



# Worldwide hedonic prices of subjective characteristics of hostels



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## H I G H L I G H T S

- Hedonic prices are applied to analyze prices of more than 8000 worldwide hostels.
- Hostel prices are explained by their subjective characteristics as rated by guests.
- Cleanliness, location and facilities are the most relevant determinants of prices.
- A 1% increase in cleanliness rating leads to a 0.317% increase in hostels' prices.
- A 1% increase in location rating leads to a 0.2% increase in hostels' prices.

## A R T I C L E I N F O

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## A B S T R A C T

An overnight at an accommodation establishment might be understood as a package of several different items. Since they are not traded separately in the market, their values for the consumer are difficult to measure. On the other hand, this information is useful for managers to develop better strategies regarding the mix of services and facilities of their establishments. Analytical decomposition of total prices by different characteristics can be done through hedonic price techniques. In this paper, hedonic prices are used to analyze the impact of different characteristics on prices of hostels. Accommodation prices of more than 8000 hostels worldwide are explained by their characteristics as rated by guests. Results show that the most relevant characteristics are cleanliness, location and facilities.

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## 1. Introduction

The definition of the project for the accommodation establishment is a highly complex process where a long list of services and physical characteristics must be defined. The planner must choose whether the property will include characteristics such as a swimming pool, large rooms, sea view, food services and many other. Each specific decision might be seen as a conditional profit maximization problem where the revenue expected from the item being evaluated is compared to its cost, provided all other characteristics of the business and its environment.

The problem is that the market price of a particular characteristic is usually difficult to assess. An overnight at an accommodation establishment generally includes access to most services and facilities available. Thus, an overnight might be

understood as a package of several different items. Since each element is not traded separately in the market, its value for the consumer is difficult to measure. How much would the consumer be willing to pay for a better location of the accommodation establishment? What is the accommodation market price of a better location? When a guest pays a specific price for the overnight, it is hard to tell how much of it was due the establishment's location.

Analytically decomposing total prices by different characteristics can be done through hedonic price techniques. By recognizing that prices vary across offers of differentiated products, this method is able to estimate the market price of each characteristic of a good or service. In this paper, hedonic prices are used to analyze the impact of different characteristics on prices of hostels worldwide. This category of accommodation service is traditionally characterized by dormitory-style accommodations with basic, shared and supervised facilities (Chon & Maier, 2010).

Previous hedonic price studies about accommodation establishments have relied on objective characteristics, such as distance to attractions and the presence of different facilities. However, what actually makes the difference for explaining consumer behavior is

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not any objective characteristic, but rather the individual's perception of it. Thus, objective characteristics are no more than proxies for the actual explanation of the price composition. Moreover, accommodation is a service, rather than a good. Considering that the ultimate offer is an experience, it is necessary to recognize that some characteristics of the accommodation service are intrinsically subjective. The atmosphere as a characteristic of a hostel is an unquestionable example of this. Considering these arguments, this study relied on subjective characteristics of hostels as rated by their guests in order to explain market prices. This innovative approach, besides being more direct than the previous one, is able to provide information on characteristics that were not examined in the previous literature.

## 2. Literature review

In the 1920s some economists were already using statistics to explain prices according to characteristics (Baranzini, Ramirez, Schaerer, & Thalmann, 2008b). Lancaster (1966) developed a renowned theory to explain consumers' demand from goods' characteristics. According to his theory, individuals obtain utility not directly from goods, but actually from their characteristics. Rosen (1974) built on the ideas of Lancaster (1966) and developed a complete theory of hedonic prices, linking consumers' preferences on goods' characteristics and market prices. According to him, given some conditions, market price is a proxy for consumers' preferences and willingness to pay for characteristics of available goods and services.

Hedonic price methods have long been used to adjust price indexes for quality (Diewert, Greenlees, & Hulten, 2009; Triplett, 2006). They have also being largely employed to value non-market assets, especially environmental amenities (Baranzini, Ramirez, Schaerer, & Thalmann, 2008a). In the tourism field, hedonic prices have been used to assess the value of characteristics in different markets, including destinations (Rigall-i-Torrent & Fluvia, 2011; Rigall-i-Torrent & Fluvia, 2007; Rigall-i-Torrent et al., 2011), tour packages (Aguiló, Alegre, & Sard, 2003; Thrane, 2005), restaurants (Gunawardana & Havrila, 1996; Yim, Lee, & Kim, 2014), national parks (Pearson, Tisdell, & Lisle, 2002), ski lift tickets (Falk, 2008) and scuba diving (Brander, Van Beukering, & Cesar, 2007).

