences of mean tests conducted on standardised data.

* $p < 0.05$.

FINDINGS

Levels of trust were explored by initially examining if the means reported for each item were statistically different from the mid-point on the scale to gain an overview of the level of trust in government—simply whether there was high or low trust—using a one-sample *t*-test. Following this, we examined if change in the levels of trust had occurred between 2005 and 2007 by way of independent-sample *t*-tests. Second, to investigate if the dimensions of trust had changed between 2005 and 2007, we ran principal component analysis and varimax rotation with Kaiser normalisation to avoid interrelationships among the modes (Kline, 1994). Lastly, findings from the focus groups supplement our statistical analysis to understand how any deficit in trust may be overcome.

Levels of trust

Table 1 presents the means, standard deviations, and results of the one-sample *t*-tests for the 2005 and 2007 surveys. In 2005, responses to 29 of the 44 survey items were statistically different from 3, the mid-point on the Likert scale. All statistically significant differences indicated that trust in the performance of government was low across the four policy areas. Looking at the dimensions used to measure trust in government, Table 1 shows that all four environmental policy areas were given a low rating for seven of the 11 measures. Trust in government fared poorly for competency (with the exception of 'skilled people'), integrity, care, fairness, and openness. For credibility and reliability, one out of four items received a low rating, but the remaining three received ambiguous scores, in that they were not significantly different from the mid-point of the scale. The competency measure of 'skilled people' also only received one statistically significant different rating for sustainable development, and other scores hovered around the mid-point and did not convey trust in the skills of government to perform policy tasks in these areas. Thinking about the findings for each of the four policy areas, the results for the air, waste, and water policy fields saw seven or eight of the items rated below the mid-point; however, for sustainable development, this rose to 10 out of 11, suggesting that there was least trust in government in this area in 2005.

Turning to the 2007 survey, the results are broadly similar to those in 2005. Overall levels of trust remained low and did not vary substantially from the prior period. Again, 30 measures were rated as statistically different from the mid-point of 4 on the Likert scale; however, one item was rated to offer positive assessments. Respondents felt that the government did not change policies without good reason in the area of water. The number of individual trust measures receiving low ratings (that is means statistically significant and below the mid-point for each of the four policy areas) in 2007 was four, falling from five in 2005.

One area changed dramatically, with respondents feeling that by 2007, the government was more likely to 'distort facts in its favour'. In 2005, respondents felt this in relation to sustainable development, but by 2007, the feeling was across all areas bar water. This might have been the result of some highly publicised speeches made by the Chief Executive where he clearly demonstrated a lack of understanding of environmental issues. For example, he repeatedly confused greenhouse gas emissions with particulate emissions and claimed that increased longevity among the population of Hong Kong demonstrated that air pollution impacts on health were not as severe as some commentators had suggested (Tsang, 2007).

Four measures of trust saw their mean score rated as significantly different from the mean in both 2005 and 2007. The key informant stakeholders offered consistently low assessments for the dimensions of trust of 'doing a good job', 'is too influenced by business', 'listens to what ordinary people think', and 'provides all the relevant information to the public'. In relation to the latter measure, focus-group participants often referred to the government hiding information, giving out ambiguous or inaccurate information, and 'putting a spin on things' or referring to the government's public announcements as 'spin doctoring':

I would think that transparency is an issue. We have a lot of misinformation coming out from the government right now. When we have a chief executive that says that visibility is really not a problem actually and it's not related to air pollution, then we have a problem. If you don't even admit that there's a problem, yet everybody in this room and everybody probably in Hong Kong thinks that air pollution is an issue.

Believability must be there as well. I think this is illustrated by recent comments on air pollution. You have to suspend your ability to believe when you listen to that message and take it in. So believability is important, you have to believe that what is being said is actually accurate. So it's accuracy of the information that goes out. If the messages that are given out by your organization are true and material to the facts ... If you put a spin on things, you're going to cause distrust.

