

Inferring customer heterogeneity for rural tourism: A latent class approach based on a best-worst choice modelling

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Abstract: This research aims to analyse customers' preference heterogeneity for rural tourism in Spain and explore their preferences' personal and socio-demographic factors. To achieve this purpose, latent class analysis with the best-worst choice modelling has been applied through conducting a survey on 452 customers in Madrid and Barcelona. The results show that there are five classes in the Spanish rural tourism market: 'all-around seeker', 'leisure activist', 'culture explorer', 'comfort-driven user', and 'basic value pursuer'. The contribution of this investigation is that it is the first study that applied the latent class analysis with best-worst choice modelling to explore customers' preference heterogeneity for rural tourism.

Keywords: customers' preference; heterogeneous choices; tourism experiences

In Spain, rural tourism emerged as an alternative to overcoming the tendency to concentrate on beach and sun tourism (Campón-Cerro et al. 2017). As the rural area outside the city was perceived by urban residents as a place where new experiences were possible, the demand for rural tourism has steadily increased, and investments in natural heritage and culture have been made in response (Albaladejo-Pina and Díaz-Delfa 2009). With this increase in demand, the number of rural tourism destinations in Spain has skyrocketed, and many jobs related to it have been created (Martins-Almeida et al. 2014). However, 75% of the owners have not specialised in any type of demand and continues to contemplate broad segments such as families, couples, and groups (Albaladejo-Pina and Díaz-Delfa 2009). Each of them seems to be too heterogeneous to meet its

specific needs. As a consequence, Spain's rural tourism sector faces a somehow undifferentiated supply. On the other hand, the increase in tourist destinations made it difficult to distinguish between them by blurring their unique characteristics (Garrod et al. 2006).

Grasping customers' needs related to selecting tourist destinations and drawing up strategies to satisfy them is an essential task for increasing the competitiveness of rural tourism in Spain (Albaladejo-Pina and Díaz-Delfa 2009). In other words, understanding customers' preference heterogeneity for rural tourism can provide insights for rural development, which might be worthy for local firms and policymakers. Promotion and communication campaigns will improve if more information on distinct groups of clients is available (Park and Yoon 2009). By targeting specific segments, accommo-

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dation owners, restaurants and leisure activity providers could differentiate their establishments and services and create additional value (Eusébio et al. 2017).

In the quantitative market research literature, studies on preference heterogeneity have been mainly conducted in two directions. The first approach identifies homogeneous segments by applying factor analysis and cluster analysis based on the rating with the Likert scale. It has the advantage that it is easy for respondents to understand and respond. Several applications show its usefulness for characterising rural tourists belonging to each segment based on benefits (Frochot 2005; Martins-Almeida et al. 2014) or motivation (Park and Yoon 2009; Polo Peña et al. 2014; Rid et al. 2014). However, it has the disadvantage that respondents do not consider the trade-offs between individual alternatives and apply the same weight to all alternatives.

The second approach is choice experiments. It has been applied to a wide array of rural tourism-related research because it can effectively reflect actual customers' behaviour as they consider multiple attributes at the same time in the purchasing decision process (Hearne and Santos 2005; Albaladejo-Pina and Díaz-Delfa 2009; Chaminuka et al. 2012). To become more realistic and accommodate potential differences among respondents, some research in the field of tourism has attempted to explore the customers' preference heterogeneity by applying latent class analysis (LCA) to choice modelling (Wu et al. 2011; Notaro et al. 2019). These studies clearly show preference heterogeneity so that the market can be properly segmented.

