



## Short Note

## Willingness to pay for protected areas: A case of Etna Park

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## ABSTRACT

Protected areas represent spaces of great environmental and social value. Their good management can allow both the protection of biodiversity and the growth of tourists' interest. With regard to the governance of these areas, the possibility of charging visitors for their enjoyment is frequently discussed. This problem is very pertinent in Sicily (Italy) where the government of the region has recently decided to introduce an entry ticket for some regional protected areas. Among the protected areas of Sicily, the Etna Volcano park is an area with extraordinary natural and cultural features and a major tourist attraction whose value has recently been recognized by UNESCO. The objective of this study is to evaluate the willingness of visitors to pay (WTP) an admission ticket for the Etna Park. After some reflections on the importance of protected areas, the results of a survey analyzing the visitors' impression and their opinions about the possible introduction of an access ticket to the Park are presented. The results obtained provide useful facts to support decision makers with regard to the choice and the relative value of a ticket.

## 1. Introduction

Protected areas are fundamental for the conservation and protection of the environmental and landscape heritage of a territory. They preserve biodiversity, guarantee ecosystem services and provide other environmental benefits (Chape et al., 2005; Dixon and Sherman, 1990; Possingham et al., 2007). A nature park is the best tool for the implementation of a sustainable development strategy that considers not only the ecological and environmental dimension but also the economic and social dimension. This is true especially near urban areas where land use and anthropization could represent a danger to protected areas (Andereck et al., 2005; Ap and Crompton, 1998; Whitelaw et al., 2014). The sustainable development of the territories in which the parks are located must, therefore, combine the presence of the protected area with the needs of the population and the local economy.

For local communities, the establishment of a park creates opportunities for the development and protection of cultural and social values. A park is the most powerful means to exploit tourism as a development strategy (Jepson et al., 2011; Liu and Var, 1986; McCool and Martin, 1994). In fact, tourist-recreational activities represent the best economic use of a protected area (Driml and Common, 1996). In recent years, most of the parks in Italy recorded a sharp increase in tourist-recreational use, in accordance with the general expansion of the demand for environmental tourism (Buckley, 2012; Sidali et al., 2017). This phenomenon, however, caused several negative externalities. The

increase in pressure on carrying capacity is linked both to the need for new accommodation facilities and to the disturbance to the local fauna and flora environment (Ceballos-Lascurain, 1996; Senes and Toccolini, 1998).

Therefore, in the use of the environmental resources of a park there are conflicts that need to be resolved in order to achieve economic development compatible with the environment. The problem of the management of protected areas emerges even more clearly from the point of view of financial sustainability (Lal et al., 2017; Mitchell et al., 2013; Rapisarda et al., 2014). Indeed, through good governance and effective management, it is possible to guarantee the use and conservation of these areas to meet the needs of present generations without compromising the possibilities of future generations (Brundtland, 1987). These models of governance must however be participatory because any measure of conservation and promotion is more likely to fail without education and the direct involvement of the different social actors (Modica et al., 2013; Zorrilla-Pujana and Rossi, 2016).

In this sense, sustainable tourism is one of the most effective means of generating funds and respecting the need to protect and conserve areas of particular naturalistic and environmental interest (Eagles, 2009).

The problem of the governance and self-financing of protected areas; of the ethical reasons that arise; of the advantages that may be in conflict with the public nature of the protected assets is much debated

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in literature (Benedetto et al., 2016; Borrini-Feyerabend et al., 2013; Coccossis, 2002; Eagles et al., 2002).

In the region of Sicily (Italy) this problem has been addressed by decisions for the introduction of an entry ticket in many protected areas managed by the regional government. The law of the competent Department (Decreto 20 ottobre 2015 – Assessorato del Territorio e dell’Ambiente della Regione Sicilia), stipulates that the proceeds of ticket sales is intended for the maintenance of protected areas and the increase of services. The ticket is the tool to allocate the funds to the park entities, which are often without adequate financial support. This decision has had a strong media impact considering that it is a matter of paying for the use of an asset which, like all environmental resources, is a public good, already financed by the whole community through the tax levy.

