Explaining price heterogeneity through leisure participation

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Abstract

The purpose of this article is to analyze the effect of distinct participation frequencies of leisure activities at and away from home on the consumer price sensitivity. The idea is that the individual price sensitivity is influenced, at the moment of choosing a destination, by the motivation that drives people to search for destinations that allow them to do specific leisure activities; these motivations condition the influence of the residual culture (through which people exhibit at destination a similar behavior to their home environment) and tourist culture (by which at the destination they change the patterns of activities they get involved in at their place of origin). For this purpose, we measure and identify individual price sensitivities –individual by individual–. The empirical application is carried out on a sample of 2,127 individuals, and the operative formalization used to estimate individual sensitivities to price follows a Random-Coefficient Logit Model; and to detect the way these sensitivities relate to the different participation frequencies in leisure activities, a regression procedure is employed. The results show that the residual and tourist cultures have an influence on price sensitivity, in such a way that different price sensitivities exist per participation-frequency scenario and per type of leisure activity.

Key words: price sensitivity to price, leisure activities, residual and tourist cultures.

JEL codes: D12; M31.

1. Introduction

Classical economic theory provides guidelines to the nature of the demand/price relationship, accepting that price and demand are inversely related. However, literature on price emphasizes the importance of different price dimensions, and recog-
nizes the complex role of price in the consumer’s purchasing decision. Erickson and Johansson (1985) and Park et al. (2007) state that the role price plays in a consumer’s evaluation of product alternatives is very possibly not unidimensional, and Walls et al. (2011) emphasize emotional values such “affect” when analyzing the effect of price; emotional elements that could be linked with impulsive behaviours (Sarabia and Schmidt, 2004). This multidimensional view on prices leads to increased awareness of the importance of price implications, since the role of different price dimensions vary between consumers and product types, and recognition that complex pricing schemes may be a necessity for particular situations (Gijsbrechts, 1993; Quintal et al., 2010). In other words, the measurement of the effect of price is not an easy task and a host of complicating factors emerges, such as consumer heterogeneity and the choice context.

In the context of leisure and tourism participation, in a markedly heterogeneous market (Molina and Blázquez, 2005), with an enormous diversity of price sensitivities, the role price plays becomes especially complex. In this respect, the effect of price is not unambiguous. In general, literature holds that demand for tourism products and leisure activities is that of ordinary goods, in such a way that price increments diminish consumption (Smith, 1995), meaning that price is a factor that reduces the utility of a destination. However, another line of thought proposes that price does not have a dissuasive effect on destination choice, but that price is an attraction factor. Morrison (1996) indicates that the underlying hedonistic character often found in the consumption of pleasure-oriented activities implies that high prices do not always act against demand; rather that the concept of value for money, which compares the amount spent with the quality of installations and service, takes over (Morrison, 1996).

In this respect, a compelling aspect within the framework of leisure activities choice is to examine the effect that the distinct participation frequencies, at and away from home, has on price sensitivity. This knowledge is critical for organizations offering such activities in order to implement their price policies, especially segmentation strategies, according to the criterion “individuals seeking a specific benefit” or the criterion “participation frequency”. Obviously, if they are more predisposed to spending larger amounts because they can enjoy “novelty” or “increased frequency”, these represent rather interesting market segments.

The idea is that the individual sensitivity to price is influenced, at the moment of choosing a destination, by the motivation that drives people to search for destinations that allow them to do specific leisure activities. In turn, these motivations condition the influence of the residual culture (through which people tend to exhibit at destination a similar behavior to their home environment) and tourist culture (by which during their stay at the destinations they change, the patterns of activities they usually follow at their place of origin) (Carr, 2002). The underlying logic is that motivations can become the main generators of utility when visiting destinations: people spend more or less depending on their wishes at a specific time. Accordingly, the effect of price on destination could alter in function of the motivation of the individual. The theory of
consumer behavior considers that motivations represent individual internal forces that lead to action (Schiffman and Kanuk, 2007). In this respect, motivations are characteristics of individuals that influence the choice of destinations, since they act as push factors leading to the realization of a travel (Kim and Lee, 2002). It is important to stress that the selection of a certain holiday destination implies a desire for some kind of benefit. Because of this, motivations play a fundamental role in destination choice, as they constitute internal thoughts which lead individual behavior towards certain ends (Nahab, 1975); in other words, they are the reasons why people take a holiday (Santos, 1983), existing also heterogeneity in tourist motivations (Saegert et al., 2008). Closely related to motivations are the concepts of residual and tourist cultures, that Carr (2002) uses to develop his tourism-leisure behavioral continuum. Residual culture deals with the leisure behavior people show in their home environment (generally, more habit-driven) whilst tourist culture influences the tourist behavior they exhibit at the holiday destinations (overall, more liberated and hedonism-driven). Of course, looking at Carr’s (2007) conclusions, a range of intermedi- ary behaviors can be observed that are influenced and conditioned by the strength each culture –residual vs. tourist– exerts. We use this scheme to analyze individual sensitivities to price when people show different patterns of activity participation at home and at the destinations. Accordingly, the following hypothesis is stated:

H.1. Differentiated patterns of “recreational activities frequencies” at home and the destination affect price sensitivity in destination choice.

According to Brey and Lehto (2007), literature has devoted little attention to the relationship between at-home recreation activities and those done by tourists at destinations. Our proposal looks directly at those individuals who engage in new leisure activities (non participation at home but occasional or frequent participation at the destination), those who increase their participation frequency (occasional participation at home but frequent participation at the destination) and those who keep up the same frequency (occasional or frequent participation at home versus occasional or frequent participation at the destination). This way of operating allows us to see whether different price sensitivities exist per scenario and per type of leisure activity.

2. Research design

2.1. Methodology

The proposed methodology allows us to estimate and explain individual sensitivities based on real travel decisions and consists of two stages: i) estimation of individual sensitivities to price through a Logit Model with Random Coefficients; and ii) application of regression analysis.
To estimate the individual parameters (sensitivities to price) of a Random Coefficients Logit Model (RCL) we apply Bayesian estimation methods in the context of destination choice. We use the RCL Model because of: i) its ability to deal with the unobserved heterogeneity of individuals, by assuming that the coefficients of the variables vary among people; and ii) its flexibility, which allows representation of different correlation patterns among alternatives. Thus, following Train (2009), the utility function is defined as

\[ U_i = \beta_n \cdot \text{price} + \varepsilon_\text{in} \]

where \( \text{price} \) is the price of \( i \); \( \beta_n \) is the parameter of price for each individual \( n \) which represents personal sensitivity; i.e. it allows us to identify the individual sensitivity to the attribute “price”; and \( \varepsilon_\text{in} \) is a random term that is iid extreme value. The likelihood of the observed choice \( i \) for individual \( n \) conditional on \( \beta \) is expressed as

\[
P(i/ \text{price}, \beta) = \frac{\exp\{\beta_n \cdot \text{price}\}}{\sum_{j=1}^{J} \exp\{\beta_j \cdot \text{price}\}}
\]

Since we do not know \( \beta_n \), the probability of a person’s choice is the integral of the previous expression over the distribution of \( \beta \):

\[
P(i/ \text{price}, \theta) = \int P(i/ \text{price}, \beta) g(\beta/\theta) \, d\beta
\]

where \( g(\beta/\theta) \) is the distribution of the random parameter vector \( \beta \) in the whole population, and \( \theta \) are the parameters of this distribution (mean and variance). By applying Bayesian procedures, we obtain the price sensitivity \( \beta_n \) of individual \( n \).

To analyze the relationship between different leisure activity patterns and the individual sensitivity to price we rely on OLS regression analysis. Let \( x_{ns} \) be a group of variables \( s \) relative to individual \( n \)'s leisure behavior (in terms of participation frequency) which are proposed to explain the price sensitivity \( \beta_n \), and \( \delta_s \) the coefficients which reflect the effects of these variables on that sensitivity. Therefore, the following expression is arrived at:

\[
\beta_n = \sum_{s=1}^{S} \delta_s x_{ns} + u_n
\]

where the disturbance \( u_n \) follows a normal distribution with a zero mean and variance \( \sigma_n \).