Within choice modelling, the best-worst choice has been proposed in order to neither burden the respondents with more choice sets nor increase the sample size and the survey cost. It consists of adding questions about not only the best choice but also the worst one (Louviere et al. 2008). Applying best-worst choice modelling makes it possible to more clearly identify the discriminatory characteristics of customers' preferences by asking their opinions not only on the preference side but also on the non-preference side. In addition, utilising the best choice and the worst choice in the best-worst choice modelling means analysing with twice the tourist preference data compared to choice modelling, and the measurement of statistical significance can be improved (Scarpa et al. 2011). The aim of this research is to analyse customers' preference heterogeneity for rural tourism in Spain and to explore personal and socio-demographic factors of their preferences so that both policymakers in local governments and rural tourism providers can establish strat-

egies. The LCA with the best-worst choice modelling has been applied. This study contributes to the existing literature in various ways. First, while previous studies in the field of tourism have applied choice modelling to exploring tourists' preference heterogeneity, this study applied the best-worst choice approach on tourism for the first time, which permits not only the best choice data but also the worst choice data. Next, most studies in rural tourism exploring tourists' preference heterogeneity have used random parameter logit (RPL), whereas this study applied LCA for the first time in the field of rural tourism to explore it.

Literature review

Preference heterogeneity for rural tourism. Rural tourism is a source of economic development that boosts local initiatives while integrating appropriately into the regional economy (Ruiz-Real et al. 2020). Better knowledge of the market, more professional management, and modern marketing methods can lead to a more specialised supply that increases added value (Lane and Kastenholtz 2015). To this end, it is necessary to identify the characteristics of the main rural tourist groups. Based on this, implement promotion and communication actions with clear messages focused on these groups (Park and Yoon 2009).

Within these modern marketing methods, choice modelling is a well-founded alternative that claims that a choice maximises the agent's utility, based on the random utility theory (Louviere et al. 2008). It is conducted with respondents' choice to select the best option and can be applied to draw up the directions for new product development and derive implications for improving existing products (Albaladejo-Pina and Díaz-Delfa 2009). This methodology has been applied in several research fields. In particular, its application has been expanded in the fields of tourism, leisure, and hospitality (a systematic review; Kemperman 2021). Discrete choice modelling requires the subsequent phases: selection of relevant attributes and their levels; establish an experimental design to produce hypothetical profiles and assign them to the choice sets; data collection and model estimation.

The most common attributes considered in choice experiments applied to rural tourism studies are price (Hearne and Salinas 2002; Hearne and Santos 2005; Albaladejo-Pina and Díaz-Delfa 2009; Scarpa et al. 2011; Chaminuka et al. 2012), infrastructure, type of building or diverse facilities (Hearne and Salinas 2002; Albaladejo-Pina and Díaz-Delfa 2005, 2009), location (Hearne and Salinas 2002; Albaladejo-Pina and Díaz-Delfa 2005,

2009), experiences related to farming (Albaladejo-Pina and Díaz-Delfa 2005, 2009), craft activities (Chaminuka et al. 2012), landscape/diversity (Scarpa et al. 2011) or local festivals (Kim 2018), information type (Hearne and Salinas 2002; Hearne and Santos 2005).

Several rural tourism studies have applied multinomial logit (MNL) or RPL based on discrete choice experiments to explore customers' preferences for rural tourism. Hearne and Santos (2005) confirmed the high preference for attributes such as the use of professional guides and management of rural ecotourism areas by allowing stakeholders to choose their preferences for several options related to ecotourism. Chaminuka et al. (2012), applying choice modelling, showed that customers prefer village tours and crafts experiences. Albaladejo-Pina and Díaz-Delfa (2005) applied discrete choice experiments to find customers' preferences for rural tourism accommodations and found that various types and sizes of accommodation are important attributes that affect tourist preferences. Albaladejo-Pina and Díaz-Delfa (2009) explored customer preferences for rural tourism using both MNL and RPL based on discrete choice experiments. The findings show that important attributes in choosing rural tourism were the number of rooms, quality certification, and location.

Although no research specifically in rural tourism has been done with LCA with choice modelling, some tourism studies have explored tourists' preference heterogeneity more clearly by applying the latent class model with discrete choice experiments. Wu et al. (2011) found that by applying choice modelling with a latent class approach, the number of tourism spots, the attractiveness of the destination, and travel time were important attributes in the destination choice and derived two groups that were heterogeneous for preference. Notaro et al. (2019) investigated tourists' heterogeneity in preference for Alpine landscapes using a latent class approach and derived two heterogeneous segments using four attributes such as forests, grassland use, extra cost, and agricultural land use. Shoji and Tsuge (2015) identified tourists' preference heterogeneity for tours in subfrigid climate zones applying four attributes (a fee for a tour, the possibility of visiting eagles, interpretation, and purpose of tour) and derived three heterogeneous segments: 'adventure-based ice tour pursuer', 'wildlife observation tour pursuer', and 'balanced tour pursuer'.

