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Is Biodiversity a Relevant Attribute for Assessing Natural Parks? Evidence from Cornalvo Natural Park in Spain

Eva Crespo-Cebada [1], Carlos Díaz-Caro [2,*], Rafael Robina-Ramírez [3] and M. Isabel Sánchez-Hernández [4]

1 Faculty of Agriculture, Department of Economics, University of Extremadura–Ctra, Cáceres s/n, 06071 Badajoz, Spain; ecreceb@unex.es
2 Faculty of Business, Finance and Tourism, Department of Finance and Accounting, University of Extremadura, Avda. de la Universidad s/n, 10071 Cáceres, Spain
3 Faculty of Business, Finance and Tourism, Department of Business Organization and Sociology, University of Extremadura, Avda. de la Universidad s/n, 10071 Cáceres, Spain; rrobina@unex.es
4 School of Economics and Business Administration, Department of Business Organization and Sociology, University of Extremadura, Avda de Elvas S/n, 06006 Badajoz, Spain; isanchez@unex.es
* Correspondence: carlosdc@unex.es; Tel.: +34-924 257936

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Abstract: The economic valuation of goods that do not have a market, like services offered by natural parks, provide a lot of information for the purpose of policy making on the conservation and protection of the natural environment, as well as for establishing park use strategies for potential park visitors. In this respect, this paper aims to analyse visitor preferences for Cornalvo Natural Park, which has been classed, since 1992, as a Site of Community Importance. To do this, we conducted an analysis adopting the choice experiment methodology to determine visitor preferences for a set of attributes. Additionally, we included a visitor preference heterogeneity analysis based on a mixed logit model in order to calculate individual willingness to pay with respect to a set of previously specified attributes. Finally, we also implemented the latent class methodology to define groups of individuals with similar characteristics. The information was gathered from visitor surveys conducted during 2019. The main results show that tourists had a high preference and willingness to pay for higher biodiversity levels and lower numbers of visitors, whereas the other attributes were less relevant. Additionally, we detected some degree of heterogeneity in willingness to pay by sex, age and income. Finally, Latent class analysis identified two visitor classes, determined primarily by age and income.

Keywords: biodiversity; environmental economic valuation; choice experiment; Cornalvo natural park

1. Introduction

The demand for the economic valuation of protected spaces, like natural parks, has been growing noticeably for several decades now [1–3]. These protected areas have a number of distinct characteristics, like the conservation and preservation of the cultural and biological diversity of the different species and the wildlife to which they are home [4,5]. Besides, they are also a resource for slowing down the decline and/or preventing the extinction of different types of endangered species by helping to maintain their natural habitat.

Additionally, natural parks are a field for economic development in their surrounding areas by promoting tourism and thus reducing poverty in different regions across the country and encouraging

the creation of further protected areas. Consequently, governments aim to improve access to, and the development of, the recreational services and facilities offered by natural parks.

However, the expansion, over the last few decades, of tourism, currently regarded as the fastest growing industry worldwide, has a major impact on these protected areas [4,6]. This has moved a debate on the direct repercussions of the tourism boom on the wellbeing of wildlife and fauna. There is also a focus on the possible vulnerability of the biodiversity of national parks, as, according to some authors, these environmental changes are one of the major factors leading to the disappearance of species [7–9].

Therefore, it is important to analyse how park visitors rate proper and effective management by public managers [9]. The aim, therefore, is to determine the relative importance attached by visitors to biodiversity protection with respect to other attributes related to park management in order to analyse the trade-offs that there are between the different attributes. Biodiversity is actually one of the sustainable development goals, being a key component for promoting the fight against climate change, to ultimately boost natural resources and possibly increase land productivity [10–12].

