



Importance-performance ratings for environmental practices among Hong Kong professional-level employees



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ABSTRACT

The environmental performance of organizations is an increasing focus in cleaner production. This paper explores how the importance and performance of environmental practices were perceived among professional-level employees in Hong Kong, China. Based on a literature review on sustainable development and environmental management, we developed a structured questionnaire to measure respondents' perceptions towards environmental practices. Using responses from 348 professional-level employees in Hong Kong organizations, we employed importance-performance analysis for identifying some improvement opportunities. In addition, we applied exploratory factor analysis to identify the underlying environmental factors based on the importance ratings. Results of the study demonstrated that the performance of environmental practices was strongly associated with perceived importance of environmental practices. As environmental practices, it was found that Hong Kong organizations and employees primarily focused on saving paper and energy resources. However, they are not embracing the concept of green value chain and have yet to engage their suppliers to go green. This paper contributes to identify the key internal and external factors of environmental practices.

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1. Introduction

The World Commission on Environment and Development (1987) published the report "Our Common Future" in which sustainable development is defined as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Moreover, the report called for the development of environmental management as a strategic tool for environment protection and resources conservation. Since then, sustainable development and environmental protection have become a global movement (Bayulken and Huisingsh, 2015; Hutchins and Sutherland, 2008). Organizations, no matter what size, have started establishing, developing, implementing, and monitoring environmentally friendly practices in order to fulfill demands from customers, governments, green groups, shareholders, and other stakeholders (Montalvo and Kemp, 2008;

Nawrocka et al., 2009). Concurrently, the International Organization for Standardization (ISO) has actively promoted its ISO14001 Environmental Management System Standard since the creation of ISO14001 in 1996. The motivations for and benefits of implementing ISO14001 has been a research focus in the past decade (Boiral, 2007; Gavronski et al., 2008; Prajogo et al., 2012). The diffusion of ISO 14001 has also been extensively studied (Marimon et al., 2011; Qi et al., 2011; To and Lee, 2014). ISO (2014) reported that 301,647 organizations have been certified to ISO14001 as at the end of 2013. About one third of them are organizations in China including its two special administrative regions i.e. Hong Kong and Macao (ISO, 2014).

Organizations, whether they are certified to ISO14001, must adopt environmental management and practices one way or the others to fulfill government regulatory requirements and customer expectations (Chan and Wong, 2006; Morrow and Rondinelli, 2002). According to previous researches (del Brio et al., 2001; Ruiz-Tagle, 2008), environmental management is an effective approach for manufacturers to manage their environmental affairs. Its core benefits include improving an organization's position in the market, transition from conventional to sustainable practices, improving relationship with society due to better environmental

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performance, and improving waste processing (Psomas et al., 2011). In the service economies, organizations embrace the concept of environmental management because it helps improving organizational image and bottom-line savings (Mensah, 2006; Studer et al., 2006). Faulk (2000) investigated environmental management practices adopted by hotels and tourism businesses in developed countries. Faulk (2000) reported that most hotels primarily focused on implementing environmental-related programs such as water saving, waste minimization, and energy management. However, there was little attention given to the social dimension, i.e. benefiting the local community, except the Kingfisher Bay complex in Australia. Hsiao et al. (2014) recently advocate that on top of pollution control and resources conservation, actively supporting the local community and suppliers to go green shall be considered as key attributes of good environmental practices in Taiwan's hotel industry. Tang and Zhou (2012) examined the role of different parties in the global supply chain and argued that organizations need to examine the triple bottom line dimensions, namely profit, people and planet, more thoroughly and strategically.

Young et al. (2013) performed a multi-disciplinary literature review on employee pro-environmental behavior. They suggested that individual level attributes such as attitudes and beliefs, group level attributes such as financial incentives and feedback, organizational factors such as management support and resources, and external factors such as economic conditions and government policy play a role in shaping employee pro-environmental behavior. Park et al. (2014) studied the impact of top management's environmental attitudes on implementing environmental practices in the US hotels. It was found that top managers' perceived benefits of environmental programs mediated the relationship between environmental attitudes and environmental practices (Park et al., 2014). In another study, Papagiannakis and Lioukas (2012) reported that top-managers' attitudes, their perceived ability to handle environmental issues, and subjective norm affected corporate environmental responsiveness based on a survey of 142 Greek organizations. Although employee participation has also been recognized as one of key organizational factors affecting the effectiveness of environmental management (Boiral, 2009; Young et al., 2013; Tung et al., 2014), there are lack of literature exploring employees' perceptions of environmental practices even though employees are the ones implementing organizational practices including environmental practices.