Several studies applied hedonic price methods to the accommodation sector. While Hamilton (2007) examined general accommodation establishments, most of the studies focused on hotels (Chen & Rothschild, 2010; Espinet, Saez, Coenders, & Fluvia, 2003; Lee & Jang, 2010; Rigall-i-Torrent et al., 2011). Other categories of accommodation analyzed include bed and breakfasts (Monty & Skidmore, 2003), rural accommodation (Fleischer & Tchetchik, 2005) and rural recreational houses for rental (Rambonilaza, 2006). Juaneda, Raya, and Sastre (2011) compared prices of hotels and apartments for rental. It is relevant to stress that no previous hedonic price study about hostels was found in the

main tourism and hospitality journals.

Most hedonic price studies of the accommodation sector focused on European and North American destinations, Taipei (Chen & Rothschild, 2010) and Israel (Fleischer & Tchetchik, 2005) being the only exceptions. Sample sizes vary substantially. Most studies used samples between one and two hundred observations. Two remarkably large samples are those used by Espinet et al. (2003) and Juaneda et al. (2011), surpassing 82 and 16 thousand observations, respectively. Finally, it is relevant to stress that log-linear regression is the most common statistical method used to estimate hedonic function parameters, although some extensions of this model were employed when necessary.

Several previous studies focused the valuation of accommodation establishment location. Distance to relevant attractions, such as the beach, was one of the most studied variables. Price differences across destinations were also frequently examined. Other focus of attention was establishments' specific facilities. Table 1 summarizes the main features of these previous studies.

## 3. Data and method

Data about prices and characteristics of hostels were collected from the website Hostelworld, which is the world leading hostel booking channel (Hotel Industry Magazine, 2014). It is also the most visited URL related to the term "hostel" (Alexa, 2015), assuming position number 4968 at the global rank of all URLs, while the second URL related to "hostel" is at rank 9273. The website was launched in 1999 and lists over 27 thousand properties in more than 180 countries (Hostelworld, 2015), including hostels, bed and breakfasts, hotels, camping sites and other categories of accommodation establishments.

This study analyzed only accommodation establishments classified as hostels. Information about the complete Hostelworld's list of 9377 hostels located at 2114 cities of 134 different countries were gathered in January 2015. For hostels offering only one type of accommodation, a single price was recorded. For those offering dormitories and private rooms, the average of both prices was considered. Regarding price variations related to different dates, the minimum available price for any date was recorded. Considering the positive skewness of registered prices, values were transformed into their natural logarithms. Therefore, the final dependent variable of the model was the natural logarithm of the average of minimum available prices in US\$ for each hostel. Outliers representing the 0.25% lowest and highest percentiles for prices of each type of accommodation were excluded from the dataset due to the high probability that these values represent transcription errors or other sorts of unrealistic prices. After outliers elimination, the sample size dropped down to 9342 hostels.

The main explanatory variables regarded guests' ratings of six hostels' characteristics: atmosphere, cleanliness, facilities, location, staff and security. The characteristic *value for money* was dropped

**Table 1**  
Summary of previous hedonic price studies of the accommodation sector.

Study	Sector	Place	Observations
Espinet et al. (2003)	Hotels	Costa Brava, Spain	82,000
Monty and Skidmore (2003)	Bed and breakfasts	Southeast Wisconsin, USA	122
Chen and Rothschild (2010)	Hotels	Taipei	146
Hamilton (2007)	General accommodations	Schleswig–Holstein, Germany	189
Fleischer and Tchetchik (2005)	Rural accommodation	Israel	197
Rambonilaza (2006)	Rural recreational houses for rental	Aveyron, France	799
Juaneda et al. (2011)	Apartments for rental and hotels	Spain and France	16,222
Lee and Jang (2010)	Hotels	USA	106
Rigall-i-Torrent et al. (2011)	Hotels	Costa Brava, Spain	4934

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