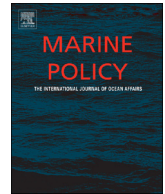




ELSEVIER

Contents lists available at ScienceDirect

Marine Policy

journal homepage: www.elsevier.com/locate/marpol

Evaluating management options for a Marine and Terrestrial National Park: Heterogeneous preferences in choice experiments

Melina Barrio^{a,*}, Maria L. Loureiro^b

^a Departamento de Economía, Universidad de Alcalá, Plaza de la Victoria, 3, 28802 Alcalá de Henares, Madrid, España

^b Departamento de Fundamentos da Análise Económica, Universidade de Santiago de Compostela, Campus Norte, Avda. Burgo das Nacións, s/n, 15782 Santiago de Compostela, A Coruña, España

ARTICLE INFO

JEL classification:

Q20

Q26

Keywords:

Atlantic Islands National Park

Attitudinal questions

Choice experiments

Heterogeneous preferences

Latent class model

Management policy

Protest responses

ABSTRACT

In order to analyze preferences for various management options at the Atlantic Islands National Park in Spain, a stated choice survey was carried out. The complexity of responses and the identification of a wide variety of heterogeneous preferences and motivations were studied through the analysis of follow up questions. The application of a latent class model employing the information gathered in the follow-up questions has proved useful to disentangle different preferences and motivations. The results show that not considering this heterogeneity in the estimation process may lead to biased results, and therefore to an erroneous interpretation of individual's management preferences. In particular, results seem to indicate that those individuals with rational responses prefer to pay more for actions to improve the quality of the National Park rather than to expand it; while those with a protest attitude are more reactive to some measures, such as visits control and the creation of smoking areas.

1. Introduction

The marine and coastal habitats protection may be motivated for any one or a combination of reasons, such as, the existence of an important ecosystem (species diversity, biological activity, critical habitat, etc.) [50], the possibility of a tourists attraction and, therefore, a source of income for communities [3,21,50], the presence of cultural values [34,50,55], as a tool for climate change protection or mitigation [39], or as a fishery resource [6] among others. However, despite their potential and relevance, the successful of marine and coastal habitats protection is not guaranteed and depends on several issues. Specifically, and following the words of Salm et al. [50]: "...it depends on the existence of appropriate legal frameworks, acceptance by coastal communities, an effective and well supported management system, and the delineation of areas so their boundaries are clear, and they can be treated as self-contained units". Therefore, it is crucial a good design of management alternatives accepted by communities, but also by other groups, such as, tourists or general public [33,54,58].

Related to this last issue, non-market valuation techniques have been widely used in order to assess preferences for various management alternatives or conservation programs. In fact, the use of non-market techniques to discover different values from protected areas in general and for marine and coastal areas is well known. There is a growing

literature regarding the estimation of management policies preferences in marine areas [8,13,22,59]. Most previous studies have used the contingent valuation (CV) method, such as, Barry et al. [8] who used the CV method to assess the willingness to pay (WTP) for an improvement to a coastal recreational site in the west of Ireland. Specifically, in this study [8], they measured the increased number of trips due to an improvement in public access to beach to estimate the consumer surplus per person per annum. The objective was to provide information on recreational values to help the design of new regulation, such as Marine Protected Areas (MPAs), in the Irish coastline. Likewise, Brouwer et al. [13] estimated public WTP for alternative management regimes of a network of offshore marine protected areas in the North Sea. Because there are not many studies on non-market benefits from MPAs and therefore few empirical evidence of them, they administered a survey among Dutch general public to discover this type of values. They underlined the importance that these results can have in the discussion about the designation of MPAs. In particular, their results showed that most participants (70%) are willing to pay an extra tax for their protection. Also, they found that those individuals that live closer to the sea feel more connected to it, and they are willing to pay more for its protection.

However, in recent years, the discrete choice experiment (DCE) methodology has been widely applied to estimate public perceptions of

* Corresponding author.

E-mail addresses: melina.barrio@uah.es (M. Barrio), maria.loureiro@usc.es (M.L. Loureiro).

various management options. For example, Durán et al. [22] used DCE to quantify the social well-being of carrying out maritime conservation policies to maintain the maritime cultural heritage in a European Atlantic Region. They designed a six-attribute survey that included intangible and tangible heritage elements, plus the cost attribute. Three groups of the population were identified based on the different attitudes toward culture heritage. However, in the three cases the WTP was significant, showing a positive attitude towards the design of policies that protect the maritime cultural aspects of the Galician Atlantic coast. Recently, Wallmo and Kosaka [59] used a DCE exercise to calculate economic values for different types of sizes and restrictions of large MPAs, including a non-permitted access, a permitted access but with restriction of extractive activities, and a multiple-use designation option, which would allow some type of recreation activities. They underline the importance of a comprehensive understanding of benefits (social, cultural and economic) of protection of large MPAs for the public, and the utility that these studies can have to inform about public preferences.

This study builds on previous research ideas related, in the first place to the importance of having information regarding the values that people give to marine and coastal areas in terms of use [8,22,59] and non-use values [13,22,59] for a proper design of policies; and secondly, once the policy alternatives are known, the necessity of understanding how stakeholders perceive these alternatives [22,59]. In some cases, and depending upon the specific question, the stakeholders could be the general public of a country [13,59], the residents [22], the visitors [8] or even a mix of them.