In this paper, we set out to analyse Cornalvo Natural Park visitor preferences and willingness to pay for different services of the park, as biodiversity or information boards. Cornalvo Natural Park is located in south-western Spain [9,13]. This park was declared a protected area in 1993, and is also classed as a Special Protection Area, known in Spain as ZEPA, based on the Birds Directive (originally published in 1979), and a Site of Community Importance, according the 1992 Habitats Directive. It covers an area of about 11,600 ha, mostly populated by holm oak and cork oak, interspersed with a number of constructions declared national monuments (like the Roman dam over the river Albarregas).

Additionally, the park's vegetation includes superbly conserved Mediterranean woodland and scrub. On the other hand, there are over 250 animal species inhabiting the park, many of which are threatened with extinction and are of conservation interest on a global scale, like the wildcat, black stork (one of the least abundant species in Western Europe), the European honey buzzard (this being one of its most important breeding sites in Europe) and the black-winged kite.

Park valuation has evolved very positively in terms of number of papers. Of these, most papers can be said to apply two types of methodologies: contingent valuation and choice experiment methods. Contingent valuation had a major impact as of the second half of the last century, as underscored by the works of Bishop et al. and Randall et al. [14,15], and later rose to high prominence following upon works by authors like Cummings et al. and Mitchell and Carson [16,17]. On the other hand, the application of choice experiments outputs a valuation of the different attributes defining the park, and is therefore an option providing a much more detailed valuation [18]. Prominent researchers that have undertaken valuations using this type of approach are Christie et al. and Hanley et al. [13,19].

In the case of Spain, contingent valuation has been used to valuate natural parks in numerous papers [1,20–26], whereas there are far fewer papers applying the choice experiment methodology in Spain [27,28]. Unlike others [9,13,29], most of these works are partial analyses of one aspect of natural parks, and fail to provide a valuation of biodiversity against other recreational attributes as part of the services offered by a natural park.

We applied the choice experiment as a methodological approach to achieve the main objective of this paper. A choice experiment outputs a valuation of the preferences of Cornalvo Park visitors (n = 373) with respect to a set of attributes gathered by means of a survey taken from February to May 2019. The model includes a set of hypothetical park profile attributes: biodiversity, expected number of visitors, resting places, information boards and entrance price, which are often regarded as national park assets [9,29–31].

In this context, this paper aims to analyses visitor preferences for Cornalvo Natural Park and in particular, deepening whether biodiversity is a relevant attribute for visitors to the natural park, taking into account the heterogeneity of preferences. These results allow to obtain a proxy to analyse biodiversity conservation policies.

2. Materials and Methods

2.1. Data Collection

The data were collected from a survey taken by park visitors from February to May 2019, with a total 373 valid survey questionnaires, using simple random sampling. The questionnaire was divided into two parts. The first part gives respondents an introduction to the valuation exercise in which they are going to take part, describing the experiment and the different attributes and attribute levels, as well as the choice experiment methodology used. The second part contains the key socioeconomic variables.

The profile of the sample mean is a 33-year-old female (64%) with higher education (42%). With regard to income, around 66% of respondents state that their income is over €900 and under €2500 per month (Table 1).

Table 1. Percentage of the characteristics of the sample.

Variable		Sample
Age (yr^{-1})		**33.40**
Gender (% women)		64.34%
Household income	<€900	15.54%
	>€901 and <€1500	31.47%
	>€1501 and <€2500	34.58%
	>€2500	18.50%
Educational Level (%)	Primary education	36.46%
	Secondary Education	21.18%
	Higher education	42.36%

2.2. Choice Experiment

The attributes and attribute levels were selected after an analysis of the literature on natural park valuation [4,9,29–32]. In fact, we included the following attributes: biodiversity, expected number of visitors, price, size and number of resting places and information boards. All the attributes and attribute levels are shown in Table 2.

Table 2. Choice set attributes and attribute levels.