Concern about government's integrity, as measured by the role of business, came heavily into question during both rounds of focus groups:

... it's a widespread perception, that government has vested interest with business, who have the inside track, that is who is being listened to, they shape policy, and this is what is favoured which puts other groups at somewhat of a disadvantage...

The most consistent responses across the two years were for sustainable development, where the same 10 pairs of items were ranked as significantly different from the mean, and on each occasion, the score for sustainable development offered the most pessimistic assessment of trust in the Hong Kong government's capacity to deal with environmental policy. This may reflect the complexity of the concept of sustainable development, but more likely the lack of vision for Hong Kong on this issue. For example, participants of the focus groups felt that the government was not doing a good job with regard to environmental issues in general but in particular for sustainability:

Everybody has mentioned about sustainability, which means that, the government has put forward many new ideas for discussion but after a very short time these ideas disappear.

These comments reflect more general concerns about difficulties the Hong Kong government finds in maintaining consistent and coherent approaches in many areas of public policy (Cheung, 2005). In relation to sustainable development, the government is also criticised for its inflexible and uncompromising stance and view of sustainable development in narrow economic terms. For example, infrastructure development continues apace (roads, bridges, and land reclamation) and the Sustainable Development Unit—which formerly reported directly to the Chief Secretary for Administration (the then head of the civil service)—was downgraded to a division in the Environment Bureau, thereby reducing the potential for articulating sustainability issues at the highest levels within the administration.

To test for change between 2005 and 2007, independent-sample t-tests were undertaken on the 44 pairs of measures of trust in the two surveys. The majority of these tests recorded no statistically significant differences between the two samples, confirming the similarity in the patterns of the univariate results discussed earlier. On two occasions, we found differences; these related to 'The government is doing a good job...' on air ($F = 3.844$, $p < 0.05$) and sustainable development ($F = 4.875$, $p < 0.05$). Air showed an increase, while remaining below the mid-point on the scale, and the mean score declined for sustainable development. These findings indicate that the low levels of trust were largely unchanging during the study period.

Dimensions of trust

Factor analysis was undertaken to see if there were condensed statements of dimensions of trust in government, to see if these remained stable or changed between 2005 and 2007, and to discover if they reflected those identified by Poortinga and Pidgeon (2003). The factor-analytic results presented in Tables 2 and 3 reveal that there are indeed underlying patterns between the two years. The cumulative percentage of the variance explained is respectable, over 60% for each model in 2005 and over 50% for 2007. Eigenvalues are typically strong for the first and subsequent factors, with each factor recording a score in excess of 2 (in all cases bar factors 3 and 4 for air in Table 2). The results reveal a larger number of factors for each environmental policy area in 2005 (four for air and three for the remaining areas) than in 2007 (two for each area except water, which records a single factor). The broad implication of these findings is that there are changing dimensions of trust in Hong Kong in the arena of environmental policy.

Table 2. Factor-analytic results for trust in government on four dimensions of environmental policy in 2005

	Air				Waste			Water			SD		
	1	2	3	4	1	2	3	1	2	3	1	2	3
The government is doing a good job...	0.45	-0.30	0.64	0.07	0.67	0.32	-0.12	0.33	0.73	-0.19	0.51	-0.22	0.62
The government is competent enough...	0.18	-0.10	0.82	0.00	0.85	-0.01	-0.01	0.06	0.84	-0.05	0.18	-0.19	0.85
The government has the skilled people...	0.01	-0.04	0.70	0.47	0.80	0.12	-0.09	0.02	0.71	0.20	0.09	-0.02	0.83
The government distorts facts in its favour...	-0.20	0.82	-0.16	-0.06	-0.13	-0.19	0.87	-0.17	-0.24	0.76	-0.36	0.80	-0.23
The government changes policies without good reasons...	-0.03	0.76	-0.28	-0.26	-0.08	-0.06	0.86	-0.12	0.09	0.78	-0.07	0.83	-0.25
The government is too influenced by business...	-0.25	0.78	0.06	0.07	-0.03	-0.18	0.69	0.11	0.06	0.82	-0.29	0.78	0.06
The government is acting in the public interest...	0.81	-0.15	0.13	0.22	0.27	0.79	-0.32	0.73	0.44	-0.14	0.64	-0.36	0.11
The government listens to concerns raised by the public...	0.18	-0.02	0.19	0.85	0.59	0.47	-0.09	0.76	0.22	0.08	0.81	-0.09	0.23
The government listens to what ordinary people think...	0.17	-0.13	0.01	0.83	0.33	0.43	-0.23	0.80	0.04	0.06	0.74	-0.09	0.16
The way government makes decisions about ... is fair	0.85	-0.10	0.26	0.05	0.23	0.76	0.03	0.50	0.37	-0.23	0.61	-0.22	0.24
The government provides all relevant information to the public...	0.70	-0.24	0.04	0.16	-0.04	0.76	-0.22	0.74	-0.11	-0.18	0.71	-0.37	-0.05
Eigenvalue	2.27	2.07	1.79	1.79	2.41	2.35	2.20	2.71	2.20	2.06	3.02	2.34	2.07
Cumulative % explained	20.61	39.42	55.72	71.95	21.90	43.25	63.25	24.60	44.63	63.33	27.45	48.69	67.52

