



Analysis

Tourists' preferences for congestion, residents' welfare and the ecosystems in a national park



Carmelo J. León^a, Javier de León^{a,*}, Jorge E. Araña^{a,b}, Matías M. González^a

^a Institute of Tourism and Sustainable Economic Development (TIDES), University of Las Palmas de Gran Canaria, 35017 Las Palmas de Gran Canaria, Spain

^b Institute for Choice (I4C), University of South Australia (UniSA), Adelaide, Australia

ARTICLE INFO

Article history:

Received 8 October 2014

Received in revised form 2 May 2015

Accepted 2 July 2015

Available online 24 July 2015

Keywords:

Colombia

Discrete choice experiments

Ecosystem services

Heterogeneity

Number of tourists

Local communities

Tourists' preferences

ABSTRACT

The management of national parks and natural areas often faces a balance between the residents' welfare, the tourist activity and the pressure on ecosystems. This paper assesses the benefits for a set of policies designed to address tourist congestion, the increase in the welfare of the local populations, and the improvements in the ecosystem services (coral reefs, mangroves, dry forests, and coastal and sandy ecosystems). We utilize a discrete choice experiment approach with the consideration of potential heterogeneity. Results show that there are three segments of visitors with different preferences for the proposed policies. Those tourists with higher values for the environmental policies and welfare of the local communities also share a preference for a lower level of congestion at the natural areas. The results have implications for managing natural areas at tourist destinations.

© 2015 Elsevier B.V. All rights reserved.

1. Introduction

National parks and natural areas are important attractors of tourists around the world. These areas contribute to the development of tourism in some destinations and generate significant economic benefits to local communities (e.g., Reimann et al., 2011; Strickland-Munro and Moore, 2013; Tommasini, 2013; Snyman, 2013). Tourism in natural areas is commonly associated with the concept of ecotourism because it is assumed that tourist activities should promote the conservation of nature and its values (e.g., Ross and Wall, 1999; Scheyvens, 1999), integrating also the needs and satisfaction of the local communities. However, some natural areas close to mass tourist destinations can be subject to significant impacts because of the potential presence of high number of visits that may put pressure on fragile ecosystems and natural resources (e.g., Brown et al., 1997; Licitignola et al., 2007; Anand et al., 2012). In addition, sometimes the local communities do not receive all the potential benefits from ecotourism (e.g., Archabald & Naughton-Treves, 2001; Ahebwa et al., 2012; Sandbrook and Adams,

2012). Thus, there is a need to develop management tools to balance the increase in tourist flow with the preservation of natural values and concern for the welfare of the local populations.

The objective of this paper is to assess the preferences of tourists for a set of policies designed to address both the preservation of ecosystems and the development of the local community in the National Park of Rosario and San Bernardo (NPRSB), Colombia in the context of increasing tourist flows and congestion pressure. This natural area is close to the city of Cartagena de Indias, which is one of the most important tourist destinations in Latin America. Most visits to NPRSB are from tourists who are also visiting the city of Cartagena during their stay. There is also a local population on the islands living in poor social and human conditions. The question is what would be the preferences that tourists make for the levels of congestion in the National Park, the values of ecosystem services, and the benefits of a development program that would increase the living standards of the local population.

In order to evaluate these preferences we utilize the technique of discrete choice experiments (DCEs) (e.g., Louviere et al., 2000; Louviere, 2006; Crouch et al., 2009). This technique has been widely applied to the evaluation of tourists' preferences both in natural areas and other tourism contexts (e.g., Morley, 1994; Eymann and Ronning, 1997; Huybers, 2003). It involves asking tourists to choose between alternative profiles or sets of attributes of the tourist destination or policy measures. The method is conducted by means of structured questionnaires that are surveyed to tourists or visitors to natural areas. The principal

* Corresponding author at: University of Las Palmas de Gran Canaria, Faculty of Economics, Business and Tourism, Modulo D (D.0.05), Las Palmas de Gran Canaria 35017, Spain.

