EXPERIMENTAL EVIDENCE ON CONSUMER PREFERENCES FOR CULTURAL LANDSCAPE

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ABSTRACT

Tourist taxes are a fiscal instrument that can generate revenue for local authorities to mitigate the negative impacts of tourism activity and promote sustainable tourism. This essay aimed to investigate the determinants of WTP for the tourist tax, focusing particularly on its financing function to preserve the cultural landscape of Cordoaria (Oporto). Although the contingent valuation method is a common method to assess how much people are willing to pay for tourism services and activities from a sustainability and heritage preservation perspective, few studies use the tourist tax as a way of payment, mainly in Portugal. As concerns about certainty arise in discrete or dichotomous choice technique, this essay validates multiple-bound discrete choice elicitation methodology. The results show that most tourists are supportive of the tax to preserve the cultural landscape, providing policy implications for designing tourist taxes that reflect consumers' preferences and enhance the city's attractiveness.

Keywords: contingent valuation, generalized ordered logit, multiple-bounded, stated preferences

Introduction

Designated as a UNESCO World Heritage Site in 1996, Oporto's historic area experienced economic and social revitalization in the late 20th century (Rodrigues & Campina, 2020). In 2001, Oporto hosted the prestigious European Capital of Culture event, triggering initiatives for cultural programming, cultural infrastructure, urban and environmental redevelopment, and economic revitalization. These efforts boosted local cultural structures, improved public spaces and infrastructure, and engaged the population (Santos *et al.*, 2002).

The city's classification as a UNESCO World Heritage site and hosting one of Europe's largest events were significant drivers for the growth of Oporto's tourism ecosystem, making it a unique destination. This growth was accompanied by the creation of services that enhanced capacity, leading to increased guests and overnight stays (Borges & Ribeiro, 2017).

Cordoaria is surrounded by protected and classified buildings, and its garden includes various recreational spaces and a collection of public art, justifying a redevelopment intervention integrated into Oporto European capital of culture event. This event followed another, the classification of Oporto's downtown as a UNESCO World Heritage Site, leading to an exponential growth in tourism, highlighting the importance of cultural preservation for the differentiation and enhancement of a destination's competitiveness. However, the negative externalities of this demand also increased, justifying a specific evaluation of the factors that determine the value of the cultural landscape.

The contingent valuation method (CVM) allows for estimating the economic value of non-market goods and services, such as natural resources, environmental amenities, or cultural heritage (Rotaris & Carrozzo, 2019; Göktas & Çetin, 2023). CVM uses surveys to elicit people's willingness to pay (WTP) or willingness to accept (WTA) for changes in the quantity or quality of these goods and services.

Since the city of Oporto has been implemented a tourist tax of 2 € per night/person in 2018, this vehicle of payment was used to determine the WTP for the conservation and maintenance of the cultural landscape of Cordoaria. This study creates a hypothetical scenario, using the CVM, where individuals are asked for their maximum WTP increase in the current tourist tax to finance exclusively the preservation of the urban landscape of Cordoaria district, located in Oporto's downtown. This method captures individuals' values even if they do not consume the service, reflecting their WTP, and addressing the uncertainty inherent in non-market decisions (Snowball, 2008; Verbič *et al*., 2016; Rotaris & Carrozzo, 2019). The elicitation technique adopted is the MBDC format, allowing respondents to express certainty in their decisions, acknowledging the uncertainty present in non-market decisions (Walsh & Poe, 1998; Alberini *et al.*, 2003).

This study aims to measure the value of the cultural landscape in a non-market context, understanding the preferences of Portuguese individuals regarding their cultural landscape through the payment of the tourist tax, minimizing the scarcity of studies about Portuguese evidence. The originality is validating the MBDC method, an underexplored technique among social scientists (Sajise *et al.*, 2021). The result from this study provides useful information for decision-makers and stakeholders in the cultural and tourism sector, as it can help them design optimal pricing strategies, allocate resources efficiently, and evaluate the costs and benefits of alternative scenarios.