Note: bold numbers indicate factor loadings > .5.

Table 3. Factor-analytic results for trust in government on four dimensions of environmental policy in 2007

	Air		Waste		Water	SD	
	1	2	1	2	1	1	2
The government is doing a good job...	0.75	0.41	0.71	0.39	0.82	0.81	0.28
The government is competent enough...	0.82	0.14	0.85	0.13	0.80	0.83	0.23
The government has the skilled people...	0.74	0.01	0.77	0.00	0.61	0.76	-0.03
The government distorts facts in its favour...	-0.26	-0.75	-0.24	-0.57	-0.62	-0.22	-0.74
The government changes policies without good reasons...	-0.07	-0.86	-0.06	-0.78	-0.52	-0.02	-0.82
The government is too influenced by business...	-0.34	-0.54	-0.16	-0.61	-0.65	-0.23	-0.51
The government is acting in the public interest...	0.76	0.40	0.74	0.37	0.84	0.71	0.49
The government listens to concerns raised by the public...	0.67	0.45	0.65	0.48	0.81	0.62	0.53
The government listens to what ordinary people think...	0.67	0.39	0.61	0.49	0.80	0.60	0.54
The way government makes decisions about ... is fair	0.59	0.51	0.43	0.57	0.80	0.56	0.60
The government provides all relevant information to the public...	0.59	0.43	0.60	0.38	0.72	0.70	0.30
Eigenvalue	4.15	2.66	3.77	2.55	5.92	4.05	2.85
Cumulative % explained	37.76	61.91	34.25	57.46	53.84	36.84	62.75

Note: bold numbers indicate factor loadings > .5.

In 2005, data reveal a number of underlying dimensions of trust. A three-factor solution was observed for waste, water, and sustainable development, and for air, a four-factor solution was uncovered. The three competency measures loaded for each environmental policy domain. Given the low mean scores reported in 2005 on these measures, this factor can be interpreted to suggest that the stakeholders who responded to our survey felt that the government was not competent. The analysis led to a clearly isolated second trust factor of the measures for each policy area. This factor drew upon the 'distorts facts in its favour', 'changes policy without good reason', and 'is too influenced by business'. This strongly relates to the Poortinga and Pidgeon (2003) scepticism factor and brings into question ways in which policies are formulated and implemented. A third trust dimension was clearly identified for water and sustainable development that captured measures of care, fairness, and openness and is labelled 'accountability'. For air and waste, the pattern across these variables is not so clear. Air draws out two care items and a further factor that brings together aspects of the 'accountability' factor. For water, fairness and openness load with 'acting in the public interest'.

The focus-group results support the long-term concern with air pollution, the inactivity on the part of the government in addressing associated public health concerns, and a deteriorating confidence in the government's ability or motivation to do anything about local air quality. Such concerns may account for these findings:

You know, when all else fails, that's why you regulate. We're having that situation at the moment, where we've got critical failure to control air pollutants. So we've let this persist for a long time now, we've tried voluntary approaches, it's time to regulate.