Best-worst choice modelling. While the best-worst choice modelling is similar to the choice modelling in that respondents choose one of the alternatives in each choice set to provide information about their preferences, one is different from the other in that

respondents not only choose the best alternative but immediately follow with the next worst alternative (Marley and Louviere 2005). In addition, through this, more information about respondents' preferences can be obtained, and the significance in statistical aspects can be improved (Louviere et al. 2008).

In the MNL to which the best-worst choice modelling is applied, both the best choice and the worst choice derived from the choice set are analysed (Louviere et al. 2008). While MNL has the advantage that model estimation and result analysis are relatively easy, it has the limitation that it does not sufficiently reflect the preference heterogeneity of respondents because it has a firm assumption that their preferences are homogeneous. There is a high probability that meaningful information acquired from a variety of behaviours regarding consumer choices is lost (Hynes et al. 2008).

LCA is a method of analysing unobserved heterogeneity through a non-parametric approach. Heterogeneity in LCA is expressed through a finite number of different classes with individual parameters. LCA divides unobserved heterogeneity by distinguishing latent segments in a discrete manner without assumptions about the distribution of the coefficients. In the LCA, each individual belongs to one of the segments called classes (Boxall and Adamowicz 2002). All classes have different characteristics, but within the same class, members' preferences are considered homogeneous (Bujosa et al. 2010). LCA allows for investigating and identifying groups of people with the same preferences (Bujosa et al. 2010). The probability (P_{ijm}) of the class m being related to alternative j , in which individual i chooses in a choice set, is explained as follows:

$$P_{ijm} = \frac{e^{\beta_m X_{ij}}}{\sum_j e^{\beta_m X_{ij}}} \quad (1)$$

where: P_{ijm} – probability; e – Euler's number; β_m – set of coefficients related to alternative attributes X_{ij} belonging to class m ; i – individual; j – alternative

Classifying individuals (H_{im}) into one of the m classes, which is related to latent structures or the characteristics of the individual being observed, can be expressed as a probabilistic model as follows:

$$H_{im} = \frac{e^{Z_i \theta_m}}{\sum_m e^{Z_i \theta_m}} \quad (2)$$

where: H_{im} – classifying individuals; θ_m – set of coefficients related to latent observable factors Z_i ; m – class.

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MATERIAL AND METHODS

Deriving attributes and determining their levels is the most important procedure in a best-worst choice study. In this study, attributes and levels were determined through three-step processes, such as the analysis of rural tourism experiences directly mentioned by customers, literature research, and expert interviews (Kim and Park 2017). First, by analysing the texts and photos left by about 1 002 customers in the rural tourism online community, what rural tourism experiences were considered important by them was analysed (An and Alarcón 2021). Next, by filtering literature research, a pool of important rural tourism experiences was derived. Finally, interviews with ten experts, consisting of rural tourism owners, rural tourism association representatives, and professors in related fields, were conducted to identify the seven attributes influencing customers when choosing rural

tourism (An and Alarcón 2020). The seven attributes are shown in Figure 1.

The levels of each attribution were also determined through expert interviews. The levels were designed in three stages in consideration of the quantitative and qualitative characteristics of the seven attributes mentioned above. The derived levels are shown in Figure 1.

Since it is less realistic to induce the respondent's response by applying all of these alternatives, to overcome this problem, this study created a total of 18 choice sets through the application of an optimal design (Aizaki et al. 2014). In addition, by using the block design, two versions of the questionnaire, each of which applied nine choice sets differently, were created to reduce the respondents' burden. Figure 2 shows an example of the best-worst question applied to the survey. Each choice set has four options, and the respondents were asked to choose the best choice from the four options ('Which of the four op-

