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Sustainability and Support for the Ecotourism within Etna Park Area

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Ecotourism sustainability is more likely to occur when the community is involved in the design of an ecotourism project and also when the community leaders support programs for families to learn more about environmental preservation. The purpose of this study is to how to develop a sustainable ecotourism project within the Natural Etna Park. Basically, the aim of this paper is to asses residents' attitudes of the goals and objectives of an ecotourism project. A 23-item Likert-type attitudinal scale was developed based on the results of a Etna Park project. The study is exploratory. A survey has been carried out using a questionnaire administered throughout a mall-intercept sampling method. Data were randomly split into two groups of the SPSS computer package command. It has been used a factor analysis with *varimax* rotation above the total amount of the respondents in order to identify the number of factors. The paper produces a valid instrument to assess local residents' perception regarding the development of an ecotourism project within a Regional Natural Park. Without the local residents' support, policy makers are less willing to support the development of any project.

Keyword: Etna, ecoturism, sustainability, regional natural park, environmental conservation

Introduction

Ecotourism contributes both environmental conservation and the economy (Donohoe & Needham, 2006; Ross & Wall, 1999; Weaver and Lawton, 2007, Weaver, 2005). Therefore, it is a "responsible travel to natural area, which conserves the environment and sustains the well-being of the local people" (The Ecotourism Society, 1998). This definition has been applied to a lot of nature tourism activities and sometimes it has created confusion as to what constitutes this segment of the nature tourism market. Other authors (Wearing & Neil, 2009; Honey, 2008; Sirakaya et al., 1999) define ecotourism as a form of tourism activities and development that produces a minimal negative impact on the host environment and an involving commitment to environmental protection and conservation of resources.

To better understand the meaning of ecotourism, it is necessary to take into consideration also the concept of sustainability which refers to management strategy of meeting economic commitments without sacrificing an equal or higher quality of life for future generations (Choi et al., 2006; MacGregor, 1993; Musa et al., 2004; Parker & Khare, 2005) and also to the ecotourist destination development (Curtin, 2003).

Some considerations have to be made also about the ecotourist. He is a professional who has higher income and education compared to other travellers. Factors influencing the ecotourism market include an ageing tourism demand with travellers possessing better retirement programs and more discretionary income and an increasing awareness about environmental preservation (Meric & Hunt, 1998).

In addition, taking account of residents' attitudes towards ecotourism is a prerequisite to incorporate their participation (Page & Dowling, 2002, p. 224). Understanding residents' attitudes towards ecotourism management principles can help planners devise more efficient and appropriate management strategies as they deal with possible conflicts between conservation of local resources and economic development of the area, leading ultimately to more smooth running of ecotourism (Lai & Nepal, 2006). Giving due consideration to the locals' views on resource usage increases the appropriateness of resource management strategies in ecotourism (Agardy, 1993). The purpose of this study is to how to develop a sustainable ecotourism project. Specifically, the study intends to show how to asses local residents' perceptions of the objective of an ecotourism project within Etna Park.

The Study Area

The scenario is the Etna's area, within the Province of Catania, where it was established in 1987 a Regional Natural Park: "Etna Park", which involves 20 Municipalities, on territory of 58.095,00 hectares. This area is famous because of the Volcano, the highest active in Europe, recently declared UNESCO World Heritage Site. Etna is also a mountain with recent lava flows where no form of life has settled yet and very ancient lava flows housing natural formations of Austrian pines, beech trees, and birches. Etna represents a special "*astenospheric* window" caused by the process of lithospheric convergence between Africa and Eurasia and its structural evolution deeply linked to

the geodynamics of the Mediterranean basin. With its 135 km of perimeter, it developed, changed, was destroyed, and reconstructed with several geological events that followed each other throughout many dozens of thousand years.

To protect this landscape marked by the presence of man, Etna Park has been divided into four areas. The "A" area (19,000 ha) is almost all public property, there are no human settlements; the "B" area (26,000 ha) is partly formed by small private agricultural lots and is characterized by rural houses, shelters for animals, palm groves, and noble houses witnessing the ancient and current human presence. Besides the "A" and "B" Park areas, there is a pre-Park area in the "C" and "D" areas (14,000 ha) to guarantee the presence of eventual tourist facilities in the respect of the safeguard of landscape and nature.