2.2. Sample, Data and Variables

To reach our proposed objective, we use information on leisure and tourism choice behavior obtained from a national survey carried out by the Spanish Center for Sociological Research. This is due to the following reasons: i) The availability of information on individual destination choice behavior as well as the one displayed at
his/her home environment; and ii) The survey is directed at a sample (over 18 years old) obtained in origin, which avoids the characteristic selection bias of destination collected samples, leading to a more precise analysis of demand. The sample is taken by using multistage sampling, stratified by conglomerations, with proportional selection of primary units –cities– and of secondary units –censorial sections–. The information was collected through personal, at home, interviews with a structured questionnaire. Of the initial sample of 3,781 individuals, we are left with 2,127 that take vacations, so we can compare participation frequencies at and away from home.

In order to make the choice model operative, we define the variables used and identify the dependent and independent variables. 1) **Dependent variable.** To represent the destination chosen by the individual, we use 50 dummy variables for the 50 Spanish provinces.

2) **Independent variable for the choice model: Destination Price.** Regarding its measurement, authors such as Eymann & Ronning (1992) and Usach (1999) consider that the correct method of reflecting the price of a certain tourist market is to compare destination prices with those of the home market and those of competing destinations. Along this line, Eymann & Ronning (1992) use purchase parity differentials between the origin and respective destinations, obtained from the corresponding consumer price indexes. Also, Morley (1994) demonstrates that the Consumer Price Index of a geographical region is a good indicator of tourist prices, by showing high correlation between the two. In line with these authors, our study measures destination prices of intra-country administrative units through consumer price index differentials among origins and destinations. These are published by the National Institute of Statistics (INE) and represent the cost of living of each origin/destination. The use of this variable implies the construction of an origin-destination matrix of a 50x50 order

3) **Independent dimension for the regression model: Frequency variables.** Respondents give us information on their participation frequency in leisure activities both during the vacation period away from home and throughout the rest of the year at home. This is measured through a 3-point ordinal scale (practiced frequently, occasionally and not at all) in line with Brey and Letho (2007). With this information we build the five variables relevant to this study: i) **Frequent novelty**, which represents an activity the individual did not take part in throughout the rest of the year but practiced frequently during the vacation period; ii) **Occasional novelty**, the activity is not practiced at all in the home environment but occasionally practiced while on vacation; iii) **Increased frequency**, an activity in which the individual participates occasionally during the rest of the year and frequently at the destination; iv) **All-year frequent activity**, activity practiced frequently at home and at the destination; and v) **All-year occasional activity**, activity practiced occasionally at home and at the destination.

The leisure activities analyzed are the following: a) Visiting protected natural areas (such as national or natural parks); b) Visiting places of outstanding natural beauty; c) Observation of fauna or flora; d) Visiting museums, cathedrals and other monuments, etc.; e) Photography and video activities; f) Traditional local activities (crafts, agricultural activities).
3. Results

Firstly, we employ Bayesian procedures to estimate the coefficients (sensitivities) of the variable “price” for each individual, using Random Coefficients Logit Models. With regard to the average impact of “price”, we find that this dimension is significant at a level below 0.001, and presents a negative sign; specifically, this parameter is -0.21 with a standard error of 0.0203. This leads us to characterize it as dissuasive factor in the choice of destination. However, it is important to stress that the standard deviation parameter of the coefficient (SD( β )) is 0.0809 with a standard error of 0.0209. This parameter is significant at 0.001 as well, which implies that “price” has a differentiated effect among the individuals of the sample and thus, a given high price does not suppose the same reduction in utility for all the sample individuals. The differentiated effect found for “price” suggests that there is a great diversity of sensitivities in the market. This result implies that this heterogeneity can potentially be explained by the frequency variables proposed.

Once the individual sensitivities to price are estimated, they are used in the regression analysis to see how the frequency variables proposed can influence them for each leisure activity examined. The results obtained are as follows (Table 1): visiting protected natural areas presents positive, significant parameters for all the frequency variables. In particular, the frequent and occasional novelty parameters show that “tourist culture” leads people to be willing to pay higher prices if they can enjoy this activity during their vacations away from home. Note that those who follow the pattern of “frequent novelty” display a bigger positive parameter, meaning that they are less price sensitive than those of “occasional novelty”. The same behavior is found for all-year frequent and all-year occasional activity, although in this case they are driven by “residual culture” as they are prepared to opt for high-priced destinations as long as they can keep on getting the pleasure of visiting protected areas. As before, the all-year frequent pattern outweighs the all-year occasional pattern in terms of insensitivity to prices. Finally, the increased frequency parameter exhibits the greatest impact on reducing price sensitivity to this activity. A mix of residual and tourist culture effects takes over: on the one hand, an individual attempts to follow the habits from which they get pleasure (residual culture), and on the other hand, this tendency intensified by the liberation of the individual during the vacation period (no worries, more free time, etc.), that allows him/her to enjoy his/her favorite activity with higher frequency (tourist culture).