| Attributes | Levels | Specification | Definition | Code |
|------------------------------|--------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Location | 3 | – Town – Farming area – Nature | – Located in town – Located in a fruit and vegetable growing area – Located near nature like a mountain, river, or lake | – Status quo – Location1 – Location2 |
| Outdoor activities | 3 | – None – Some – Many | – There is no activity – Some activities like hiking and climbing – Many activities like horse riding, cycling, fishing, hiking, and climbing | – Status quo – Activity1 – Activity2 |
| Cultural experiences | 3 | – None – Some – Many | – There is no cultural experience – Some cultural experiences related to crafts and food – Many cultural experiences related to cultural heritage like ruins/castles/churches, crafts and food | – Status quo – Culture1 – Culture2 |
| Room quality | 3 | – Basic – Good – High | – Room with basic/functional bedding and furnishings – Room with good quality bedding, furnishings, and coffee service – Room with luxurious bedding, furnishings, and wine service | – Status quo – Room1 – Room2 |
| Additional facilities | 2 | – None – Some – Many | – It does not have any additional facilities – Some facilities like a barbecue, or chimney – Many facilities like a pool, spa, garden, recreation area, barbecue, or chimney | – Status quo – Facility1 – Facility2 |
| Staff hospitality | 2 | – Basic – Good – High | – Hospitality only while greeting guests – Hospitality through offering local information – Hospitality through continuous care, offering local information, and a good breakfast | – Status quo – Hospitality1 – Hospitality2 |
| Price per room for one night | 2 | – Low – Medium – High | – EUR 60 per room for one night – EUR 120 per room for one night – EUR 180 per room for one night | – Price (continuous) |

Figure 1. Attributes and levels used in the choice experiment design

Source: Authors' own processing

| | OPTION 1 | OPTION 2 | OPTION 3 | OPTION 4 |
|-------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Location | Nature Located near nature like a mountain, river, or lake | Nature Located near nature like a mountain, river, or lake | Farming area Located in a fruit and vegetable growing area | Town Located in a town |
| Outdoor activities | Some Hiking and climbing | Many Horse riding, cycling, fishing, hiking and climbing | Some Hiking and climbing | None There is no activity |
| Cultural experiences | Many Related to cultural heritage like ruins/castles/churches, crafts and food | Some Related to crafts and food | Some Related to crafts and food | None There is no cultural experience |
| Room quality | Basic Room with basic/functional bedding and furnishings | Good Room with good quality bedding, furnishings, and coffee service | Good Room with good quality bedding, furnishings, and coffee service | Basic Room with basic/functional bedding and furnishings |
| Additional facilities | Some Barbecue and chimney | None It does not have any additional facility | Some Barbecue and chimney | None It does not have any additional facility |
| Staff hospitality | Basic Hospitality only while greeting guests | Basic Hospitality only while greeting guests | Good Hospitality through offering local information | Basic Hospitality only while greeting guests |
| Price per room for one night | EUR 60 | EUR 60 | EUR 120 | EUR 180 |
| Best choice | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| Worst choice | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Figure 2. Example of a best-worst question

– unselected option; – selected option

Source: Authors' own processing

tions would you most likely choose?') and then select the worst choice from the remaining three options ('Which of the three remaining options would you least likely choose?').

From June 1 to June 30, 2019, this study conducted an online survey for adults aged 20 years or older who have had at least one rural tourism visit within the last three years and reside in Madrid and Barcelona. Since the tourists of Madrid and Barcelona, the largest cities in Spain, are representative customers of rural tourism in Spain, it was decided to use them as the target of the survey. Quotas were applied for age, region, income, and education level to get a representative sample. Finally, a total of 452 customers

participated in the survey, consisting of 227 Madrid residents and 225 Barcelona residents. Through the best-worst choice survey of these 452 customers, a total of 8 136 observations were obtained, including not only 4 068 observations related to the best choice but also 4 068 observations related to the worst choice.

This study utilised the R package 'Rchoice' (Sarrias 2016) and the Latent GOLD[®] version 5.1 (Vermunt and Magidson 2016) software to analyse the latent class MNL model.

RESULTS AND DISCUSSION

Table 1 shows the overall respondents' profiles.