E-mail addresses: carmelo.leon@ulpgc.es (C.J. León), javier.leon@ulpgc.es (J. de León), jorge.arana@ulpgc.es (J.E. Araña), matiasmanuel.gonzalez@ulpgc.es (M.M. González).

advantage of this method is that it allows researchers to investigate the preferences of various attributes of the tourist product simultaneously and, at the same time, it avoids the extensively found "scale perception bias" when using likert scales to elicit individual preferences (Araña and León, 2012; 2013a; León et al, 2013a,b).¹

The applications of DCM to the investigation of tourists' preferences for natural areas started with the work of Hearne and Salinas (2002) about the preferences of national and international tourists in the Braulio Carrillo National Park in Costa Rica. Authors conclude that both types of tourist prefer improved infrastructure, aerial trams with observation towers and picnic areas, more information, and low entrance fees. Also in Central America, Hearne and Santos (2005) studied alternative scenarios for ecotourism in the Maya Reserve Biosphere in Peten, Guatemala. Authors find that foreign tourists have similar preference orderings to educated locals regarding the attributes of improved national park management and the presence of guides for wildlife viewing, but different preferences regarding paved roads and illegal colonists in the area.

In Africa, Naidoo and Adamowicz (2005) investigated the contribution of biodiversity to tourists' WTP to visit a forest reserve in Uganda, considering the preferences for the number of bird species seen by the tourist and the chances of seeing large wildlife and other tourist product characteristics (lodging facilities, travel time, tour, landscape features). Similarly, Chaminuka et al. (2012) analyzed the potential for development of ecotourism in rural communities adjacent to Kruger National Park (KNP) in South Africa, by investigating the attributes of village accommodation, village tours and visits to craft markets. The authors find that tourists are reluctant to use accommodation outside the National Park but show interest in the attributes of village tours and craft markets. Also in South Africa, Dikgang and Muchapondwa (2014) analyze the preferences of tourists for the attributes of the Kgalagadi area, finding positive values for more pristine recreational opportunities and increased chances of seeing predators, but opposing granting local communities access to grazing opportunities in the area.²

The present paper contributes to the literature on the use of DCE for assessing the management of natural areas in tourism by providing further evidence of the advantages of DCE for assessing tourists' preferences. In addition, our application focuses on the case of a natural area that is subject to a large number of tourist visits from an important tourist destination in the Caribbean which faces specific challenges regarding the quality of life of the local community and the management of the impacts caused by increasing tourist flows. Furthermore, the data is modeled utilizing advance data modeling techniques that allow researchers for the investigation of heterogeneous preferences across the population of tourists, which can be useful for targeting specific groups of tourists according to their specific characteristics.

Crucial to the investigation of the preferences of tourists for the set of environmental attributes of tourist destinations is the potential heterogeneity that can be present across the tourist population. In our judgment, there has not been sufficient investigation on the presence of heterogeneity of tourist preferences in the applications of DCE to natural areas in tourism. However, heterogeneity has implications both for the economic assessment of tourists' preferences and for the design of policy measures addressed to manage natural areas in tourist destinations.

¹ There is a large number of applications of the contingent valuation method (CVM) to value tourists' preferences for natural areas focusing on a single attribute or policy question (e.g., Lee, 1997; Lee and Han, 2002; Asafu-Adjaye and Tapsuwan, 2008; Davis and Tisdell, 1997; Tisdell and Wilson, 2001; Fredman and Emmelin, 2001; Greiner and Rolfe, 2004; Huybers and Bennett, 2000; Huybers and Bennett, 2003; Rulleau et al., 2012). The travel cost method (TCM) has also been utilized to value the economic benefits of tourists' visits to natural areas (e.g., Tobias and Mendelsohn, 1991; Maille and Mendelsohn, 1993; Menkhaus and Lober, 1996; Font, 2000; Herath and Kennedy, 2004).

² There is also a larger number of applications of DCE to the investigation of the preferences of recreationists or users (i.e., residents or local population) towards natural areas (e.g., Boxall et al., 1996; Adamowicz et al., 1998; Hanley et al., 1998; Morrison et al., 1999; DeShazo and Fermo, 2002; Othman et al., 2004; Horne et al., 2005; Christie et al., 2007; Bullock and Lawson, 2008; Jacobsen and Thorsen, 2010; Jutinen et al., 2011; Rogers, 2013).

