



Munich Personal RePEc Archive

Drivers of eco-innovation in the Spanish hospitality industry

Magadán-Díaz, Marta and Sotiriadis, Marios and Rivas-García, Jesús

Universidad Internacional de La Rioja, Ningbo University,
Universidad Internacional de La Rioja

15 April 2019

Online at <https://mpra.ub.uni-muenchen.de/94090/>
MPRA Paper No. 94090, posted 26 May 2019 13:14 UTC

Drivers of eco-innovation in the Spanish hospitality industry

Marta Magadán-Díaz

Universidad Internacional de La Rioja

Marios Sotiriadis

Ningbo University

Jesús Rivas-García

Universidad Internacional de La Rioja

Some rights reserved.

Except otherwise noted, this work is licensed under: <https://creativecommons.org/licenses/by-nc-nd/4.0>

A previous version of this paper was published in: *Tourismos: An International Multidisciplinary Journal of Tourism*, Volume 14, Issue 1, 2019, pp. 119-136.

Abstract:

The main goal of this research is to determine whether the accommodation capacity and the financial performance can be considered as the main driving forces of eco-innovation in the context of Spanish hotel industry. Eco-innovation is a challenge for tourism industry, given the connection and interrelationship between environmental quality and business performance. The eco-innovation plans represent a new field of research in its infancy. This paper addresses the conceptual evolution of eco-innovation to subsequently develop an analytical framework that tentatively explores this concept and its implementation in Spanish hotel companies through two basic internal characteristics of these organizations: their business performance and their respective size, measured in terms of accommodation capacity. The case study method was applied -through documentary evidence and structured interviews- to the 10 companies leading -in terms of turnover- the national hotel offering and have a remarkable international presence. All these interviews were conducted between November 6th, 2017 and February 28th, 2018.

Keywords: *Eco-innovation, environmental responsibility, hospitality industry, drivers, organizational change, Spain.*

INTRODUCTION

Tourism industry represents 11.2% of the Spanish Gross Domestic Product. Spain has been among the top five destinations in the world for more than twenty years according to the data recorded by the World Tourism Organization (UNWTO, 2018). Tourism is the main export industry in Spain and creates 13 out of every 100 jobs in the country. In addition to the socio-economic impact of tourism, the sector, if managed in a sustainable manner, can become a factor of environmental preservation, promotion and cultural valorization. For this reason, companies in the tourism sector play an important role in introducing criteria of sustainability and energy efficiency in their operations (Magadán & Rivas, 2011) adopting eco-innovations to reduce their environmental impact and optimize the use of natural resources (Sáez, Avellaneda & González, 2016).

Generally speaking, the ability of business organizations to compete is increasingly influenced by their relationship with sustainability and innovation, either acting separately (Hitchens et al., 2005) or synergistically (Esty & Winston, 2009; Fotiadis, 2018), generating new markets for environmentally benign products (Beise & Rennings, 2005) and a new field of academic study: eco-innovation (Díaz et al., 2015; Fussler & James, 1996; Jänicke, 2008). The company-environment binomial is transforming processes, products, markets and business strategies by incorporating the principles of sustainability into the strategic business direction (Christou, 2002; Peiró et al., 2011). On the other hand, tourism industry is not immune to new technologies and their impact on the changes both in the behaviour and consumption patterns of today's tourist (Agarwal, 2002, Aguiló et al., 2005). In short, eco-innovation -or environmental innovation- could play an increasingly revealing role in shaping a tourism model adapted to the environmental sustainability principles (Hunter & Shaw, 2007).

Tourism companies are increasingly implementing innovative plans, not only to sustain growth, but also as a response to the varying scale and nature of global environmental change (Bell & Ruhanen, 2016). For some companies, this has included the development and adoption of green innovations (Nella & Christou, 2014; Bell & Ruhanen, 2016). Although tourism literature has considered the topic of business sustainability in broader terms, the notion of eco-innovations represents a new field of research with studies that still investigate in depth the adoption of eco-innovations among tourism companies (Moise et al., 2018; Ouyang et al., 2019; Tzschentke et al., 2008; Volgger et al., 2017).

Eco-innovation, as a concept handled in academic literature (Peiró et al., 2014) in which they find space for organizational procedures linked to the incorporation of environmental aspects in different points of the value chain and, even, in their own designs and organizational strategies is relatively recent (Klewitz & Hansen, 2014; Nella & Christou, 2016; Chatzigeorgiou, 2017). But its interest has grown significantly as a -direct or indirect- consequence of the new options and business possibilities that are opened with eco-innovation and that could arouse a special interest

in small and medium-sized companies facing improve their efficiency and competitiveness: i) with the implementation of new or improved processes and products, or ii) with a thorough reconsideration of their business models. Eco-innovation offers, as indicated above, a path of competitive efficiency capable of opening new markets. Although eco-innovation is founded on the basis of technical progress, it can also be promoted simply through arguments that manifest a genuine concern for the environment or an obvious economic need in the business organization capable of seeing efficiency gains and competitiveness to which reference has already been made. In any case, the unique characteristic of an eco-innovative process in organizations is that it must promote always a clear profit for the environment.

Eco-innovation is shown as one of the great challenges of the tourism industry, given the increasing connection between environmental quality and the good performance of the sector (Tzschentke et al., 2008; Samy, 2016). In fact, numerous studies on the hotel industry have shown that the commitment to environmental practices improves the financial performance of hotels (Tari et al., 2010, Tzschentke et al., 2008). Despite the industry's progress to be sustainable, hotels are still struggling with the most effective way to promote their green status (Peiró et al., 2014; Chatzigeorgiou et al., 2017).

