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THE IMPACTS OF PRIVATE ACCOMMODATION ATTRIBUTES ON TOURISM DEMAND

Abstract

The private tourism accommodation concept has not been largely represented in the scientific research. It started appearing on the margins of the actual research in the past ten years, namely with a hotel as the most analyzed form of tourism accommodation.

In the structure of tourism accommodation in Croatia in 2011 private accommodation participated with 465 000 beds which represents 49,8 percent of the total capacity and therefore demands more attention.

Using the main marketing postulate where the consumer is the key of each business success, the main goal of this paper is to determinate the attributes of private tourism accommodation which have the main role in selection of accommodation facilities in Dubrovnik as one of the leading tourism destination in Croatia. The main goal will be carried out through the primary research of tourism demand by using modified hedonic model which will represent accommodation capacity utilization rate in relation to selected private accommodation attributes. Ordinary Least Squares (OLS) regression or the related log-linear form have in prior hospitality or tourism applications mostly been used to estimate this type of model. In this paper log-linear specification for the capacity utilisation rate function was used instead of the linear one.

This paper differs from other papers which used hedonic pricing model as it examines the impact of attributes of the actual accommodation units not on price but on capacity occupancy rate.

The explanatory variables of the private accommodation capacity utilization rate, among others, include location, characteristics such as

availability of free parking place, distance to the Old Town, sea view, terrace/garden.

The results of this research will provide instructions and directions to the management of private accommodation in tourism destination in order to increase private accommodation capacity utilisation whereby private accommodation season will be extended. The positive effects of season extension will be two-sided: for destination management the number of arrivals will be increased as well as overnights and receipts and for the accommodation owners increasing of rental receipts will result in their higher satisfaction.

The main finding of the paper is that the prices in the private tourist accommodation are formed solely by owners' intuition whereas accommodation capacity utilization rate is the real reflection of the tourist demand preferences.

Keywords: private accommodation attributes, tourism demand

1.   INTRODUCTION

Private accommodation is still in the pioneering phase of the serious scientific research, especially when it is compared to other forms of accommodation and in particular with hotel accommodation.

It is interesting to note down that this concept has attracted attention of very few Croatian economic scientists and the interest expressed in the field can be traced back to the beginning of the 21st century (Bronzan, 2003; Cerović et al., 2010; Petrić i Mimica, 2011; Portolan, 2012; Portolan, 2013). The reasons behind scientific inertia for this rather important aspect of tourist accommodation lie in the fact that there is a lack of information about its key features, functions and the success it has created. In private accommodation capacities in Croatia in 2012 a total of 21.2 million overnights were realized, which is 35% of total overnights (Croatian Bureau of Statistics, access on 10.04.2013). This statistical data clearly points to the fact that the private accommodation needs to be incorporated within the core categories of tourist accommodation capacity. The reason why was this so called extra capacity form of tourist accommodation marginalized, was due to the legal framework limitations as well as statistical one, which are in turn closely intertwined. Also the economists could not reach the agreement on the validity and transparency of the statistical date. Petrić & Mimica (2011) advocate the theory of social aspect in the realm of private accommodation, so to speak in its capacity as an extra income earner, the private earned income for an average Croatian household living mainly on the coast. They believe that this has marginalized this type of tourist accommodation. Portolan has looked at this issue

from a diverse angle because this type of accommodation brings not only direct income to the owner of tourist unit but also has indirect implications in meeting indirect cost of some household goods and services in general and it directly influences purchasing power of the local population and improves economic prospects of the destination on the global map.

According to the author of this paper, the marketing myopia, where the bearers of the tourist accommodation focus on their large scale products, is to blame for rather indifferent approach to private accommodation units. The success of any business is based on rather simple principle of meeting consumers needs. Whilst the owners of private accommodation units consult each other what they lack is a feedback from their consumers even on a smaller scale, there are no officially gathered data by some official tourist body with regards to private accommodation consumer preferences.

Tourist products and services consumers, in this case those sleeping in private accommodation, are by definition tourists willing to indulge in leisure activities according to the criterion of needs.

In the paper private tourist accommodation is regarded as tourist product composed of a number of partial components which put together form an entity of products and services (Burkart and Medlik 1974. in Vanhove 2005; Hitrec 1995). This definition of private accommodation is derived from the previous analysis of the latter combined with the synthesis of the known scientific research.

