

Analysing the **environment** as a variable that affects prices: Willingness-to-pay and **consumer behaviour** in the **hotel sector**

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Keywords | Consumer behaviour, Competitiveness, Environment, Hotel, Willingness-to-pay.

Objectives | Respect for the environment could be a differentiating attribute over competitors and will lead to competitive advantages (Ladhari, 2009). Some authors highlight the fact that, providing the environmental setting is valued by clients, it becomes a differentiating output. Other authors consider environmental compliance as an element for improving the quality of the product and an attribute of the service provided by firms that has economic value for the consumer. The environmental sustainability of the activities carried out by firms is rarely used for explaining factors that have an impact on room pricing. In fact, only a few papers include an environmental attribute for justifying room pricing by using a hedonic function (Kuminoff, Parmeter & Pope, 2010; Kuminoff, Zhang & Rudi, 2010; García-Pozo, Sánchez-Ollero & Marchante-Mera, 2013; Sánchez-Ollero, García-Pozo & Marchante-Mera, 2014).

Currently, environmental responsibility is having an effect on the behaviour of consumers when making purchasing decisions, influencing their reasons for travelling and the final choice of destination and service provider. In this work we analyze whether environmental variables have an influence in the willingness-to-pay (WTP) of the tourist.

Methodology | The hedonic pricing methodology has been used in many fields of economics for analysing heterogeneous goods and services. In particular, has been widely used in the tourism sector and its subsectors due to its diverse character. In this paper, the model proposed follows the methodology developed in the work of Rosen (1974) and is based on the semilog relationship between the price of a hotel room and a variable representing the implementation of measures favouring environmental sustainability. This methodology is useful when one of the variables covers a large range of values - the price of the room, in our case - and the other - the environmental measures - has only a restricted range. The inclusion of this variable is a distinguishing feature of our study. We have also included two control variables (the

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number of quality certificates or mentions, and the number of environmental quality certifications or mentions awarded to the hotel) to adjust for the effect of the environmental variable on room pricing. Finally, we have included a set of variables that represent structural and location attributes traditionally used in hedonic models of the hotel industry.

The database was created as part of the project 'Quality, productivity and competitiveness in the hospitality industry for Andalusia' (Po7/Sej-02889). It includes representative parameters from 216 Andalusian hotels (88 rated as 3 star, 118 as 4 star, and 10 as 5 star) offering a total of 62,847 beds representing 34.34% of the total beds offered by these types of establishments in Andalusia at the end of 2009.

The hedonic function was modelled using the 13 independent variables finally included in the empirical models. These variables were selected from all the potential variables collected in the questionnaire and formed the basis for building the database.

Main results and contributions | The data show that very few hotels in Andalusia implement sustainable measures. In fact, the only data of relevance are that most establishments have implemented energy and water saving measures (79.8%) and recycling waste measures (70.1%). Both measures are compulsory in Spain and both also derive in a reduction of costs. In another vein, there are clear differences between the results obtained for each star-rating group. Regarding the services offered, it is noteworthy that the higher the star-rating, the higher the percentage of establishments offering the added value services analyzed in this work.

The costs associated with any investment in environmental sustainability made by hotels are passed onto the customers; as can be derived from the principles of hedonic models, the customers are willing to pay a higher price because they value sustainability: each environmental measure implemented increased the price by 4.51%. The estimates are compatible with the results of studies for the Spanish economy using similar variables but different database (Espinet, Fluvià, Rigall-I-Torrent & Saló 2012; Alegre, Cladera & Sard, 2012).

Limitations | The database contains the descriptive variables of a set of establishments ranged from 3 to 5 stars, not including other types of hotels or different accommodations. Furthermore, all these hotels are located in the region of Andalusia. The explanatory power of the model would need to be increased by including establishments located in other regions of Spain, including those ranged with less than 3 stars, and other types of accommodations. In addition, the inclusion of more variables refer to the age of the establishment, the date of the last refurbishing, whether the propriety is leased or owned by the establishment, the nationality of the customers, and the strategic plans of the establishment or hotel chain, surely will improve the results and conclusions of future works.

Conclusions | The results show that when the hotels implement environmental sustainability measures, their customers increase their WTP. This means that consumers positively value the implementation of environmentally sustainable measures because, by increasing the perceived quality of hotel's services, they are willing-to-pay a premium price for the service provided. As results of this behaviour of the customers, room prices increase when the quality of hotel services is improved by implementing environmental sustainability measures. In this case, investing in environmental sustainability by local governments could be a way to increase the number of tourist for this region and the number of clients for the establishment which decide implements those measures. This would particularly apply to inland hotel services, where nature-based activities are already their main attraction and whose potential clients positively regard environmental sustainability.

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