	Municipalities
1	Adrano
2	Belpasso
3	Biancavilla
4	Bronte
5	Castiglione di Sicilia
6	Giarre
7	Linguaglossa
8	Maletto
9	Mascali
10	Milo
11	Nicolosi
12	Pedara
13	Piedimonte Etneo
14	Ragalna
15	Randazzo
16	S. Alfio
17	S. M. di Licodia
18	Trecastagni
19	Viagrande
20	Zafferana

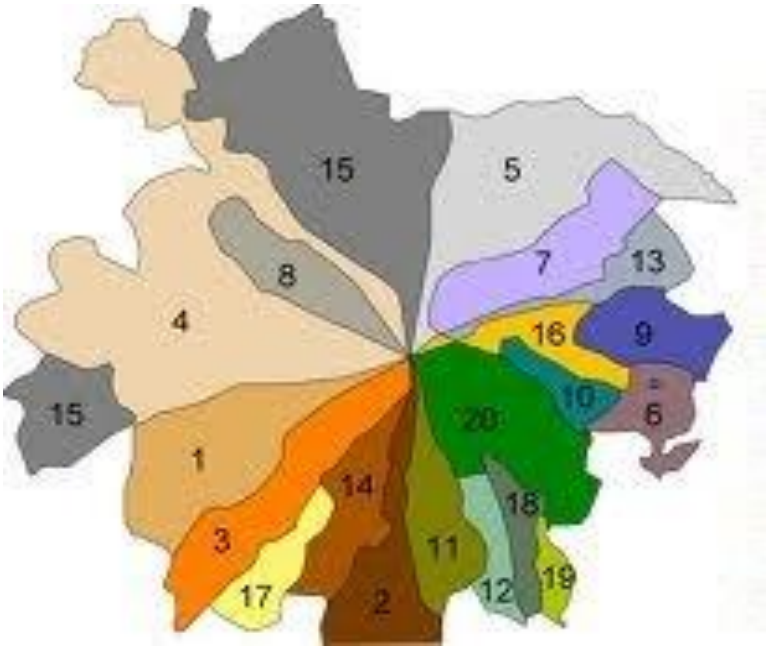

Figure 1. The Municipalities of Etna Park

Methodology and Research Design

To asses residents' perceptions and attitudes toward the creation and support (Togridou *et al*., 2006) of the ecotourism project (Byrd, Cárdenas, & Greenwood, 2008; Andriotis, 2005; McGehee & Andereck, 2004) of Park of Etna, it needs information that would ascertain local residents' acceptance of the proposed ecotourism project.

Four hypothesis have been specified in factor analysis methodology, they were proposed that are considered essential for assessing residents' support for ecotourism development:

Hypothesis 1: Residents that are environmental consciousness.

Hypothesis 2: Residents that encourage and support developing educational goal and programs that promote conservation for current and future generations.

Hypothesis 3: Residents that demonstrate recognition and support for sustainable economic development in accordance with conservation goals and ecotourism development.

Hypothesis 4: Residents that has to develop ethical conservation regulations and enforcement codes. Each of those hypothesis specified a factor used for the analysis.

Factor 1	Community environmental consciousness
Factor 2	Ethical/Moral conservation guidelines
Factor 3	Current Tourism economic benefits
Factor 4	Potential ecotourism economic benefits
Factor 5	Environmental educational objectives

An attitudinal rating scale instrument was developed based on the procedures recommended

by the literature. A 23-item Likert-type attitudinal scale were developed based on the results of an Etna Park project (2010) and input from a focus group of Etna's stakeholders, composed by Etna Park's staff, University ecotourism experts, birding experts.

Initially, a draft of the questionnaire was tested with the focus group of Etna's stakeholders who added four additional questions in adherence with the academic literature, the goals and objectives of the Etna Park. The final questionnaire was administered to local residents intercepted within the main Etna malls, as well as in similar studies that have collected data using a mall-intercept sampling methodology (Vincent & Thompson, 2002).

The respondents were intercepted by the interviewers at the entrance, so to random select the local residents. The survey data was carried out during the week-ends from the beginning of November to the end of December 2012. A 5-point scale (from 1= *strongly agree* to 5= *strongly disagree*) was used to assess attitudes.

Because of the large sample size, the data were randomly split into two groups of the SPSS computer package command: an original sample of 473 residents and a validation sample of 516 residents. In order to ensure the generalizability of the results to the resident population and to test the comparability and stability of the two factors models, a comparison between the results obtained in the original sample with the validation sample was made.

Data analysis

To test 4 hypothesis, it has been used the factor analysis with *varimax* rotation above the total amount of the respondents (473) in order to identify the number of factors (see Table 1).

