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Measuring birdwatchers preferences: A case for using online networks and mixed-mode surveys

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HIGHLIGHTS

- We purpose a mixed-mode survey to sample special purpose tourists.
- The mode includes on-site and off-site samples of a small population of bird watchers.
- We explore online social networks to get in touch with the target population.
- We obtained convergent validity of the samples in terms of elicited preferences.
- The approach is useful for studies targeting small and socially cohesive populations.

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ABSTRACT

This paper reports findings derived from a study of birdwatchers in the Azores. The subject was birdwatchers' preferences for given management actions designed to improve the attractiveness of bird watching sites. In the absence of official statistics on this market segment, use was made of a mixed-mode survey incorporating both on-site and off-site surveys and the use of on-line social networks and communications tools. The variable willingness-to-stay more time at the site was used as a welfare measure. It has the advantage that it can be used to demonstrate the significant returns of eco-tourism to local communities. Two findings emerge. First, tourists practicing wildlife viewing and nature-based activities are less worried about infrastructures and care more about biodiversity and habitat quality, and second, the research technique appears to be successful when surveying seasonal recreation communities that are small and socially cohesive.

1. Introduction

Ecotourism has been advocated as a way to promote economic benefits while ensuring nature conservation (Collins-Kreiner, Malkinson, Labinger, & Shtainvarz, 2013; Lee & Han, 2002; Lee, Lee, Kim, & Mjelde, 2010; Reynolds & Braithwaite, 2001; Tsaur, Lin, & Lin, 2006; Weaver & Lawton, 2007). In that context, bird watching, consisting of the visitation of sites where birds can be observed, identified, and photographed, is an activity that does not consume natural resources and is actually quite dependent on habitat quality (Higham, 1998). For this reason, bird watching is increasingly understood as an activity that should be promoted in regions where natural assets allow it and where human settlements need livelihood (Carver, 2006; Jones & Buckley, 2001). To maintain and develop bird watching, one important management question is the choice of actions that may increase the value that users give to a birding site. As advocated by several studies, an

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understanding of users' preferences for the attributes of the site is essential for that goal (Chaminuka, Groeneveld, Selomane, & van Ierland, 2012; Juutinen et al., 2011; Lee et al., 2010; Lee & Mjelde, 2007; Morse-Jones et al., 2012; Myers, Parsons, & Edwards, 2010; Reynolds & Braithwaite, 2001; Rolfe, Bennett, & Louviere, 2000; Westerberg, Lifran, & Olsen, 2010; Zander & Straton, 2010).

Many studies have opted to use Stated Preferences (SP) techniques to measure the recreational values of different assets related to nature (Chaminuka et al., 2012; Gürlük & Rehber, 2008; Hvenegaard, Butler, & Krystofiak, 1989; Lee et al., 2010; Myers et al., 2010; Richardson & Loomis, 2009). As in other survey-based studies, an important decision that must be made when conducting a SP study is the choice of the survey mode. It requires weighting several factors, including the type of questionnaire (length, show cards, etc.), target population, sampling method, and the cost and time available to conduct the survey. Survey modes include face-to-face (f2f), mail, telephone, Internet, e-mail, or a mix of these. Mixed-modes combine different survey techniques, such as contacting respondents by telephone and then mailing them the survey (Bateman et al., 2002), or conducting a first wave of the survey by telephone followed by a second wave of f2f interviewing (e.g. González-Cabán, Loomis, Rodriguez, & Hesseln, 2007).

In SP studies, the use of a mixed-mode survey can be particularly risky given its potential effect on the value that is derived from the participants' answers (Arrow et al., 1993; Mitchell & Carson, 1989; Schuman, 1996). If the stated preferences differ when the survey is answered by phone or by f2f, this means that the valuation was influenced by the survey conditions.

This paper presents a mixed-mode survey combining f2f, Internet, and phone/VoIP (Voice over Internet Protocol) that was developed with the purpose of implementing a SP study. Unlike most studies targeting bird watching, this study is interested in understanding the preferences of birdwatchers (i.e. birders) towards management actions that are site specific which means that only birders that knew the area had the level of knowledge needed to undertake the survey.