Regarding visiting areas of outstanding natural beauty, the same results as for the previous activity are obtained, with the only exception of the non-significance parameter associated to occasional novelty. It means that, for this activity, people are predisposed to spend more money if they are given the opportunity to enjoy areas of outstanding natural beauty frequently –not just occasionally– during their vacations. The comments for the rest of variables are the same as in the preceding activity.

Concerning the observation of fauna and flora we find positive significant parameters for the variables increased frequency—which reaches the biggest positive impact—, all-year frequent and occasional activity. As this activity can be regarded as more spe-
<table>
<thead>
<tr>
<th>Activity Description</th>
<th>Frequent novelty</th>
<th>Occasional novelty</th>
<th>Increased frequency</th>
<th>All-year frequent activity</th>
<th>All-year occasional activity</th>
<th>Constant</th>
<th>F-statistic</th>
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<tr>
<td>Visiting protected natural areas</td>
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<td>0.019&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.043&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.035&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.021&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>0.010</td>
<td>0.037&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>0.018&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>0.011</td>
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<td>0.017&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.013&lt;sup&gt;c&lt;/sup&gt;</td>
<td>-0.219&lt;sup&gt;a&lt;/sup&gt;</td>
<td>7.312&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>0.007</td>
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<td>1.880&lt;sup&gt;d&lt;/sup&gt;</td>
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a=prob<0.1%; b=prob<1%; c=prob<5%; d=prob<10%
cialized, the Brey and Lehto (2007) argument might apply in the sense that as a person becomes more and more involved in an activity, s/he ends up being a specialized participant, and tends to be more selective when choosing where to do such activities. This selective trait implies that this person might be willing to pay extra money, thereby reducing the negative effect of price, thus becoming more price insensitive. In the same vein, only those passionate about visiting museums, cathedrals and other monuments show a clear predisposition to spend more money. Funnily enough, those who do not have this activity among their favorite at-home-environment activities are not at all disposed to pay extra money to participate in it during their vacation period.

As regards photography and video activities, positive and significant parameters are obtained for frequent novelty, increased frequency and all-year frequent activity. As for the frequent novelty, people following this pattern show that the possibility of doing this activity—even one that the individual has not practiced throughout the year—can be an incentive to visit an expensive destination. This result is coherent with those obtained for the activities “visiting protected natural areas” and “visiting areas of outstanding natural beauty” in which people are willing to spend more to visit special sites with special views and to take pictures of such places and landscapes. Along this line, for those people who wish to increase frequency (from occasional to frequent at the destination) and for those who want to maintain their high frequency at both, home and destination, there is also a clear reduction in the sensitivity to prices. They show a propensity to pay higher prices if they can practice the activity they are really keen on. Notice that, according to these results for the three positive significant variables (frequent novelty, increased frequency and all-year frequent) this activity—photo and video—is clearly influenced by both, residual and tourist culture.

With respect to traditional local activities such as crafts or agricultural activities, the parameters related to increased frequency and all-year occasional activity are positive and significant. These people may get involved in this activity occasionally at their home environment, but are prepared to incur higher costs during their vacations if it allows them to keep doing it, at least, with the same frequency. Note that those wanting to increase the frequency present a greater parameter—leading to a bigger drop in their price sensitivity—than those just wishing to maintain it. In any case, both groups are people who tend to do—at their home environment—an activity that requires a certain degree of expertise, thus, in line with the aforementioned specialization argument, they are willing to sacrifice more money if it takes them to special sites where they can participate in their favorite activity. These results allow us to accept the stated hypothesis that differentiated patterns of “recreational activities frequencies” at home and the destination affect price sensitivity in destination choice.