So we're talking about air, but then basically, one of the main culprits is actually how the government hasn't even articulated, or been putting together, or given someone to look at a total traffic plan, such that we won't be wasting energy and polluting the air.

Addressing air pollution in Hong Kong is a serious problem: '...the reduction of [Hong Kong's air] pollution to the levels in other world cities, such as London, Paris and New York, would avoid over 1,600 deaths' a year (Hedley *et al.*, 2006, p. 4).

By 2007, dimensions of trust had changed, becoming more focused (Table 3). In three of the issue areas, a two-factor solution was obtained with water having a one-factor solution. The one-factor solution for water may indicate the ways in which government action can overcome problems associated with lower levels of trust.

In relation to air, waste, and sustainable development, the first trust factor blended competency, care, fairness, and openness into a general trust factor. In the first waste factor, the item 'makes government decisions about ... is fair' loaded more heavily on factor two but cross-loaded to the first factor. In the sustainable development factor, three items cross-loaded. These variations indicate that the underlying factors of trust in Hong Kong in 2007 were not neat

and clean, and this differs from other studies undertaken using these measures (Metlay, 1999; Poortinga and Pidgeon, 2003). The second factor for air, water, and sustainable development isolated the scepticism measures once more but associated with other measures—fairness in decision making for air and waste and with substantial cross-loading on care, fairness, and openness measures for sustainable development.

There are some clear differences between 2005 and 2007. First, the number of overall factors has reduced, suggesting change and that trust is dynamic. Second, between 2005 and 2007, the survey data reported increase in trust in relation to water and resulted in a single factor in 2007. This may be accounted for by government action to alleviate the problems of raw sewage being pumped into the harbour by the Harbour Area Treatment Scheme. The scheme took many years to come to fruition, being launched in the late 1990s. However, it was associated with an open and consultative decision-making process and has led to better-quality marine waters (Gouldson *et al.*, 2008). It is perhaps these positive outcomes that resulted in perceptions of government competency or performance growing in this area, which is, in turn, associated with higher trust.

The third change to be witnessed between 2005 and 2007 was the loss of the clear competency measure and its merger with the accountability items from 2005. The focus-group discussions noted that the government is seen to have the skilled people in-house but neither uses nor applies these skills and did not consult expertise outside of the government. In short, they felt that government's competence in relation to air, waste, and sustainable development was questionable, indicating scepticism. While these factors may not be as crisp as those found in Poortinga and Pidgeon's UK study, the overall pattern for air, waste, and sustainable developing is similar. These findings, therefore, offer some further validation of trust as a two-dimensional construct.

Rebuilding trust

The second-round focus groups held in 2008 shed more light and interpretation on some of the findings reported in the surveys and provided insights into ways that trust in government could be rebuilt in relation to environmental risks in Hong Kong. In discussion, the stakeholders suggested two primary mechanisms by which this might be achieved. First, the private sector key informant stakeholders promoted the idea of using regulation to create innovation—a practice seen in other economies, such as Europe and Japan, that was making inroads in environmental policy. Second, the NGO groups placed much emphasis on enhancing dialogue between the community and government for all aspects of environmental risks. They sought to enhance meaningful dialogue in the policy-making process as a key step towards increasing their trust in government.

Beyond these two approaches, the key informant stakeholders highlighted the relationship between the Hong Kong government and Mainland China as having been an influential factor affecting the Hong Kong government's ability to tackle cross-border (or regional) environmental issues. In addition, this relationship with Mainland China was highlighted as affecting the public's confidence in the government's decision-making processes. Informants suggested that, in order to enhance public trust, the government needs to develop stronger leadership, reform the present rigid government structure, improve communication on environmental issues with the public, take input from the community more seriously, show greater concern for environmental issues, make better use of regulation, and provide incentives for environmental protection.