The characteristics of our case study implied three major challenges that we were able to address by making use of today's online social networks and communication tools. The first challenge was the absence of official data concerning the number and type of visitors traveling to this destination with the purpose of bird watching. Secondly, the target population visits the site for short periods and during specific months, when the chances of bird occurrences are higher (i.e., 4–5 months during a year, staying on average three days). Finally, some birders are annual visitors, others come every two or three years, and some have so far visited the area only once. These challenges were overcome by the development of a survey mode conducted both on-site and off-site using a similar enquiry method.

A major contribution of this paper is to propose an approach that might be able to deal with the typical challenges of surveying special-purpose populations such as nature-based recreational groups (i.e. anglers, birders, hunters, canoeists, or hikers). In addition, we demonstrate the potential of using Internet tools (i.e. websites, personal webpages, blogs, Skype, and Facebook).

In our study, we make use of the willingness-to-stay more time at the site as a welfare measure. One of its advantages is that it can be used to demonstrate the significant returns of eco-tourism to local communities. Using this welfare measure we are also able to measure the differential value that tourists practicing wildlife viewing and nature-based activities give to the existence of better infrastructures versus maintaining habitat characteristics.

The paper is organized as follows. Section 2 presents a review of bird watching studies using non-market valuation techniques. Section 3 provides an overview of alternative survey modes and their implications. The case study is described in Section 4. The methodology, including the design of the mixed-mode survey, is described in Section 5. Section 6 presents the results obtained. A discussion of the results and concluding remarks are provided in Section 7.

2. Bird watching and non-market valuation studies

Previous work on bird watching has focused on birders categorization in terms of their demographic characteristics, motivations, behavior, and preferences (Applegate & Clark, 1987; Cole & Scott, 1999; Hvenegaard, 2002; Lawton & Weaver, 2010; Lee et al., 2010; Myers et al., 2010; Scott & Thigpen, 2003). In some countries (e.g. USA and Australia), the economic relevance of bird watching is annually measured (Carver, 2006; Jones & Buckley, 2001). In Portugal, where the present study was undertaken, bird watching is becoming increasingly important, although targeted studies have not yet been reported.

Among the different valuation methods, SP techniques have become increasingly popular. These techniques use survey questionnaires to define hypothetical markets and to find out about people's preferences with respect to trade-offs between a payment and the provision of a specified good (Mitchell & Carson, 1989). SP methods can be classified into two groups: the Contingent Valuation Methods (CVM) and the Attribute-Based Valuation Methods (ABVM) (Hanley, Mourato, & Wright, 2001). The CVM has been widely used to value a variety of environmental goods including bird populations (Hvenegaard et al., 1989; Lee, Lee, Mjelde, Scott, & Kim, 2009; Myers et al., 2010). Nevertheless, it is limited to measure the value of a single (or limited number of) policy package(s). The ABVM differ from the CVM in that several attributes of a good (or different goods) are valued simultaneously (Hoyos, 2010). The three most common formats of ABVM are ratings, rankings, and choices. Choice Modeling (CM), the technique used in this study, is the most popular and the only one that unequivocally provides consistent welfare estimates. Its application usually implies the comparison between the Business-As-Usual (BAU) situation, at zero price, and other two (or three) alternatives, each including a positive payment for the corresponding package of attributes (or goods). Individuals are asked to pick their favorite alternative out of a set of choices.

Most studies that use SP techniques target populations which can be easily identified (e.g. visitors to a park) and focus on management actions that can be applied in several sites (e.g. construction of observation towers, or providing guided tours). For some examples see Chaminuka et al. (2012), Gürlük and Rehber (2008), Hvengaard et al. (1989), Lee and Han (2002), Lee et al. (2010), Myers et al. (2010), and Richardson and Loomis (2009). Studies focusing on the evaluation of preferences for management actions that are specific to a birding area are rather scarce (Lee et al., 2010; Myers et al., 2010). As we consider broader topics other than bird watching, a few more studies can be found in the literature (i.e. wildlife viewing and other nature-based recreational opportunities, e.g. Brey, Riera, & Mogas, 2007; Chaminuka et al., 2012; Juutinen et al., 2011; Lee & Han, 2002; Lee & Mjelde, 2007; Morse-Jones et al., 2012; Rolfe et al., 2000; Westerberg et al., 2010; Zander & Straton, 2010). As we will further detail, our study focuses on management actions that are site specific. Moreover, we consider a target population (the birders) that is difficult to define and reach.

3. Review of survey modes used in non-market valuation

When designing a SP study, a decision needs to be made concerning the sampling strategy and the method to deliver the