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5 **IF YOU, TOURIST, BEHAVE IRRATIONALLY, I'LL FIND YOU!**

6 **Abstract**

7 When departures from rational behavior can potentially be expected, modeling should allow
8 for their identification and their quantification. In this regard, prices in tourism might have
9 effects that may not be as apparent as economic theory predicts. This article incorporates the
10 sticker shock formulation into the mixed logit model without imposing consistency with
11 consumer theory to accommodate any possible positive or negative price effects. By allowing
12 the parameters of “price” and “sticker shock term” to take any value – negative or positive –
13 we detect abnormal behaviors in the tourist demand: not only is the negative relationship
14 between price and demand inverted for some people but also some tourists might be willing to
15 accept higher-than-expected prices. The “non-well-behaved” groups’ shares are estimated.

16

17 **Keywords:** utility theory; irrational behavior; reference prices; sticker shock model; choice
18 model.

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20

1. INTRODUCTION

21 Irrational behavior is found in the pricing literature in general (Shampanier, Mazar, &
22 Ariely, 2007) as well as in the tourism context (Nicolau, 2012; Nicolau & Sellers, 2012). In an
23 attempt to delve into behavioral anomalies, this paper is based on three fundamental aspects of
24 human behavior: risk aversion, pleasure seeking, and reference dependence. Regarding risk
25 aversion, it is important to emphasize that uncertainty is inherently contained in tourism
26 consumption, as the individuals are taken where the product is located (i.e. the destination) and
27 therefore become much more involved than in other industries. Concerning pleasure seeking,
28 tourists might look for quality, either for tangible (for example, assurance that the service
29 performance is high) or for intangible reasons (such as social esteem). As for reference
30 dependence, it is a property that focuses on the way in which people assess outcomes with
31 reference points. Thus, this study makes a linkage of these three elements in the context of
32 tourism prices by arguing that risk aversion and pleasure seeking modify the expectations of
33 the reference-dependence phenomenon.

34 Considering the inherent uncertainty that tourism consumption entails, people tend to
35 look for cues that provide indications about a product's or service's quality and therefore use
36 them to form expectations about the future experience (Gould-Williams, 1999). Accordingly,
37 tourism prices play a critical role because of the implicit message that they convey in terms of
38 quality and as an "uncertainty reducer." This circumstance, however, might lead to situations
39 that are counterintuitive.

40 While the neoclassical theory of preferences posits an inverse price–demand
41 relationship, using a correct price measurement and appropriate modeling is not always
42 straightforward (Crouch, 1994; Meissner & Strauss, 2012a, 2012b; Oses, Gerrikagoitia, &
43 Alzua, 2016; Seetaram, Forsyth, & Dwyer, 2016). Certainly, its effects are not always apparent:
44 tourists can invert the relationship between price and demand because of quality–price

45 associations. Furthermore, how can an analyst model a demand situation in which some people
46 behave consistently with neoclassical theory and others do not (i.e. the price does not
47 negatively affect the demand)? Identifying the market share of people in one group or another
48 is a tricky task. As if all this were not enough, people tend to use individual reference points to
49 determine how high or how low a price is (Cai & Cude, 2011; Gilbride, Gultinan, & Urbany,
50 2008; Malasevska & Haugom, 2018) meaning that individuals' decisions may be based not
51 only on finding high or low prices but also on coming across amounts that are above or below
52 their expected rate. Figure 1 shows the way different effects of prices on consumption that
53 might bring about the -expected and unexpected- behaviors analyzed in this manuscript.

