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Case study

Visitors' preferences for preserving the attributes of a world heritage site

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ABSTRACT

UNESCO world cultural heritage sites, in particular landscapes, impose several land use restrictions and consequently impact the welfare of various stakeholders. As the preservation of the denomination implies costs, it is of utmost importance to identify and value stakeholders' preferences. This paper applies discrete choice experiments to the Alto Douro Wine Region, classified by UNESCO as world heritage site. The results suggest a clear hierarchy of attributes. In addition, the introduction of both socioeconomic variables and interaction terms provides useful insights on systematic heterogeneity of preferences with interesting directions for heritage safeguarding.

1. Research aims

The increased demand of cultural heritage attractions and the need of objective measures to support informed decisions within cultural policy and among institutions [1] have justified the increasing importance of cultural heritage valuation.

This paper applies the discrete choice experiments technique (DCE) to a case study. The study focuses on the Alto Douro Wine Region (ADW), a UNESCO world cultural heritage site, located in the interior North of Portugal. Acknowledging the threat posed by economic pressures on the preservation of more traditional landscape attributes, it is crucial to determine landscape's potential benefits for Portuguese visitors. In the region, there is a clear association between wine, heritage inherent to the UNESCO classification, and tourism [2–4] clearly show the relevance of tourism for the development policies and results in the region. Hence, inquiring Portuguese tourists about the definition of landscape attributes in the context of the economic dynamics that threats the continuity of the more traditional landscape attributes is of utmost importance. The main objective is to analyze how the consideration of preferences systematic heterogeneity among visitors' segments influences the relative importance of ADW landscape main attributes. Section 2 describes the methodology, presents the results and welfare estimates; conclusions are offered in Section 3.

2. Experimental

2.1. Introduction

The criteria for including the ADW, a traditional European wine producing region, on the world cultural heritage list [5] reflect the human made landscape where successive generations together with nature configured a unique landscape where history can be read from. Vineyards are mixed with other Mediterranean crops defining a mosaic (MOS), together with a characteristic type of villages (AGGLO). Economic pressures to introduce higher productivity crops and techniques are threatening the mosaic and damaging the traditional urban villages. This application of the DCE provides information to design preservation programs that best represent the Portuguese visitors' preferences. The analysis of residents' preferences is left for future research.

2.2. Methodology

Valuation of non-market goods, given their public goods' characteristics and the non-use value related to cultural heritage preservation [6], rests on stated preferences methods. The contingent valuation method has been the most commonly used [1,7,8], but if the interest is on valuing individual attributes then the DCE is the most appropriate [9]. Within the cultural economics arena,

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Table 1
Attributes and levels of ADW preservation program.

Attributes	Levels
Terraced vineyards supported by schist walls (VIN)	1. Presence (maintain the tradition) 0. Absence (Expansion via modern vineyards)
Landscape mosaic with agricultural diversity, including plots planted with and bordered by traditional crops (MOS)	1. Presence (maintain the landscape mosaic) 0. Absence (replace the landscape mosaic and borders around plots via vineyards expansion)
Traditional agglomerations and built heritage (AGGLO)	1. Presence of traditional characteristics 0. Absence (villages lose the traditional character)
Price[a] (TAX) Annual tax increase per household	60 € 40 € 20 € 0 € (None-Option)

ADW: Alto Douro Wine Region.
[a] The levels of the price attribute were obtained from the results of an open-ended question in the pilot study carried out. Further explanation about the attributes' selection is available from the authors.

Table 2
An example of a choice set.

Program	A	B	None
	MOS + AGGLO€20	VIN€60	€0
Your choice	☐	☐	☐

VIN: terraced vineyards; MOS: mosaic; AGGLO: traditional agglomerations.

the DCE has mostly been used to estimate the economic value provided by cultural institutions [9–13], there are few applicattions to monuments [14] and sites [7,15].

The DCE considers that the good is described by its attributes and levels [16] and consumers choose combinations of these (alternatives). The alternatives may be considered independent; in which case the Multinomial Logit Model (MNL) would be appropriate; if instead we assume correlation within sub-sets of alternatives, the Nested Logit Model (NL) is suitable. The application of the NL is also recommended when a No-choice option is available as an alternative[1].

DCE elicits individual preferences through the choices made in a sequence of sets of two or more alternatives or programs.

2.2.1. The attributes, levels and choice sets

The choice of attributes and corresponding levels was guided by the UNESCO' inscription criteria [5] and a previous preferences pilot study and experts interviews (Table 1).

The first three attributes have two levels: protection, ensuring its presence (level 1); or not (level 0). The changes in attributes are explained to the respondents through digitally altered photographs[2]. The price (hypothetical tax on yearly household income[3]) was set at €20, €40 and €60 (preservation program' alternatives) and €0 (None-Option).

Using a D-efficient design [17] the attributes and levels were combined and paired into six choice sets. Additionally each set comprised the None-Option, setting the four attributes' levels at zero (absence of preservation). Table 2 includes an example of a choice set, where alternative A proposes the preservation of the mosaic and agglomerations for a cost of €20; alternative B proposes the preservation of vineyard with schist walls for a cost of €60, and the None-option, proposes no preservation at zero cost.

Table 3
Descriptive statistics.

Variable	Acronym	Codification	Sample Average
Variables related with the respondents			
Socioeconomic variables			
Gender	GE	1-Male; 0-Female	0.582
Age	AGE	18–75	39.5
Education degree	EDU	1-Primary; 2-Secondary; 3-Pos-secondary	2.4
Education (dummy)	DEDU	1-if EDU = 2 or EDU = 3 0-if EDU = 1	
Monthly household income	INCOME	1 (< 1000 €); 2 (1000–2000 €); 3 (2001–3000 €); 4 (> 3000 €)	2.32
Household size	SIZE	1- 6	2.67
Profession	PROF	1- Managers and intellectual professions; 0- Others	0.402
Attitude and context variables			
Member of a cultural association	MEMBER	1- Yes; 0-No	0.185
Consumption of cultural activities (Number times last year)	CULT	0–389	24.28
Visit the ADW for the 1st time	FIRST	1- Yes; 0-No	0.143
ADW visits (last year)	VISIT	1–60	7.47
Distance between the residence and the ADW	KM	15–622	136.58
Visit purpose	PURPOSE	1- To know the ADW cultural heritage; 0- Others	0.249
Influence of the world heritage classification in decision to visit	LIST	1- Yes; 0- No	0.280
Identifies the more traditional attributes	IDENT	1- Yes; 0- No	0.84
Know the reasons of ADW inclusion in UNESCO list	KNOW	1- Yes; 0- No	0.439
Choice Decision Process	*TRADE*	1- Considered all the attributes; 0-Other	0.561

ADW: Alto Douro Wine Region

2.2.2. Survey design and data

The survey was split into three sections. The first addresses questions about the respondents' use and attitudes towards cultural heritage and ADW. The second is concerned with the valuation scenarios and the third collects socio-demographic information.

The survey was administered face-to-face to 189 visitors between May and August 2008 (1134 useful choice responses). Table 3 reports the descriptive statistics.

2.3. Results and welfare estimates

Systematic preferences heterogeneity [18] was analyzed introducing the respondents' characteristics as alternative-specific variables (preference heterogeneity) as well as interaction terms (response heterogeneity).

[1] See [17] for a description of DCE, its theoretical framework and empirical models.
[2] Available upon request.
[3] Considering that the ADV comprises an open area of 24,600 hectares this payment vehicle is the most plausible, in the sense that it includes all the visitors enjoy the ADV, on foot or by car, and do not use any type of accommodation.