Differential public support for waste management policy: The case of Hong Kong

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ABSTRACT

Gaining public support for environmental policy can promote pro-environmental behaviors and facilitate policy implementation. A telephone survey was conducted in Hong Kong to solicit 504 respondents' level of support for different waste management policies and to investigate the role of key socio-demographic variables in influencing the level of support for these policies. Data was examined by using multivariate analysis of variance (MANOVA). Findings revealed that variance in policy support for different measures differs significantly across gender, age groups, and education level, while household size and political inclination exhibited less association with support for the policies. Respondents also indicated a varying level of support across policy tools, with policies of developing recycling industry and extending Producer Responsibility Scheme received more support, but municipal solid waste charging scheme and publicity and education measure were less welcomed by respondents. Our analysis infers that current waste management framework should be driven toward a more coherent mode in order to secure greater public support and maximize policy effectiveness. Policy implications could be applied to waste management framework development in cities which share similar background with Hong Kong.

1. Introduction

Public support is a key to successful implementation of waste management policy and policy goal achievement (Wan et al., 2015, 2017). It is particularly significant for environmental policies which emphasize active public participation, such as recycling and recovery measures. Most previous research examined public support for waste management strategies by using single measurement (e.g., Afroz and Masud, 2011; Brown and Johnstone, 2014; Dietz et al., 1998; Elliott et al., 1995; Gelissen, 2007; Saphores et al., 2006). Though there have been a considerable number of studies examining relationship between socio-demographic factors and the level of policy support, little research explores the level of support for different waste management tools and the differences in level of policy support across demographic variables in a single study. Previous studies also

confined to measurement deficiency (e.g., single measurement) that the results only provide us with limited understanding of the issue. Given the above background, this research aims at investigating the level of policy support and socio-demographic effect on the public support for various waste management options with reference to Hong Kong. Empirical evidence of the level of public support across policies and socio-demographic factors that account for the variations could inform formulation of effective waste management strategies. It assists policy-makers to work out measures that are responsive to the public, thereby promotes public participation and facilitates policy implementation. The densely populated research context with scarce land resources available also gives a unique insight into countries which share similar background.

The study will first brief the study area and research background. Section 3 presents a review of the literature on policy support. Methodological details are given in section 4. Statistical results are reported in section 5. Section 6 is an extensive discussion of the results. Section 6.1 offers explanations for differential policy support across policies in relation to the phenomenon of uncoordinated waste management framework. Section 6.2 begins by comparing socio-demographic effect on the level of policy

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support with findings from previous studies; and put forward exposition of each finding by drawing reference to these studies. In section 6.3, a new framework toward a coherent waste management and policy relevance based on results are proposed. We also provide suggestions on recruiting public support targeted at people with different socio-demographic backgrounds in section 6.4. The paper will end with a note on the issue of framework applicability to other cities.

2. Study area and research background

Hong Kong was selected as our study area. It is a densely populated city with over 7.3 million population living in a terrestrial area of 1105 square kilometers (Information Services Department, 2015). A large population, rapid economic growth, and consumptive culture have accelerated waste production, making waste management in the city a challenging problem than ever before. According to the Environmental Protection Department (2017b), the quantity of municipal solid waste (MSW) disposal had increased by 11.5% from 9114 tonnes in 2010 to 10,159 tonnes in 2015. Every Hong Kong citizen generated 1.39 kg of MSW per day in 2015. The city has the highest daily per capita MSW rate compared to neighboring cities, about 1.36 times and 1.77 times higher than Taipei city and Tokyo, respectively (Environment Bureau, 2013).

Over the past decades, the Hong Kong government has relied heavily on landfilling as its core waste management strategy. Approximately 65% of MSW is taken to landfills for disposal, with the rest being recycled (Environmental Protection Department, 2017b). Waste minimization and prevention policies by contrast have never emerged as a preferred solution to waste problems. Policy development of waste prevention is fragmented, not well-formed, and ineffective. For example, a territory-wide source separation program introduced in 2005 was only made as a voluntary basis. Under the program, 3-colored separation bins were made available to over 80% of population for encouraging recycling practices; but recycling rate of MSW between 2012 and 2015 remained at a low level of around 35%–39% (Environmental Protection Department, 2017b). Regarding the producer responsibility scheme (PRS), only plastic shopping bag levy was fully introduced in 2015 since the enactment of Product Eco-responsibility Ordinance in 2008. Regulations for other types of product including vehicle tyres recycling have not yet been implemented.