Literature review

Taxation related to tourism (fees, indirect and direct taxes) has been implemented, justified by negative externalities (Biagi *et al.*, 2017; Çetin *et al.*, 2017) and to ensure financial resources to invest in infrastructure and services provided to tourists (Borges *et al.*, 2019; Rotaris & Carrozzo, 2019). Durán-Román *et al.* (2021) classified this taxation into five dimensions: i) environmental (fee for services in nature, tickets for access to natural parks, municipal garden access tickets, or nature restoration fees), ii) tourist services (fees for overnight stays in tourist accommodations or tickets for access to attractions, events, museums, and theatres), iii) recreational (taxes on bets and gambling), iv) infrastructure (access tickets or daily fees), and v) mobility (rental vehicle tax). The success of tourist tax can be explained by the flexibility of application to overnight stays, which can vary based on the season, individual characteristics, or accommodation type, and its relative ease of collection (Bratić *et al.*, 2012).

The application of a fiscal instrument can lead to a decline in competitiveness and attractiveness; thus, this value should not exceed the marginal cost of the negative externalities caused by tourism (Biagi *et al.*, 2017). Therefore, the destination's competitiveness is affected proportionally by the magnitude of the negative externalities and the demand elasticity for the services. Researchers have given attention to studying the value that the tourist tax should adhere to in order not to be inefficient (Sheng & Tsui, 2009, 2017). It should be noted, however, that in practice tourist taxes are not set to internalize the negative externality they are associated with, but to raise revenues for the municipality which can either be consigned to tourism related projects or not.

According to existing literature, the impact of a tourist tax depends on several factors. First, there is no impact on demand in cases where the destination has a high level of geographic differentiation, which may not be the case for destinations with nearly perfect substitutes, where consumers can change their consumption patterns due to the introduction of a tax that increases the final service price (Durbarry, 2008; Bratić *et al.*, 2012). Second, how the revenue is applied, whether in financing events combating seasonality or enhancing differentiated services offered to consumers, can mitigate the negative effect that may arise from its application (Do Valle *et al.*, 2012; Pinto *et al.*, 2020).

Studies using the CVM to estimate the value that non-residents attribute to the cultural landscape using the tourist tax as a payment vehicle are scarce (Rotaris & Carrozzo, 2019; López-del-Pino, 2021). Göktas & Çetin (2023), conducted a CVM survey on tourists in Istanbul to elicit the WTP for sustainable tourism using the tourist tax as the payment vehicle, and a payment card as the elicitation mechanism. Applying the Tobit model to the 428 observations collected, the WTP tourist tax for heritage preservation ranged between €2.2 and 2.9. Similarly, interviews conducted at major monuments and recreational areas in Otranto and Castro (Apulia, Italy) determined, using the same methodology, a WTP between 1.9 and 2.2 € if revenues were used for cultural heritage maintenance, 0.6 € more than if they had no information about its use (Rotaris & Carrozzo, 2019).

These studies found a positive correlation between the WTP the tourist tax and its impact on generating revenue for efficient management of infrastructure and maintenance of heritage sites, viewing the urban landscape as a holistic and differentiating element among its attributes. Although the CVM is widely used to evaluate WTP for tourism services and activities from a sustainability and monument preservation perspective, few studies incorporate the tourist tax as a payment vehicle when designing the questionnaire. Therefore, an effort was made to find results from other studies regarding WTP the tourist tax, to supplement previous articles, and to achieve a comprehensive matrix of the main causal factors.

This payment vehicle was used in a questionnaire conducted in 2019 at major tourist locations in Andalusia, employing multiple correspondence analyses. The study concluded that 62.2% of individuals were willing to pay more for access to monuments and sites or tourist tax, respectively, to finance policies enhancing destination sustainability and travel experience. These willingness determinants include the purpose of the trip, the household income, the place of origin, and the daily budget (Durán-Román *et al.*, 2021).

