



From innovation to sustainability: Sustainability innovations of eco-friendly hotels in Taiwan



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ABSTRACT

Sustainable innovation is a critical attribute in modern hotel management, as is widely recognized by experts and hotel managers alike. This paper develops and tests a new integrated theoretical model of associations among innovation diffusion, environmental marketing strategy, sustainability innovations, and the organizational environment. This research also considers the mediating effect of environmental marketing strategy and the moderating role of the organizational environment. The results of a study that included 367 managers of eco-friendly hotels in Taiwan provide support for this model across various dimensions of hotels' sustainable innovation. The present study found relationships among innovation diffusion, environmental marketing strategy and sustainability innovations, and a mediating effect of environmental marketing strategy. The results also confirmed that the organizational environment moderates the relationship between innovation diffusion and environmental marketing strategy. That is, a supportive organizational environment will enhance the effect of innovation diffusion on environmental marketing strategy.

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1. Introduction

Sustainability is founded on decreasing environmental impacts, closing the consumption cycle to eliminate wasteful outputs, and decreasing unnecessary inputs (Epstein, 1996; McDonough and Braungart, 2002). Because businesses play a leading role in the global economy through the production of goods and services, their involvement is integral to increasing sustainability and to communicating its value. Increasingly, business enterprises have discovered that competitive advantages may be captured by measuring success in terms of the triple bottom line (TBL): social equity, ecological integrity, and financial profitability (Andriate and Fink, 2008). Further, facilitating consumer decision-making, and serv-

ing a marketing mechanism to differentiate products and services (Buckley, 2002; Deng-Westphal et al., 2015). Leaders of companies are realizing that if the natural resources upon which they depend become depleted, ecological and financial stability will be disrupted (Hawken et al., 1999).

This study focuses on sustainability in hotels because companies in this industry are responding to the demands of environmentally conscious stakeholders, a planet in ecological crisis and the risks of litigation and regulation while attempting to maintain profitability and market growth (Edwards, 2005; Freeman et al., 2000; Hitchcock and Willard, 2006). Hotels create a significant environmental impact and must take a more proactive approach to reduce it (Becken et al., 2001; Brown, 1996). Within the tourism industry, hotels require the greatest amount of energy (Bohdanowicz, 2005). Sustainability is therefore necessary not only for the betterment of the natural environment but also for maintaining competitive hotel performance. Erdogan and Baris (2007) consider that some hotel managers now understand that long-term economic sustain-

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ability and growth depend upon the nature of their environmental policies. Xu and Gursoy (2015) identify the impact of the environmental, social and economic dimensions of sustainable hospitality supply chain management actions on customers' attitudes and behaviors including satisfaction, loyalty and willingness to pay a premium for sustainable hospitality goods and services utilizing data collected from U.S. consumers who frequently stay at hotels.

With prosperous growth in the hospitality market, hospitality management programs are some of the most rapidly growing majors in Taiwan (Horng et al., 2011; Horng and Lee, 2005; Wang et al., 2014). However, gaps remain between academia and practical industry. Because studies on environmental marketing/management have mainly focused on manufacturing firms, due to their greater exposure to ecological issues in the form of inputs and outputs, the investigation needs to extend to green issues in the services sector, which has often been described as destroying the environment 'silently' (Álvarez-Gil et al., 2001; Carmona-Moreno et al., 2004; Foster et al., 2000). A driving force in this sector is hospitality, which, with its unprecedented growth in recent decades, has been responsible for using excessive natural resources, consuming a great amount of energy, and damaging the biophysical environment (Rodríguez and Cruz, 2007).

Although the uniqueness characterizing the relationship between hotels and the natural environment has received increasing attention in the field (Kasim, 2006), environmental marketing issues within the hotel industry have been only tangentially tackled (Hudson and Miller, 2005; Leonidou et al., 2013). The present study aims to fill this void in the eco-friendly hotel literature by proposing and testing an integrated model of associations among innovation diffusion, environmental marketing strategy, sustainability innovations, and the organizational environment. That is, whether innovation diffusion can effectively contribute to sustainable innovation through environmental marketing strategy and organizational environment.

