



Using a spatial hedonic analysis to evaluate the effect of sea view on hotel prices



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HIGHLIGHTS

- A spatial hedonic model was used to estimate guests' WTP for a room with a sea view.
- The sample of rooms was collected at the regional level to examine local effects.
- The results show a considerable spatial differentiation of the value of sea view.
- Local variations may be useful in tourism marketing and future investment decisions.

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ABSTRACT

This paper attempts to examine the effect of sea view to room rates alongside other structural and locational attributes. Specifically, it aims to test whether rooms with a sea view are priced higher than others, thus trying to quantify the associated aesthetic values of coastal areas where tourism-related development is a key economic activity. For this purpose, a sample of 557 rooms in Halkidiki, Greece was collected through an online database during the summer tourist season. Subsequently, these data were integrated into a GIS-system in order to apply a spatial hedonic model. A semi-parametric geographically weighted regression model was used to assess the local effects, as well as, to investigate the spatial variability of the selected attributes. The results exhibited a significant spatial variability concerning the effect of sea view to room rates, indicating that local natural and/or tourism resources may have a substantial role in aesthetic values.

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1. Introduction

The view from a room is a feature that is taken into account quite often by the managers of tourist accommodations (hotels and apartments) when determining the price of rooms. The main reason for this is that guests would prefer a room with a view of the natural environment around the premises (e.g. aquatic/coastal environment, forest and/or mountainous areas) rather than an identical one without such a view. Consequently, many guests/tourists are willing to pay higher prices for a room with a view, thus assigning an economic value to this attribute. This value is directly linked to the aesthetic value of the natural environment, which according to the Millenium Ecosystem Assessment (MEA, 2005), is one of the main components of ecosystem cultural services. In coastal areas the aesthetic value is determined primarily by the

view of the sea. This view, although a public good and free of charge in many places near the coast, actually contributes significantly to the accommodation rates, particularly along the coastal areas of the Mediterranean, where the seascape is an essential tourist resource (Fleischer, 2012).

In order to examine whether the view of the sea may actually affect the room rates, a hedonic pricing model can be applied. Hedonic pricing is an indirect valuation method of the environment that examines the effect of specific characteristics or attributes on the prices of market goods. As part of the revealed preference valuation techniques, hedonic pricing is based on the assumption that people's behavior in a market of composite goods, which, among others, incorporates environmental characteristics, is likely to reveal the value that people attach to each particular characteristic (Pearce & Özdemiroglu, 2002). In this context, hedonic pricing has been established as a very common approach to analyze the property prices, aiming to explain variations in house prices as a function of various property/location characteristics. An application

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of this method has been developed and implemented on the tourism sector in order to evaluate the effect of individual characteristics of hotel rooms and facilities on the offered prices.

The first application of this method in the hospitality and tourism field dates back to 1990 (Carvell & Herrin, 1990; Sinclair, Clewer, & Pack, 1990). The particular role of lodgings' location, as a fundamental characteristic of the hotel market, was underlined by Bull (1994), who argued that location includes at least two components: (a) distance from (or access to) one or more specific places (e.g. beach, city center) and (b) neighborhood amenities or qualities (e.g. views from rooms, quietness). Since then, a number of hedonic pricing models has been applied seeking to investigate the implicit prices of numerous hotel rooms' attributes (e.g. Israeli, 2002; Monty & Skidmore, 2003; Roubi & Litteljohn, 2004; Thrane, 2007; White & Mulligan, 2002). Some hotel hedonic studies focused particularly on coastal/beach tourism, trying to assess, among others, the values (i.e. the positive effect on room prices) related to the characteristics of coastal environment, such as beaches, shores or coastline. (Espinete, Saez, Coenders, & Fluvia, 2003; Hamilton, 2007; Rigall-I-Torrent et al., 2011). However, so far, little attention has been paid to the effect of attributes related to the aesthetic value of coastal environment (i.e. the view of the sea) in determining the hotel room prices (e.g. Alegre, Cladera, & Sard, 2013; Fleischer, 2012). A common outcome of these studies is that the aesthetic value derived from the enjoyment of scenic views in coastal areas may significantly affect the price of accommodation (Ghermandi, Nunes, Portela, Rao, & Teelucksingh, 2009). In addition, Fleischer (2012) argues that the view of the sea is equally valued in all Mediterranean regions; while Alegre et al. (2013) concluded that the view of the sea may be differently assessed by tourists originating from different countries. Nevertheless, these studies do not take into account the spatial variability at the regional/local area, considering that the effect of sea-view on tourists' preferences and choices is homogeneous (constant) at these spatial scales. Nevertheless, as stated by White and Mulligan (2002), the spatial dimension of room rates is an important issue that may enhance the geographic focus of any similar study and may clearly delineate the role that hotel location plays in price variation. Hence, incorporating the spatial dimension into the seascape experience may assist tourist managers to capture regional/local variations on tourists' preferences, thus providing useful implications in their business strategies (e.g. room pricing, marketing). Tourism industry could also benefit from linking the spatial analysis with the tourism-economic view of what constitutes market boundaries, in order to identify some homogeneous regions with respect to tourists' preferences regarding the view of the sea (as well as regarding other environmental characteristics).