In Portugal, using the Chi-Squared Automatic Interaction Detector algorithm, it was concluded that most tourists were not willing to pay the tourist tax to increase environmental preservation (Do Valle *et al.*, 2012). Analyzing the application of the tourist tax in Oporto, it was found that nationality (individuals from countries with higher average incomes) and education level (individuals with higher academic qualifications) were statistically significant determinants of WTP a higher tourist tax (Borges *et al.*, 2019). These results are consistent with international literature (Durán-Román *et al.*, 2021; Göktas & Çetin, 2023).

In the CVM, the elicitation mechanism most used is the dichotomous choice, but others exist such as payment cards, referendums, bidding games, or open-ended questions (Wright & Eppink, 2016). With the evolution of this methodology, the introduction of certainty levels in responses was introduced aiming at controlling for the lack of familiarity and preference uncertainty concerning the scenario or the elicitation mechanism. This refinement was introduced as researchers started to conclude that, based on the hypothetical scenario, there might be a non-negligible possibility of individuals being confronted with questions they had never considered before (Boman, 2009). That is, given the information presented to the consumer, there is only one correct WTP value within a range of values (Hakansson, 2005; Li & Mattsson, 1995; Hakansson, 2005). Although the MBDC method can assume only a simple affirmative or negative response regarding each payment value, this elicitation method typically includes more than two bids, also collecting information about the certainty level of this payment being truly made in a real context (Alberini *et al.*, 2003; Evans *et al.*, 2003). Everyone indicates the certainty level for each of the amounts on a scale ranging from definitely certain to definitely uncertain (Li & Mattsson, 1995; Wang 1997). In addition to the collected information, this methodology also provides a complete perspective on the set of available payment amounts (Alberini *et al.*, 2003) and minimizes

the pressure effect that the questionnaire design using the single and DBDC methodology can impose (Bateman *et al.*, 2001), notably due to the chaining of questions based on the respondent's previous answer, with the potential anchoring bias that may arise, leading MBDC to more satisfactory answers (Vossler *et al.*, 2003).

Methodology

As mentioned earlier, the CVM was applied to estimate the preferences of national tourists (or residents in Portugal) for the conservation, restoration, and maintenance of a cultural landscape. This method consists of an initial presentation of the policy under study, followed by a description of the market constructed for this purpose, and finally, an explanation of the mean of payment (Noonan, 2003; Snowball, 2008).

Firstly, the questionnaire began by assessing individuals' relationship with the object under study. Secondly, the hypothetical market was explained primarily through the composition of Cordoaria district, which includes a green area, a playground, and several sculptures, with its maintenance being guaranteed by the Porto City Council. The individuals were subsequently confronted with the hypothesis that this tax would be the only source of funding for the maintenance and conservation of this tourist area in the city, and exclusively dedicated to this end. After the scenario explanation, questions eliciting WTP were presented, considering social and economic issues that could affect the response, including household income and its multiple regular expenses. Individuals were asked to pick a range of values (3 €, 5 €, 7 €, 9 €). Finally, the last part of the survey included questions describing the characteristics of the individual, including age, gender, education, income, and the number of household members.

The elicitation questions were only presented to those who, although declaring to live in Portugal, were not residents of Greater Oporto area. This question proved to be crucial in minimizing the risk of bias due to free-riding since, for residents, the tourist tax would not be a realistic vehicle of payment.

The questionnaire was conducted during the month of November 2023 through the Prolific platform, a service for sharing users available to participate in surveys. A total of 386 questionnaires were collected, using the MBDC elicitation methodology, where individuals answered through a matrix containing bids and certainty levels (Cristian *et al*., 2004). When individuals, in addition to uncertainty, have several possibilities to choose their response, the MBDC is appropriate for assessing the probability of choosing each option, increasing the possibility of arriving at the actual value of WTP (Welsh & Poe, 1998; Evans *et al.*, 2003). Considering the potential bias in response to the intermediate uncertainty level, an ordinal scale between "definitely yes" and "definitely no" was chosen, including "probably yes" and "probably no," with "definitely yes" and "probably yes" responses being good predictors of individuals

contributions to a public good (Vossler *et al.*, 2003). There are benefits to presenting this axis randomly, as the ordering can influence estimation, which is known as anchoring bias (Alberini *et al*., 2003).