This study aims to determine whether the accommodation capacity and the financial performance among the Spanish hospitality companies analysed can be considered as the driving forces of eco-innovation among them.

LITERATURE REVIEW

Eco-innovation concept

Eco-innovation can be defined in many different ways (see Table 1); however, it could be pointed out that two are the most comprehensive (i) a new list of processes and products able to increase the value for customers and companies and to favour a significant reduction of negative externalities on the environment (Fussler & James, 1996); ii) the appearance of any novelty or improvement in products or processes, organizational redesign or new marketing possibilities that, jointly or in isolation, are capable of optimizing the use of natural resources while minimizing the negative impacts associated with such changes (Alonso et al., 2016; Fotiadis et al, 2019).

The main and most quoted concepts focusing on eco-innovation extracted from academic literature from the last twenty years are collected in Table 1.

Table 1. Eco-innovation definitions (in chronological order)

<i>Study</i>	<i>Eco-innovation concept</i>
Fussler & James (1996)	New products and processes offering value to the customer and the business, but that significantly reduce environmental impacts.
Freeman (1996)	It is the same as other types of innovation, but with two important distinctions: i) it represents an innovation that results in a reduction of the environmental impact, and ii) its scope can go beyond the conventional organizational limits of the innovative company and involve pacts or broader social agreements that trigger changes in socio-cultural norms and existing institutional structures.
Klemmer <i>et al.</i> (1999)	All those measures of relevant social actors (companies, politicians, unions, associations, churches, private homes) that: i) develop new ideas, behaviours, products and processes, ii) apply or introduce them, and iii) contribute to the reduction of environmental burdens or achieving ecologically specified sustainability objectives.
Rennings (2000) Kemp (2010)	Production, assimilation or exploitation of a product, a service, a productive process, a commercial method or new management for the organization (that develops or adopts it) that favour, throughout its life cycle, a reduction of environmental risk, pollution and other negative impacts derived from the use of resources (including the use of energy) in comparison with relevant alternatives.
Little (2005)	Creation of new market spaces, products, services or processes driven by social, environmental or sustainability problems.
Charter & Clark (2007)	Process in which sustainability considerations (environmental, social, financial) are integrated into the company's systems, from the generation of ideas to research and development (R & D) and commercialization. It applies to products, services and technologies, as well as new business and organizational models.
Oltra & Saint Jean (2009)	Processes, practices, systems and new or modified products that benefit the environment and contribute to environmental sustainability.
González, Sáez & Díaz (2013)	Any form of innovation aiming at significant and demonstrable progress towards the goal of sustainable development, through reducing impacts on the environment or achieving a more efficient and responsible use of natural resources, including energy.

Source: Own elaboration.

Ecological innovations occupy a very important place in the ecological business models (Garcia, Gemar & Sevilla, 2016). Eco-innovation can contribute to the establishment of business and social networks, increase in social capital, business cooperation and the creation of new relationships between the public and private sectors (Alonso et al., 2016). For these reasons, all eco-innovation definitions agree with the increasing value of the environment and reflect two

derived effects of them: significant reduction of negative externalities and a better use of productive factors obtained from environment (Hojnik & Ruzzier, 2016).

The suggested concepts of eco-innovation are indicating as a three-dimensional process, the three pillars of Ecology, Economics and Technology (Hong & Shuai, 2008; Van Berkel, 2007; Christou, 2011; González, Sáez & Díaz, 2013; Fotiadis & Williams, 2018). Any organization would be in that three-dimensional space looking to progress considering the opportunity costs associated with an advance without environmental improvements that could have resulted in better business results. Therefore, eco-innovation seeks to achieving a balance between commercial development and productivity with an ecological concern attitude and respect for the environment, so that the tourism can conserve and efficiently use natural resources.

There is still no consensus on the definition of eco-innovation, which is even more evident when the analysis focuses on tourism, given the lack of studies related to this topic (García et al., 2015). In fact, when considering the few existing studies it can be observed that the prevailing concept of eco-innovation in the hotel industry is perceived as a binomial between environmental management and innovation, oriented to the continuous improvement of the hotel organization (González, Díaz & Saez, 2016).

Previous studies on eco-innovation

Previous research on sustainability in the tourism field started two decades ago as an analysis of the adoption of environmentally friendly practices (Alonso et al., 2015) and its economic impacts (Perramon et al., 2014). Sustainable management and operation affect an organisation in three ways, namely: i) it has a direct impact through energy saving; iii) it has an indirect effect because an image that respects the environment creates a competitive advantage; and iii) gaining the advantage of positioning itself as an ecological company (Best & Thapa, 2013; Hsiao & Chuang, 2016).

Eco-innovation research is more recent and, therefore, it is in an initial or embryonic stage (Alonso et al., 2016). As is the case in other fields of study, it began in the manufacturing sector (Christou, 2010; Segarra et al., 2014). In particular, the creation and adoption of ecological innovations have been analysed in this sector, and a series of triggers have been identified for their development (Alonso et al., 2016): i) investment in Research and Development and Innovation and export capacity of an innovation (Horbach et al., 2012;), have little place in the services sector; ii) the possession or size of a critical mass of resources and capacities, the mastery of certain technological capabilities and the existence of specific organizational characteristics for each company (Biondi et al., 2002), can belong to all types of sectors. In any case, it seems that there is a consensus that indicates that environmental regulation and market mechanisms are the main triggers for the creation, development and diffusion of eco-innovations (Horbach et al., 2012). iii) It comes from the environment in which the company develops its activity than from the company itself (del Río, 2005). Therefore, subsequent research indicated that internal factors could boost more than external factors because companies have little or no control over external factors (Bossle et al., 2016).