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55 **[Please, insert Figure 1 about here]**

56 In this context, the analyst needs to approach the modeling task from a flexible
57 perspective, in such a way that, rather than imposing constraints that are in accordance with
58 consumer theory, the model should accommodate any possible relationships between variables.
59 Therefore, when it comes to the price variable, the model should be able to capture both
60 negative and positive effects as well as the fraction of the population undergoing each different-
61 sign effect. In this sense, Nunes, Cunha-e-Sa, Ducla-Soares, Rosado, and Day (2001) indicate
62 that, in choice models, the price coefficient should not be restricted to negative values. Taking
63 a step further, our article estimates a sticker shock model (Winer, 1986) in which both the price
64 parameter and the sticker shock coefficient can take any value – negative or positive – with the
65 ability to detect those individuals in the sample who are well behaved in terms of consumer
66 demand theory and those who are not. As the purpose of this article is to detect anomalies in
67 tourist behavior (such as paying a higher-than-expected price), the simplicity of the sticker
68 shock model allows us to focus on the intricacies of the variable price and analyze the

69 consequences of each of the three aforementioned dimensions of human behavior (risk
70 aversion, pleasure seeking, and reference dependence) simultaneously in the same model.

71

72 **2. NON-CONSISTENT TOURIST BEHAVIORS TOWARDS PRICE**

73 Before the service encounter, tourists form expectations about the characteristics of
74 their future experience in a destination using different internal and external cues that reflect the
75 levels of service that they will receive (Gould-Williams, 1999). Inseparability, intangibility,
76 and heterogeneity make the information collected before booking particularly meaningful in
77 tourism. The uncertainty that exists in tourism consumption implies information asymmetries
78 that need to be reduced, and the strategies implemented to this end should help to distinguish
79 high- and low-quality services; these strategies used as quality assurance mechanisms might
80 include warranties, reputation, or quality certifications (Dewally & Ederington, 2002).

81 However, let us suppose that a tourist is dealing with, say, three different choice
82 alternatives, all of them claiming to have a good reputation, all recommended by distinct travel
83 agents, or, which in turn can be particularly confusing, all showing several quality certificates
84 granted by different third-party entities. In this case, the tourist does not know whom to trust
85 the most. An example that reflects the complicated task of distinguishing the quality of
86 different alternatives would be the situation of a group of tourists who are planning to take a
87 cruise along the Nile, and all the ships are marked as having five stars: which one will they
88 choose? Evidently, price will be a determinant factor in their final decision. Therefore, whether
89 the information is only a little *informative* (e.g. when all the choice alternatives claim to be
90 high quality) or whether there is information overload (e.g. companies might have several
91 quality certificates but customers do not know which one is best), the price appears to be a
92 relevant decision criterion. Consequently, as the literature has well established, prices might
93 be considered to be an indication of quality.

94 Note that, while Boyle and Lathrop (2009) find that consumers have a modest positive
95 price–quality relationship and Caves and Greene (1996) conclude that “convenience goods”
96 show a lower price–quality correlation, in tourism, a positive relationship between price and
97 quality is observed by Decrop (2006). It is no wonder that this relationship exists in tourism
98 consumption: in line with Jones and Hudson (1996), consumers use more signals as product
99 prices rise, and it is rational for them, in this context, to include the price in the set of signals
100 used to assess the expected quality. Therefore, as prices might be a signal of quality, a critical
101 element that can form people’s attitudes towards prices is the uncertainty that they feel a
102 purchase decision entails: they might show a greater predisposition to pay a higher price to
103 reduce the risk involved and make sure that they receive the level of service that they expect.
104 In this regard, and according to Assael (1984) and Diaz and Maria (2013), people’s
105 involvement and interest in a product condition their perceived value and determine how they
106 incorporate the information that prices convey. Considering that, in tourism consumption,
107 individuals are actively involved (i.e. they are moved to the place where the product is), this
108 behavior strongly applies. After the information has been collected, people will assign a
109 meaning to each price through an encoding process (Lichtenstein, Bloch, & Black, 1988).

110 In this context, value for money turns out to be a central measurement of
111 competitiveness (Stevens, 1992), which helps to increase the likelihood of repurchase (He &
112 Song, 2009). Dodds and Monroe (1985) indicate that the predisposition to buy is affected by
113 the dual effect of prices: high prices lead to greater monetary sacrifices and thus diminish the
114 predisposition to accept them; at the same time, however, these high prices lead to higher
115 perceived quality and, in turn, enhance the willingness to purchase. Therefore, this literature
116 suggests that high prices may not reduce the demand on account of price–quality associations,
117 apart from the possibility that the hedonistic element that sometimes appears in tourism
118 consumption might lead some people to opt for the expensive alternative (Morrison, 1996).

