



# Knowledge agents as drivers of environmental sustainability and business performance in the hospitality sector



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## ABSTRACT

This study examines the role of knowledge agents as key enablers in the process of creating and updating the environmental knowledge base of a firm and, in doing so, having a positive effect on business performance. From the perspective of a hotel as the most important cog in the machinery of the hospitality sector, knowledge agents are those individuals who can provide information and knowledge that enables the firm to deal with environmental issues effectively. The paper describes an empirical, longitudinal study of 87 organisations in the Spanish hospitality industry. The results highlight the importance of the relationship between knowledge agents and environmental knowledge for business performance. Furthermore, our findings indicate that the role of knowledge agents is also relevant for the future management of the environmental knowledge base of a firm within the hospitality sector.

## 1. Introduction

As the basis for attaining sustainable development in countries and regions, environmental protection and the improvement of organisational performance become two of the highest priorities for business and society (Galpin, Whittington, & Bell, 2015; Tee, Abdullah, Din, Abdullah, & Wu, 2017). Globalisation and industrialisation have resulted in a shifting of the impact of local environmental issues to a larger scale or a wider region, often been transformed into international environmental challenges (Wheeler, 2005). Different initiatives have been adopted by organisations with the aim of addressing such problems while minimising their financial performance (Boiral, Raineri, & Talbot, 2016; Chien & Shih, 2007; Chin, Marcolin, & Newsted, 2003; Font, Garay, & Jones, 2016; Martínez-Martínez, Cegarra-Navarro, & García-Pérez, 2015).

It can also be argued that environmental issues have turned into one of the most serious concerns for organisations worldwide due to an increasing, global interest in “green” initiatives. Firms' attitude toward sustainability issues is changing in response to a combination of an increasing social awareness of environmental issues and the dynamics of the related regulatory and competitive landscape (Fraj, Matute, & Melero, 2015). In this context, new systems are created to help firms

formalise and use knowledge associated with industrial ecology in a business setting (Tee et al., 2017). Thus, the concept of environmental knowledge has emerged to describe the relationship between the firm and those systems which connect environmentally-related data sets, their analysis and people for the benefit of the firm and society (Singjai, Winata, & Kummer, 2018; Wernick, 2003).

Knowledge management is a distinctive subject domain which has developed rapidly over the last three decades (Durst & Edvardsson, 2012; Nieves & Haller, 2014; Omotayo, 2015). However, the subject has become more focused on the development of applications for the identification and solution of different types of knowledge-related problems. Over the next decade a better understanding of these people-related issues will drive knowledge management forward (Chase, 2006; Johannessen, 2017), besides, organisational knowledge loss has emerged as one of the most important corporate risks today (Massingham, 2018). In this context, the term environmental knowledge management has emerged to describe the use of knowledge management strategies, tools and techniques to create, share and reuse tacit and explicit knowledge resources related to the environment and its protection (Martínez-Martínez et al., 2015). It is perceived by scholars as a result of the combination of environmental knowledge resources and knowledge management practices (Singjai et al., 2018;

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Wernick, 2003). Although the subject has been studied for almost two decades and from a variety of perspectives, key issues that define a successful environmental knowledge management initiative have not received enough attention in the literature.

Commitment to the environment is perceived by many as an integral environmental right and a responsibility for individuals and organisations operating in several sectors (Bell, 2005). For the hospitality industry, such commitment is particularly relevant. Conscious that natural resources are limited, society expects that hotels and other stakeholders within the hospitality sector will make their demands for environmental protection increasingly explicit. Paradoxically, the sector has been only marginally influenced by recent environmental regulations and there is currently a lack of a homogeneous, cross-industry response to today's environmental concerns (Boiral, Raineri, & Talbot, 2016; Céspedes-Lorente, Burgos-Jiménez, & Álvarez-Gil, 2003; Darnall, Henriques, & Sadorsky, 2010; Rahman & Reynolds, 2016). Furthermore, it is fair to argue that environmental knowledge and its management within the hospitality sector have become a widely neglected research setting in recent years.

One area that has received particularly limited attention is the role of individual stakeholders and their knowledge in the process of solving environment-related issues and in doing so contributing to hotels' performance (Jain & D'lima, 2018; Zientara & Zamojska, 2016). This is important because previous research shows that a reason why some hotels seek, adopt, manage and benefit from environmental knowledge is directly related to the role played in those processes by their individual knowledge agents (Martínez-Martínez, Cegarra-Navarro, & Wensley, 2017; Tee et al., 2017). Knowledge agents, in this context, have been defined as individuals with the willingness to invest their own resources into acquiring environmental knowledge for the benefit of the environment and, directly or indirectly, of their own institution. Thus, the purpose of this study is to analyse the role played by knowledge agents as key enablers of the processes of creating and updating the environmental knowledge base of an organisation, and the impact that these activities could have on business performance. All of these with focus on the hospitality sector in general and hotels in particular.