Eco-innovation in tourism field has been little documented in academic research or scientific articles (Alonso et al., 2016). The issues that have been studied in the academic literature include the role of eco-innovations in the choice of tourist establishments, such as restaurants (Teng & Chang, 2014), the types of eco-innovations adopted by restaurants (Daim et al., 2013; Rodgers, 2007) and hotels (Christou, 2013; Bastič & Gojčič, 2012; Horng et al., 2016), and the importance of using eco-innovations in the design of the physical environment of restaurants to generate an innovative atmosphere (Horng et al., 2013). It is important to highlight that eco-innovations include numerous action plans that affect tourism companies and destinations in fields such as energy, recycling, water, buildings / construction, interior design, new products, processes and business models, new materials, the use of eco-biological / organic product, to name a few (Alonso et al., 2016). It is believed that generation, development, adoption and diffusion of eco-innovations are different and much more complex than other innovations (Karakaya et al., 2014).

The research hypotheses, advanced by the present study, are discussed in the following subsections.

Research hypotheses

Initially, drivers of eco-innovation are both on the demand side -market- and on the supply side -accommodation capacity of the organization. Literature suggests the following drivers: (i) customers' demands / requirements; (ii) the existing legislation and regulations; (iii) the reputation / image of the organization; (iv) savings / decrease of operational costs; and (v) the business commitment to social wellbeing, in terms of corporate social responsibility.

This study attempts to explore the relationship between eco-innovation and two hypotheses linked to the internal characteristics of a hotel company: its business performance (measured in terms of annual turnover) and its size (measured in terms of accommodation capacity).

Scholars suggest that there is a direct relationship between financial performance, business results and eco-innovation (Doran & Ryan, 2012, Przychodzen & Przychodzen, 2015; Del Chiappa et al., 2018). Good financial performance is a prerequisite to the development of investments in eco-innovation and, consequently, the generation of positive results over time. This is a driver for hotel organisations to design and develop eco-innovation plans. In addition, this relationship tends to be bi-univocal: successful hotel organisations are favourable to eco-innovation and eco-innovative hotel organisations tend to achieve better results than non-eco-innovative ones. Based on the above, the following hypothesis is proposed:

H1: The higher the turnover of a hotel company, the stronger is the incentive to implement eco-innovation plans.

Hotel organizations do not evolve towards eco-innovation from similar positions. A determining factor is the size/accommodation capacity to achieve incentive and streamline eco-innovation processes (De Marchi & Grandinetti, 2012, Chen, 2008, Demirel & Kesidou, 2011; Chatzigeorgiou & Christou, 2016). Studies (see, for instance, Bowen, 2000, De Marchi & Grandinetti, 2012; De Almeida Ramos & Fernandes, 2016) indicate the positive and high correlation between size and eco-innovation, arguing that larger organizations tend to be more inclined to commit to eco-innovation. This is regarded as consequence related with the greater control over compliance with environmental regulations. On the other hand, from the perspective of internal analysis of business organizations, the question is if the accommodation capacity influences positively or negatively eco-innovation plans (Molero & Garcia, 2008, Lazaric & Dennis, 2005; Brunnermeier & Cohen, 2003). Based on the above, the following hypothesis is proposed,

H2: The bigger is the accommodation capacity of a hotel company, the stronger is the incentive to implement eco-innovation plans.

The two hypotheses were tested by means of an empirical study.

EMPIRICAL STUDY: RESEARCH METHOD

This study adopted and implemented the case study method to investigating the two hypotheses. Creswell (2005) considers that in a case study there should be cross-checking of data sources. Through it, we ensure the constructive validity, since the use of different data sources and methods of analysis will allow us to get a more accurate picture of the reality we are investigating (Johnston et al., 1999). This study has used different methods of collecting information: i) documentary evidence, which could be obtained through advertising, catalogues, reports and reports from companies, as well as financial data, among others; and ii) structured interviews via Skype and e-mail and conducted between November 6th, 2017 and February 28th, 2018.

Nowadays, more than 122 hotel chains operate in Spain, having an accommodation capacity of 628,556 rooms. This study analyses 10 companies leading -in terms of turnover- the national hotel offering and have a remarkable international presence. The analysed hotel chains have 3,221 hotel units (2.587 in Spain), 297,018 rooms (12,159 in Spain), and achieved a turnover of 13,724.3 million euros.

The selected hotel companies (convenience sampling) are 10 hotel chains belonging to the main Spanish national hotel chains, which have been named A1, A2, A3, A4, A5, A6, A7, A8, A9 and A10. Table 2 depicts the profile of the 10 organizations studied.