119 Note that Dodds, Monroe, and Grewal (1991) and Grewal, Monroe, and Krishnan
120 (1998) suggest that reference prices determine the value of the purchase, as preferences tend
121 to be reference-dependent. Accordingly, information acquired in the past leads some people to
122 regard the price to visit a destination as expensive and others to consider it to be inexpensive.

123 Different psychological evaluations of price are derived from this process of fitting it
124 into consumers' set of beliefs, in which the reference price is a central construct in these
125 psychological evaluations (Kim & Crompton, 2002). The reference price is a benchmark, and,
126 more importantly, people form their willingness to pay based on this expected price
127 (Kalyanaram & Winer, 1995). Accordingly, when they compare their *reference price* with the
128 *observed price* and find a discrepancy, it should have an effect on their choices: positive
129 differences should increase the likelihood of choosing a product (the product has a price that
130 is lower than the individual thought it would be (*gains*)); and negative differences should
131 reduce such a likelihood (the product has a higher-than-expected price (*losses*)).

132 However, Alegre and Juaneda (2006) indicate that those individuals who base their
133 choices on perceived quality tend to accept higher prices to make sure of the quality of the
134 product. It is important to remember that consumers view price as a proxy for product quality
135 (Rao, 2005), particularly when there is a lack of information about the product and of
136 confidence in their ability to make the right decision (Schiffman & Kanuk, 2004). This is
137 further intensified by information asymmetries between consumers and service providers that
138 frequently arise in tourism due to the temporal and geographical distances that increase the
139 uncertainty of the consumption (Park & Nicolau, 2015). In this sense, travelers look for signals
140 when making a judgment that requires the balancing of uncertainties, in which price might take
141 central stage because of the price–quality association (Dodds, Avila, & Wahlers, 1993); this
142 might ultimately affect the perceived value and behavioral intentions (Lichtenstein, Ridgway,
143 & Netemeyer, 1993). Consequently, consumers in the tourism industry do not necessarily opt

144 for cheap products/services; rather, they might be more prepared to pay higher rates to find a
145 product/service with their desired level of quality.

146 This consumer behavior can be associated with the notion of conspicuous consumption
147 (Bagwell & Bernheim, 1996). Recognizing that tourism is a high-involvement product, there
148 could be travelers who would pay a premium price for a service just to exhibit their wealth
149 (Kim & Jang, 2013), as a premium price implies exclusivity and distinctiveness. That is, paying
150 a higher price may enable some people to meet their social need for esteem (Amaldoss & Jain,
151 2005). Thus, it can be said that a higher price might lead to expectations of higher quality and
152 prestige sensitivity (conveying prestige to others) and thus enhance the intention to buy
153 (Zeithaml, Berry, & Parasuraman, 1996).

154 Shiv, Carmon, and Ariely (2005) empirically demonstrate the positive effects of price
155 not only on the perceived benefits derived from product consumption but also on the
156 performance of the products advertised. Even if the qualities of the products are
157 indistinguishable, consumers predict inferior quality from a lower-priced product and, as a
158 result, produce a lower performance, giving rise to a placebo effect. Accordingly, some
159 signaling (e.g. discount prices) could drive a reduction of the utility associated with specific
160 consumption (Berns, 2005). A placebo effect has been described in a medical domain – the
161 patient's beliefs and expectations of a medical product can create genuine health benefits, even
162 though the drug is in fact inactive (Stewart-Williams & Podd, 2004). In other words, a placebo
163 effect may appear with elements of a product that are not physical characteristics (e.g. its price)
164 in a way that unconsciously triggers an expectation that an influence will exist, which
165 ultimately will have an impact on the effectiveness (i.e. perceived quality) of the
166 product/service (Irmak, Block, & Fitzsimons, 2005). Although the price paid may be entirely
167 unrelated to the product's real quality, people's unconscious beliefs regarding the price–quality
168 relationship can lead them to believe that they will obtain an outcome similar to that of an item

169 with a quality that is appropriate for the price paid. This implies that individuals may obtain
170 *happiness* from buying products with observed prices that are higher than their reference prices,
171 which, albeit a departure from rational economic behavior, is a way of making sure that they
172 will receive high quality. Therefore, we might also find people who are willing to buy at a
173 higher-than-expected price.