This hypothesis has been based on a Likert scale with 23 statements and compared with similar previous studies (Zhang & Lei, 2012; Tsaur, et al., 2006; Dimanche & Smith, 1996; Bottrill & Pearce, 1995; Allen et al., 1993; D'Amore, 1993; Ap, 1992).

It has been used a principal component extraction method, to analyse all variance in the items, with *varimax rotation*. Moreover, *Bartlett test of sphericity* was used for the overall significance of all correlations within the correlation matrix and so also the Measure of Sampling Adequacy (MSA), calculated for the entire correlation matrix and for each individual variable evaluating the appropriateness of applying factor analysis. Bartlett's test and MSA showed a significant number of nonzero correlations and grouping of these correlations to perform factor analysis for both the original and the validation samples. The scores respectively were $p < .001$ and MSA = 0.80. They highlighted a significant number of correlations. Cronbach's alpha values were calculated to determine the reliability of each identified dimension (Hair, Black, Babin, & Anderson, 2010, p. 125). *Cronbach Alpha* was 0.76, therefore there is an acceptable internal consistency.

Table 1. Resident responses regarding support for the ecotourism project.

	Original sample = 463		
Variable	*Yes*	*No*	*Missing*
Would you visit Park of Etna?			
Number	363	94	6
%	79.4	20.6	1.3
Would you pay a fee to visit Park of Etna?			
Number	318	143	2
%	69.0	31.0	0.4
Would you purchase a season pass to visit Park of Etna?			
Number	207	243	13
%	46.0	54.0	2.8
Would you drive 40 kilometres to visit Park of Etna?			
Number	305	150	8
%	67.0	33.0	1.7
Consider yourself to be a birdwatcher?			
Number	148	312	3
%	32.2	67.8	0.6

Correlations were bracket together to start the factor analysis. Five factors were selected to obtain at least a minimum of tree data per each factor. The analysis was conducted on 23 statements. Scores equal or more than .30 were considered significant (Hair and Anderson, 2010). Factors with scores equal or more than .40 have been highlighted in bold (Table n. 2). The four factors were verified by the factor analysis of the original sample.

Cronbach's index, although low, is 0.6, which represents an acceptable value for each factor, showing an internal consistency amongst the items. Afterwards, the hypothesis concerning the sustainability of environmental tourism and ecotourism project have been tested. The same procedures were performed on the validation sample confirming results similar to those obtained from the original sample.

Table 2. Factor analysis above residents' perceptions concerning environmental tourism Original sample (n = 473).

Statements	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*	*Factor 5*
Voluntary organizations that foster environmental projects			**.65**		
Can protect environment and increase job opportunities			**.58**		.33
Many people needs recreational services			**.54**		
The historical sites restoration would promote tourism			**.53**		
The involvement of the residents in environment boost the tourism			**.48**		
Tourist activities are part of the Regional restoration plan	.38		**.47**		
The law is necessary to protect the environment			**.45**		
The tourism increases the recreational opportunities for residents			**.45**		
Natural environment is an important driver for tourism			**.44**		
Tourist development should be discouraged when violate the environment		**.69**			
Govern institutions spare no efforts to decrease the regional unemployment rate.		**.67**			
It needs to improve citizens culture above the environment.		**.53**			
Profits are not more important than environment		**.43**		.36	
The tourism decreases the unemployment rate	**.64**				
Business services improved thanks to the tourism	**.58**				
Public utilities quality improved thanks to tourism	**.52**	.31			
Economic development funds should be spent to promote tourism				**.70**	
The tourism increases job opportunities	.32			**.65**	
The Region needs more wildlife reserves		.34		**.55**	
Mountain dews are considered a good place for families' tours.					**.64**
Environment education programs improve natural resources					**.58**
Children need to learn about environment			.37		**.49**
The environment needs more protection					.38
Eigenvalue	1.80	2.93	4.11	1.36	1.1
% of variance	6.7	10.9	15.2	5.0	4.3
% cumulative variance	32.8	26.1	15.2	37.8	42.1
Cronbach's Alpha index	0.59	0.65	0.66	0.62	0.63

Table 3. Factor analysis above residents' perceptions concerning environmental tourismValidation sample (n = 516).