Table 2. Sample: Hotel chains studied

Name	Years of operation	Corporate headquarter	Type of hotels	Category	Rank of turnover (millions of euros)		International presence (IP)		Presence in Spain (PS)		Ratio = (PS/IP) in %	
					2016	2015	Number of hotels	Number of rooms	Number of hotels	Number of rooms	Hotels	Rooms
A1	62	Balearic Islands	Urban Beach hotels	5 stars 4 stars 3 stars	2.878,00	2.900,00	314	83252	150	34867	48%	42%
A2	62	Balearic Islands	Beach hotels	5 stars 4 stars 3 stars	2.025,00	1.847,00	78	27551	33	9665	42%	35%
A3	61	Balearic Islands	Urban Beach hotels	5 stars 4 stars	2.011,00	1.848,00	93	42291	32	11142	34%	26%
A4	40	Madrid	Urban	5 stars 4 stars 3 stars	1.475,00	1.395,00	381	58714	139	17588	37%	30%
A5	87	Balearic Islands	Urban Beach hotels	5 stars 4 stars	1.317,10	1.178,90	109	32770	51	13858	47%	42%
A6	58	Balearic Islands	Urban Beach hotels	5 stars 4 stars 3 stars	558	500	50	12804	26	6214	52%	49%
A7	38	Catalonia	Urban	4 stars 3 stars	505	440	55	14658	44	10391	80%	71%
A8	35	Catalonia	Urban Beach hotels	5 stars 4 stars	413	370	66	9808	55	6653	83%	68%
A9	46	Canary Islands	Beach hotels	5 stars 4 stars	389,6	319,17	20	7463	11	5187	55%	70%
A10	17	Madrid	Urban	5 stars 4 stars	136,6	127	39	5691	30	3478	77%	61%

FINDINGS: ANALYSIS OF RESULTS AND DISCUSSION

Tourism in general and hotel industry in particular, have not been oblivious to the changes in political and social attitudes regarding their commitment to environmental sustainability. In this new context, hotel companies have had to face new challenges posed by environmental innovations that, incardinated in their respective internal processes, are able to offer a way of compatibility with environmental management. Nonetheless, these eco-innovations entail, in addition to an awareness of the need for protection and sustainable use of natural resources, a financial challenge due to returns achieved in the medium or long term. This challenge leads companies to reconsider their organizational

structure in order to obtain competitive advantages based on of ecological innovations of ecological nature. This was postulated by H1 (the higher the turnover of a hotel organisation, the stronger is the incentive to eco-innovate).

Using the information obtained through the analysis of cases, it can be concluded that organizations are becoming more environmentally aware. For the representative of A1, sustainability is an element inherent to positioning as a company, both present and future, which becomes a backbone of the business model, thus ensuring the creation of economic value in a sustainable way. Its representative recognizes that management based on sustainability criteria allows them to have an important tool for continuous improvement of the daily activity of their units, focused on mitigating the impact on environment. The representative of A2 claims that it was in the last years when the organization began to take seriously the environmental management and points out that they initially began with an approach to the idea of sustainability from the people to subsequently moving towards the environment. This organization identified the increasing interest on the part of its clientele in carrying out a respectful leisure with people, cultures and means to which was added the concern of government, with regulations. The representative of A2 points out that the hotel chain has a strong commitment to environmental preservation and respect for the fauna and flora in all the destinations in which they operate, based on the opinion that sustainable economy is the way forward. The representative of A2 claims that they have reached that awareness and environmental plans pushed by demand.

The representative of A3 argues that they operate on daily basis to develop their business in an increasingly responsible manner with the environment and the community. He also indicates that they are aware of the direct impact of their operational activities on the environment and that is why they work to minimize by implementing plans aimed at ensuring efficiency and savings in energy and water consumption, protecting biodiversity, and avoiding pollution. The interviewed representatives of A5, A6 and A9 share the same opinion and argument they act in terms of environmental sensitivity (certifications and environmental sustainability plans, energy efficient equipment, etcetera.) driven by demand and legal requirements / regulations.

The representative of A4 states that this company is fully committed to integrate responsible business management in the economic, social and environmental fields. The representative of A7 goes further by collaborating actively in various social and environmental projects with non-profit associations, hospitals, schools, orphanages, contributing to a sustainable development of its hotel units.

The representative of A9 indicates that their company has successfully implemented different tools for sustainable management, making in recent years heavy investments, in the fields of energy (renewable sources and efficient use), and waste as well as water management. Hotel organisation A10 annually establishes objectives and goals both at the chain / corporate and unit levels. She points out that "promoting sustainable development in line with our daily activity is a strategic value: it is about promoting sustainable development in line with the activity daily." In all these cases, it is emphasized that the financial capacity of the respective organizations made it possible to introduce different environmental management processes aimed at achieving certifications, labels and approvals. Over time, this formalization and institutionalization of good practices of environmental management within each organization has focused on obtaining better results to achieve a range of customers more increasingly aware of respect for environment.

Representatives of A1, A2, A3 and A4 enthusiastically expose the achievements of their respective organizations in the field of eco-innovation. Beyond being or dealing with a necessary adaptation to social changes specified in government regulations or a perception of the new concerns of their clientele, what is involved is to advance in the improvement of the organization in itself. For these hotel organisations, addressing the challenge of eco-innovation is to have long-term vision: energy is saved and, therefore, there is a costs reduction; in addition, the related plans are enhancing and improving the prestige of the organization itself. In A1, A2, A3 and A5, they state their commitment to environmental sustainability through the adoption of innovations positively feeds the economic results of the organization. In short, for A1, A2, A3, A5 and A6, eco-innovation can be defended in their organizations not only by the need to build an awareness of respect for the environment, but the same long-term economic rationality makes the adoption of environmental innovations an opportunity to distance income and costs to advance the benefits.

Based on the above discussion, it could be argued that there is a direct relationship between financial performance, business results and eco-innovation, as suggested by previous studies (Doran & Ryan, 2012, Przychodzen & Przychodzen, 2015). Hotel organisations with higher turnover have more incentives to eco-innovate as they perceive eco-innovations as investments whose returns in the medium and long term allow them to consolidate a competitive advantage derived from the positive assessment by increasingly growing clients sensitive to their relationship with environment.