Two main objectives drive the contribution of this empirical application to previous literature. First, to offer policy makers a guide to manage a specific marine and coastal area, such as the Maritime-Terrestrial National Park of The Atlantic Islands, in line with previous studies. That is, this study attempts to reveal the individual's heterogeneous preferences towards the management of this specific protected area. In order to do so, four attributes (plus cost) mainly related with the coastal management of the National Park were presented to survey participants. Second, it contributes to the growing literature on non-market valuation and the refinement of its analysis through the treatment of protest responses and other anomalies in DCE. Specifically, the treatment of protest responses in DCE has not been sufficiently investigated. Just a few previous studies have assessed protest attitudes empirically in DCE [43,44], as it will be described in detail in the next section. The results show the need to consider such heterogeneity to avoid biased estimates, not only from a methodological point of view, but also from a policy advice perspective.

2. Heterogeneity and protest response in the literature

Responses to DCE may suffer from a wide variety of anomalies (see [48] for a review of the validity and reliability of environmental DCEs from 2003 to 2016 studies), including protest responses. Although not commonly studied, some relevant references in the literature have studied the impact of protest responses in DCE. In particular, Meyerhoff and Liebe [43] employed a follow-up question with DCE and CV in order to differentiate the protest responses, and to assess whether the likelihood of protest responses differs across methodologies, not finding any clear differences between protests and non-protest responses in both methods. In another study, Meyerhoff and Liebe [44] analyzed the motives for selecting the status quo alternative. Using data from two choice experiments about forest biodiversity, they find that the attitude toward the studied good and the protest attitude influence the choice of the status quo.

Nevertheless, and mainly in CV, there is a very extensive amount of literature dealing with protest responses [see for example, [14,35,38,42,56,57]]. Traditionally, the identification of protests has been done through a set of debriefing questions that are presented to respondents who are unwilling to pay for the good [see an example of

questions in [38,56,57]], trying to differentiate true zeros from protest zeros and dropping the protest zeros from the sample in most cases for welfare estimation purposes [38]. This is the case of the study of Loomis et al. [38], who presented a CV survey to obtain the WTP for a fire prevention and response program to protect old-growth forests in Oregon. They identified protest responses only among those that are not willing to pay. Through a set of six responses they split the sample among real zeros and protest response, considering in their estimation only the true zeros. However, other authors claim a need for a change in the identification and/or treatment process of such responses [14,35,41,56,57]. Strazzera et al. [56] stated that the way protest responses are treated in the estimation process may have an effect both on the parameter estimates and on the estimates of mean and median WTP, underestimating or overestimating the results so an alternative framework should be applied. A similar idea is behind the works of Strazzera et al. [57] and Brower and Martín-Ortega [14], although in the last study the identification of protest responses was done across the entire sample. In fact, the identification of protest responses only among those who are not willing to pay could be inadequate [35,42], due to the fact that protest responses may also hide behind certain choices, as they can become an expression of emotions and different feelings towards certain attributes [7]. For example, Jorgensen and Syme [35] showed, in a CV study about storm water pollution abatement, that those respondents who were not willing to pay because they were not agreeing with the act of payment, showed a negative attitude toward paying for the good in question. Furthermore, they found that the protest beliefs were associated with the latent variable “attitude towards paying for public goods”. Therefore, if protest beliefs are representative of the same underlying attitude, which can be found among all respondents, censoring one type of protest beliefs and not another type is indefensible. Due to the few existing references, more research in this field seems to be necessary as the various identification strategies to dealing with protest responses may have a significant impact on the results.

Other anomalies that could be behind the results of a DCE exercise, and directly related with “badly behaved” responses, are non-attendance of attributes, task complexity, and lexicographic preferences, among others. The non-attendance problem has been recently well studied (see for example, [4,9,16,29,51,53]) and refers to the tendency to ignore one or more of the attributes in the experiment [31]. Some of these studies identified this issue by asking respondents about the attributes that they take into account when making their final choices [28], while others used analytical models rather than respondents' statements [15]. Alemu et al. [5] used a follow-up set of questions to analyze why respondents ignore a specific attribute, arguing that some of the reasons given by the survey participants could be interpreted as protest behavior. Following their interpretation, we consider that many of the concerned issues (such as protest responses, task complexity or non-attendance) may be related, and, for that reason, we aim to delve into the possible influence of these various anomalies that may simultaneously be present and affect the estimates. Also, in Barrio et al. [7], the authors established a relationship between protest responses and the act of carrying out a protective action for wolf populations in a given area. More specifically, the authors identified protest responses in a DCE exercise using a follow-up statements. Their results show that protest responses are common in DCEs and that this type of attitudes are related with a less positive preference toward the wolf protection actions.

Task complexity can also be a feature affecting choice responses (see for example, [10,12,17,20] among others). In particular, Bonsall and Lythgoe [10] applied a CE survey about road charging to record response time data in order to investigate the determinants of complexity. Their findings showed that, apart from being affected by personal characteristics, such as age, and level of education, response time increases with perceived task complexity, and decreases with the order of presentation. Recently, Chen et al. [17] measured the impact of task

Download English Version:

<https://daneshyari.com/en/article/7487646>

Download Persian Version:

<https://daneshyari.com/article/7487646>

[Daneshyari.com](https://daneshyari.com)