In Hong Kong, the Environmental Protection Department was established in 1985 to coordinate, develop, and implement resources conservation and pollution control programs. The promotion of corporate environmental management is one of its key initiatives. Hong Kong construction companies were among the first group of organizations adopting environmental management practices in order to save resources and comply with environmental legislation (Shen and Tam, 2002). Studer et al. (2006), on the other hand, found that Hong Kong's small and medium-sized enterprises had been slow to adopt good environmental practices because they considered environmental activities as costly. Nevertheless, about 1000 Hong Kong organizations have adopted ISO14001 to identify and manage environmental affairs. Most of these organizations are medium-to large-size organizations. These organizations need to establish environmental management programs, processes and practices, and monitor and continuously improve environmental performance. In addition, the Hong Kong Government has enacted environmental legislations and collaborated with different industries and green groups to organize seminars and environmental campaigns such as Eco-Business Award, Hong Kong Green Purchasing Charter, etc. to promote good environmental practices (Ho et al., 2010; Studer et al., 2008). To evaluate alternative environmental solutions objectively, Zhao et al. (2006)

proposed the Multiple Criteria Data Envelopment Analysis that takes qualitative and quantitative criteria into account. Chau and Muttil (2007) and Muttil and Chau (2006) showed that other approaches such as neural network, genetic programming, data mining and factor analysis can be applied to identify the sources of environmental problems based on biological, chemical and physical, quantitative data. Nevertheless, employees' recognition of and attitudes towards environmental practices in general has yet to be thoroughly studied, except that in the hotel industries (Chan and Wong, 2006; Chan and Hawkins, 2010). In the present study, we were interested in knowing the importance and performance ratings for environmental practices among professional-level employees in different industries. Professional-level employees are the ones who have a minimum education level of a professional diploma or bachelor's degree (Kuchinke et al., 2009), and work in a medium- or large-size organization (50 staff or more). It is because professional-level employees normally retain a high degree of autonomy in their work (Kuchinke and Cornachione, 2010) and their perceptions on environmental management and practices affect their organizations' environmental performance. In sum, this study aimed at answering the following research questions: (i) to what extent Hong Kong professional-level employees recognize and perceive the importance of external and internal environmental practices, (ii) how this group of employees perceive the performance of those environmental practices, and (iii) what areas that can be improved in terms of environmental management.

2. Methods

The cross-sectional survey design was adopted for the study. To achieve the research objectives, a structured questionnaire was developed and administered to Hong Kong professional-level employees in different industries as described below.

2.1. Research instrument

A 32-item self-administered questionnaire was developed based on an extensive literature review, inputs from experts, and feedback from a pilot study. The first section consisted of 23 items. The items cover 13 internal environmental practices and 10 external environmental practices. The items of internal environmental practices were adapted from the researches of Faulk (2000), Mensah (2006) and Park et al. (2014). These 13 items cover two facets of environmental practices: technical practices such as energy saving, water saving, waste reduction and recycling; and organizational system level practices such as training employees, and monitoring and reporting environmental performance. Out of the 10 items of external environmental practices, three items that describe 'greening the suppliers' were adapted from Rao and Holt (2005) and seven other items were adapted from Mensah (2006) and good environmental practices recommended by the Inter-American Development Bank (2006) as well as Hsiao et al. (2014). We asked the respondents to rate them in importance based on their view of environmental practices and perceived performance levels in organizations. The "Importance" of each item was rated using a 5-point Likert scale with 1 anchoring "very unimportant" to 5 anchoring "very important". The "Performance" of each item was rated from 1 representing "never" to 5 representing "all of the time". The 23 items are shown in Table 1. The second section consisted of 9 questions to collect respondent demographics: gender, age group, educational level, industry, department, position, working experience in the organization, whether the company the respondent worked for had an environmental policy, and if the company had such a policy how the policy was publicized.

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