Hedonic price theory is based on hypothesis that every good or services can be observed as a bundle of characteristics or attributes and are valued for these attributes. Up to date hedonic price model researches focus their research on the co-relation between a given attribute and the price. Furthermore, price value determines the attractiveness of a certain tourist destination but one has to take into account the subjective approach whilst assessing the importance of certain attributes read bundle of characteristics of every good or services.

The primary purpose of this paper is to determine those private accommodation attributes which were primordial whilst choosing a particular private accommodation unit in ownership of a particular individual. The methodology used would be that of modified hedonic price model taking into account the factors of tourist demand. All economists used price as dependable variable in employing hedonic price model. As the focus of this paper are attributes then we can openly call this methodology hedonic attributes model as implicitly discovers which attributes of a certain tourist products and services are meeting hedonistic needs of the tourists.

2.   THEORETICAL FRAMEWORK

2.1.   Private tourist accommodation

The hectic lifestyle and lack of spare time in the place of residence have lead to the loss of quiet family life and family atmosphere prompting tourists to seek in the place of their temporary residence i.e. during holidays the atmosphere and warmth of a home. As a consequence there is the continued growth in demand for quality, comfortable and fully equipped holiday homes, apartments and studio apartments, capable to offer the feeling of a home, togetherness and pleasure.

The term private accommodation originates from private ownership. Bronzan (2003) states that a much more acceptable term for private accommodation is private hospitality, for the simple reason since accommodation as a neutral word indicates roof over your head while hospitality has a significantly wider meaning and delivers the message that a much more personal approach is being offered.

Private accommodation is defined in the Republic of Croatia as an accommodation type of unit such as rooms, studio apartment, apartment, house for rent for leisure purposes, camping site within certain household area as well as the village type of house used for leisure activities. All of these accommodation units offer extra services such as breakfast, dinner and so forth. In theory there is a uniform quality of private accommodation supply because most of the private accommodation facilities are three star facilities, while in practice the situation is quite different (Petrić and Mimica, 2011). Accommodation facilities within a same category are equipped differently which creates the need to carry out a more detailed analysis of the attributes influencing the overall accommodation price.

It was only at the beginning of the 90's in the last era when the serious economic papers covering the subject of private accommodation started to appear. Analysis of private accommodation, in a different context, has been the focus of research of many scientists ((Warnick and Klar, 1991; Emerick and Emerick, 1994; Getz and Carlsen, 2000; Vasilevska-Nestoroska, 2001; Di Domenico and Lynch, 2007; Cerović *et al*, 2009; McIntosh *et al*, 2011; Petrić i Mimica, 2011) who carried research on terminologically different but from the ownership, structural and functional point of view the similar forms of private tourist accommodation (bed&breakfast, commercial home, family business). Their joint conclusions are that private tourist accommodation as an extensive and insufficiently utilized potential represents a quality foundation for:

➢ reduction of unemployment and social tensions in a local community through self-employment

➢ utilisation of local resources and parallel protection of autochthonous products

➢ reduction of hotel accommodation monopoly through faster adaptation, flexibility and innovativeness

➢ realisation of new ideas, products and services

➢ stopping population outflow

➢ generating direct revenue for community members

➢ avoiding the leakage of tourism revenue outside the region

2.2. Hedonic pricing model

The earliest reference to the literature of hedonic price seems to be Waugh (1928). In his research which aimed at ascertaining how the consumers relatively value certain characteristics of a product, reached the conclusion that prices of some sorts of fresh vegetable vary depending on the Boston wholesale market and depending on various physical qualities of the vegetable. The term ''hedonic pricing method'' is generally attributed to Court (1939) who applied it to cars including several technical car qualities in the model. His work was renewed by Griliches (1961) applying it also to car industry in research of consumer preferences when choosing and buying cars.

In 1960s Lancaster (1966) elaborated on the idea of approaching the product as a set of objective attributes rather than a homogeneous entity. Sherwin Rosen (1974) used a conventional utility-maximizing approach to derive implicit attribute prices for multi-attribute goods under conditions of perfect competition. Researches which looked at this subject found that hedonic rather than utilitarian attributes of a product explained greater amount of variation in prices (Rosen, 1974). Results of the research can especially be applied in tourism since the main motive for travel is the wish to enjoy and tourists are more prone to stronger perception of hedonic attributes of a tourist product in comparison with the utilitarian.