Attributes	Levels	Variable Name
Biodiversity	1. Same number of species of vertebrates (250)	BIO
	2. A 10% increase in species	BIO+
	3. A 10% decrease in park populations	BIO−
Expected number of visitors	1. Same number of visitors per year (25,000)	Visit
	2. A drop in the annual number of visitors to 15,000	Visit+
	3. A rise in the annual number of visitors to 35,000	Visit−
Entrance fee	1. No entrance fee 2. Entrance fee of €2 per person/visit 3. Entrance fee of €5 per person/visit 4. Entrance fee of €10 per person/visit 5. Entrance fee of €20 per person/visit	Price
Size and number of resting places	1. Same number and size of resting places	Size
	2. Larger sized resting places	Size+
	3. Larger number of resting places	Size++
Information boards	1. Same number of information panels	Point
	2. A 10% increase in the number of information panels	Point+
	3. A 20% increase in the number of information panels	Point++

Considering the above five attributes and attribute levels, we can establish a total of 405 ($3 \times 5 \times 3 \times 3 = 405$) possible combinations of plausible scenarios. In view of the high number of resulting comparisons, we opted, for reasons of economy and time, to apply a factorial design with an orthogonal main effect plan. This procedure resulted in a total number of 28 alternatives that were divided and combined into two blocks, meaning that each respondent was faced with a set of seven choices. This is a common design practice in choice experiments [33]. Table 3 shows an example of a choice set.

Table 3. Example of a choice set.

Attribute	Alternative 1	Alternative 2	Status Quo
Biodiversity: number of species in the park	Unchanged biodiversity	Unchanged biodiversity	None of the others (status quo)
Expected number of visitors per year	Decrease in visitors to 15,000 per year	Increase in visitors to 35,000 per year	None of the others (status quo)
Entrance price: for adult visitors only	5 EURO entrance fee per person/visit	20 EURO entrance fee per person/visit	None of the others (status quo)
Size and number of resting places	Same size and number of resting places	Increase in the size and number of resting places	None of the others (status quo)
Information panels along footpaths	20% increase in the number of information boards	Same number of information boards	None of the others (status quo)
Choice			

2.3. Models

We used a conditional logit model to calculate the mean valuation of visitor preferences, and we also implemented the parameter logit (RPL) model to study response heterogeneity in this valuation. Finally, we used the individual parameters output by RPL to calculate willingness to pay (WTP).

These models are derived from random utility models [34], and it is assumed that the utility function of each individual is the sum of two terms: a deterministic part that can be described as a function of factors that influence the utility of the individuals and a stochastic, that is, an unobserved, random, part. Consequently, according to Revelt and Train [35], we can assume a sample of N individuals with the choice between J alternatives on T choice occasions, where the utility of the individual n derived from choosing alternative j on choice occasion t is as follows:

$$U_{njt} = \beta'_n x_{njt} + \varepsilon_{njt}, \quad (1)$$

where β'_n is the specific vector of coefficients of each individual, x_{njt} is the vector of the observable attributes of individual n and alternative j on choice occasion t, and ε_{njt} is the random term that we assume to be an independently and identically distributed extreme value. Therefore, the probability of respondent n choosing alternative i on choice occasion t is written

$$L_{nit}(\beta_n) = \frac{\exp(\beta'_n x_{nit})}{\sum_{j=1}^{J} \exp\left(\beta'_n x_{njt}\right)}, \quad (2)$$

Equation (2) is the conditional logit formula [34]. In this paper, it will be used to approximate the method by simulation [36], where the log likelihood is defined by Equation (3):

$$SLL(\theta) = \sum_{n=1}^{N} ln\left\{\frac{1}{R}\sum_{r=1}^{R} S_n(\beta')\right\}, \quad (3)$$

with R being the number of repetitions and β', the r-th draw from $f(\beta|\theta)$.