The focus groups argued that the government falls short in its leadership and accountability to the public and that if it were to engage in genuine deliberative and inclusionary methods of public participation, it would significantly improve its legitimacy in the eyes of its public. The lack of dialogue with the community and the government's tendency to favour special interest groups, in particular business, were seen as evidence of the government's lack of accountability and responsibility to the public as a whole.

CONCLUSIONS

In this study, we have examined trust in government on a number of key environmental risks in Hong Kong between 2005 and 2008. The aims of the study were to identify the level of trust and its dimensions for four policy areas—air, water, waste, and sustainable development. The article also sought to replicate previous work on trust, to identify if

there are two underlying dimensions of trust—general (or reliance) and scepticism—and to categorise trust in government on environmental policies in Hong Kong. In doing this, we sought to analyse the validity of Poortinga and Pidgeon's (2003) typology of trust in government.

Findings point towards low and stable levels of trust in government in relation to air quality, solid-waste management, water quality, and sustainable development. Of these four areas, respondents to our survey were most pessimistic about sustainable development. Although the level of trust remained broadly the same, there was some evidence of change in the number of dimensions of trust in the 3-year period. The 2005 pattern broadly isolated a competence in government dimension and scepticism, and one focused around accountability. By 2007, the competence and accountability categories had collapsed into a broad trust in government category, whereas scepticism remained for three of the cases. The implications of these results are that there are two underlying dimensions of trust. These findings reflect those of Poortinga and Pidgeon (2003) in relation to the risk of a number of policy challenges in England and offer another small step towards understanding trust as a two-dimensional concept.

Interpretation of these results suggests that general trust is low and scepticism is high (witnessed by the low levels of trust in government). Referring back to Poortigna and Pidgeon's typology (Figure 1), we do not find critical trust, or 'a healthy type of distrust' in Hong Kong (which requires high trust and high scepticism) but rather rejection or cynicism. The evidence from our key informant stakeholders indicates that they have to rely upon information from the government, but the validity and reliability of the data are questionable. This cynicism is supported by the findings of our focus groups and through the proposed strategies that informants identified as enhancing the public's trust in the Hong Kong government's ability to improve environmental quality—namely technological innovation, public participation, and stronger government capacity.

Trust is a key dimension of governance and related to the practicalities of the delivery and performance of public services (Vigoda and Yuval, 2003). These findings are somewhat at odds with the wider perception of Hong Kong. For example, the World Bank Governance indicators (Kaufmann *et al.*, 2006) show that the territory performs well on government effectiveness, regulatory quality, rule of law, political stability, and control of corruption. The data for 2005 and 2007 show that the informed stakeholders in Hong Kong do not generally think the same way with regard to the government's ability to formulate effective environmental policy. Levels of trust are low and remained low for the two surveys, whereas the dimensions of trust somewhat simplified, highlighting general trust and scepticism. Although samples were small for both studies, we can still say this with some confidence because the complementary focus groups undertaken in 2007 and 2008 show very similar trends with regard to the overall lack of confidence in the government. This lack of confidence focused on poor leadership, accountability, and little or no dialogue with the community. These issues are often noted as wider difficulties in the governance of Hong Kong (Cheung, 2005, 2008). Furthermore, low trust suggests that stakeholders do not offer government officials the discretion necessary to undertake the tasks of service delivery; restoring trust in government by government is necessary to rebuild trust and the effective delivery of environmental policy in Hong Kong.

There is a need for a wider investigation into the issue of trust in the policy-making process in Hong Kong in light of the fact that the levels of trust are low. It is necessary to understand if these findings only apply to environmental policy and to the group of stakeholders examined or if they are more widespread across government and different groups in society, notably the community at large. Engaging directly with policy makers would provide an opportunity to determine their perceptions of trust and how this might be affecting their ability or motivation to develop effective environmental policy. Such work would also overcome our small sample problems. However, the survey was supplemented with focus groups to probe many issues in greater detail, and as we note earlier, concerns expressed in relation to environmental policy have resonance with other commentaries on Hong Kong (Cheung, 2005, 2008). Similar questions of external validity require additional research in other settings and contexts on similar topics. This is particularly so given the executive-led style of government in Hong Kong, and our results might be an artefact of these circumstances. Although our study was longitudinal, it covered only a limited number of years. Further research should systematically explore dimensions of trust over extended periods. The study of other policy arenas may also result in different findings and lead to alternative conclusions. For example, policy areas such as housing or ageing policies do have a cross-border element, in that Hong Kong residents can and do reside in Guangdong, but these are more within the remit of government than the effects of air or water pollution. Studies in other policy domains would usefully complement, or contrast, the findings of this study.