Hedonic price analysis is widely used for different goods such as housing and property (Goodman, 1978; Freeman, 1979; Witte *et al*, 1979; Andersson, 2000; Goodman and Thibodeau, 2002; Malpezzi, 2002), wine (Combris et al, 1997; Oczkowski, 1994; Nerlove, 1995; Sayer and Moohan, 2007), automobile (Court, 1939; Griliches, 1961), computer (Chow, 1967; Cole *et al*, 1986; Berndt and Griliches 1990).

First study using hedonic pricing in the tourism is Hartmans' (1989) application to the luxury hotels. A year after Carvell and Herrin (1990) examined the implicit prices of hotel amenities for hotels in San Francisco using actual room rates as the dependent variable and only distance from the hotel to Fisherman's Wharf as explanatory variable. In the same year appeared a pioneer investigation on how attributes of holiday packages implicate on overall price by using a hedonic pricing (Sinclair *et al*, 1990). A year after Carvell and Herrin

(1990) examined the implicit prices of hotel amenities for hotels in San Francisco using actual room rates as the dependent variable and only distance from the hotel to Fisherman's Wharf as explanatory variable. In the same year there was a pioneer investigation on how attributes of holiday packages implicate on overall price by using hedonic pricing (Sinclair *et al*, 1990). A series of locally dispersed research on this subject followed whose authors analysed holiday packages from various points of view but using the identical hedonic price methodology (Aguiló *et al*, 2001; Papatheodorou, 2002; Sard, 2002; Haroutunian *et al*, 2005; Thrane, 2005; Mangion *et al*, 2005). After Hartman (1989) and Carvel and Herrin (1990) the analysis of hotel accommodation pricing was the focus of research of many other scientists (White and Mulligan, 2002; Espinet *et al*, 2003; Thrane, 2007; Hamilton, 2007; Andersson, 2010; Hung *et al*, 2010; Chen and Rothschild, 2010; Kushi and Caca, 2010). The authors involved in analysis of the impact of attributes onto overall price of a product or service which does not involve accommodation are Rigall-I-Torrent (2011) who observed the tourism product as a set of public and private attributes with an emphasis on public attributes, and Falk (2008) who investigated the relationship between lift ticket prices and factors that influence the quality of ski resorts.

Little research using hedonic pricing models has been taken in the field of private accommodation (Portolan 2013). The hedonic pricing model in an analysis of non-hotel accommodation pricing was used by Monty and Skidmore (2003) in their research of bed and breakfast amenities, as well as Fleischer and Tchetchik (2005) in the analysis of rural households. Only recently there has been some research works on accommodation units which, according to Croatian Catering Industry Law, are classified as private tourist accommodation with application of hedonic pricing method. The only authors working on these topics are Hamilton (2007) who carried out research on the impact of coastal landscape on the price of seven different types of accommodation included, beside the hotels and guesthouses, bed and breakfast, rooms in private accommodation, holiday homes and flats, Saló and Garriga (2011) who analysed the second-home rental market and Juaneda et al, (2011) who made a comparative analysis of hotels and apartments in private ownership using the hedonic pricing model.

The basis of all previously carried out researches was formed on the impact of attributes on the price on the integral product. All the authors were led by the theory that the customers preferences combined with the fluctuations in the demand process affect the price. From the scientific point of view whilst carrying out research into private tourist accommodation in the Republic of Croatia it is impossible and scientifically improper to implement above mentioned theory as the prices are form on the subjective impulse of the owners not taking into account any of the factors such as the competitors analysis, the actual demand, capacity yield in the previous years and so on. This paper differs from other papers which used hedonic pricing model as it examines the impact of attributes of the actual accommodation units not on price but on capacity occupancy rate thus prompting that the former results from the actual demand process. The key

hypothesis of this model is that individual so to speak bundles of characteristics of private accommodation units are linked with a degree of the demand for those units.

3.   EMPIRICAL RESEARCH AND RESULTS

3.1.   Methodology

Since the tourist cannot create his own bundle of attributes he has to choose from a finite number of multi-attribute bundles, i.e. from a number of private accommodation units with different attributes.