174 In conclusion, this section has reviewed two possible non-consistent behaviors in
175 tourists' price reactions that analysts have to accommodate in their models: i) opting for the
176 expensive alternative; and ii) paying a higher-than-expected price. A priori, it is not easy to
177 differentiate the positive and the negative coefficients associated with "price" and "the
178 discrepancies between the reference price and the actual price," especially considering that the
179 two effects can coexist in the same market; however, with the use of choice models with
180 random coefficients, we are able to test whether these abnormal behaviors exist and, if so, to
181 estimate the proportion of people who follow each of these behavioral patterns.

182

183 3. RESEARCH DESIGN

184 3.1. The Sticker Shock Formulation

185 To analyze how individuals make use of prices and reference prices in their tourist
186 product choices, this article employs the sticker shock model proposed by Winer (1986), in
187 which choice alternatives are assessed by considering the discrepancies between actual and
188 reference prices. Note that, as the purpose of this article is to detect anomalies in tourist
189 behavior, the model proposed is not intended to introduce a comprehensive list of demand
190 variables; rather, we try to keep the model as simple as possible but still look into some
191 intriguing variables that might shed light on some intricacies of tourists' reaction to prices.
192 Thus, for tourist n and occasion t , the utility of alternative i is

$$193 U_{int} = \alpha_i + \beta_{1n} PRICE_{int} + \beta_{2n} (RP_{int} - PRICE_{int}) + \varepsilon_{int}$$

194 $PRICE_{int}$: the current price of product i ;
 195 $(RP_{int} - PRICE_{int})$: a sticker shock term that reflects the price and reference price deviations;
 196 β_n : the set of coefficients of each individual n ;
 197 ε_{int} : an extreme-value random term.

198

199 We turn to the mixed logit model (MLM) because it allows us to consider explicitly the
 200 potential heterogeneity in price responses (Klapper, Ebling, & Temme, 2005) and avoids any
 201 spurious effect of the sticker shock term, as found by Chang, Siddarth, and Weinberg (1999).
 202 Assuming a number J of alternatives, individual n 's probability $P_{nt}(i)$ of selecting choice
 203 alternative i in purchase incidence t is obtained by integrating the expression $P_{nt}(i/\theta)$ by
 204 considering all the values of the parameters θ that vary with density $f(\theta)$, which follows a
 205 normal ($\square\square\square$) distribution with mean b and variance W (Train, 2009).

$$206 \quad P_{nt}(i) = \int_{\theta} \frac{\exp\{U_{int}\}}{\sum_{j=1}^J \exp\{U_{jnt}\}} \phi(\theta | b, W) d\theta$$

207

208 3.2. Sample, Data, and Variables

209 The survey ‘‘Spanish Holidaying Behavior (III)’’ is used, as it shows how people (older
 210 than 18) behave when making tourism choices at the national level in the context of destination
 211 types (coastal vs inland). A multistage conglomeration-stratified sample is employed,
 212 conducted by the CIS (*Centro de Investigaciones Sociol3gicas*). We select those people who
 213 provide information about their tourist consumption at least twice over a year. The resulting
 214 sample contains 410 respondents.

215 1) *Dependent variable*. A variable with three categories is employed for the destination
 216 types: ‘‘coastal,’’ ‘‘inland,’’ and ‘‘not going on holiday’’ (which is the reference alternative).