One of the limitations of the conditional logit model is that it assumes that the preferences are the same for everyone or that their preferences do not depend on observable characteristics. The mixed

logit model corrects this limitation by allowing different coefficients for each person. In particular, the mixed logit choice can be estimated as follows:

$$SLL(\theta) = \sum_{n=1}^{N} ln\left\{\frac{1}{R}\sum_{r=1}^{R}\prod_{t=1R}^{T}\prod_{t=1R}^{J}\left[\frac{\exp\left(x'_{njt}\beta_n^r\right)}{\sum_{j=1}^{J}\exp\left(x'_{njt}\beta_n^r\right)}\right]^{y_{njt}}\right\}, \quad (4)$$

On the other hand, we applied latent classes to identify visitor groups. Latent classes are estimated based on

$$SLL(\theta) = \sum_{n=1}^{N} ln\left\{\sum_{q=1}^{Q} H_{nq}\prod_{t=1R}^{T}\prod_{t=1R}^{J}\left[\frac{\exp\left(x'_{njt}\beta_n^r\right)}{\sum_{j=1}^{J}\exp\left(x'_{njt}\beta_n^r\right)}\right]^{y_{njt}}\right\}, \quad (5)$$

where H_{nq} is the probability of membership of a specific class and is output by

$$H_{nq} = \frac{exp\left(z_n^t\gamma_q\right)}{\sum_{q=1}^{Q} exp\left(z_n^t\gamma_q\right)}, \quad (6)$$

Therefore, the functional form of U_{njt} derived from the individual n for the alternative j in a choice set t can be defined as follows:

$$\begin{aligned} U_{njt} = \beta_0 ASC + \beta_1 BIO^{+}_{njt} + \beta_2 BIO^{-}_{njt} + \beta_3 Visit^{-}_{njt} + \beta_4 Visit^{+}_{njt} + \beta_5 Size^{+}_{njt} + \\ \beta_6 Size^{++}_{njt} + \beta_7 Point^{+}_{njt} + \beta_8 Point^{++}_{njt} + \beta_9 Price_{njt} + \varepsilon_{njt}, \end{aligned} \quad (7)$$

where β_0 is associated with the current situation (alternative specific constant, ASC), that is, nothing changes with respect to the status quo, and β_k is the marginal utility associated with each park attribute, which shows how the utility level changes if the provision of each attribute increases. Specifically, β_1 and β_2 refer to biodiversity, β_3 and β_4, to the expected number of visitors, whereas β_5 and β_6 are related to the number and size of resting places, β_7 and β_8, to the number of information boards, and β_9, to the park entrance price.

Additionally, when we introduce the price coefficient into the choice experiment, the marginal substitution rate between one non-cost coefficient, and the price attribute is the WTP for the specified attribute, which is calculated as follows:

$$WTP_k = -\left(\frac{\beta_k}{\beta_{Price}}\right), \quad (8)$$

Therefore, the WTPk stands for how much visitors would be willing to pay in monetary terms for each increase in the level of attribute k provided by the natural park. This not only denotes an attribute value but is also an approximation of the role the attribute plays in individual wellbeing, as well as the relative importance of the part that the natural park plays in overall wellbeing.

3. Results

3.1. Preference Analysis

Table 4 below shows the results of applying the conditional logit and mixed logit models. Table 3 illustrates both the coefficients of the different attributes and attribute levels and the respective standard errors. The fixed effects logit model shows the mean effect of the different attributes. The only positive and significant coefficients are for positive biodiversity, whereas a reduction in biodiversity and an increase in the number of visitors, as well as a 20% increase in the number of information boards have a significant negative influence on park visitor utility.

Table 4. Conditional (fixed effects) logit and mixed logit.