In this article a general model, in which the "product" of a given private accommodation facility F is the embodiment of a set of attributes, was employed (Espinet at al, 2003), so that

$$F_i = (q_{i1}, q_{i2}, q_{i3},\dots, q_{ik},\dots,q_{im}) \tag{1}$$

where $i=1,\dots,n$ indexes private accommodation facility and q_{ik} $(k=1,\dots,m)$, each of its attributes. Because the private accommodation capacity utilization rate is assumed to be a function of its attributes, the hedonic function for F_i can be considered as follows:

$$CUR = CUR (q_{i1}, q_{i2}, q_{i3},\dots, q_{ik},\dots,q_{im}) \tag{2}$$

where the functional form of CUR is assumed to be constant across facilities, though the contribution of each attribute may vary from one facility to another. This set of attributes determines the choices of consumers according to their utility.

Ordinary Least Squares (OLS) regression or the related log-linear form have in prior hospitality or tourism applications mostly been used to estimate this type of model (Thrane, 2007: 316). Following Rosen's (1974) advice and that of the previous researchers in this domain (Espinet et al, 2003; Thrane, 2007; Chen and Rothschild, 2010; Kushi and Caca, 2010, for hotel data; and Monty i Skidmore, 2003; Juaneda et al, 2011; Saló i Garriga, 2011, for other types of accommodation) log-linear specification for the capacity utilisation rate function was used instead of the linear one.

3.2.1.   Empirical results analysis

In this paper solely private accommodation facilities within the limits of the city of Dubrovnik from Kantafig to Sveti Jakov are analysed. In 2011 in that area total of 1138 providers of private accommodation were registered. Out of total 1138 providers 33.5% are in Montovjerna/Lapad, 17.8% in Pile/Kono, 17.6% in Old Town, 13.5% in Gruž and 17.6% in Ploče (Internal statistical data Dubrovnik Tourist Board, February 2012). The percentage of accommodation

units in the sample corresponds geographically to the percentage in the total number of providers.

A stratified sample was used based on geographical criteria and random choice of accommodation units. Total 122 accommodation units were analysed, making 10.7% of the total number.

The data were obtained from two Internet travel agents, Dubrovnik Apartment Source and Croatian Travel Agency and one portal (www.dubrovnik-area.com). Dubrovnik Apartment Source quotes as the best mediator in private tourist accommodation sales and their data are realistic and true. Their web site offers all required data on the prices, location of the accommodation unit, interior and exterior decoration as well as the percentage of capacity exploitation. From Croatian Travel Agency and Dubrovnik Area Online pages the data on accommodation units in the area of Gruž were collected since Dubrovnik Apartment Source does not offer any data on Gruž.

The research period was limited to two summer months during which the largest number of arrivals and overnights in private tourist accommodation is realised, in order to avoid the problem of seasonality.

Private accommodation capacity utilization rate, as a dependable variable represents a relationship between a number of days of accommodation unit's occupancy rate and a total of days in July and August. The limitations in gathering statistical data determined the presentation of this dependable variable. After all on previously mentioned web pages the access to the data needed to look at this particular issues is only possible by tracking a number of days on which these private accommodation units were occupied.

Since the log-linear form is use in this study to correct heterokedasticity, LNCUR is the natural logarithm of the CUR in July and August. In line with the theoretical guidelines for selecting independent variables in hedonic price theory (Andersson, 2000) the variable selection was based on the previous studies. Table 1 presents the final list of the explanatory variables considered in this model and their definition. Variable star rating category was excluded from the model since in Croatia assigned category is not reflected by interior design of a private accommodation unit nor price so it is often the case that a three star unit with low quality interior design is more expensive than that with four or five star rating with supreme design.