2. Theoretical background

2.1. Diffusion of innovations, environmental marketing strategy, and sustainability innovations

Diffusion of innovations theory (DIT) defines an innovation as an idea, practice, or object that is perceived as new by an individual or other unit of adoption (Rogers, 2003). As sustainability is spreading throughout numerous industries (Esty and Winston, 2009), DIT offers a highly appropriate approach for examining hotel sustainability (e.g., Deng-Westphal et al., 2015; Smerecnik and Andersen, 2011). Hsu et al. (2007), and Smerecnik and Andersen (2011) find that diffusion of innovations includes relative advantage (e.g., add significant value and market advantage to profile and services), compatibility (e.g., compatible with existing employee practices), simplicity (e.g., a simple and easy process), trialability (e.g., test the adoption on a smaller scale), and visibility (e.g., the produced benefits of promoting innovation by the company is evident).

Leonidou et al. (2013) reveal that environmental marketing strategy includes product-service (e.g., use environmentally friendly supplies and consumable products), price (e.g., build environmental compliance costs into the service price), distribution (e.g., show a preference for suppliers and strategic partners that embrace environmental responsibility), and promotion (e.g., use ecological arguments in advertisements, promotional material and marketing campaigns).

Salmones et al. (2005), and Smerecnik and Andersen (2011) consider that sustainability innovations involve environmental communication (e.g., environmental education of guests), resource conservation (e.g., pay attention to recycling), corporate social

responsibility (e.g., respect and protect the natural environment), energy conservation (e.g., use environmentally friendly building materials), culture innovation (e.g., combine local culture to enhance innovation value), sustainability management (e.g., assessment of greenhouse gas emissions and carbon footprint), and technology innovation (e.g., cloud systems and electronic forms). Besides, Deng-Westphal et al. (2015) consider that ecolabels can be adopted by a wide range of tourism suppliers/producers and destinations which offer certain environmentally friendly products and services. They are committed to adopt sustainable practices and able to afford the required resources for obtaining certification.

When companies seek to implement new environmental policies, practices or products, regardless of their various motivations (Bansal and Roth, 2000), they are introducing a sustainability innovation. How companies perceive the concept of sustainability and its value and adopt the innovation is a complex process involving numerous facets of communication (Berkhout and Rowlands, 2007; Dunphy et al., 2003; Vasi, 2006), and it can be explained through DIT. Rogers (2003) contends that adopting an innovation is based on five characteristics of the innovation: relative advantage, compatibility, simplicity, trialability, and observability.

Studies on sustainability innovations have primarily investigated such topics as the diffusion of environmental sustainability policies (Bergström and Dobers, 2000; Foxon and Pearson, 2008; Tsoutsos and Stamboulis, 2005), sustainability innovations adopted in geographical regions (Geltz, 2008; McEachern, and Hanson, 2008; Vasi, 2006, 2007), and consumer adoption of sustainability innovations (Labay and Kinnear, 1981). Studies have not systematically investigated the diffusion of sustainability innovations in the hotel industry.

In contrast with previous studies that focus on solutions within the constraints of what is already known, Lim (2016) presents a fresh perspective in the form of creativity toward greater sustainability. Lim (2016) adopts an inductive reasoning systems approach to develop a creativity framework for greater sustainability in hospitality and tourism. More specifically, Lim (2016) offers a contemporary overview of sustainability and a thorough explanation of the creativity concept and its application in these industries. In doing so, Lim (2016) provides greater clarity on the creativity-sustainability relationship in hospitality and tourism.

Numerous diffusion studies show that the successful adoption of innovations can be predicted from the perceived innovation characteristics of relative advantage, compatibility, simplicity, trialability, and observability (Rogers, 2003). Though it has not been widely used in sustainability innovations, DIT has been used to explain the spread of sustainable prevention innovations (Johnson et al., 2004), and renewable energy technologies (Tsoutsos and Stamboulis, 2005). Tsoutsos and Stamboulis (2005) integrated the supply- and demand-side perspectives, arguing that a successful policy for the speedy deployment of renewables should focus on the systemic innovation processes that characterize the development and sustainable diffusion of renewables. The current study was conducted because few studies have yet to test these important diffusion variables in the context of environmental sustainability in hotels (e.g., Le et al., 2006). This study thus presents the following hypotheses:

Hypothesis 1. Innovation diffusion is positively related to environmental marketing strategy.

Hypothesis 2. Innovation diffusion is positively related to sustainability innovations.

Hypothesis 3. Environmental marketing strategy is positively related to sustainability innovations.

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