As for the second hypothesis, it is proposed that the higher the number of rooms in a hotel company, the stronger is the incentive to eco-innovate. Based on information obtained by means of cases analysis, it was found that all interviewed representatives recognize the need for better waste management and an optimal use of energy and water in all the hotels of their respective organizations. Particularly, in the cases of A1, A2 and A3, the direct relationship between this management concern and the hotel size is underlined, especially by the control of indirect variable costs associated with the processes of consumption and operations within the hotel units. The organisations A2 and A3 claim that they refuse to transfer the burden of environmental sensitivity to clientele because encouraging them, for instance, to use water responsibly is a wake-up call to their awareness, but it is not a suitable business solution to the challenges that arise in the hotel environment management.

Therefore, the accommodation capacity of hotel companies, measured in number of rooms, may stimulate and speed up the eco-innovation processes as indicated by previous studies (De Marchi & Grandinetti, 2012, Chen, 2008, Demirel & Kesidou, 2011). Larger companies are more prone to eco-innovation (Bowen, 2000, De Marchi & Grandinetti, 2012). This is due greater governmental pressure and closer monitoring by public administration.

When analysing the internal structure of the companies studied and bearing in mind a potential linkage between eco-innovation and size (Nelson, 1982, Churchill & Levis, 1983, Greiner, 1997) the research question proposed is whether this variable can suppose a brake on eco-innovation or just the opposite (Molero & García, 2008, Lazaric & Dennis, 2005, Brunnermeier & Cohen, 2003). Based on the above discussion, it could be argued that the higher the number of rooms in hotel organisations the stronger their incentive to eco-innovate aiming at two objectives (i) to manage available resources efficiently, and (ii) to achieve significant decreases in indirect variable costs.

Therefore, the two hypotheses advanced by the present study were supported.

CONCLUSION AND IMPLICATIONS

This study attempted to consider and analyse a topic of importance for the strategic management of hotel companies in general, which is progressing in Europe in an outstanding way and which is expected to follow an analogous pace in the Spanish hotel industry, considered as one of the most important in the world.

Based on the above discussion, this study aimed to identify the main drivers of eco-innovation in the context of Spanish hotel industry. It is concluded that two are the main drivers to design, develop and implement plans of innovation is the field of hotel environment management, namely: the accommodation capacity and the financial performance. The higher the turnover of a hotel company, the stronger is their incentive to eco-innovate; and the bigger their accommodation capacity (in terms of units and number of rooms), the stronger is their incentive to eco-innovate. Nonetheless, the analysis allows us to classify the hotel organizations into two groups: (i) First group - Reactive eco-innovators: their annual reports include the progress in environmental matters, progressively certifying their hotels in environmental quality and underlining the change in market trend, every time more oriented to sustainable products and services; and (ii) Second - Pro-active eco-innovators: the organisations publishing annual sustainability reports with the actions performed in this field trying to go ahead of the standards, and trying to make use of eco-innovations in their hotel units.

In the first group (A1, A4, A5, A6, A9 and A10) the "push factor" was twofold: firstly, government regulations and, secondly, the greater customers' sensitivity and concern about environment. From there, these organizations realise that eco-innovation is not an 'expensive obligation', but a long-term strategy to reduce costs and improve the position of the different hotel units of their respective organizations. In the second group (A2, A3, A7, A8 and A9), there is a certain anticipation and vision 'beyond' mandatory regulations and market demand, making them take control of the internal processes and operations of their hotel units, driving them towards the eco-innovation from the conviction that this is the adequate strategy to make a high quality and profitable hotel company.

Hotel organizations are seeking to adapt to the conditions of an evolving and challenging new socioeconomic and ecological context. Their management (mainly senior) are beginning to accept the value of an organizational culture capable of transforming and guiding companies towards sustainable development (Peiró et al., 2011).

The first conclusion is to see eco-innovation as a source of competitive advantages (Buhl et al., 2016; Kemp & Horbach, 2007; Rosen, 2001) in the medium and long term associated with: i) a significant reduction in costs, ii) an improvement in business reputation, and iii) access to market segments 'environmentally sensitive and aware' wishing to enjoy their leisure in a sustainable way (respectfully) with environment.

The second conclusion is to highlight the driving role of government policies to guide hotel companies towards good environmental practices. In fact, eco-innovations and their implementation in the hotel industry should be supported by the different instruments or mechanisms (mainly incentives, subsidies and tax reductions) and available government policies (policies for information dissemination, technology transfer and of creating associations and clusters of a mixed public-private nature) in order to minimize possible barriers to knowledge (Doran & Ryan, 2012; Hojnik & Ruzzier, 2016). In some cases, this orientation will have a reactive nature: the regulations act by defining the limits of what is environmentally acceptable (Horbach et al., 2012; Rennings, 2000). In others, a dialogue and an engagement among social stakeholders could contribute to promoting a citizenship with ecological awareness and concern. The latter will enhance organisations to make decisions and implement plans positively influenced by environmental sensitivity.

This study contributed to our knowledge of the eco-innovation and environment management in the field of hotel industry; however, it entails some limitations. It presents limitations related to the selection of the sample that will require in the future a broader and more detailed study to analyse the evolution of eco-tourism innovation in Spain, a country as rich as diverse in tourist terms. The profile of hotel companies considered is very marked by its urban character, but it would be desirable to evaluate hotel units with different targets to detect if there are significant differences in the implementation of environmental innovations depending on the market to which Spanish hotel companies are oriented.