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Table 1. Socioeconomic variables of the total sample

| Sample characteristic | | Number | Percentage (%) |
|--------------------------------------------|------------------------------|--------|----------------|
| Gender | female | 228 | 50.4 |
| | male | 224 | 49.6 |
| Age (year) | under 30 | 81 | 17.9 |
| | 30–39 | 110 | 24.3 |
| | 40–49 | 155 | 34.3 |
| | 50–59 | 77 | 17.0 |
| | 60 and older | 29 | 6.4 |
| Region | Madrid | 227 | 50.2 |
| | Barcelona | 225 | 49.8 |
| Civil status | non-married | 248 | 54.9 |
| | married | 204 | 45.1 |
| Whether he/she has children (child) | without children | 251 | 55.5 |
| | with children | 201 | 44.5 |
| Education level (education) | below university | 168 | 37.2 |
| | university degree and higher | 284 | 62.8 |
| Monthly household income (income) | under EUR 2 000 | 130 | 28.8 |
| | EUR 2 000–2 999 | 163 | 36.1 |
| | EUR 3 000–3 999 | 84 | 18.6 |
| | EUR 4 000 and more | 74 | 16.4 |
| Frequency of visits in 3 years (frequency) | 1–4 times | 282 | 62.4 |
| | 5–9 times | 125 | 27.7 |
| | 10 and more times | 45 | 10.0 |
| Trip type of rural tourism (trip type) | family | 135 | 29.9 |
| | friends | 150 | 33.2 |
| | couple | 167 | 36.9 |
| Total | | 452 | 100.0 |

Source: Authors' own processing

To determine the number of potential latent classes, the goodness of fit is measured by log-likelihood (LL), Bayes information criterion (BIC), and Akaike information criterion (AIC). Table 2 shows the results with an increasing number of latent classes. A model with five latent classes was deemed optimal since the LL, BIC, and AIC decreased sharply up to the five-latent class model but very smoothly in the six-latent class model.

Table 3 shows the estimated parameters for latent class regression, and Table 4 indicates the class membership on socio-demographics. The size of the five latent classes ranges from at least 15.7% to at most 31.4%. In the first class, the estimated parameters of all attributes except 'Facility1' were significant at a 5% significance level. It included 31.4% of respondents, the highest rate among the five classes. It was named 'all-around seeker' because they take into account a vari-

ety of attributes little by little when deciding on rural tourism. In the first class, the percentage of the male

Table 2. Statistical indicators to determine the optimal number of classes

| Number of clusters | Number of parameters | LL | BIC | AIC |
|--------------------|----------------------|---------|--------|--------|
| 1 | 15 | –20 911 | 41 914 | 41 852 |
| 2 | 31 | –20 711 | 41 611 | 41 484 |
| 3 | 47 | –20 538 | 41 363 | 41 170 |
| 4 | 63 | –20 429 | 41 244 | 40 985 |
| 5 | 79 | –20 353 | 41 189 | 40 864 |
| 6 | 95 | –20 300 | 41 180 | 40 789 |

LL – log-likelihood; BIC – Bayes information criterion; AIC – Akaike information criterion