In this article, the focus has been on key informant stakeholders. This approach was adopted in Metlay's (1999) study of radioactive waste and the Department of Energy in the USA. Poortinga and Pidgeon (2003) suggested that their findings may have varied from those of Metlay because they surveyed the general public. Our findings may offer some validation of a key informant stakeholder approach in complex policy arenas. However, research on trust and the environment should be extended to other groups in society, and notably to the general public to understand how citizens more widely trust in their government's on important policy agendas. It might be that using key informants and experts leads to a more critical assessment of trust, whereas the general public may offer a more general assessment of government policy processes. Future studies could contrast such approaches to understand if someone's distance from a policy affects their assessments of trust. Future research could also examine the consequences of trust on the performance of the policy system. For example, what is the relative performance of high and low trust governments?

This study has begun an examination of the dimensions and levels of trust in Hong Kong's administration. The results have shown that the problem of low levels of trust and confidence in the government's ability to address local environmental issues is of serious concern. Although there is undoubtedly talent within parts of government, what the public seems to perceive is a government that does not understand environmental issues, tries to belittle their impacts on the territory, and lacks any visions of how to put in place innovative environmental policies. Moreover, the fact that much of the air pollution, for example, comes across the border from the mainland (where the Hong Kong government has no direct influence on policy making) means that people perceive the government as powerless to act in many cases. What can be done to address some of these concerns is to build more deliberation and inclusion into the processes of policy formulation and implementation. Key informant stakeholder respondents demanded more participation, and such inclusive mechanisms can be used to solve problems, seek alternative courses of action, and deliver results. This is a major policy challenge for the Hong Kong government and is likely to be similarly so for governments everywhere.

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REFERENCES

- Andrews R, Boyne GA, Walker RM. 2006. Subjective and objective measures of organizational performance: an empirical exploration. In *Public Services Performance: Perspectives on Measurement and Management*, Boyne GA, Meier KJ, O'Toole, Jr. LJ, Walker RM (eds). Cambridge University Press: Cambridge; 14–34.
- Bouckaert G, Van de Walle S. 2003. Comparing measures of citizen trust and user satisfaction as indicators of 'good governance': difficulties in linking trust and satisfaction indicators. *International Review of Administrative Sciences* 69(3): 329–343.
- Brewer GA. 2003. Building social capital: civic attitudes and behavior of public servants. *Journal of Public Administration Research and Theory* 13(1): 5–26.
- Brom FWA. 2000. Food, consumer concerns and trust: food ethics for a globalizing market. *Journal of Agricultural and Environmental Ethics* 12(1): 127–139.
- Cheung ABL. 2005. Hong Kong's post-1997 institutional crisis: problems of governance and institutional incompatibility. *Journal of East Asian Studies* 5(1): 135–167.
- Cheung ABL. 2008. Restoring governability in Hong Kong: managing plurality and joining up governance. In *Governance for Harmony in Asia and Beyond*, Tao J, Cheung ABL, Li C, Painter M (eds). Routledge: London; 158–186.
- Coulson A (ed). 1998. *Trust and Contracts: Relationships in Local Government, Health and Public Services*. Policy Press: Bristol.
- Dryzek JS. 1997. *Democracy in Capitalist Times: Ideals, Limits, and Struggles*. Oxford University Press: New York.
- Edelman. 2005. Sixth annual Edelman trust barometer. A global study of opinion leaders. Available at: http://www.edelman.com/trust/2008/prior/2005/Edelman_Trust_Barometer-2005.pdf [Accessed on 16 September 2008].
- Frewer LJ, Howard C, Hedderley D, Shepherd R. 1996. What determines trust in information about food-related risks? Underlying psychological constructs. *Risk Analysis* 16(4): 473–485.
- Fukuyama F. 1995. *Trust: The Social Virtues and the Creation of Prosperity*. The Free Press: New York.
- Fukuyama F. 2001. Social capital, civil society and development. *Third World Quarterly* 22(1): 7–20.
- Giddens A. 1990. *The Consequences of Modernity*. Polity Press: Cambridge.
- Gilson L. 2003. Trust and the development of health care as a social institution. *Social Science and Medicine* 56: 1453–1468.
- Gouldson A, Hills P, Welford R. 2008. Ecological modernisation and policy learning in Hong Kong. *Geoforum* 39(2): 319–330.
- Hardin R. 2002. *Trust and Trustworthiness*. Russell Sage: New York.

