Direct and indirect effects of eco-innovation, environmental orientation and supplier collaboration on hotel performance: An empirical study

Mohamed Aboelmaged

College of Business Administration, University of Sharjah, P.O. 27272, Sharjah, United Arab Emirates

ARTICLE INFO

ABSTRACT

This research builds on the relational theory and the natural-resource-based view (NRBV) of the firm to examine the direct and indirect effects of eco-innovation, environmental orientation and supplier collaboration on hotel performance. Survey responses of 182 hotel managers and officers from the United Arab Emirates (UAE) have been validated and analysed by means of structural equation modelling using the partial least squares method. The findings capture the dynamic role of environmental orientation and eco-innovation practices in influencing hotel performance. Surprisingly, the impact of environmental supplier collaboration on eco-innovation practices and hotel performance was not supported. This paper extends the body of sustainability knowledge by linking environmental orientation and supplier collaboration to eco-innovation in hotel organisations. It is also an early attempt to examine these relationships in a developing context. Theoretical and managerial implications are also discussed.

© 2018 Elsevier Ltd. All rights reserved.

1. Introduction

Sustainability has become a crucial issue for hotel organisations as they naturally consume a vast amount of resources. Bohdanowicz (2006) indicated that the majority of hotels' environmental impact is derived from the unlimited and diffused consumption of nondurable resources including water, food, energy, paper, and other goods, followed by the emissions of pollutants and unfriendly materials (e.g., non-disposable or non-recyclable items) to the local environment. Hotels also confront strenuous environmental and economic pressures from a wide spectrum of local and international stakeholders. For example, managers are struggling to satisfy a growing segment of their customers who would like to pay for green hotels while trying to control the costs of hotel operations (Rodríguez-Anton et al., 2012). Additionally, the growing emphasis on resource conservation and sustainable tourism are robust forces for environmental practices, bearing in mind the expectations of hotel guests as a powerful determinant of service effectiveness (Ludevid, 2000). Moreover, the natural environment (e.g., air, the sun, sand, sea, landscape) is a frail element in the service mix since it is highly prone to a negative impact of hotel operations concerning customer effect, resource utilisation and waste management (García-Pozo et al., 2015; Vellecco and Mancino, 2010). To meet the escalating demand for

sustainability, hotel managers have overseen various innovative approaches to minimise the negative environmental impact of their operations. According to Martínez-Pérez et al. (2015), eco-innovation practices have gained eminence in hotel organisations as a new business model in which meeting the growing demand for quality and sustainable products and services, using innovations in hotel operations, and protecting the environment are well grounded. However, eco-innovation research in hotel organisations remains scant despite its popularity in the manufacturing and industrial sectors (Alonso-Almeida, 2016; García-Pozo et al., 2015). Similarly, Menezes & da Cunha (2016) asserted that although there is considerable research on sustainability in hotels (e.g., Jones et al., 2014, 2016; Legrand et al., 2005; Sloan et al., 2013), studies that emphasise eco-innovation in this sector are scarce. This situation is even more glaring in such contexts as the Arabian Gulf, where very hot weather and water scarcity are further challenges to sustainable tourism. Therefore, the purpose of this paper is to examine the determinants of eco-innovation in hotel organisations. The study also contributes to the body of sustainability knowledge via developing the theoretical foundation for linking eco-innovation to environmental orientation and environmental supplier collaboration based on the natural-resource-based view (NRBV) of the firm (Hart, 1995) and the relational theory (Dyer and Singh, 1998). Besides, the study is an early attempt to investigate eco-innovation in

hotels in the context of the Arabian Gulf. The third contribution is testing the effects of environmental orientation, environmental supplier collaboration and eco-innovation on hotel performance.

The rest of the paper is organised as follows: Section two reviews relevant theories and literature. While section three draws research hypotheses, the research methodology is outlined in section four. Data analysis and results are presented in section five. Section six is dedicated to discussing the research results. Finally, the paper concludes with the study's limitations and directions for future research.

2. Theoretical background

This section paves the theoretical ground for the current study through emphasising the role of eco-innovation in hotel organisations and introducing the study context. This is followed by presenting two theories involving the NRBV and the relational theory and their relevance as theoretical foundations for environmental orientation and environmental supplier collaboration.