Previous research initiatives have perceived service organisations as less harmful entities for the environment than their industry equivalent (Dangelico & Pontrandolfo, 2015; González-Benito & González-Benito, 2005; Molina-Azorín, Claver-Cortés, Pereira-Moliner, & Tarí, 2009). This has led researchers and practitioners to put significantly less attention into the subject in a service environment than they have in other subjects (Mina, Bascavusoglu-Moreau, & Hughes, 2014).

While most of previous studies focus on measuring the proactive attitude of firms towards environmental protection (e.g. their explicit efforts for the reduction of pollution), this study adopts a fresh approach to the study of the subject. We understand that firms' ability to reduce its environmental impact is also determined by a combination of two key issues. These are (1) how knowledge agents can foster the creation, development and continuous updating of an environmental knowledge base within the firm, and (2) how the environmental knowledge base can help the firm improve their business performance. Thus, this research seeks to contribute to improving the current understanding of the environmental impact of a firm in terms of its relationship with the firm's ability to implement specific environmental knowledge management strategies. This has been achieved by running two observations of the evolution of the same variables in the same context within a six-year period, in 2008 and 2014.

The rest of this paper is organised as follows: the theoretical framework and hypotheses development are presented in section 2. Section 3 describes the methodological approach to conducting the research and details of the approach to data collection and analysis. The theoretical contribution and managerial implications of the research are discussed in section 4, while the conclusions of the research, managerial implications, limitations and recommendations for future

research are included in section 5.

## 2. Theoretical framework and hypotheses development

### 2.1. Environmental knowledge and the Spanish hospitality sector

The hospitality sector is key to the success of the Spanish economy. In a sector that represents approximately 70% of global gross domestic product (GDP) from services (WTO, 2010), Spain is the third most important economy with US\$ 57 billion (WTO, 2016), preceded only by the United States of America with US\$ 178 billion and China with US\$ 114 billion.

In a move towards more explicit efforts to protect the environment, organisations that have developed and promoted environmentally friendly products and services have received support from their respective governments (Leonidou, Leonidou, Fotiadis, & Aykol, 2015). It is widely acknowledged that 'green practices' contribute not only to an improved public perception of organisations but also to a reduction in business costs (Mittal & Dhar, 2016). In this context, it has become a norm that tourists consider 'care for the environment' as part of their preferences when making a purchase decision. All this, combined with an immediate and increased access to information about the sector, helps tourists organise their holidays taking into consideration a range of environmental issues (Civre & Omerzel, 2015). Tourism-related organisations therefore face an increasingly complex and competitive environment. Adaptation to the new explicit and implicit environment-related norms and the embracing of innovation in this domain become key elements for success and often for survival (Cruz, Martínez, Hincapié, & Torres, 2016; De Marchi & Grandinetti, 2013).

The idea of environmental knowledge refers to the way in which businesses align their strategic goals to sustainable development (Singjai et al., 2018; Wernick, 2003). Research by Fryxell and Lo (2003) defined environmental knowledge as a general knowledge of facts, concepts, and relationships concerning the natural environment and its major ecosystems. In their recent research, Martínez-Martínez et al. (2015) found that the conservation of the environment becomes a key factor to be considered in the management of hotel operations. In this regard, environmental knowledge involves what people or agents know about the environment, key relationships leading to environmental aspects or their impact, and an appreciation of systems and collective responsibilities necessary for sustainable development (Frick, Kaiser, & Wilson, 2004; Po-Shin & Li-Hsing, 2009). On this basis, this study has focused on providing the hospitality research and practice communities with an understanding of how knowledge agents can contribute to the development of new environmentally-conscious business strategies and to the adaptation of existing environmentally-focused approaches to business operation and management (Cegarra-Navarro & Martínez-Martínez, 2010).

### 2.2. Environmental knowledge: an enabler for knowledge agents

A wide range of knowledge agents can be identified within the hospitality sector. These generally include roles such as managers and employees in firms from all sectors, from travel and tourism to recreation, lodging and those dependants on food and beverage. Such agents require continuous acquisition of new knowledge in order to adapt their roles and responsibilities to the challenges posed by the current, changing environmental conditions. Knowledge agents often engage with customers in important face-to-face and online activities. These agents try to respond to external demands by using the skills and knowledge they have acquired over time, both within and outside their job. Thus, knowledge agents play a key role in the hospitality sector not only by making the right decisions but also by providing customers with valuable insights into environmental issues of relevance for both the customer and the business (Kim & Lee, 2013).

As they seek to meet their customers' needs, knowledge agents

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