217 2) *Independent variables*. a) *Prices*. When it comes to the measurement of prices, an
218 important question arises in the context of this study: what happens if the analysis is focused
219 on *types of destinations* rather than *destinations*? If this is the case, working with *types of*
220 *destinations* means dealing with different destinations – within a specific type – which are
221 located in different areas that, of course, have distinct prices. Consequently, the analyst has to
222 generate some kind of index to reflect the *prices* of these destination types. On this line, as the
223 alternatives in this article are “types of destinations,” we resort to Eymann and Ronning’s
224 (1997) “specific cost index,” which is estimated for each destination type and individual.

225 The procedure is developed in two steps (Eymann & Ronning, 1997). The first step is
226 the estimation of an expenditure model, such as $E_{int} = \delta_{i1} + \delta_{i2}X_{int}^{(1)} + \delta_{i3}X_{nt}^{(2)} + \varepsilon_{int}$, where ε_{int}
227 is the error term, E_{int} the variable “expenditures” for each person n in every type of destination
228 i in occurrence t , $X_{int}^{(1)}$ the “intensity of use of the destination type i ” approached by the length
229 of stay (days), and $X_{nt}^{(2)}$ the characteristics of the decision maker, such as income, education,
230 marital status, and household size. The second step consists of the construction of the specific
231 cost indices. Once parameters δ_{i1} , δ_{i2} , and δ_{i3} have been estimated, the specific cost indices –
232 sometimes called *quasi-hedonic prices* QHP_{int} – are obtained by employing the expression
233 $QHP_{int} = \hat{\delta}_{i1} + \hat{\delta}_{i2}\bar{X}_{it}^{(1)} + \hat{\delta}_{i3}X_{nt}^{(2)}$, where $\bar{X}_{it}^{(1)}$ stands for the mean of $X_{it}^{(1)}$.

234 b) *Reference prices*. According to Chang et al. (1999), the reference prices used in the
235 sticker shock model are based on the price on the last purchase occasion; that is, the reference
236 prices are product-type-specific. We measure the reference prices of coastal and inland
237 destinations with the same procedure as outlined earlier. Evidently, when it comes to the
238 destination actually visited, as the information is directly available, the amount paid is
239 employed. By using this procedure, the price QHP_{int} for each type of destination type i , each
240 tourist n , and every purchase occurrence t is obtained. Thus, the reference price is expressed as

241 $RP_{it} = QHP_{it-1}$, which is the price that a tourist observed for destination i (regardless of whether
242 that destination was chosen) on occasion $t-1$.

243 Table 1 shows the descriptive statistics for all the variables used in the sticker shock
244 model and for the building of the specific cost index. The number of people in each household
245 is 3.27 on average. Over half (58.8%) of the respondents are married. The distribution of
246 education levels seems to be even at around 33%. In terms of income, the majority of the
247 respondents earn between €600 and €2399. Importantly, the key dimensions of the sample
248 remain similar to the original sample: in the latter, 94.2% of people select a domestic
249 destination, 61.9% of people taking vacations choose a coastal destination, and 38.1% choose
250 an inland destination; in our sample, these proportions are 100%, 59.2%, and 40.8%,
251 respectively. Their average prices of coastal and inland destinations are €645.93 and €615.36.
252 The average length of trip is 18.3 days with a standard deviation of 14.06.

253 Concerning the sticker shock term, its mean and standard deviation are -33.66 and 7.77,
254 respectively, and its quartiles are $Q_1 = -140$, $Q_2 = -44.5$, and $Q_3 = 50$. For coastal destinations, we
255 find that the mean of the sticker shock term is 37.60 and its standard deviation is 11.61, with
256 quartiles $Q_1 = -64.25$, $Q_2 = 20$, and $Q_3 = 117.50$. For inland destinations, the mean is -104.92 and
257 the standard deviation is 9.06, with $Q_1 = -173$, $Q_2 = -111$, and $Q_3 = 0$.