The MBDC can be estimated using the maximum likelihood estimator by the logistic regression, which aims to maximize the set of parameters that accommodate the presented model (Greene, 2012). As there is a natural order in the bids WTP_i, meaning observation i takes values $1, 2, ..., J$ associated with categories where $1 < 2 < ... < J$, choosing a model where the dependent variable does not consider this order results in inefficient maximum likelihood estimators. Thus, the model can be specified as $WTP_i^* = \alpha + \beta X_i + \epsilon_i$, where WTP_i^* is an unobservable latent variable, X_i represents the set of explanatory variables that influence the choice of a specific WTP bid based on the certainty level of these options, as specified in the table below, and ϵ_i is the error term. The parameters α and β are the parameters that the model will estimate. The latent variable WTP_i^* is divided into J intervals, which can be approximated to the observable variable WTP_i when it takes the value of J under the condition $\tau_{J-1} \leq WTP_i^* < \tau_J$ (Long & Freese, 2014). That is, WTP_i takes the value of 1 if $\tau_0 \leq WTP_i^* < \tau_1$; of 2 if $\tau_1 \leq WTP_i^* < \tau_2$; of 3 if $\tau_2 \leq WTP_i^* < \tau_3$; of 4 if $\tau_3 \leq WTP_i^* < \tau_4$. $\tau_1, \tau_2, ..., \tau_j$ are the cutpoints or threshold of the latent variable WTP_i^* and the observed variable WTP_i falls within the value intervals defined by these intersections. Table 1 describes the J categories.

Table 1. Categories of the dependent variable

Category	Description	Minimum	Maximum	Observations
WTP_{i1}	1 if definitely or probably not willing to pay	0	3	116
WTP_{i2}	2 if definitely or probably willing to pay a tourist tax of €3 (definitely or probably not willing to pay €5, €7, and €9), 0 for other options	3	5	108
WTP_{i3}	3 if definitely or probably willing to pay a tourist tax of €5 (definitely or probably not willing to pay €7 and €9)	5	7	118
WTP_{i4}	4 if definitely or probably willing to pay a tourist tax of €7 (definitely or probably not willing to pay €9)	7	9	26

Category	Description	Minimum	Maximum	Observations
WTP_{i5}	5 if definitely or probably willing to pay a tourist tax of €9 (definitely or probably willing to pay €3, €5, and €7)	9	∞	18

Source: own elaboration

The dependent variable assumes values from 1 to 5 based on the WTP the tourist tax and the associated level of certainty. For example, the probability of choosing category 2, indicating a WTP a tourist tax of €3, requires a definitely or probably affirmative certainty, implying a definite or probable unwillingness for higher tourist taxes. Thus, only responses indicating definite or probably willingness were included to ensure the consistency of the results. 69.95% of individuals were willing to pay more for the tourist tax, while 30.05% of the responses were considered null due to unwillingness to pay more (100) or lack of logic in the responses (16).

A crucial consideration in evaluating the ordered logistic model is the test of the presence of parallel regression assumption, which assumes that proportional odds mean that the coefficients of the independent variable regression are parallel ($\beta_{1j} = \beta_{2j} = \beta_{(k-1)j}$). The likelihood ratio (LR) test allows testing for no difference in coefficients across models using a chi-squared distribution with $K(J-2)$ degrees of freedom. Alternatively, the Brant Wald Test has the advantage of analyzing the proportionality of each variable by testing the null hypothesis ($\beta_1 = \beta_2 = \beta_{(k-1)}$) using a chi-squared distribution with $J(K-2)$ degrees of freedom. As this assumption is necessary for model validation, in case the assumption is rejected, an alternative solution should be considered. The generalized ordered model estimates $J-1$ equations simultaneously and is a more flexible model because relaxes the parallel regression assumption (Williams, 2016).