REFERENCES

- Agarwal, S., (2002). Restructuring seaside tourism: The Resort Lifecycle. *Annals of Tourism Research*, Vol. 29, No. 1, pp. 25-55.
- Aguiló, E., Alegre, J. & Sard, M., (2005). The persistence of the sun and sand tourism model. *Tourism Management*, Vol. 26, No. 2, pp. 219-231.
- Alonso, M., Bagur, L., Llach, J. & Perramon, J., (2015). Sustainability in small tourist businesses: the link between initiatives and performance. *Current Issues in Tourism*, Vol. 8, No. 1, pp. 1-20.

- Alonso, M., Rocafort, A. & Borrajo, F., (2016). Shedding light on eco-innovation in tourism: a critical analysis. *Sustainability*, Vol. 8, No. 12, pp. 1262-1274.
- Bagur, L., Llach, J. & Alonso, M., (2013). Is the adoption of environmental practices a strategical decision for small service companies? An empirical approach. *Management Decision*, Vol. 51, No, pp. 41-62.
- Bastič, M. & Gojčič, S., (2012). Measurement scale for eco-component of hotel service quality. *International Journal of Hospitality Management*, Vol. 31, No. 3, pp. 1012-1020.
- Beise, M. & Rennings, K., (2005). Lead markets and regulation: a framework for analyzing the international diffusion of environmental innovations. *Ecological Economics*, Vol. 52, No. 1, pp.5-17.
- Bell, C. & Ruhanen, L., (2016). The diffusion and adoption of eco-innovations amongst tourism businesses: the role of the social system. *Tourism Recreation Research*, Vol. 41, No. 3, pp. 291-301.
- Best, M. N. & Thapa, B., (2013). Motives, facilitators and constraints of environmental management in the Caribbean accommodations sector. *Journal of Cleaner Production*, Vol. 52, No. 1, pp. 165-175.
- Bossle, M. B., de Barcellos, M., Vieira, L. & Sauvée, L., (2016). The drivers for adoption of eco-innovation. *Journal of Cleaner Production*, Vol. 113, pp. 861-872.
- Bowen, F. E., (2000). Environmental visibility: A trigger of green organizational response? *Business Strategy and the Environment*, Vol. 9, No. 2, pp. 92-107.
- Brunnermeier, S. & Cohen, M., (2003). Determinants of environmental innovation in US manufacturing industries. *Journal of Environmental Economics and Management*, Vol. 45, pp. 278-293.
- Buhl, A., Blazewski, S. & Dittmer, F., (2016). The more, the merrier: Why and how employee-driven eco-innovation enhances environmental and competitive advantage. *Sustainability*, Vol. 8, No. 9, pp. 2-17.
- Chatzigeorgiou, C. (2017). Modelling the impact of social media influencers on behavioural intentions of millennials: The case of tourism in rural areas in Greece. *Journal of Tourism, Heritage & Services Marketing*, 3(2), 25-29.
- Chatzigeorgiou, C. & Christou, E. (2016). Destination branding and visitor brand loyalty: Evidence from mature tourism destinations in Greece. *Tourismos: An International Multidisciplinary Journal of Tourism*, 11(5), 102-123.
- Chatzigeorgiou, C., Christou, E. & Simeli, I. (2017). Delegate satisfaction from conference service quality and its impact on future behavioral intentions. 5th International Conference on Contemporary Marketing Issues, ICCMI, June 21-23, 2017 Thessaloniki, Greece, pp. 532-544.
- Chen, Y. S., (2008). The driver of green innovation and green image–green core competence. *Journal of Business Ethics*, Vol. 81, No. 3, pp. 531-543.
- Christou, E. (2002). Examining the impact of tourism destination image and reputation on visitor loyalty likelihood. *Tourism Today*, 2(1), 34-46.
- Christou, E. (2003). Guest loyalty likelihood in relation to hotels' corporate image and reputation. *Journal of Hospitality & Leisure Marketing*, 10(3/4), 85-100. https://doi.org/10.1300/J150v10n03_0544
- Christou, E. (2010). Relationship Marketing Practices for Retention of Corporate Customers in Hospitality Contract Catering. *Tourism & Hospitality Management*, 16(1), 1-10.
- Christou, E. (2011). Exploring online sales promotions in the hospitality industry. *Journal of Hospitality Marketing & management*, Vol. 20, No. 7 pp 814-829. <https://doi.org/10.1080/19368623.2011.605038>
- Creswell, J., (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Los Angeles: Sage.
- Daim, T. U., Basoglu, A., Gunay, D., Yildiz, C. & Gomez, F., (2013), Exploring technology acceptance for online food services. *International Journal of Business Information Systems*, Vol. 12, No. 4, pp. 383-403.
- De Almeida Ramos, G.M. & Fernandes, J.L.J. (2016). Tourism territories in low density areas: The case of Naturtejo geopark in Portugal. *Journal of Tourism, Heritage & Services Marketing*, 2(1), 14–21. <http://doi.org/10.5281/zenodo.376330>
- De Marchi, V. & Grandinetti, R., (2012), Who are the green innovators? An empirical analysis of firm's level factors driving environmental innovation adoption. Copenhagen: Druid Conference.
- Del Chiappa, G., Usai, S., Cocco, A. & Atzeni, M. (2018). Sustainable Tourism Development and Climate Change: A Supply-Side Perspective. *Journal of Tourism, Heritage & Services Marketing*, 4(2), 3–9. <http://doi.org/10.5281/zenodo.1490348>
- Del Río, P., (2005). Analysing the factors influencing clean technology adoption: a study of the Spanish pulp and paper industry. *Business Strategy and the Environment*, Vol. 14, No. 1, pp. 20-37.