258

259 **[Please insert Table 1 about here]**

260

261 **4. RESULTS AND DISCUSSION**

262 The inclusion of the Sticker Shock model implies the estimation of an MLM, which is
263 shown in Table 2. The results find that the variable price is significant with a negative sign, so
264 prices have a negative effect on destination choice. Therefore, this result is in line with the
265 research line that regards tourism services as ordinary goods with an inverse relationship

266 between price and demand. At this point, however, it is crucial to highlight the statistically
267 significance of the standard deviation of the price coefficient, which, in this model, means that
268 its impact is not the same for all individuals. It implies that in a market as heterogeneous as the
269 tourist context, with such a great disparity of sensitivities to price, the intricacies of the effects
270 of prices might be complex. Some tourists consider high prices as an attraction factor on
271 account of the higher quality and lower uncertainty associated with them (Dodds et al., 1991).
272 In particular, we find that about 20 percent of the tourists who take vacations (ϕ -
273 $0.013/0.015$)=19.3%) do not opt for the most economical alternatives.

274

275 **[Please insert Table 2 about here]**

276 Regarding the sticker shock term, that is, the discrepancy between reference prices and
277 prices, the result finds that the mean parameter is not significant, but its standard deviation is
278 significant at 1% level. Note, however, that in a MLM, the distribution of values for β is
279 estimated. Therefore, if the standard deviation is significant, then the distribution of values for
280 β spreads on both sides of the mean parameter, be it zero or not. It simply means that
281 preferences exist on both sides of zero¹ along the distribution function.

282 In this particular case, the results obtained imply that for about half (56%) of tourists of
283 the sample [$\phi(0.003/0.020)$ =0.56], the sticker shock term has a positive effect -as would be
284 expected- but for the other half (44%) [$1-\phi(0.003/0.020)$ =0.44] this term has a negative
285 influence -which is against the logic of reference prices-. That is, significant standard
286 deviations mean that some people react positively to discrepancies between *reference price*
287 and *observed price* -as one would expect by assuming rational behavior in the consumer
288 decision process-, and that some other people react negatively to such discrepancies; this latter

¹ In fact, models estimated without considering heterogeneity provide poorer fits: model with *fixed* price and sticker shock parameters, model with *random* price parameter and *fixed* sticker shock parameter and model with *fixed* price parameter and *random* sticker shock parameter have all lower log-likelihood functions.

289 result is against consumer rationality because it indicates that finding a higher-than-expected
290 price represents “good news” and lower than expected represents “bad news”.

291 On the one hand, this counterintuitive “good news” (some people get happiness from
292 paying more than expected) can be due to the fact that individuals may opt for a higher-than-
293 expected price just because they assume a certain level of quality associated with that price.
294 This result is in line with Alegre and Juaneda (2006) comments that perceived quality might
295 lead to accept higher prices so that people make sure of the quality they will be obtaining. On
296 the other hand, the also counterintuitive “bad news” (some people get disappointment from
297 finding prices lower than expected) may lead individuals to perceive a lower quality, even if
298 the actual quality is the same as the one associated with the expected prices. As the individual
299 cannot physically inspect in advance what they buy, this context entails a high degree of
300 involvement and uncertainty. Therefore, the information that prices convey about quality takes
301 over and high prices can help reduce uncertainty, or vice versa, finding prices lower than
302 expected might make one distrust the offer and assign lower quality to a product with higher
303 quality. Hence, an individual might (not) be willing to pay more (less) than his/her expected
304 price to obtain a specific quality level, to make sure of what he or she is purchasing and to
305 eliminate worries and concerns, irrespective of the final real outcome. This result could suggest
306 placebo-like behavior.

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310 **5. CONCLUSIONS**

311 There are some situations in the market that oblige researchers to adopt a flexible
312 approach. When counterintuitive reactions and departures from rational behavior can be
313 expected, modeling should allow their identification and, if possible, their quantification.