Source: Authors' own processing

Table 3. Estimated parameters for latent class regression

| Mean | Latent class-multinomial logit (LC-MNL) | | | | |
|--------------|-----------------------------------------|--------------------------------|-------------------------------|----------------------------------|-----------------------------------|
| | class 1 (all-around seeker) | class 2 (leisure activists) | class 3 (culture explorer) | class 4 (comport-driven user) | class 5 (basic value pursuers) |
| Location1 | -0.137* (0.061) | -0.966*** (0.103) | -1.511*** (0.195) | -0.267* (0.109) | -0.276* (0.107) |
| Location2 | 0.154* (0.061) | 1.592*** (0.113) | 0.135 (0.175) | 0.656*** (0.112) | 0.423*** (0.107) |
| Activity1 | 0.148** (0.054) | 0.760*** (0.108) | 0.427** (0.134) | 0.150 (0.094) | 0.412*** (0.089) |
| Activity2 | 0.300*** (0.058) | 1.468*** (0.110) | 0.684*** (0.096) | 0.082 (0.107) | 0.870*** (0.099) |
| Culture1 | 0.134* (0.055) | 0.398*** (0.087) | 0.620*** (0.096) | 0.444*** (0.103) | 0.005 (0.089) |
| Culture2 | 0.182** (0.062) | 0.232* (0.094) | 1.128*** (0.137) | 0.381*** (0.086) | -0.207* (0.099) |
| Room1 | 0.244*** (0.055) | 0.471*** (0.091) | 0.310* (0.128) | 0.159 (0.090) | 0.660*** (0.099) |
| Room2 | 0.268*** (0.057) | 0.805*** (0.107) | 0.532*** (0.091) | -0.025 (0.100) | 1.181*** (0.113) |
| Facility1 | 0.095 (0.057) | -0.457*** (0.104) | 0.493*** (0.118) | 0.051 (0.103) | 0.123 (0.102) |
| Facility2 | 0.140* (0.063) | 0.567*** (0.108) | 0.941*** (0.166) | 1.183*** (0.122) | 0.472*** (0.119) |
| Hospitality1 | 0.268*** (0.059) | 0.890*** (0.089) | 0.584*** (0.093) | 1.863*** (0.191) | 0.884*** (0.091) |
| Hospitality2 | 0.493*** (0.063) | 1.371*** (0.089) | 1.313*** (0.121) | 2.148*** (0.180) | 1.118*** (0.099) |
| Price | -0.091** (0.031) | -0.381*** (0.057) | -0.008 (0.052) | -0.524*** (0.054) | -1.076*** (0.071) |

*, **, ***Statistical significance at $P < 0.05$, $P < 0.01$, $P < 0.001$, respectively; parentheses indicate standard errors (SE)

Source: Authors' own processing

is slightly higher than that of female. The proportion of respondents who have visited rural tourism five to nine times at the medium level in the past three years was high. Compared to other classes, the percentage of the couple trip type is higher.

In the second class, the estimated parameters of all attributes were significant at the significance level of 5%. 20.1% of respondents belong to the second class, which is the second-largest among the five classes. It was named 'leisure activists' because the ratio that considers the possibility of various activities in rural tourism to be the most important is higher than in other classes. In the second class, younger, non-married, low education, and low earners are relatively high. The percentage of the friends' group trip type is higher.

In the third class, the estimated parameters of all attributes except 'Location2' and price per room for one night were significant at the significance level of 5%. 16.6% of respondents were in this class. It was called 'culture explorer', reflecting the importance of higher cultural experiences compared to other classes. In this class, the proportion of unmarried and low-educated respondents was relatively high, and the ratio of those who had practised rural tourism ten and more times in the past three years was the highest compared to other classes. Their trip type was centred on the family.

In the fourth class, the remaining attributes except for the attributes such as 'Activity1', 'Activity2', 'Room1', 'Room2', and 'Facility1' were significant at the significance level of 5%. This class includes 15.7% of respon-

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Table 4. Multinomial logit for class membership on socio-demographics