	Conditional Logit		**Mixed Logit**	
	Coef.	**SE**	**Coef.**	**SE**
Mean				
SQ	−0.5221 ***	0.0973	−1.0094 ***	0.1331
Bio+	0.2432 ***	0.0873	0.5379 ***	0.1832
Bio−	−0.6227 ***	0.1123	−0.8376 ***	0.1711
Visit−	−0.4144 ***	0.0812	−0.9493 ***	0.1540
Visit+	−0.0502	0.0706	−0.0259	0.0990
Size+	−0.0472	0.0944	−0.4822 ***	0.1278
Size++	0.0254	0.0714	0.1349	0.1215
Point+	0.0877	0.0916	0.1534	0.1417
Point++	−0.2041 **	0.0788	−0.4963 ***	0.1147
Price	−0.0246 ***	0.0048	−0.0447 ***	0.0073
SD				
Bio+			2.3919 ***	0.2053
Bio−			1.2825 ***	0.3702
Visit−			1.0634 ***	0.2075
Visit+			0.7235 ***	0.1230
Size+			0.4137	0.2954
Size++			1.3575 ***	0.1554
Point+			1.5400 ***	0.2019
Point++			0.6701 ***	0.1917
N	373		373	
Log-Likelihood	−2629.34		−2454.51	
LR chi2	164.05		349.66	
Prob>chi2	0.0000		0.0000	
AIC	5278.697		4945.039	
BIC	5347.794		5069.415	

Note: Statistically significant at a level of ** 0.05 and *** 0.01.

The sign of the different attributes output by the mixed logit model, assuming fixed status quo (SQ) and price [37], is similar to the fixed effects model. However, the results of estimating the standard deviation reveal some variability, returning significant coefficients for all the variables, except size. This result brings to light signs of heterogeneity among visitors for these attributes. Price still has a negative effect, which is to be expected in this type of analysis. Additionally, SQ has a negative effect, which indicates a preference for a change to the current natural park attributes.

In comparative terms, the signs of the coefficients are equal in both models, except for the case of Size+, which is significant in the mixed logit model. However, according to the Akaike information criterion (AIC) and Bayesian information criterion (BIC) selection criteria, the mixed logit has a better data fit.

3.2. Visitors Willingness to Pay for Natural Park Services

Table 5 shows the estimated WTP for the attributes. It reports the WTP output by both the conditional logit and mixed logit models. The WTP output by the conditional logit model indicates the mean effect for each attribute, whereas the WTP output by the mixed logit model identifies WTP variability among individuals. Table 6 reports results for statistically significant attributes. Both models return a similar WTP. However, the mixed logit model outputs greater values for most of the attributes, except for decreased biodiversity (Bio−). Additionally, the calculated intervals are greater for the mixed logit model.

Table 5. Estimates of willingness to pay for attributes.

	Conditional (Fixed Effect) Logit		Mixed Logit	
Variable	**WTP (Mean)**	**Interval for WTP ***	**WTP (Mean)**	**Interval for WTP ***
Bio+	9.8572	(1.65–18.05)	12.01	(2.53–21.48)
Bio−	−25.23	(−37.73–12.73)	−18.70	(−26.66–−10.73)
Visit−	−16.79	(−26.34–−7.24)	−21.19	(−31.86–−10.52)
Visit+				
Size+			−10.76	(−17.52–−4.01)
Size++				
Point+				
Point++	−8.27	(−15.78–−0.76)	−11.08	(−17.81–−4.35)

Note: * Confidence intervals constructed by delta method; On the other hand, Table 5 reports the results for the mean WTP across socioeconomic variables.

Table 6. Average willingness to pay across socioeconomics variables.

Group	Bio+	Bio−	Visit−	Size+	Point++
Men	15.02 ***	−19.30 ***	−21.40	−10.87 ***	−11.10
Woman	9.38 ***	−18.16 ***	−21.26	−10.13 ***	−11.29
ESO	12.08	−16.33	−19.64	−10.13	−11.16
Upper secondary	10.31	−20.64	−2.00	−10.97	−11.48
Higher	12.02	−17.90	−21.54	−10.79	−11.03
Less than 900	8.57	−20.99	−23.96	−10.43	−11.37
Income 901 and 1500	8.95	−14.22	−19.63	−10.38	−10.22
Income 1501 and 2500	11.06	−21.26	−22.02	−11.13	−12.28
Income more than 2501	16.85	−18.45	−20.73	−10.74	−10.97
Country visitor	12.75 ***	−18.10 ***	−21.40	−10.77 ***	−11.28 ***
Town visitor	3.61 ***	−21.29 ***	−20.83	−10.43 ***	−10.92 ***

Note: Statistically significant at a level of *** 0.01.