314 Prices in tourism have effects that are not as apparent as neoclassical economic theory predicts:
315 not only can tourists sometimes invert the relationship between price and demand but also they
316 might be predisposed to pay higher-than-expected prices. In this highly uncertain context,
317 which is very information-sensitive and notably risk-averse and in which information
318 asymmetries are particularly important, price–quality associations, an interest in reducing
319 information asymmetries, hedonistic factors, or even a kind of placebo-like effect might be
320 behind these non-consistent behaviors (Kim & Jang, 2013).

321 This article has analyzed the effect of the information provided by prices on tourist
322 destination choice by incorporating the sticker shock formulation into the MLM in an attempt
323 to accommodate any possible positive or negative effects. In this regard, by allowing the price
324 and the sticker shock coefficients to take any value – negative or positive – we have detected
325 abnormal behaviors in the tourist demand and estimated the share of each group of people
326 following each pattern. Twenty percent of tourists consider high prices as an attraction factor
327 and choose the expensive alternative, and forty-four percent opt to pay higher-than-expected
328 prices (irrespective of whether the alternative is the most expensive or not). This finding might
329 also be related to the “Veblen effect” and conspicuous consumption (Bagwell & Bernheim,
330 1996). Consumers might be predisposed to accept a higher price due to their desire to achieve
331 social status by signaling their wealth through purchasing costly products. Furthermore, in
332 terms of a placebo effect, people believe that products with higher prices potentially indicate
333 superior quality to products with discount prices, thus ultimately leading to higher perceived
334 value (Irmak et al., 2005; Shiv et al., 2005). These two psychological concepts can help to
335 explain the behavioral pattern in which travelers are predisposed to pay higher prices than
336 reference prices when making a travel decision.

337 This study adds to the literature on consumer behavior and pricing in tourism.
338 Numerous studies suggest a negative role of price in perceived quality and value (e.g., Mattila

339 & O'Neill, 2003; Oh, 2003; Ye, Li, Wang, & Law, 2014). Discount prices help travelers to
340 reduce the acquisition cost, which enhances the values of travel experiences. Following a
341 behavioral approach, however, this paper identifies non-consistent tourist behaviors regarding
342 prices: travelers are more prone to pay higher prices than their reference prices. With tourism
343 being a high-involvement and intangible product (in which conspicuous consumption can
344 easily take place), this research deals empirically with the price–quality schema and can open
345 up new research lines on the analysis of a placebo effect in tourism prices. This suggests a non-
346 linear relationship between a price and a travel choice, which requires multiple
347 concepts/theories to understand it by considering various contexts, including different
348 destinations, products, services, and individual characteristics.

349 In addition to the theoretical contributions, the results have relevant managerial
350 implications. As price promotions could be attractive for some people but a deterrent for others,
351 firms should try to find a balance whereby a specific price allows them to maximize their
352 profits. This implication is even clearer if we take into account the fact that permanent price
353 reductions tend to lower reference prices (Kim and Kang, 2018); accordingly, after a price
354 promotion, when managers set the price back to its normal level, consumers can regard it as a
355 price increment: “bad news” for some but “good news” for others. This means that a strategy
356 based on premiums could be successful when considering this potential placebo effect on
357 certain consumers. The model used in this application allows marketers to identify those
358 individuals who are willing to accept higher prices and to execute a dynamic pricing strategy
359 (Kimes & Wirtz, 2003). The differential pricing approach would allow tourism marketers to
360 increase the travel income at the destination as well as to improve travel experiences.

361 Some limitations of this study are the following: i) as the sample is comprised of people
362 who travel to domestic destinations, it entails less information asymmetry, meaning that these
363 non-consistent behaviors might be underestimated, even more considering that reference prices

364 in international travel play a major role (Park, Hahn, Lee & Jun, 2018); ii) as we do not have
365 data on the destination quality and it might be correlated with the price, the availability of
366 quality measures would allow us to control the estimation of prices better; and iii) to measure
367 reference prices, we have to resort to proxies, as it is not feasible to obtain them directly.