2.1. Eco-innovation in hotel organisations

Eco-innovation has become a buzzword in the innovation research field in recent years. It is denoted by researchers as one of the paths to proper sustainability. However, the concept is often used without a precise definition and is discussed from multifaceted perspectives. It is occasionally referred to as developing new products and processes that create customer and business value through decreasing negative environmental effects (Fussler and James, 1996; Rennings, 2000). An alternate view maintains that eco-innovation should go beyond developing new products and services to include the processes, practices, systems, equipment and techniques that should be modified to contribute to environmental sustainability in general (Oltra and Saint Jean, 2009; Kemp and Arundel, 1998; Rennings and Zwick, 2003). In addition, Carillo-Hermosilla et al. (2010) asserted that eco-innovation is any innovation that leads to minimising harmful effects of production and consumption on the environment, whether the focal drive for their invention or modification is environmental or not. Furthermore, Carillo-Hermosilla et al. (2010) introduced three levels of eco-innovations. First, the end-of-pipe eco-innovations that aim at reducing the negative environmental impact through adding components to the original product, processes or systems. Second, the eco-efficacy innovations that are the processes or systems that generate less waste and pollution. Third, the eco-effectiveness innovations that adopt an industrial ecology's view towards developing effective environmental solutions for society through radical alteration of components and subsystems (Carrillo-Hermosilla et al., 2010). Nonetheless, most of the eco-innovation definitions promote a sustainable future through fulfilling social, economic, and environmental goals. In the hotel context, Menezes and da Cunha (2016) asserted that eco-innovations can be used in hotels to preserve resources including water (e.g., toilets with dual flush valves, sewage treatment plants, reusing treated water for cooling and irrigation, sensors on taps), energy (e.g., using LED and motion sensors in lighting, using low temperature systems in the laundry, solar panels for heating water, energy production from waste, heat recovery systems, wind turbines), waste (e.g., garbage separation, waste management, recycling of paper, cardboard, aluminium and glass, using anaerobic digestion to turn organic waste into energy, using vacuum systems in waste management, conversion of used oil in food and beverage, using a system that eliminates food wastage), and other resources (e.g., using natural ingredients in redesigning facilities and packaging, using certification of environmentally sustainable buildings, applying sustainable enterprise

reporting, using a 100% PVC-free). They further demonstrated that hotels tend to develop a large number of end-of-pipe eco-innovations to save costs, improve their image and increase market share. However, the impact of eco-innovation on hotel's competitive advantage is wobbling when incentives (e.g., innovation funding and collaborations with other organisations) and barriers (e.g., lack of stakeholder's pressures) are encountered (Menezes and da Cunha, 2016). García-Pozo et al. (2015, 2016) examined the relationship between eco-innovation and labour productivity in Spanish hotels. They indicated that implementing eco-innovative practices in hotel organisations enhances labour productivity by about 8.15%. Moreover, Martínez-Pérez et al. (2015) examined the mediating role of knowledge strategy in the relationship between social capital and eco-innovation in tourism clusters. They revealed that a knowledge exploration strategy is a significant mediator through which managers can use social capital in developing eco-innovation initiatives in tourism firms. Analysing eco-innovations in 57 tourism businesses worldwide using the Delphi method, Alonso-Almeida et al. (2016) confirmed the vital role of eco-innovation practices in fostering creative changes in the entrepreneurial mindset and key processes within various types of tourism organisations (e.g., hotels, restaurants, cruises, leisure, travel). Alonso-Almeida et al. (2016) also stressed that eco-innovation research is still in its infancy which opens the venue for abundant research opportunities in diverse contexts. In conclusion, prior research has pointed out the eminent role of eco-innovation in hotel organisations though there are a limited number of studies. Further to delineating the types of eco-innovations in hotel organisations, most of the previous studies focused on the outcomes of eco-innovations rather than investigating their determinants in the hotel sector. The following section presents the sustainability pressures on the hotel industry in the UAE.

2.2. Sustainability and hotels in UAE context

The UAE has been a front-runner in the transition to sustainability by making efforts to become a successful model for a low-carbon green economy. In 2009, the UAE hosted the International Renewable Energy Agency (IRENA) which is located in Masdar City. The UAE also launched the green economy for sustainable development initiative, in 2012, which paved the way for the UAE Green Agenda 2015–2030 which aimed at increasing the use of renewable energy and eco-innovation (MOEW, 2015). For example, Abu Dhabi, The UAE capital, established the 100 MW Shams 1 CSP plant, the largest-ever renewable energy project in the Middle East. The Drop of Life Project is another initiative, aiming to extract freshwater from air humidity, which has been activated through joint agreements between the UAE government and technology firms. Considering the fact that the fast-growing demand exceeds water and energy supply, the UAE was highlighted alongside Brazil and India as most needing to mitigate that risk (O'Neill, 2013). Recently, the tourism sector in the UAE has embarked on moving towards sustainability and a clean environment to abridge the startling resource consumption figures. A recent report by the Emirates green building council stated that "UAE hotels rank among the top energy-consuming hotels worldwide. For instance, a recent survey showed that in Dubai five-star hotels consume up to 225% more energy when compared to their five-star counterparts in Europe" (EmiratesGBC, 2016, p. 13). Moreover, the estimated annual CO_2 emission per hotel room in the UAE is about 32 kg compared with 6 kg in the UK, while daily water consumption is estimated at 680 L per guest compared with 300 L for the local population (O'Neill, 2016). In response to these figures, some UAE hotels have pioneered the path toward sustainability such as Yassat Gloria Hotel & Apartments, Madinat Jumeirah, and Ramada Hotel & Suites.