| Socio-demographics | | Class 1 (all-around seeker) | Class 2 (leisure activists) | Class 3 (culture explorer) | Class 4 (comfort-driven user) | Class 5 (basic value pursuers) |
|-----------------------|---------------------------------|-----------------------------------|-----------------------------------|----------------------------------|-------------------------------------|--------------------------------------|
| Gender | female | -0.132*** (0.011) | -0.017 (0.013) | -0.005 (0.014) | 0.273*** (0.014) | -0.119*** (0.014) |
| Age (category number) | | -0.018 (0.011) | -0.188*** (0.013) | 0.040** (0.014) | 0.024 (0.015) | 0.141*** (0.015) |
| Region | Barcelona | 0.068*** (0.010) | 0.120*** (0.012) | -0.243*** (0.013) | 0.071*** (0.014) | -0.016 (0.013) |
| Civil status | married | 0.054*** (0.014) | -0.226*** (0.018) | -0.192*** (0.019) | 0.181*** (0.019) | 0.183*** (0.018) |
| Child | with children | 0.040*** (0.016) | 0.016 (0.019) | 0.047* (0.020) | 0.188*** (0.021) | -0.290*** (0.020) |
| Education | university degree and higher | 0.063*** (0.012) | -0.129*** (0.013) | -0.145*** (0.014) | 0.043** (0.015) | 0.167*** (0.015) |
| Income | less than EUR 2 000 | -0.168*** (0.019) | 0.116*** (0.021) | 0.021 (0.023) | 0.234*** (0.024) | -0.203*** (0.024) |
| | EUR 2 000~2 999 | 0.116*** (0.016) | 0.151*** (0.020) | 0.071*** (0.021) | -0.143*** (0.023) | -0.196*** (0.022) |
| | EUR 3 000~3 999 | -0.153*** (0.021) | -0.165*** (0.026) | -0.025 (0.027) | 0.169*** (0.025) | 0.174*** (0.025) |
| | EUR 4 000 and more | 0.205*** (0.021) | -0.103*** (0.028) | -0.067* (0.030) | -0.260*** (0.032) | 0.225*** (0.026) |
| Frequency | 1~4 times | 0.010 (0.016) | 0.029 (0.019) | -0.117*** (0.019) | 0.233*** (0.022) | -0.156*** (0.019) |
| | 5~9 times | 0.063*** (0.018) | 0.161*** (0.022) | -0.056* (0.022) | -0.088*** (0.026) | -0.079*** (0.022) |
| | 10 and more times | -0.073** (0.024) | -0.190*** (0.030) | 0.173*** (0.027) | -0.145*** (0.035) | 0.235*** (0.028) |
| Trip type | family | -0.110*** (0.018) | 0.042 (0.022) | 0.358*** (0.022) | -0.122*** (0.023) | -0.168*** (0.024) |
| | friends | -0.006 (0.016) | 0.078*** (0.018) | -0.118*** (0.020) | -0.006 (0.020) | 0.051* (0.020) |
| | couple | 0.116*** (0.015) | -0.121*** (0.018) | -0.241*** (0.020) | 0.128 (0.020) | 0.117*** (0.020) |

*, **, ***Statistical significance at $P < 0.05$, $P < 0.01$, $P < 0.001$, respectively; parentheses indicate standard errors (SE)

Source: Authors' own processing

dents, the lowest among the five classes. It was named 'comfort-driven user' because customers belonging to this class compared to other classes highly value the importance of hospitality provided by staff and additional facilities provided by rural tourism accommodation. In this class, the proportion of women was relatively high. The proportion of married people and those having children was relatively high. There were many low-

-income households, and the proportion of customers who had visited rural tourism at a low level was high.

Finally, in the fifth class, all attributes except 'Culture1' and 'Facility1' were significant at the significance level of 5%. This class includes 16.2% of respondents. Since customers belonging to this class favour the basic values provided by rural tourism, such as price and room quality, they were named as 'basic value pursuers'.

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In this class, the proportions of men, elderly, married, and high-income earners were relatively high. In this class, relatively more customers had carried out rural tourism ten and more times in the past three years.

Discussion. This study aimed to analyse tourist preference heterogeneity for rural tourism in Spain and explore personal and socio-demographic factors of their preferences. Best-worst choice modelling with LCA was applied to achieve this goal. In terms of customers' preference heterogeneity, our study revealed that there are five classes in the Spanish rural tourism market (Table 5).

The first class, named 'all-around seeker', has the characteristic its members consider various attributes little by little when selecting rural tourism. It presents some similarities with the 'want-it-all' found in the study by Park and Yoon (2009), although socio-demographic characteristics are quite different. The Korean 'want-it-all' is composed by less educated and wealthy tourists that do not mind doing housework when they travel, while the Spanish 'all-around seeker' includes, to a greater extent, couples with higher living standards.

The second class, named 'leisure activist', is similar to the active visitors from Eusébio et al. (2017) and active rural customers from Molera and Albaladejo-Pina (2007). Customers belonging to the second class are characterised by nature and outdoor activities. This segment is connected with ecotourism (Hearne and Salinas 2002; Hearne and Santos 2005; Chaminuka et al. 2012; Fernández-Hernández et al. 2016) and

presents promising economic implications. Since their members are more concerned with environmental issues and sustainable development, they can generate a larger economic impact in these areas (Fernández-Hernández et al. 2016; Eusébio et al. 2017).