- Hedley AJ, McGhee SM, MingWong C, Barron W, Chau P, Chau J, Thach TQ, Wong TW, Loh C. 2006. *Air Pollution: Costs and Paths to a Solution*. Civic Exchange: Hong Kong.
- Hills P. 2004. Administrative rationalism, sustainable development and the politics of environmental discourse in Hong Kong. In *Sustainable Development in Hong Kong*, Mottershead T (ed.). Hong Kong University Press: Hong Kong; 13–42.
- Hills P, Barron W. 1997. Hong Kong: the challenge of sustainability. *Land Use Policy* **14**(1): 41–53.
- Hills P, Lam J, Welford R. 2004. Business, environmental reform and technological innovation in Hong Kong. *Business Strategy and Environment* **13**(2): 223–234.
- Hills P, Zhang L, Liu J. 1998. Transboundary pollution between Guangdong Province and Hong Kong: threats to water quality in the Pearl River Estuary and their implications for environmental policy and planning. *Journal of Environmental Management and Planning* **41**(3): 375–396.
- Hoffman AM. 2002. A conceptualization of trust in international relations. *European Journal of International Relations* **8**(3): 375–401.
- Hovland CI, Janis IL, Kelley HH. 1953. *Communication and Persuasion. Psychological Issues of Opinion Change*. Yale University Press: New Haven.
- Johnson RJ, Scicchitano MJ. 2000. Uncertainty, risk, and information: public perceptions of environmental issues and willingness to take action. *Policy Studies Journal* **28**(3): 633–647.
- Jungermann H, Pfister H-R, Fischer K. 1996. Credibility, information preferences, and information interests. *Risk Analysis* **16**(2): 251–261.
- Kasperson RE, Golding D, Tuler S. 1992. Social distrust as a factor in siting hazardous facilities and communicating risk. *Journal of Social Issues* **48**(4): 161–187.
- Kaufmann D, Krray A, Mastruzzi M. 2006. *Governance Matters VI: Aggregate and Individual Governance Indicators for 1996–2006*. World Bank: Washington DC.
- Keele L. 2007. Social capital and the dynamics of trust in government. *American Journal of Political Science* **51**(2): 241–254.
- Ellen PF (ed.). 1984. *Ethnographic Research: A Guide to General Conduct*, Academic Press: Orlando.
- Kim S-E. 2005. The role of trust in the modern administrative state. *Administration and Society* **37**(5): 611–635.
- Kline P. 1994. *An Easy Guide to Factor Analysis*. Routledge: London.
- Korzynski M. 2000. The political economy of trust. *Journal of Management Studies* **37**(1): 1–21.
- Kumar N, Stern LW, Anderson JC. 1993. Conducting interorganizational research using key informants. *Academy of Management Journal* **36**(6): 1633–1651.
- Lo AYH. 2008. Merging electricity and environment politics of Hong Kong: identifying the barriers from the ways that sustainability is defined. *Energy Policy* **36**(4): 1521–1537.
- Loh C, Steveson A, Weldon M, Hedley A, McGhee S, Hak-kan L, Chau J, Chau P, Chit-ming W, Tsz-wai W, Ng S, Lau A. 2008. Price too high —health impacts of air pollution in southern China. June 2008. Available at: http://www.civic-exchange.org/eng/upload/files/200806_pricetoohigh.pdf [Accessed on 16 September 2008].
- Maeda Y, Miyahara M. 2003. Determinants of trust in industry, government, and citizen's groups in Japan. *Risk Analysis* **23**(2): 303–310.
- Marshall MN. 1996. The key informant technique. *Family Practice* **13**(1): 92–97.
- Metlay D. 1999. Institutional trust and confidence: a journey into a conceptual quagmire. In *Social Trust and the Management of Risk*, Cvetkovich G, Löfstedt RE (eds). Earthscan: London; 100–116.