- Demirel, P. & Kesidou, E., (2011). Stimulating different types of eco-innovation in the UK: Government policies and firm motivations. *Ecological Economics*, Vol. 70, No 8, pp. 1546-1557.
- Díaz, C., González, Á., & Sáez, F. J. (2015). Eco-innovation: insights from a literature review. *Innovation*, Vol. 17, No. 1, pp. 6-23.
- Doran, J. & Ryan, G., (2012). Regulation and firm perception, eco-innovation and firm performance. *European Journal of Innovation Management*, Vol. 15, No. 4, pp. 421-441.
- Esty, D. and Winston, A., (2009). *Green to Gold: How Smart Companies use Environmental Strategy to Innovate, Create Value, and Build Competitive Advantage*. New York: John Wiley & Sons.
- Freeman, C., (1996). The greening of technology and models of innovation. *Technological Forecasting and Social Change*, Vol. 53, No. 1, pp. 27-39.
- Fotiadis, A. (2018). Modelling wedding marketing strategies: An fsQCA Analysis. *Journal of Tourism, Heritage & Services Marketing*, 4(1), 23-26.
- Fotiadis, A., Nuryyev, G., Achyldurdyeva, J., & Spyridou, A. (2019). The Impact of EU Sponsorship, Size, and Geographic Characteristics on Rural Tourism Development. *Sustainability*, 11(8). doi:10.3390/su11082375
- Fotiadis, A., & Williams, R. (2018). “TiCoSa” a 3d matrix conceptual model to investigate visitors’ perceptions in an athletic event. *Journal of Tourism, Heritage & Services Marketing*, 4(2), 32-36.
- Fussler, C. and James, P. (1996). *Driving Eco-Innovation: A Breakthrough Discipline for Innovation and Sustainability*. London: Pitman Publishing.
- García, A., Gemar, G., & Sevilla, C., (2016). Determinants of eco-innovation: comparative analysis of the industrial and services sectors. *Environmental Engineering and Management Journal*, Vol. 15, No.7, pp. 1473-1479.
- García, A., Sánchez, J. & Marchante, M., (2015). Eco-innovation and management: An empirical analysis of environmental good practices and labour productivity in the Spanish hotel industry. *Innovation*, Vol. 17, pp. 58-68.
- González, A., Díaz, C., & Saez, F. J. (2016). Environmental responsibility among SMEs in the hospitality industry: performance implications. *Environmental Engineering and Management Journal*, Vol. 15, No. 7, pp. 1527-1532.
- González, Á., Sáez, F. J., & Díaz, C., (2013). Drivers of eco-innovation in chemical industry. *Environmental Engineering and Management Journal*, Vol 12, No. 10, pp. 2001-2008.
- Hitchens, D., Thankappan, S., Trainor, M., Clausen, J. & De Marchi, B., (2005). Environmental performance, competitiveness and management of small businesses in Europe. *Royal Dutch Geographical Society*, Vol. 96, No. 5, pp. 541-557.
- Hojnik, J. & Ruzzier, M., (2016). What drives eco-innovation? A review of an emerging literature. *Environmental Innovation and Societal Transitions*, Vol. 19, No. 1, pp. 31-41.
- Hong, C. & Shuai, S., (2008). Research of local government behavior in eco-technological innovation process. *Management Science and Engineering*, Vol. 2, No. 1, pp. 86-96.
- Horbach, J., Rammer, C. & Rennings, K., (2012). Determinants of eco-innovations by type of environmental impact—the role of regulatory push/pull, technology push and market pull. *Ecological Economics*, Vol. 78, pp. 112-122.
- Hornig, J. S., Chou, S., Liu, C. & Tsai, C., (2013). Creativity, aesthetics and eco-friendliness: A physical dining environment design synthetic assessment model of innovative restaurants. *Tourism Management*, Vol. 36, pp. 15-25.
- Hornig, J. S., Wang, C., Liu, C., Chou, S. & Tsai, C., (2016). The role of sustainable service innovation in crafting the vision of the hospitality industry. *Sustainability*, Vol. 8, No. 3, pp. 1-18.
- Hsiao, T. Y. & Chuang, C., (2016). Creating shared value through implementing green practices for star hotels. *Asia Pacific Journal of Tourism Research*, Vol. 21, No. 6, pp. 678-696.
- Hunter, C. & Shaw, J., (2007). The ecological footprint as a key indicator of sustainable tourism. *Tourism Management*, 28(1): 46-57.
- Jänicke, M., (2008). Ecological modernisation: new perspectives. *Journal of Cleaner Production*, Vol. 16, No. 5, pp. 557-565.
- Johnston, W., Leach, M. & Liu, A., (1999). Theory testing using case studies in business-to-business research. *Industrial Marketing Management*, Vol. 28, pp. 201-213.
- Karakaya, E., Hidalgo, A. & Nuur, C., (2014). Diffusion of eco-innovations: a review. *Renewable and Sustainable Energy Reviews*, Vol. 33, pp. 392-399.
- Kemp, R. & Horbach, J., (2007). Measurement of competitiveness of eco-innovation. *Measuring Eco-innovation Project (MEI)*.

