



# Key determinants of willingness to support policy measures on recycling: A case study in Hong Kong



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## ABSTRACT

Over the past three decades, the municipal solid waste in Hong Kong had increased by nearly 80% while the population growth was merely 36%. This indicated that the people in Hong Kong were producing waste at an alarming rate. This problem should be addressed systematically. Recycling had been considered as one of the major strategies in the waste management framework both in Hong Kong and across the globe. Hong Kong people have become more outspoken about their demands and asked for higher degree of participation in policymaking since the change of sovereignty in 1997. Therefore, policy makers should understand the determinants of policy support for recycling so as to address the environmental concerns and the rising sentiments of people in policy participation. Previous studies had identified key factors influencing people's willingness to support policy measures in various policy domains. Nevertheless, there is no comprehensive list of well-established constructs in predicting policy support on recycling and little is known about the key psychological determinants in predicting people's support for different policy tools. To research this issue that has parallels in other countries, a model is developed and tested in this study with a sample of 246 people in Hong Kong. The results showed that support for inducement policy measures is influenced by attitude, past behaviour and perceived policy effectiveness, while support for capacity-building policy measures is influenced by external influences and perceived benefits.

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## 1. Introduction

Waste management strategies comprise key elements, such as waste reduction, reuse, and recycling. These elements help in the conservation of natural resources and the reduction of demands for landfill space (Environmental Protection Department, 2010). Although waste reduction and reuse at source are effective methods of minimizing waste (Tonglet et al., 2004a), these often require changes in consumption preferences and choices (Henry et al., 2006), for example, bringing own bottles of water instead of purchasing bottled water, purchasing products in large quantities instead of individually packaged items, replacing individual components of electronic products instead of purchasing an entirely new one. Waste reduction and reuse behaviours that require changes in consumption habits and adjustment in lifestyles are more difficult to change than recycling behaviours (Mont and Plepys, 2008; Vermeir and Verbeke, 2006). Therefore,

public authorities have emphasized the increase in household recycling levels (Tonglet et al., 2004a). Prior studies have shown that encouraging reduction and reuse behaviours requires different strategies and messages (Barr et al., 2001; Ebreo and Vining, 2001). Recycling is a method that requires intensive energy, specifically in collecting, transporting, and processing of recyclables and recycled items (Björklund and Finnveden, 2005). Despite this, recycling behaviours have continued to receive considerable attention from researchers. This is because recycling behaviours are mainly influenced by situational factors, e.g. recycling facilities, which are more controllable by the public authorities; while waste reduction and reuse behaviours are more driven by people's own environmental values (Barr et al., 2001; Chen and Tung, 2009).

The campaign to establish waste-separation facilities was introduced by the Hong Kong Government in 2005 to encourage and facilitate recycling (Environmental Protection Department, 2005). The government recognized the importance of mobilizing the community to support the campaign (Environmental Bureau, 2013). Government statistics showed that although population growth was merely 36% in the past three decades, the increase in municipal solid waste was nearly 80%. In essence, Hong Kong residents have been producing wastes at an alarming rate. Various

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policy measures (e.g., waste charging, development of an EcoPark, community mobilization projects) have been proposed by the government to encourage and facilitate recycling and waste reduction (Environmental Bureau, 2013).

The citizens of Hong Kong have become increasingly outspoken about their demands for democracy since the change of sovereignty in 1997 (Chan, 2007). On July 1, 2003, half a million Hong Kong residents took to the streets to protest against the HK SAR Government as a gesture of solidarity. This day was a defining moment for Hong Kong. Surprisingly, the bulk of demonstrators were professionals, civil servants, students, businessmen, young people, and families, in addition to the regular protesters from political parties or interest groups (Chan, 2007). Post-80s, which refers to the group of people born after 1980, became a buzzword in Hong Kong. The term supposedly describes the youth, who are driven to rash and radical extremes because of frustration over the diminishing opportunities for upward mobility and comparatively high unemployment rate (Sin and Mok, 2010). A media sector regarded the Post-80s as an aggressive group of the youth movement, and public discussion has been spurred by the radical edge of recent protests (Hui, 2010; Phillips, 2014). The civil society in Hong Kong has experienced tremendous growth after the change of sovereignty. Hong Kong people are no longer content with having important decisions made for them by the government; thus, they demand participation in policymaking (Chan and Chan, 2007). The people's growing sentiments to retain local roots are evident in their call for higher levels of participation, as well as in their concerns over the loss of the city's Hongkongness (Cheung, 2007).