Table 2 describes the explanatory variables of the model and presents their main statistical indicators. Most of the sample consists of males (63%), singles (84%), and young individuals (average age of 27 years), with an average annual household income of 40,568 euros, and a higher education level (average of 14.7 years of schooling). According to the latest Population census conducted by INE in 2021, 52% of the population was female, the majority were between 25 and 64 years old, and only 18% had completed higher education as their highest level of education (INE, 2022). Therefore, the sample appears to be younger, predominantly male, and more educated compared to the country's overall demographics. According to the Portuguese Fiscal Authority, the average gross annual income of households is approximately 19,400€.

Table 2. Explanatory variables of the model

Variable	Description	Mean	Standard Deviation	Minimum	Maximum
Gender	Gender (Male=1; Other=0)	0,632	0,483	0	1
Age	Number of years of the individual	26,596	7,795	18	69
Income	Annual gross household income	40568	137639	4000	250000
Schooling	Number of years of schooling	14.681	1.885	9	17
Landscape	Preservation of urban landscapes enhances the well-being of populations [Scale from 1 (Strongly Disagree) to 5 (Strongly Agree)]	4.236	0.834	1	5
Environment	The tree canopy of Cordoaria helps reduce the temperature in summer and increase humidity [Scale from 1 (Strongly Disagree) to 5 (Strongly Agree)]	4.528	0.612	2	5

Source: own elaboration

Results

Using Stata 15.1 software, the ordered logit model presented in the previous section was programmed. The value obtained in the likelihood ratio test indicates that the null hypothesis (all parameters of the explanatory variables are zero) can be rejected at a statistical significance level of 5%. However, the model is only consistent if it satisfies the assumption that all parameters of the independent variable concerning the dependent variable are identical. By applying likelihood-ratio test of proportionality of odds and the Brant test, it is observed that the null hypothesis is rejected in the first test, indicating a violation of the assumption that the regressions are constant for all levels of the response variable, although it is not rejected in the second test. Therefore, it was decided to estimate the generalized ordered logit (GOL) model, which relaxes this assumption. The following table presents the results estimated by the ordered logistic (A) and generalized ordered logit (B) methods, showing first the coefficients associated with the explanatory variables and then some model evaluation indicators, including the previously mentioned tests, in addition to Bayesian Information Criterion (BIC) and Akaike's Information Criterion (AIC). We found lower values associated with these indicators which indicate a preference for the complexity and appropriateness of the model.

Table 3. Ordered and generalized ordered logit

VARIABLES	(A) Ordered Logit (1)	(B) GOLogit (1)	(2)	(3)
Age	-0.0316**	-0.0355**	-0.0285*	-0.0437**
	(0.0132)	(0.0146)	(0.0156)	(0.0220)
Educação	-0.150***	-0.132**	-0.144**	-0.197*
	(0.0554)	(0.0647)	(0.0600)	(0.104)
Log(Income)	0.262*	0.0807	0.367**	0.260
	(0.142)	(0.179)	(0.155)	(0.206)
Gender	0.213	0.0895	0.301	0.247
	(0.196)	(0.237)	(0.229)	(0.383)
Landscape	-0.233**	-0.251*	-0.310***	-0.0386
	(0.0956)	(0.150)	(0.118)	(0.147)
Environment	0.374**	0.542***	0.305*	0.252
	(0.162)	(0.195)	(0.171)	(0.274)
/cut1	-0.444			
	(1.709)			
/cut2	0.794			
	(1.714)			
/cut3	2.600			
	(1.727)			
/cut4	3.586**			
	(1.740)			
likelihood-ratio test of proportionality of odds				
$\chi^2_{K(J-2)} = \chi^2_{7(5-2)} = \chi^2_{21}$	36.88			
Prob $> \chi^2_{21}$	0.0174			
Wald test				
$\chi^2_{J(K-2)} = \chi^2_{5(7-2)} = \chi^2_{25}$	25.48			
Prob $> \chi^2_{25}$	0.112			
Log-likelihood	-527.682		-492.856	
Wald	23.434		34.697	
p-value	0.001		0.010	
AIC	1075.363		1027.712	
AIC/N	2.786		2.662	
BIC	1114.922		1110.785	
Observations	386		386	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Own computation

Computing the GOL model with 5 categories and 7 independent variables yields negative predicted probabilities (the probability of selecting a specific category must necessarily be between zero and one, so violating this non-negativity property renders the results invalid). The origin of this problem could

be the fact that the two upper categories (4 and 5) have few observations. The solution to overcome this issue is to aggregate both categories, subtracting one from the total in the model.