Table 1

Description of variables used in the hedonic regression

Variable	Description of variable
Dependent variable	
CAPACATY UTILISATION RATE	CUR per private ccommodation facility in July and August

LOG CAPACATY UTILISATION RATE	CUR logged
Explanatory variable	
LOCATION	Accommodation facility is located more then 500 m from Old Town
PARK	Availability of free parking place
BEACHDIST	Accommodation facility is located more then 500 m from beach
SEAVIEW	Sea view from the accommodation facility
GARD/TERR/BALC	There is a garden, terrace or balcony in the accommodation facility
AIRCON/HEAT	There is an air-conditioning and heating in the accommodation facility
SATTV	There is a satellite television in the accommodation facility
SAFE	There is a safe in the accommodation facility
DVD player	There is a DVD in the accommodation facility
SWIMPOOL	There is a swimming pool in the accommodation facility
Internet	There is Internet connection included in the price
DISHW	There is a dish washer in the accommodation facility
WASHM	There is a washing machine in the ccommodation facility

Source:Author

Table 2

Hedonic CUR function for private accommodation in Dubrovnik

	Coefficients	Std. Error	t-value
LOCATION	-.042	.025	-1.660*
PARK	-.027	.081	-.340
BEACHDIST	.000	.020	-.011
SEAVIEW	.205	.073	2.821**
GARD/TERR/BALC	.875	,091	9.648**
AIRCON/HEAT	.402	.275	1.461
SATTV	.111	.088	1.253
SAFE	.006	.123	.046

DVD player	-.091	.078	-1.166
SWIMPOOL	.286	.200	1.432
Internet	.047	.076	.619
DISHW	-.013	.076	-.171
WASHM	.025	.072	.348
F-value	23.783**		
Adj. R-Squared	0.739		
*p<0.1; **p<0.01			

Author

Explanatory power of the model is high, explaining 73.9% of the variations in CUR as measured by the adjusted R^2. The results indicate that only three attributes location, see view, and garden/terrace/balcony) influence the capacity utilization rate in private accommodation in the city of Dubrovnik. The CUR in accommodation units distant from the Old Town is 4.2% lower than in those situated in the vicinity of the Old Town. CUR in accommodation units with sea view is 20.5% higher than those not offering the same service. Offers including garden/terrace/balcony within the accommodation units increase the CUR by 87.5%. The conclusion may be reached that garden/terrace/balcony included in the rental price is by far the most influential factor in achieving the higher capacity utilization rate. Having that attributes satisfies the original hedonic motive for satisfaction and consequently the existence of these is of the most importance. All other variables involved in the analysis have no impact on the CUR in private tourist accommodation in the city of Dubrovnik.

Multicollinearity is often an issue in hedonic pricing model. Nonetheless, no definitive rules exist for determining whether multicollinearity is a serious problem in a particular hedonic application (Chen and Rothschild, 2010). In collinearity diagnostics eigenvalue, CI (Condition Index) and VIF (Variance Inflation Factor) were used. Eigenvalue near zero and CI higher than 15 (Rozga, 2010), as VIF value greter than 10 (Chen and Rothschild, 2010) are indicators of the presence of collinearity. In this analysis eigenvalue is not near zero, CI is lower than 15 and all VIF values of independet variables are less than 5 suggesting that in this study multicollinearity is not a serious problem

4. CONCLUSION

Private accommodation facilities are the least studied type of accommodation specially compared with hotels. With a view to pointing out to the importance of this type of tourist accommodation and taking into account the

consumers, in this case the tourists, paper employs a modified hedonic model in order to investigate the significance of selected private accommodation facilities atributes to the tourists.

In comparison with previous research of private accommodation unit attributes impact on price (Portolan, 2013) where private parking space played determined role on the price, this partially modified method of the previous research recognizes the attribute garden/terrace/balcony as the determining one in the actual capacity occupancy rate.

The starting point of this research is the author's belief that the prices in the private tourist accommodation are formed solely by owners' intuition whereas accommodation capacity utilization rate is the real reflection of the tourist demand preferences. The both researches support the author's theory. The first that using hedonic pricing method, it was the parking space which impacted the price whereas the current research into accommodation units capacity occupancy revealed that attributes of balcony/terrace/garden determine the choice of accommodation unit among tourists. The fact of the matter is that parking space availability has no impact on the choice of a particular accommodation unit. However, the experience of private accommodation units owners when it comes to parking issues or the lack of it led them believe that if an accommodation unit has a parking space has an added value and has to be more expensive.

The research method used in this paper could be called HCUR method (Hedonic Capacity Utilization Rate) or the method determining accommodation attributes of the most hedonic importance to tourists. The results of this research will greatly benefit the owners of accommodation units as it points out to which attributes carry primary importance for tourists and their presence ensures better capacity occupancy yield and it prolongs the tourists season and it justifies the price of the accommodation unit.

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