The third class, called 'culture explorer', tends to seek cultural experiences and a town or nature instead of a farming area located in a fruit and vegetable growing region. This class is consistent with heritage and nature seekers derived from the study of rural tourism market segmentation by Rid et al. (2014). As in the previous case, this type of tourist is also more in tune with the social conditions of the towns they visit, with the depopulation problems that are frequent and with the need to preserve inheritance. Therefore, they are more sensitive to contributing to their economic development. In addition, traditional and cultural values can be interpreted as powerful means to create place branding and to differentiate specific places (Ruiz-Real et al. 2020).

The fourth class, called 'comfort-driven user', has the characteristic that they consider staff hospitality as the most important attribute and prefer to have a lot of additional facilities. This result was consistent with 'enjoying rural destination's services and facilities' reported by Polo Peña et al. (2014), the 'family togetherness' of Park and Yoon (2009), or the 'summer family vacationers' of Eusébio et al. (2017).

Finally, the fifth class, named 'basic value pursuer', valued room quality and price per room for one night.

Table 5. Latent class interpretation

| Name | Class 1 (all-around seeker) | Class 2 (leisure activists) | Class 3 (culture explorer) | Class 4 (comport-driven user) | Class 5 (basic value pursuers) |
|----------------------|------------------------------------------------------|------------------------------------------|----------------------------------|-------------------------------------|--------------------------------------|
| Size (%) | 31.4 | 20.1 | 16.6 | 15.7 | 16.2 |
| Attributes – high on | all attributes are considered little by little | Location2, Activity2, Hospitality2 | Culture2, Hospitality2 | Hospitality2, Facility2 | Room2, Price |
| Attributes – low on | Facility1 | Culture2 | Room1, Activity1 | Location1 | Culture2 |
| Gender | male | balanced | balanced | female | male |
| Age | balanced | younger | balanced | balanced | older |
| Region | balanced | Barcelona | Madrid | balanced | balanced |
| Civil status | balanced | non-married | non-married | married | married |
| Child | balanced | balanced | balanced | with children | without children |
| Education | balanced | low education | low education | balanced | high education |
| Income | balanced | lower | balanced | lower | higher |
| Frequency | medium | medium | high | low | high |
| Trip type | couple | friends | family | balanced | couple, friends |

Source: Authors' own processing

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It was similar to those of 'passive tourists' derived from the study of Park and Yoon (2009), but in our case, this segment includes the oldest and highest income tourists, as the 'inactive' of Eusébio et al. (2017). Therefore, in this case, we also identify the possibility of generating added value, targeting a group that seeks relaxing and calming activities, and that on the other hand, has spending capacity. Therefore, this segment can value sustainable tourism and can empathise with rural development.

CONCLUSION

This study has made several contributions in terms of methodology. First of all, the best-worst choice approach that asks for the worst choice in addition to the best choice can offer plentiful information on the individual preferences of customers for rural tourism, as compared to the choice experiments modelling that exclusively utilise best choice data. This was also a way to ensure higher statistical usefulness. In addition, whereas existing choice experiments studies that studied preference heterogeneity in rural tourism focused on single class-based RPL often, this study was able to more clearly confirm the customers' preference heterogeneity by applying LCA to the field of rural tourism.

From a practical point of view, we argue that understanding market heterogeneity leads to better management and a more complete satisfaction of tourist demand. And over time, this can mean a more sustainable development of rural areas (Eusébio et al. 2017; Ruiz-Real et al. 2020). Results show different groups of rural tourists to which rural establishments can be oriented and move away from the great problem of the scarce differentiation of rural tourism in Spain.

Despite the contributions mentioned so far, this study has some limitations. First, this study explored customers' preference heterogeneity for rural tourism based on some large attributes that are considered important in rural tourism. Future research should be conducted by being expanded to include more decision-making factors for customers. Second, in order to generalise the proposed LCA model, it is necessary to consider the cultural context of the region. Future studies could apply the same model derived from this study to other regions after a comparison between regions.

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