- Mitchell RK, Agle BR, Wood DJ. 1997. Towards a theory of stakeholder identification and salience: defining the principle of who and what really counts. *Academy of Management Review* **22**(4): 853–886.
- Mottershead T (ed). 2004. *Sustainable Development in Hong Kong*. Hong Kong University Press: Hong Kong.
- Paxton P. 1999. Is social capital declining in the United States? A multiple indicator assessment. *American Journal of Sociology* **105**(1): 88–127.
- Podsakoff PM, Organ DW. 1986. Self-reports in organizational research: problems and prospects. *Journal of Management* **12**(4): 531–544.
- Poortinga W, Pidgeon N. 2003. Exploring the dimensionality of trust in risk regulation. *Risk Analysis* **23**(5): 961–972.
- Priest SH, Bonfadelli H, Rusanen M. 2003. The trust gap hypothesis: predicting support for biotechnology across national cultures as a function of trust actors. *Risk Analysis* **23**(4): 751–766.
- Putnam RD. 2000. *Bowling Alone: The Collapse and Revival of American Community*. Simon and Schuster: New York.
- Renn O, Levine D. 1991. Credibility and trust in risk communication. In *Communicating Risks to the Public*, Kasperson RE, Stallen PJ (eds). Kluwer: The Hague; 75–97.
- Sztompka P. 1999. *Trust: A Sociological Theory*. Cambridge University Press: Cambridge.
- Tsang D. 2007. Keynote Speech by the Chief Executive of Hong Kong at 'Business for Clean Air', a Joint Conference of Project CLEAN AIR and Action Blue Sky (27 November 2006). Available at: <http://www.info.gov.hk/gia/general/200611/27/P200611270129.htm> [Accessed on 16 September 2008].
- Tsang S, Burnett M, Hills P, Welford R. 2009. Trust, public participation and environmental governance in Hong Kong. *Environmental Policy and Governance* **19**(2): 99–114.
- Tschannen-Moran M, Hoy WK. 2000. A multidisciplinary analysis of the nature, meaning, and measurement of trust. *Review of Educational Research* **70**(4): 547–593.
- Vigoda E, Yuval F. 2003. Managerial quality, administrative performance and trust in governance: can we point to causality? *Australian Journal of Public Administration* **62**(3): 12–25.
- Walker RM. 2008. An empirical evaluation of innovation types and organizational and environmental characteristics: towards a configuration framework. *Journal of Public Administration Research and Theory* **18**(4): 591–615.
- Walker RM, Hills P. 2012. Partnership characteristics, network behaviour, and publicness: evidence on the performance of sustainable development projects. *International Public Management Journal* **15**(4): 479–499.
- Wang X. 2002. Assessing administrative accountability: results from a national survey. *American Review of Public Administration* **32**(3): 350–370.
- Welford R, Hills P, Lam J. 2006. Environmental reform, technology policy and transboundary pollution in Hong Kong. *Development and Change* **37**(1): 145–178.
- Williamson OE, Craswell R. 1993. Calculativeness, trust and economic organization. *Journal of Law and Economics* **36**(1): 453–486.
- Yang K. 2006. Trust and citizen involvement decisions. Trust in citizens, trust in institutions, and propensity to trust. *Administration & Society* **38**(5): 573–595.
- Yang K, Holzer M. 2006. The performance–trust link: implications for performance measurement. *Public Administration Review* **66**(2): 114–126.