Lately, the hedonic pricing method is combined, more and more often, with geographical information systems (GIS) in order to explore the impact of several characteristics varying over space (i.e. exhibiting spatial patterns) on house/property prices (Schläpfer, Waltert, Segura, & Kienast, 2015). In this context, several methods of econometric analysis (spatial regression models) have been used, aiming to take into account the spatial dimension of the data set (Anselin, 1988). However, only a few hedonic pricing studies have utilized such models in the tourism sector to examine the spatial characteristics and the spatial variation of the hotel rooms' attributes (e.g. Suárez-Vega, Acosta-González, Casimiro-Reina, & Hernández, 2013; Zhang, Zhang, Lu, Cheng, & Zhang, 2011).

Following the aforementioned analysis, the present study intends to estimate the economic value of the seascape and its spatial distribution by means of a hedonic pricing technique. This approach was implemented in the coastal zone of Halkidiki, Greece, during the peak summer tourist season of the year 2015. Specifically, a spatial hedonic pricing model was developed and then

applied aiming to estimate the (marginal) implicit prices of differentiated characteristics of tourism/accommodation facilities. Among these characteristics particular attention is paid on the view from the room, thus trying to indirectly estimate the aesthetic value of the coastal environment (ecosystem).¹ To the author's knowledge, this is the first application that combines spatial econometric analysis and hedonic pricing in relation to hotel prices aiming to evaluate the aesthetic values in coastal areas (i.e. the value associated with the view of the sea).

2. Methodology

2.1. Hedonic pricing method, tourist needs and hotel characteristics

The hedonic pricing method, for which Lancaster (1966) and Rosen (1974) provide the theoretical foundation, is a revealed preference approach that has been extensively used to study the attributes (characteristics) affecting the price of differentiated/composite products/goods. These attributes cannot be sold separately but are jointly shaping the final price/value of those composite market goods. The aim of the hedonic pricing method is thus to assess the relationship between the market value of a composite good and each single attribute, by generating a set of implicit prices for all these attributes.

Hotel accommodation is a composite good (i.e. a complex product) consisting of several characteristics. Any accommodation has comparative advantages and disadvantages over other accommodations, while even within the same accommodation rooms may also offer different set of characteristics (attributes) at different prices. Therefore, the demand for a hotel room is usually evaluated by means of multiple determinant attributes.² Travelers' motives and psychological profile influence what they seek from an accommodation, thus playing a significant role in shaping their preferences over these attributes. For example, according to Pearce (1992), the psychological needs and motives (in a top-down hierarchical order) for travelers seeking out holidays experiences can be categorized as follows: (a) relaxation, (b) excitement and thrills, (c) social interaction, (d) self-esteem and (e) self-development. It is worth noting that most of these factors seem to affect particularly the choice of accommodation, which is an important part of travelers' experience.

A successful understanding of the travelers' preferences is at the core of the business practice in the tourist industry (Goeldner & Ritchie, 2007), as it can provide a guide to hotel managers concerning their pricing policies, as well as concerning the differentiation of their offer (Espinete et al., 2003). In this framework, Bull (1998) recommends that it would be theoretically sound to categorize the hotel attributes (characteristics) into two distinguished groups: (a) a group of variable characteristics that the supplier can vary (e.g. number and quality of services/amenities provided to the guests) - as part of product redesign or development - in order to satisfy the tastes of their guests and (b) a group of fixed characteristics (e.g. sea view, other locational characteristics) that suppliers cannot vary. Monty and Skidmore (2003) added to these categories the seasonality effect to capture differences in preferences between peak and off-peak periods.

¹ Based on the theoretical framework provided by Rosen (1974) the hedonic price function is the market clearing function provided by the interaction of demand (tourists) and supply (hotel owners). In this context, the implicit prices obtained by the hedonic models can be interpreted as the marginal valuation which individuals attach to the different characteristics (Chay & Greenstone, 2005; Rigall-I-Torrent et al., 2011).

² Determinant attributes are those that are important to a consumer (as a product benefit or disadvantage) and differentiable between products (Alpert, 1971; Bull, 1994).

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