Prior studies in the field of environmental psychology examined the key factors influencing recycling behaviour (Sidiqie et al., 2010; Tonglet et al., 2004b; Wan et al., 2014). Majority of these studies focused on direct behaviours, specifically environmental action (Kollmuss and Agyeman, 2002). Indirect recycling behaviours, such as voting for a politician and supporting government policy, are rarely studied (Courtenay-Hall and Rogers, 2002). Rauwald and Moore (2002) suggested that gaining policy support from the citizens is essential to the efforts of governments to institute environmental policies. The limited studies on policy support focused on a particular predictor variable, i.e. a variable considered to influence or predict an outcome variable (Field et al., 2012). For example, Rauwald and Moore (2002) examined how environmental attitudes influence policy support. In addition, these studies simplistically considered policy support as a single construct (e.g., Daneshvary et al., 1998). No comprehensive research that extensively examines the psychological determinants that influence policy support on recycling policy or considers the difference among policy measures has been published.

Policy makers should understand the key psychological determinants of policy support to gain public recognition in policy formulation and implementation, particularly in Hong Kong, which is a land-hungry and compact city (Tang et al., 2007). Such understanding is particularly important to waste management. Hong Kong heavily relies on landfills that will reach their full capacities by the end of the 2010s. The government aims to reduce landfilling rate from 52% to 22% through incineration and recycling in ten years (Environmental Bureau, 2013). Aligned with this aim, this study examines the key psychological determinants influencing policy support for various policy tools on recycling, and intends to draw policy implications that could enhance the support of citizen for recycling policies.

The rest of the paper is organized as follows. Section 2 presents a summary of literature on policy support and key psychological determinants. Section 3 discusses the proposed research model and hypotheses. Section 4 describes the research methodology. Data analyses and research findings are presented in Sections 5 and 6, respectively. Discussion on the research results is presented in Section 7, and conclusions are provided in Section 8.

## 2. Literature review

### 2.1. Policy support: A pro-environmental behaviour

Environmental behaviour is defined as any behaviour that “changes the availability of materials or energy from the environment or alters the structure and dynamics of ecosystems or the biosphere itself” (p. 408) (Stern, 2000). This definition includes both environmentally friendly and damaging behaviours. Compared with pro-environmental behaviour, which refers to a behaviour “that harms the environment as little as possible, or even benefits the environment” (p. 309), environmental behaviour is a broader term (Steg and Vlek, 2009). Given that most environmental problems are rooted in human behaviours (Vlek and Steg, 2007), a considerable number of studies have been conducted to identify factors that affect various types of pro-environmental behaviours, and determine the processes that influence these behaviours. These studies focused on energy saving (Poortinga et al., 2004), public transportation utility (Heath and Gifford, 2002), recycling (Tonglet et al., 2004a), and green product purchase (Chan, 2001), among others. Although studies have focused on a range of behaviours, such as that of Dolnicar and Grün (2009), which covered recycling, energy saving, and green purchases, among others, different behaviours motivated by different psychological and situational factors (McKenzie-Mohr et al., 1995) and different types of pro-environmental behaviours have not been correlated with each other (Thøgersen and Ölander, 2003), for example, an individual who performs recycling behaviour does not necessarily purchase green products.

Kollmuss and Agyeman (2002) suggested that pro-environmental behaviour can be categorized as direct and indirect. Examples of indirect behaviours are supporting government policies, voting for favourable politicians, or signing petitions; whereas direct behaviours refer to the performance of pro-environmental actions. Stern (2000) similarly suggested that supporting or accepting policy is considered as a non-activist behaviour that indirectly influences the environment through its impact on public policies. This is an important class of behaviour because policies can change the behaviours of people and organizations (Schneider and Ingram, 1990). Previous studies on pro-environmental behaviours in the field of environmental psychology mostly focused on the frequency with which people engage in certain behaviours, such as recycling, energy use, and so on (Steg and Vlek, 2009). As a form of indirect behaviour, policy support from citizens is vital because it can enhance political feasibility and effectiveness of implementation (Rauwald and Moore, 2002). In addition, studies on policy support simplistically considered policy support as a single psychological construct (Daneshvary et al., 1998; Rauwald and Moore, 2002; Tobler et al., 2012; Wan et al., 2014). However, different policy tools can exert different levels of influence on citizens (Elmore, 1987); thus, these tools may gain different levels of support.

Steg and Vlek (2009) stated that two strategies can be used to intervene in the pro-environmental behaviour of the individual: (i) informational strategies that generally aim to enhance knowledge and awareness of the individual and (ii) structural strategies that intend to change contextual factors including the costs and benefits of behavioural alternatives. Wan and Shen (2013) listed three common policy tools used by policy makers in promoting pro-environmental behaviours based on the tools categorized by Elmore (1987).

- Mandates—Rules regulating behaviour in which policy makers formulate a package of generally acceptable rules, punishments, and enforcement.
- Inducements—Provision of encouragements to stimulate behaviour.

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