4. Conclusions

The underlying idea of this article is that the individual sensitivity to price is influenced by people’s drivers that lead them to search for destinations that facilitate tak-
ing part in specific leisure activities; and most importantly, these motivations have an effect on the influence of residual culture (through which people tend to exhibit at destination a similar behavior to their home environment) and tourist culture (by which during they stay at the destinations they change their home based activity patterns). In this respect, the aim of this study is to see whether individual price sensitivity is influenced by the distinct leisure activity participation frequencies people have, at and away from home.

For this purpose, we measure and identify people’s sensitivities to price—individual by individual—from real choices made by them (individual sensitivity to price is estimated for each person by observing the destination s/he actually selects). The operative formalization used to estimate the individual sensitivities to price follows a Random-Coefficient Logit Model and to detect the effect of the motivation proposed, a regression analysis is applied. The empirical application carried out on the sample of 2,127 individuals reaches the general main conclusion that residual and tourist cultures have been shown to have an influence on price sensitivity. In particular, residual culture has an effect on “Visiting protected natural areas”, “Visiting areas of outstanding natural beauty”, “Observation of fauna and flora”, “Visiting museums, cathedrals and other monuments”, “Photography and video activities” and “Traditional local activities”. For its part, tourist culture has an influence on “Visiting protected natural areas”, “Visiting areas of outstanding natural beauty” and “Photography and video activities”.

Three findings stand out from these residual and tourist cultures effects: i) The most specialized leisure activities are among those that are influenced by residual culture, which means that a person keen on participating in an activity, for which s/he has developed and mastered an ability, shows a propensity to spend more money to go to a destination where s/he can partake in it; ii) For the same leisure activity the two effects can have an impact on individual sensitivity to price, but the sizes of their impacts differ. For instance, the price sensitivity of people taking part in “visiting protected natural areas” is reduced to a greater extent for a person not participating in it at all on a year-round basis and trying to make the most of if on vacation (seekers of frequent novelty) than an individual who follows the pattern of all-year occasional activity—i.e. s/he attempts to participate with the same frequency—occasionally—, at and away from home; and iii) Stemming from the previous conclusion and going a step further, note that within the same effect—residual or tourist culture—the influences of the frequency variables change. For example, focusing on the activities “visiting protected natural areas”, “visiting areas of outstanding natural beauty”, and “traditional local activities”, and looking at the variables representing the residual culture effect, seekers of “increased frequency” show a bigger drop in their price sensitivity than those who follow the “all-year occasional activity” pattern (in particular, the parameter of the former is more than twice the size of the latter). For the case of “observation of fauna and flora” it is three times the size.

As managerial implications, the following can be mentioned: given that the existence of diversity of sensitivities to price is confirmed, an important implication is that, knowing the individual by individual preference structure in terms of response
to price allows managers to find the appropriate destination for each individual (though extreme, it could be possible), as well as the formation of segments with similar “price preferences”, via the criterion “benefit sought” or the criterion “participation frequency”. Evidently, as these segments are more predisposed to spending more money because they can enjoy “novelty” or “increased frequency”, they represent rather interesting market segments.

Note that the analysis is based on the preferences of individual people, and preferences are key elements in the choice of destinations. Moreover, the estimation of the individual parameters of the utility function of each individual reveals his/her preference structure and allows the analyst to operate with precise information on each individual. At a time when people are increasingly demanding service provision adapted to their specific needs, knowledge of the profile of each individual allows organizations to offer the most suitable products. Identifying individuals with more or less sensitivity to the price of destinations, with a specific emphasis on their capability to provide the person with a specific activity, is crucial for destination managers. In this way they can, know their clientele in terms of preferences, in order to develop appropriate products with the right attributes, set “fair” prices (without incurring opportunity costs), and design promotional campaigns directed at the targeted group with the stress on the appropriate traits.

To sum up, this knowledge is critical for organizations operating such activities in order to implement their price policies. As participation frequency –at and away from home– has an influence on price sensitivity, the availability of certain leisure activities helps reduce the negative effect of price as people driven by the opportunity to try an activity not practiced at all throughout the year, to maintain their participation frequency or to increase it, might become less sensitive to price.

References


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