The positive and statistically significant coefficients of the explanatory variables, gross household income, and the environmental impact of the landscape, indicate that the higher these coefficients, the greater the probability of consumers choosing a higher category. Conversely, in the explanatory variables, age, years of education, and the effect of urban landscapes on well-being, which have negative coefficients, the probability of individuals choosing lower value categories is higher.

Interpreting the coefficients is more intuitive and useful when calculating marginal effects. The results are shown in Table 4, where the explanatory variables are on the vertical axis, and each of the now four categories are on the horizontal axis. Therefore, an individual ten years older has a probability of choosing category 1 over any other higher by 7.32%, holding other variables in the model constant at a 95% confidence level, and a lower probability by 3.97% of choosing the highest category, *ceteris paribus*. On the other hand, an increase of one more year of education has the effect of increasing the probability of choosing category 1 by 2.72%, all else being equal, and a lower probability by 1.79% of choosing the maximum category over any other, at a 5% significance level. A 10% increase in the annual gross income of the household negatively impacts the probability of choosing category 2 by 72.4%, holding other variables in the model constant at a 5% significance level, and increases the probability by 65.5% that this individual falls within the range of category 3, at a 90% confidence level. There is a negative relationship between the evaluation of the contribution of urban landscapes to the well-being of populations and the selection of a higher category over another. Conversely, there is a positive relationship between the impact of the landscape in environmental terms and the selection of higher categories.

Table 4. Marginal effects (generalized ordered logistic)

VARIABLES	(1)	(2)	(3)	(4)
Age	0.00732**	-0.000398	-0.00295	-0.00397**
	(0.00303)	(0.00306)	(0.00355)	(0.00199)
Schooling	0.0272**	0.00767	-0.0170	-0.0179**
	(0.0132)	(0.0130)	(0.0137)	(0.00906)
Log(Income)	-0.0167	-0.0724**	0.0655*	0.0236
	(0.0369)	(0.0322)	(0.0348)	(0.0184)
Gender	-0.0185	-0.0537	0.0504	0.0219
	(0.0493)	(0.0494)	(0.0509)	(0.0332)
Landscape	0.0518*	0.0234	-0.0716**	-0.00350
	(0.0306)	(0.0305)	(0.0284)	(0.0133)
Environment	-0.112***	0.0380	0.0510	0.0229
	(0.0401)	(0.0369)	(0.0402)	(0.0248)
Observations	386	386	386	386

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Own computation

Discussion

The Oporto tourist tax has been implemented since 2018 to compensate for the negative impacts that arose with the increased attractiveness of the destination due to its unique heritage assets. Thus, facing the hypothetical scenario where the tourist tax revenue finances only the area delimited by the Cordoaria district and serves as the sole source of funding for the maintenance and conservation of this tourist zone in the city, this contingent valuation study reveals that most individuals (69.95%) are willing to pay a tourist tax higher than 2 euros/night/person to preserve the cultural landscape in question. This proportion of positive responses is consistent with previous studies, such as in Andalusia, where the percentage of individuals willing to pay the tourist tax is at least 62.2% (Durán-Román *et al.*, 2021) or in Santiago de Compostela, where this percentage does not exceed 63% (Soares *et al.*, 2022). However, in Oporto, only approximately half of the surveyed tourists were aware of its existence (Borges *et al.*, 2020).