The paper is organized as follows. Section 2 presents the methodology describing the DCE method and econometric methods employed for the assessment of heterogeneous tourists' preferences. Section 3 presents the data and application. Section 4 discusses the main results and Section 5 summarizes the conclusions and implications of the paper.

2. Methodology

In order to model tourist heterogeneity in the responses to the valuation questions of the DCE experiment we considered a Mixed of Normals Multinomial Logit (MM-MNL) model as the best representation of the DCE data. The main advantage of this model is its flexibility and ability to jointly estimate visitors' valuations of different services of the national park and segmenting visitors based on the elicited preferences (Araña et al, 2008; Araña and León, 2013b; León et al., 2014; 2015).

In order to represent this model, let us assume that tourist i chooses a single option j from among k mutually exclusive policy alternatives in a specific choice situation t . For a well-behaved preference map, represented by a strictly increasing, continuous, and strictly quasi-concave utility function, upon selecting alternative j , a general indirect conditional utility U_{ijt} takes the following form:

$$U_{ijt} = V_{ijt} + \varepsilon_{ijt} = \beta'_i x_{ijt} + \varepsilon_{ijt} \quad i = 1, \dots, N; \quad j = 1, 2, \dots, K; \quad \text{and } t = 1, 2, \dots, T \quad (1)$$

where V_{ijt} represents the observed systematic portion of utility and it is assumed to be a linear, additive function of the attribute levels of the alternatives x_{ijt} , and β_i is a vector of random variables that allow researchers to account for heterogeneity of preferences in the population. The random error term, ε_{ijt} , represents the unobserved portion of the utility function, which is assumed to be independently and identically distributed (IID) over individuals, alternatives and choice situations.

Following the behavioral decision process proposed by (2), the tourist faces a multi attribute discrete choice problem, in which the researcher observes that tourist i chooses alternative j^* if, and only if:

$$U_{ij^*t} = [\beta'_i x_{ij^*t} + \varepsilon_{ij^*t}] > U_{ijt} = [\beta'_i x_{ijt} + \varepsilon_{ijt}] \quad \forall j \neq j^* \quad (2)$$

Under this general specification of the utility function, the probability that an alternative j^* is chosen by tourist i , in a choice situation t , is specified as follows;

$$P_{ij^*t} = \text{Prob}(\beta'_i x_{ij^*t} + \varepsilon_{ij^*t} > \beta'_i x_{ijt} + \varepsilon_{ijt}) \quad \forall j \neq j^* \quad (3)$$

Different models follow depending on the specification of the nature of heterogeneity, which can be incorporated both in the model parameters and in the error terms. Keane and Wasi (2013) show that the Mixed of Normals Multinomial Logit model (MM-MNL) follows by specifying the mixing distribution in the error terms to be a mixture of Normals, which is also equivalent to extending the latent class models (LC) to incorporate unobserved heterogeneity within each class. Thus, the utility of individual i in period t conditional on choice of alternative j is specified as:

$$U_{ijt} = \beta_{ijs} x_{ijt} + \varepsilon_{ijt} \quad (4)$$

where β_i follows a multivariate normal distribution $MVN(\beta_s, \Sigma_s)$ with probability P_{is} ; $\sum_s P_{is} = 1$; and $P_{is} > 0 \quad \forall s, \quad s = 1, \dots, S$. Therefore, the choice probabilities are given by the following expression:

$$\Pr\left(\left\{y_{ijt}\right\}_{t=1}^T\right) = \sum_{s=1}^S P_{i,s} \left\{ \int \left[\prod_t \prod_j \left(\frac{e^{\beta_{ijs} x_{ijt}}}{\sum_k e^{\beta_{isk} x_{ikt}}} \right)^{y_{ijt}} \right] f(\beta^s) d\beta^s \right\} \quad (5)$$

where $f(\beta^s)$ follows a multivariate normal pdf with mean β , and a covariance matrix Σ_s , that is, $MVN(\beta_s, \Sigma_s)$. It is worth noting that if $P_{is} \rightarrow 0$ for all classes except one, MM-MNL boils down to the Mixed

Download English Version:

<https://daneshyari.com/en/article/5049355>

Download Persian Version:

<https://daneshyari.com/article/5049355>

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