Statements	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*	*Factor 5*
Voluntary organizations that foster environmental projects			**.70**		
Can protect environment and increase job opportunities			.68		
Many people needs recreational services			.63		
The historical sites restoration would promote tourism			.61		
The involvement of the residents in environment boost the tourism		.34	.52		
The tourism increases the recreational opportunities for residents			.40		
The law is necessary to protect the environment			.39		
Natural environment is an important driver for tourism		**.62**			
Tourist activities are part of the Regional restoration plan		.59			
Tourist development should be discouraged when violate the environment		.56			
Govern institutions spare no efforts to decrease the regional unemployment rate.		.40			
It needs to improve citizens culture above the environment.	**.64**				
Profits are not more important than environment	**.64**				
The tourism decreases the unemployment rate	.45		3.3		
Business services improved thanks to the tourism	.45	.43			
Public utilities quality improved thanks to tourism				**.66**	
Economic development funds should be spent to promote tourism		.35		.65	
The tourism increases job opportunities				.51	
The Region needs more wildlife reserves	.35			.45	
Mountain dews are considered a good place for families' tours.				.40	.33
Environment education programs improve natural resources					**.64**
Children need to learn about environment			.35	.38	.54
The environment needs more protection	.35				.44
Eigenvalue	1.63	2.53	4.46	1.30	1.2
% of variance	6.0	9.4	16.5	4.8	4.5
% cumulative variance	31.9	25.9	16.5	36.7	41.2
Cronbach's Alpha index	0.59	0.58	0.69	0.59	0.55

A stepwise analysis of the factor scores identified the same three factors either in the original or in the validation samples also if in a different rank order, which discriminates between financial and non financial supporters of ecotourism project in the Etna Park. The discriminant factors between original and validation samples are: "Community environmental consciousness", "Environmental educational objectives" and "Potential ecotourism economic benefits", while "Ethical/ Moral conservation guidelines" and "Current tourism economic benefits" did not discriminate between the samples.

Table 4. Discriminant function summary analysis.

	Original Sample (n = 473) Structure matrix		Validation Sample (n = 516) Strucutre Matrix	
Stepwise Analysis: Factors	*Loadings*	*Rank*	*Loadings*	*Rank*
Potential Ecotourism Economic Benefits	.643	1	.385	3
Environmental Educational Objectives	.558	2	.479	2
Community Environmental Consciousness	.479	3	.690	1
Ethical/Moral Conservation Guidelines	.032	4	- .012	5
Current Tourism Economic Benefits	-.032	5	- .016	4

Conclusions and Discussion

Data analysis showed that most of the local residents would attend project to qualify environment. The 70% of them declared a willingness to pay to attend ecotourism and green tourism in general.

To asses the local resident attitudes toward acceptance and support the goals of the ecotourism program, it has been performed a factor analysis of the 23 *Likert-type* scale items that produce five factors for the respondents and the four hypothesis were confirmed in the group of the respondents.

The five factors identified from the factor analysis were used as discriminating variables in a discriminant function model where the criterion is whether the local residents would be willing to pay a fee to attend an ecotourism project.

These factors, considered as necessary for community ecotourism development and sustainability, were confirmed in both the original and validation samples. The factor concerning the current tourism economic benefits represents what local residents consider to be benefits to the community as a result of tourism to the area. Both the original sample and the validation sample produced the same three factors as discriminating between residents willing to pay a fee and those unwilling to pay a fee to attend an ecotourism project.

Resuming, this paper produced a valid instrument to assess local residents' perception, regarding the support of an ecotourism project. It showed also that ecotourism activities were identified to assist a Regional Natural Park in the development of an ecotourism project. Furthermore, an environmentally conscious community would be one that develops ecotourism projects that protect the environment.

The findings provide some implications relevant for the support of ecotourism project in regional natural parks and useful information about the instrument to assess residents' perceptions regarding the support and development of an ecotourism project. An environmentally conscious community would be one that develops ecotourism projects that protect the environment and enhance local development as well as involves residents and promote tourism to the area. Additional jobs could be created throughout other related tourism activities, for instance heritage and cultural tourism or wine and food tourism (Asero & Patti, 2011).

These results confirm also some points coming out by other researches: residents appear to give stronger support to local tourism when they have more positive perception of its impact (Baral *et al*., 2008; Andereck & Vogt, 2000; Perdue, Long, & Allen, 1990). Accordingly, residents' positive attitudes towards ecotourism, particularly those related to the characteristics and management principles of ecotourism, may subsequently encourage their active involvement in local tourism (Weaver, 2002). Local people benefit by improving the quality of the local environment, which increases the visual attraction for tourists, enhances the aesthetic and recreational values of the environment and, in turn, enriches the residents' quality of life (Zhang & Lei, 2012, p. 917) and also becomes useful for biodiversity conservation (Kiss, 2004).

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