368 Finally, as a future research avenue, it would be relevant to analyze the new intricacies
369 that the sharing economy brings about and some of its innovative pricing methods in which
370 firms and consumers collaborate in the price-setting process (Stangl & Prayag, 2017).
371 Accordingly, the application of reference prices in contexts such as the “pay what you want”
372 environment – in which, taking an extreme example, an individual could decide to propose a
373 zero price – would be relevant because of the insightful outcomes that could be obtained for
374 both firms and consumers.

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Table 1. Descriptive statistics

Variables	Average/Proportion	Standard Deviation
<i>Demographic</i>		
Household size (people)	3.27	1.34
Married	58.8%	
Education level		
Basic education	36%	
Secondary education	33%	
University education	31%	
Income		
Up to €600	14.53%	
€600-€1199	40.07%	
€1200-€2399	37.23%	
€2400-€4499	7.80%	
More than €4500	0.35%	
<i>Travel behaviors</i>		
People taking vacations	69.3%	
going to coastal destinations	59.2%	
going to inland destinations	40.8%	
Not taking vacations	30.7%	
Average coastal price	€645.93	353.89
Average inland price	€615.36	266.83
Expenditures	€675.18	876.15
Length of stay (days)	18.33	14.06
<i>Sticker shock</i>		
Sticker shock term	-33.66	7.77
Sticker shock term (coast)	37.60	11.61
Sticker shock term (inland)	-104.92	9.06

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Table 2. Effect of price and sticker shock term on the type of destination.
(Standard errors in brackets)

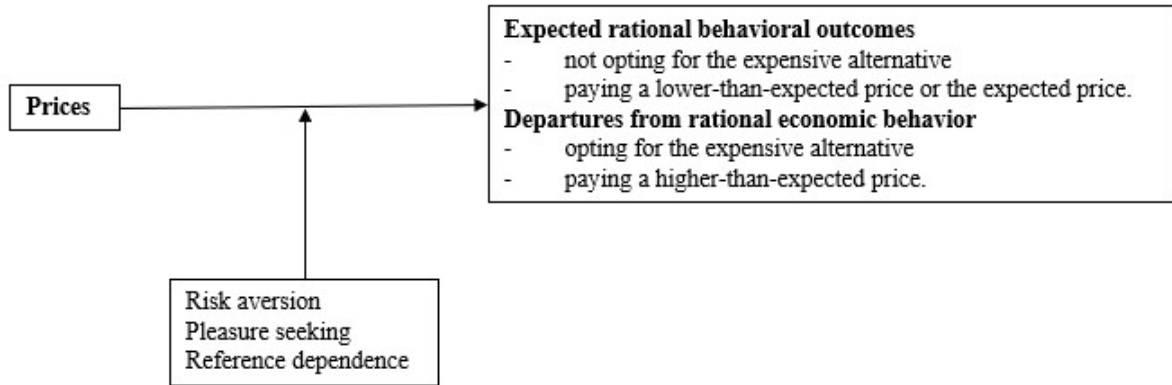
Independent Variables	Equation 1	
	<i>b</i>	SD of β
Price	-0.013 ^a (0.004)	0.015 ^a (0.005)
Sticker shock term	0.003 (0.002)	0.020 ^b (0.002)
Coastal Constant	1.965 ^a (0.475)	-
Inland Constant	1.704 ^a (0.437)	-
Log-likelihood	-407.59	

a=prob<0.001; b=prob<0.01

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Figure 1. Expected and unexpected behaviors derived from the effects of prices



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Appendix: Questionnaire

515 Have you taken a vacation this year?

516

517 How many times?

518

519 How long were you away on vacation on each occasion? (number of days)

520

521 What type of destination did you go to:

522 Coastal small town

523 Coastal city

524 Inland small town

525 Inland city

526

527 How much did you spend while on vacation?

528

529 What is your marital status?

530

531 What is the number of people in your household?

532

533 What studies do you have?

Basic education

Secondary education

University education

534

535 Please, mark the category that reflects your household income:

536 Up to €600

537 Between €600 and €1200

538 Between €1200 and €2400

539 Between €2400 and €4500

540 More than €4500

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