This measure has not yet been fully implemented and is still being assessed with regard to the Etna Park. This protected area, famous for the extraordinary beauty of the landscapes and the impressive eruptive activities of the highest active volcano in Europe, has recently been included by UNESCO in the World Heritage List (it is the fourth Italian natural resource to have been declared heritage humanity). The governance of this area is divided between the various institutional actors responsible for it: the Park Authority, the region, the individual municipalities that are located within the park and UNESCO.

The failure to apply the regional decree for this area is justified by several aspects. Firstly, the particularly large size of the area. Secondly, the high impact of the anthropic dimension linked to the presence of many communities living in and near the area. Finally, the difficulty in establishing the value of the entrance ticket for a public good with extraordinary environmental and cultural characteristics.

In this paper we present the first results of a research on the evaluation of visitors’ willingness to pay (WTP) an admission ticket to access the Etna Park. It is extremely interesting to investigate the motivations of those who oppose the introduction of an entry tax (because they think that the parks are part of the public assets and the management costs must be covered by taxes), and those who instead believe it is right to charge users of the park and its services.

This information can, in fact, be of extreme interest and support to the public decision-maker, in particular within a protected area characterized by a difficult governance due to the presence of many stakeholder categories.

The interest of this paper is also linked to the fact that the literature on this topic has examined aspects of the enjoyment of specific areas of the Etna park or of certain recreational activities (Signorello, 1995; Signorello et al. 2001; Signorello and De Salvo, 2007) but has not investigated the willingness to pay for a ticket to enter the park.

The paper is structured as follows: in the next section the main characteristics of the park will be presented, both from a natural and socio-economic point of view; the model will then be presented to estimate the willingness to pay, the characteristics of the survey and the main results obtained.

### 1.1. Study area

The Etna Park is a protected natural area that is located in the region of Sicily and was established in 1987 (the first park to be established in Sicily) (Fig. 1). It covers 59,000 hectares and has the function of protecting the natural environment and the surrounding landscape of the largest active volcano in Europe. With the creation of the park, the Etna Park Authority was set up, which manages the park and is subject to control and supervision by the regional government. The park includes 20 municipalities, all belonging to the province of Catania, where more than 250,000 inhabitants live (Istat, 2012). In 2013 the volcano Etna was declared a World Heritage Site by UNESCO.

The level of biodiversity is very high and has been influenced by various factors, primarily the volcanic nature of the territory, which has contributed to the creation of various habitats in the area (Foti et al.,



Fig. 1. Sicily and Etna park geographical localization.

2014). In this environment the flora is also extremely rich and characterizes the landscape with a great variety of vegetation (Struck, 2010). The landscape in the Etna Park is highly diversified: rising from sea level to over 3000 m, presenting a complex multiplicity of vegetation.

The landscape is composed of fertile areas, dense forests, grassy areas and vast areas of more recent lava where there is no vegetation. Below 1500 m, the natural cover has been replaced by crops. Agriculture in the Etna area is known for its high quality and variety of fruit crops, vineyards olive groves, hazelnuts and pistachios and horticultural crops (Riguccio et al., 2017). The richness of the territory is not limited to the beauty of the landscape, but is also found through human and cultural values (Tuttolomondo et al., 2014).

The protected natural area is divided into four zones subject to different constraints: Zone A (or integral reserve), i.e. the summit of the volcano, which extends over 19,237 hectares where nature preserves its integrity. Zone B (or general reserve) which extends over 25,931 hectares, where the needs of environmental protection are integrated with the development of socio-economic activities. In this area the construction of new houses and the execution of any type of works that may alter the territory are prohibited.

Zone C of 4188 hectares and Zone D 9551 hectares, comprises a more man-made environment and where building and transformations of the land are permitted.

## 2. Methods

### 2.1. The contingent valuation method

One of the most used techniques for environmental assessment is the Contingent Valuation Method (CVM). As described by Mitchell and Carson (1989), this method consists of asking people directly what value they would attribute to a service if there was a market for it. The Willingness To Pay (WTP) estimates values depending on a hypothetical market situation, or scenario, which is described to the respondents before asking the amount they are willing to pay.

The scenario is meant to describe the market conditions and aspects which need to be evaluated thus the WTP reflects a personal economic valuation of the good in question (Hanley et al., 1997).

According to Tisdell (2006), WTP for a particular natural attraction has been the most frequently used indicator for the economic value of the attraction. There are several studies that have applied this

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