Owing to the fact that existing three landfills in Hong Kong are expected to reach full capacity by the end of this decade, in addition to space scarcity and escalating public opposition, landfilling is no longer a panacea for the impending municipal solid waste crisis. The government has recognized the urgency of shifting its waste management to a more sustainable direction and hence promulgated various initiatives in the latest blueprint for resources management (Environment Bureau, 2013). Policies promoting waste prevention and reduction to higher levels of the waste hierarchy have been rolled out to advance the waste management. For instance, along with enhanced financial support for the development of recycling industry, the government introduced a legislative proposal of producer responsibility scheme for waste electrical and electronic equipment (WEEE) and glass beverage containers into the legislature. Under the new direction of waste management, the public are required to make behavioral changes in response to meet the target of reducing 40% per capita MSW generation (Environment Bureau, 2013). Widespread public attention and support would be vital if waste avoidance and sustainable oriented waste management framework are to succeed (Xiao et al., 2017). It is this case calls for an in-depth examination of policy support for different instruments and optimal policy

arrangements that could provide timely insight into gaining broader public support for the framework.

3. Policy support and waste management policy

Environmental instruments and regulations are set up for the purpose of mitigating deteriorating environmental problems and protecting the environment. Individuals showing policy support for environmental measures can be regarded as an indirect pro-environmental behavior (Kollmuss and Agyeman, 2002). It is a non-activist environmental significant behavior because people affect the environment indirectly through the means of exerting influence on environmental policies (Stern, 2000). The public may support or accept policies by making material sacrifice to achieve the goal of environmental protection, for example, individuals pay higher taxes or endorse increased spending on environmental issues; further, individuals may express support by way of voluntarily complying with policies or changing behaviors in private sphere in accordance with promulgated environmental guidelines and instruments (Stern et al., 1999).

Therefore, gaining policy support is an essential condition for the success of waste management because it enhances political feasibility of policy initiation and facilitates implementation of effective policy (Brown and Johnstone, 2014; Convery et al., 2007; Stern, 2000; Wan et al., 2015). New environmental policies would be easier to initiate if the authority is equipped with adequate public support (Rauwald and Moore, 2002). It is particularly significant for environmental policies with emphasis on waste separation and recycling programs which active public participation is required. Stern et al. (1999) pointed out that policy support is a barometer that can signal both authorities and industries about citizens' concerns about the environmental issues. The present study is an echo of the argument and emphasizes that policy support can serve as an analytical tool which by examining the level of public support for different policy instruments helps identify defects of existing waste management framework; subsequently, policy-makers can recommend or fine-tune programs that would gain greater public support (Brown and Johnstone, 2014; Ladd, 1990).

Socio-demographic characteristics were frequently used by prior studies as explanatory variables of environmental policy support or willingness to pay for environmental protection. Age is a consistent predictor of policy support which younger generation in general is more prone to support for environmental policy than their older counterparts (Afroz and Masud, 2011; Brown and Johnstone, 2014; Dietz et al., 1998; Gelissen, 2007; Jones and Dunlap, 1992). Regarding gender effect, females were found to be more concerned about environmental problems (Blocker and Eckberg, 1989; Schultz et al., 1995; Triguero et al., 2016) and more willing to pay for environmental protection than men (Bartelings and Sterner, 1999; Stern et al., 1993). Education level is a less robust determinant. Some studies proved that educated people are prone to support increased environmental spending and committed as environmentalists (Barr et al., 2005; Brown and Johnstone, 2014; Dietz et al., 1998; Gelissen, 2007; Jones and Dunlap, 1992; Triguero et al., 2016), however a negative effect was found by Samdahl and Robertson (1989). Similarly, yet many studies proved that higher income results in greater support for environmental policy or involvement in pro-environmental behaviors (e.g., Elliott et al., 1995; Gelissen, 2007; Milovantseva, 2016; Oskamp, 1995), but not Challcharoenwattana and Pharino (2016), Samdahl and Robertson (1989), Scott (1999) and Zeng et al. (2016). The mixed results may due to heterogeneous contextual background such as social, cultural, economic, political, and regional variation exist in these studies.