In the MBDC method, which is considered by researchers to enhance the precision of estimates (Welsh & Poe, 1998; Evans *et al.*, 2003), the dependent variable can be transformed into several ordinal categories ranging from 1 to J, which could incorrectly suggest that the data fit linear regression models (Long & Freese, 2014). When the variable is ordinal, the assumption that distances between categories are equal does not make sense, and nonlinear or discrete methods should be used. Among these models are the ordered probit model, binary choice model, multinomial logistic model, and ordered logistic model (Cameron *et al.*, 2002; Shivan & Mehmood, 2012). The latter is appropriate when response choices follow a natural order, and the proportional probability assumption (or parallel lines) is not violated (Vessler *et al.*, 2003), in addition to sharing common properties with logistic regressions, including linearity between the dependent and independent variables, estimation of parameters through maximum likelihood estimation, and requiring complete data for each observation (Long & Freese, 2014). The problem of violating the assumption of parallel regressions, which implies that all coefficients of the model's regressions are identical, was overcome by using the GOL method. The GOL model fits the database better, not only because the likelihood ratio test rejects the null hypothesis that the parameters of the independent variables are zero but also because the BIC and AIC also support the preference for the GOL model.

The results demonstrate that the variables age, years of schooling, and gross annual household income are statistically significant. An individual ten years older has a higher probability of choosing a lower category concerning the others, all else being constant. This negative relationship between the probability of choosing higher WTP categories with increasing age is not consistent with the literature, where a positive relationship exists (Do Valle *et al.*, 2012). It is not easy to infer what justifies this

original finding in this study, but two possibilities can be considered: on the one hand, lack of familiarity with the vehicle of payment; on the other hand, the belief that it is not an appropriate payment for the object in question. Category 1 is relatively more selected among the population over 29 years old (40.66% compared to 26.78% of the population under 30 years old), and, grouping the first two categories, they account for 72.53% of individuals' answers. However, for the justification of the lack of WTP, only 5% of individuals considered that the tourist tax was not a suitable vehicle of payment, allowing the hypothesis of bias to be rejected.

Another originality in this study refers to education, as a higher number of years of schooling increases the probability of an individual choosing a lower WTP category concerning the other categories, all else being constant. This is a surprising result compared to the existing literature since scientists have detected a positive relationship between higher education levels and the higher WTP manifested by consumers for the tourist tax (López-Sánchez & Pulido-Fernández, 2017; Rotaris & Carrozzo, 2019). This is a sample with elevated levels of schooling, mostly with higher education, which can promote higher levels of financial literacy and a greater consideration of the benefits to be gained from the tourist tax, namely its real impact on the preservation of the landscape and the efficiency of the state in achieving the objectives of the fiscal instrument. It is noteworthy that the main reason for not being willing to pay more for the tourist tax for these purposes is precisely because individuals believe that the state is responsible for protecting the cultural landscape. Finally, an individual with a higher gross annual household income has a higher probability of choosing higher WTP categories for the tourist tax, what is is consistent with the existing literature on this subject (Borges *et al.*, 2020).

The model also includes how the evaluation of the impact of the urban landscape on well-being affects the selection of one category over another. There is a negative relationship because individuals who believe that the urban landscape contributes to well-being are more likely to choose lower categories. This means that people who are more willing to pay for the preservation of this specific landscape are those who assess the contribution of the urban landscape to well-being less positively. A curious reflection on the sustainability of cities and the quality of life they offer.

Conclusion

According to the OECD (2022), countries have prioritized heritage preservation in the distribution of recovery funds after the shock caused by the pandemic. National and local authorities should develop policies considering the sustainability of tourism, as well as consumers' perceptions regarding the cultural, social, and environmental protection of territories and populations.

Therefore, this study, along with the validation of the adopted methodology, can add value to the decision-making mechanism because: i) there is a favorable opinion regarding the use of this fiscal instrument, and ii) it underscores the importance individuals attach to the cultural landscape (favour of

an increase in the tax for the maintenance of green areas, environmental awareness, and cultural promotion, among other conservation activities).

As this study concluded with a sample consisting solely of residents in Portugal, it is relevant for future research to include both national and international tourists in the sample and to expand the methodology to other study objects since each one presents unique characteristics, making it impossible to generalize conclusions to other landscapes with different features.

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