With respect to the conditional logit model, one of the attributes with the highest WTP is increased biodiversity (Bio+), which is the only attribute level with a positive WTP, although decreased biodiversity (Bio−) has the highest (negative) WTP in absolute terms. An increase in the number of visitors (Visit−) has a negative WTP, as does an increase in the number of information points (Point++), albeit slightly lower in this case. The results of the estimation of the mixed logit model are similar, although WTP is higher for all the attributes in absolute terms. In actual fact, this model differs in that the attribute with the highest WTP in absolute terms is an increase in the number of visitors, whereas WTP is similar, albeit higher for all the other attributes, except for decreased biodiversity (Bio−).

As shown, there are significant differences for the sex variable, especially with regard to an increase in the WTP for increased biodiversity, which is higher among men than women. We also find significant differences with respect to educational level. Income is another socioeconomic variable that reveals heterogeneity with respect to preferences for the different park attributes, where higher income levels have a higher WTP. Finally, according to visitor origin (town or country), country visitors have a clearly higher WTP. However, increased biodiversity is the attribute with the greatest heterogeneity across the socioeconomic variables, as compared with reduced biodiversity, number of visitors, size of resting places and number of information points, whose values are closer to the mean.

Based on the data from the mixed logit model, we can infer that there is heterogeneity of preferences. Therefore, we applied a latent class model in order to analyse the non-observable heterogeneity. Although we used class selection criteria like AIC and BIC that stipulate that the optimal number of classes is four, we opted to apply two classes to improve the interpretability of results considering that the resulting classes have a very small number of members. Table 7 reports the results.

Table 7. Latent class choice model.

	Class 1			Class 2		
	Mean	**SE**	**WTP**	**Mean**	**SE**	**WTP**
SQ	−1.5259 **	0.7637		−1.6456 ***	0.1350	
Bio+	−1.7803 ***	0.4972	−8.72	0.5980 ***	0.1384	22.60
Bio−	−4.2379 ***	0.8245	−20.60	−0.4322 **	0.1856	−16.33
Visit−	0.1737	0.3264		−0.4894 **	0.1111	−18.49
Visit+	−0.8901 ***	0.3449	0.85	−0.0175	0.0984	
Size+	−1.0329 ***	0.3755	−5.05	−0.0757	0.1480	
Size++	0.13647	0.2329		0.1893 *	0.0983	7.15
Point+	−1.2119 *	0.4952	−5.93	0.1235	0.1360	
Point++	−0.9264 ***	0.3103	−4.53	−0.1845 *	0.1029	−6.97
Price	−0.2041 ***	0.0443		−0.0264 ***	0.0066	
Share	0.292			0.708		
High income	−0.1816 ***	0.0893				
Age	0.0349 ***	0.0083				
Constant	−1.9797 ***	0.3067				
Log likelihood	−2242.2902					
AIC	4530.58					
BIC	4689.50					

Note: Statistically significant at a level of * 0.1, ** 0.05, and *** 0.01.

As we can see, the latent class model has a better fit than the others. Accordingly, we were able to get two groups with similar preferences. The explanatory variables include higher income and age as variables that are statistically significant for explaining group membership. Therefore, the characteristics of the members of the first group are that they have an income <€2500 and are older, whereas the members of the second group are high income earners but are younger than the first group.

We find that both groups have differences with respect to WTP for each of the park characteristics. Importantly, the first group does not have a positive WTP for increased biodiversity, whereas the second group does. However, the first group is less willing to pay for reduced biodiversity than the second group. Another striking feature is that first group has significantly different preferences to the second group with respect to, for example, the size variable, where the first group is not willing to pay for an increase, whereas the second group is.