- Kemp, R., (2010), Eco-Innovation: definition, measurement and open research issues. *Economia Politica*, Vol. 27, No. 3, pp. 397-420.
- Klewitz, J. & Hansen, E., (2014). Sustainability-oriented innovation of SMEs: a systematic review. *Journal of Cleaner Production*, Vol. 65, No. 1, pp. 57-75.
- Lazaric, N. & Dennis, B., (2005). Routinisation and memorisation of tasks inside a workshop: an illustration through a case study. *Industrial and Corporate Change*, Vol. 14, No. 5, pp. 873–896.
- Little, A. D. (2005). How Leading Companies are using Sustainability-driven Innovation to win Tomorrow's Customers. *Innovation High Ground Report*.
- Magadán, M., & Rivas, J., (2011). The impact of energy consumption on the benefit functions of enterprises: proposal of an energy efficiency indicator. *Environmental Engineering and Management Journal*, Vol. 10, No 12, pp. 1831-1834.
- Moise, M. S., Gil-Saura, I., & Ruiz-Molina, M. E. (2018). Effects of green practices on guest satisfaction and loyalty. *European Journal of Tourism Research*, Vol. 20, No. 20, pp. 92-104.
- Molero, J. & Garcia, A. (2008). The innovative activity of foreign subsidiaries in the Spanish Innovation System: an evaluation of their impact from a sectoral taxonomy approach. *Technovation*, Vol. 28, pp. 739-757.
- Nella, A. & Christou, E. (2014) Linking Service Quality at the Cellar Door with Brand Equity Building, *Journal of Hospitality Marketing & Management*, 23:7, 699-721. <https://doi.org/10.1080/19368623.2014.891959>
- Nella, A. & Christou, E. (2016). Extending tourism marketing: Implications for targeting the senior tourists' segment. *Journal of Tourism, Heritage & Services Marketing*, 2(1), 36–42. <http://doi.org/10.5281/zenodo.376336>
- Ouyang, Z., Wei, W., & Chi, C. G. (2019). Environment management in the hotel industry: does institutional environment matter? *International Journal of Hospitality Management*, Vol. 77, pp. 353-364.
- Peiró, A., Segarra, M. & Verma, R., (2014). The impact of environmental certification on hotel guest ratings. *Cornell Hospitality Quarterly*, Vol. 55, pp. 40-51.
- Peiró, Á., Segarra, M. D. V., Miret, L., & Verma, R., (2011). Eco-innovation attitude and industry's technological level-an important key for promoting efficient vertical policies. *Environmental Engineering and Management Journal*, Vol. 10, No. 12, pp. 1893-1901.
- Perramon, J., Alonso, M. & Llach, J., (2014). Green practices in restaurants: impact on firm performance. *Operations Management Research*, Vol. 7, No. (1-2), pp. 2-12.
- Przychodzen, J. & Przychodzen, W. (2015). Relationships between eco-innovation and financial performance—evidence from publicly traded companies in Poland and Hungary. *Journal of Cleaner Production*, Vol. 90, pp. 253-263.
- Rennings, K., (2000). Redefining innovation—eco-innovation research and the contribution from ecological economics. *Ecological Economics*, Vol. 32, No. 2, pp. 319-332.
- Rodgers, S., (2007). Innovation in food service technology and its strategic role. *International Journal of Hospitality Management*, Vol. 26, No 4, pp. 899-912.
- Rosen, C. M., (2001). Environmental strategy and competitive advantage: an introduction. *California Management Review*, Vol. 43, No 3, pp. 8-10.
- Sáez, F. J., Avellaneda, L., & González, Á. (2016). Open and green innovation in the hospitality industry. *Environmental Engineering and Management Journal*, 15(7): 1481-1487.
- Samy, H. (2016). Exploring Factors that Influence Domestic Tourists' Satisfaction with Budget Hotel Services in Egypt. *Journal of Tourism, Heritage & Services Marketing*, 2(2), 17–22. <http://doi.org/10.5281/zenodo.376344>
- Segarra, M. D., Peiró, A., Mondéjar, J. & Vargas, M., (2014). Service vs. manufacturing: how to address more effectively eco-innovation public policies by disentangling the different characteristics of industries. *Innovation: The European Journal of Social Science Research*, Vol. 27, No. 2, pp. 134-151.
- Tari, J. J., Claver, E., Pereira, J. & Molina, J., (2010). Levels of quality and environmental management in the hotel industry: Their joint influence on firm performance. *International Journal of Hospitality Management*, Vol. 29, No 3, pp. 500-510.
- Teng, C.C. and Chang, J. (2014). Effects of temporal distance and related strategies on enhancing customer participation intention for hotel eco-friendly programs. *International Journal of Hospitality Management*, Vol. 40, No. 1, pp. 92-99.
- Tzschentke, N. A., Kirk, D. & Lynch, P., (2008). Going green: decisional factors in small hospitality operations. *International Journal of Hospitality Management*, Vol. 27, No. 1: pp. 126-133.

UNWTO (2018). Yearbook of Tourism Statistics, Data 2012 –2016. Madrid: OMT.

Van Berkel, R., (2007). Eco-Innovation: opportunities for advancing waste prevention. *International Journal of Environmental Technology and Management*, Vol. 7, No. (5-6), pp. 527-550.

Volgger, M., Pechlaner, H., & Pichler, S. (2017). The practice of destination governance: A comparative analysis of key dimensions and underlying concepts. *Journal of Tourism, Heritage & Services Marketing*, 3(1), pp. 18-24.
<http://doi.org/10.5281/zenodo.401371>