4. Discussion

According to the results of the choice experiment analysis, the park valuation responses suggest that there is ample room for improvement on the status quo, a point which park managers may want to reflect upon. In this respect, one of the most important attributes in relative terms is the level of biodiversity, on the grounds of both the low preference for a reduction in biodiversity and a high willingness to pay for an increase in biodiversity. These results are consistent with the findings of other authors [9,38,39], showing that high willingness to pay for biodiversity contributes both to the wellbeing of the local population and to the satisfaction of the expectations of tourists visiting a tourist attraction. In addition, it can also be seen how the conservation of biodiversity is a very relevant attribute for consumer preferences in products that have an environmental impact [40].

With respect to the increase in the number of visitors, which is the attribute with the highest willingness to pay in absolute terms, it is consistent with the literature defending that an increase in the number of visitors is one of the causes of loss of wellbeing [9,41]. However, visitors do not have a preference for a large increase in the number of information boards (Point++), which suggests that park visitors are happy with the current number of information boards. This result deviates from other papers that also analysed the number of information boards [9,42,43]. However, this could be due to differences in the number of information panels with which each analysed park is initially equipped,

as well as to visitor type. Nevertheless, with a view to park management, it shows that the existing provision is adequate.

Finally, visitors consider the number and size of the resting places currently available in the park to be adequate, as illustrated by the negative willingness to pay for an increase in resting places, which is consistent with the preference for no increase in the number of park visitors. This result suggests that too large a number or size of resting places does not lead to increased wellbeing, a finding that is consistent with the literature [9].

Based on the results, one clear option to Cornalvo Natural Park managers to improve park quality and the wellbeing of both the local population and visitors is to increase, or at least maintain and definitely not reduce, biodiversity. Therefore, the management should aim to provide better conditions for increasing biodiversity, especially as there is a large group of people that have a high willingness to pay for increased biodiversity. This finding is supported by the identification, as in other studies, of two groups in which income is a significant explanatory variable [9], highlighting that income is a determining factor in willingness to pay for biodiversity on the part of visitors.

These results also show that park visitors maintain preferences for carrying out practices that are more sustainable with the use of natural resources by public managers, as indicated by various studies for the case of Shadegan International Wetland [44] or for Dalai Lake protected area [45]. Furthermore, the park managers could be use several proper silviculture tools [46] in order to increase biodiversity and thus suit the visitors' demands.

5. Conclusions

This article analyses the preferences of tourists with respect to Cornalvo Natural Park, classed as a Site of Community Importance since 1992, in order to output an economic valuation of the park, as well as the willingness to pay for each of the analysed attributes. Thanks to the selected attributes, we were able to analyse both ecological issues (biodiversity) and recreational aspects with regard to tourist activity (size of resting places, information points) in line with recent literature.

In particular, the valuation of the characteristics of a natural park is important for proper management by the public managers responsible for its conservation and maintenance. Additionally, research on the heterogeneity of visitor groups is crucial for improving parks with a view to their sustainable management over time in conformance with sustainable development goals.

The results showed that, on average, an increase in biodiversity is the characteristic for which all visitors are much more willing to pay. However, other attributes, like the increase in the number of visitors, have a negative and significant effect on tourist preferences. Nevertheless, we believed that a more in-depth analysis was necessary, and therefore we analysed the heterogeneity of the preferences based on a mixed logit model to reveal visitors' willingness to pay depending on their individual characteristics.

On the other hand, the application of the latent class model proved to have a better statistical fit to the data, and therefore visitor preferences. This model output two classes of visitors, explained by age and income level. The groups show clear differences with respect to biodiversity and size preferences, highlighting that the higher income group has a greater willingness to pay for increased biodiversity.

With respect to the biodiversity conservation policies included as the funds allocated to them (such as the creation of the Natura 2020 Network), as well as the establishment of areas with a greater or lower level of environmental protection by the authorities, which is a clear reference in the reservations of the visitors. Consequently, the policies directed in this sense are a clear example of success when it comes to the well-being of citizens, at least in terms of their preferences.

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