



Visitors' perceptions on the management of an important nesting site for loggerhead sea turtle (*Caretta caretta* L.): The case of Rethymno coastal area in Greece

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ABSTRACT

Tourism has important impacts, both positive and negative, on the management of coastal areas with high biodiversity value. It is therefore important to investigate visitors' perceptions concerning environmental policy alternatives for these areas along with the factors influencing these perceptions. The present paper aims to investigate visitors' perceptions of an important nesting ground for loggerhead sea turtles located in a highly touristic area of Greece (Rethymno, Crete) registered in the Natura 2000 network. The paper focuses on the level of environmental awareness of visitors and their perceptions of two proposed policy instruments which will secure funding for the improvement of the environmental management of the area: an entrance fee to the beach and a tax to be levied on local accommodation costs. The influence of social and institutional trust on these perceptions is also explored. According to the results of the study, awareness of the existence of the Natura 2000 site was low. Furthermore, the accommodation tax was regarded as a more effective policy when compared to the entrance fee. Average Willingness to Pay (WTP) was also explored for the two policies, estimated at €1.13 for the daily accommodation tax and €1.59 for the entrance fee. The influence of social and institutional trust had a significant influence both on the perceived level of effectiveness of the proposed policies and the stated Willingness to Pay. The study concludes that the accommodation tax would be a more appropriate policy for the management of Rethymno beach taking into consideration visitors' perceptions and the current level of trust.

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1. Introduction

Several areas with high biodiversity value are under increasing pressure from tourism (Buultjens et al., 2005; Cunha, 2010; Depondt and Green, 2006; Pickering and Hill, 2007; Pickering, 2010). Especially in coastal areas, tourism is associated with environmental impacts, such as changes in water quality, habitat destruction and water pollution (Burak et al., 2004; Hall, 2001; Priskin, 2003). In order to minimize these impacts, tourism may be incorporated in environmental management activities under the principles of sustainable development (Dharmaratne et al., 2000; Libosada,

2009; Mayer et al., 2010; Reid-Grant and Bhat, 2009; Udaya Sekhar, 2003). To this end, several economic instruments have been suggested, such as user's fees and taxes (Alpizar, 2006; Depondt and Green, 2006; Reid-Grant and Bhat, 2009; Thur, 2010) functioning in combination with protection regulations (Christie, 2005).

Taking into consideration the important positive and negative impacts that tourism may have on the management of areas with high biodiversity value, it is important to investigate visitors' perceptions (Arabatzis and Grigoroudis, 2010; Suckall et al., 2009) which will assist in finding the optimum environmental management instruments that could be applied. Several studies have examined visitors' views of Protected Areas (PAs) focusing on levels of awareness and perceptions (Muller and Job, 2009; Oh et al., 2010; Peters and Hawkins, 2009; Petrosillo et al., 2007; Reid-Grant and Bhat, 2009; Thur, 2010; Togridou et al., 2006). Furthermore, numerous studies aim to estimate the value of biodiversity based on public perceptions. Several techniques exist for this purpose with

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the most commonly used one being the Contingent Valuation Method (CVM) (Carson, 2000; Martin-Lopez et al., 2008; Nunes and van den Bergh, 2001). The CVM elicits the Willingness to Pay (WTP) of individuals for environmental protection through the provision of a hypothetical scenario and a payment vehicle (Carson, 2000; Mitchell and Carson, 1989; Nunes and van den Bergh, 2001). Although the hypothetical nature of the method has been linked to possible biases (Venkatachalam, 2004), CVM remains one of the most widely applied techniques in the field (Carson, 2000). A variety of factors have been identified influencing visitors' perceptions and WTP, including educational level and place of residence (Petrosillo et al., 2007), level of knowledge and information (Martin-Lopez et al., 2008; Muller and Job, 2009), social class and ethnicity (Suckall et al., 2009), satisfaction from services provided (Togridou et al., 2006) and assigned values (Tanner et al., 2008).

The current literature on environmental policy emphasizes the importance of additional parameters influencing individuals' perceptions of environmental issues. Specifically, the level of trust toward both society and institutions has been underlined as having a significant impact on perceptions of the environment (Pretty, 2003; Jones, 2010). Trust may be regarded as an important parameter of social capital which influences the management of natural resources (Miller and Buys, 2008; Pretty and Ward, 2001; Pretty, 2003, 2007; Uphoff, 1998). It has been recently introduced in issues of PA management (Jones and Burgess, 2005; Zachrisson, 2008) but few studies focus on the influence of trust on visitors' perceptions regarding the management of PAs (Nyaupane et al., 2009).

Social trust has been recognized as having significant influence on individuals' perceptions of environmental policies and also their environmental behavior (Jones, 2010). Social trust may be divided into particularized and generalized trust (Uslaner and Conley, 2003). The former refers to trust of a particular social group (e.g., family, neighbors) while the latter refers to the level of trust toward other people in general. Social trust is linked with perceptions concerning the actions of others. Thus, those who tend to trust their fellow citizens, also tend to consider that they act in a responsible manner regarding natural resources (Wagner and Fernandez-Gimenez, 2008). This means that they display more responsible environmental behavior and also that they are more willing to accept an environmental policy.

Institutional trust has also been analyzed in the context of environmental policies. The level of trust of institutions is highly connected with perceptions concerning the level of effectiveness of a proposed policy (Kim, 2005). Higher levels of institutional trust are regarded as having a positive influence on the level of acceptance of an environmental policy and also on individual environmental behavior (Beierle and Cayford, 2002; Cvetkovich and Winter, 2003; Jones et al., 2009). Thus, negative perceptions of visitors may develop due to a lack of trust in management efficiency (Depondt and Green, 2006). Furthermore, institutional trust is connected with the level of acceptance of information concerning environmental aspects (Groothuis and Miller, 1997; Petts, 1998).

Although the above issues have been recognized as important for the effectiveness of environmental management, they have not yet been adequately explored in the case of visitors' perceptions of coastal areas with high biodiversity value. The present paper aims to investigate these issues focusing on an important nesting ground for loggerhead sea turtles (*Caretta caretta* L.) located in a highly touristic area of Greece (Rethymno, Crete). Through an empirical survey the following issues were investigated: (a) Visitors' environmental awareness and perceptions concerning the environmental problems in the area along with the level of satisfaction gained from their visit, (b) Visitors' perceptions and WTP for two proposed policy instruments for the coastal area, (c) The influence of trust on visitors' perceptions of the two hypothetical policy instruments.

2. Methodology

2.1. Research area

The loggerhead sea turtle (*Caretta caretta*) is regarded as endangered (IUCN, 2009; Legakis and Maragou, 2009). Rethymno beach is the third most important nesting area of *Caretta caretta* on a national level (Margaritoulis, 1998). In addition, Rethymno beach is included in a Special Area of Conservation of the Natura 2000 network (GR4330004; www.ypeka.gr), based on the Habitat Directive (92/43/EEC; http://ec.europa.eu/environment/nature/natura2000/index_en.htm) as part of the nature and biodiversity policies of the European Union. However, a decrease in the population levels of sea turtles has been observed in the specific area (Margaritoulis et al., 2009). The sea turtle population is under significant pressure in Rethymno and in Greece in general mainly due to construction and recreational activities connected with tourism along with fishing (www.ypeka.gr; Legakis and Maragou, 2009; Lima, 2008; Mazaris et al., 2009). In order to overcome these problems, some solutions have been proposed and implemented through the collaboration of state actors and NGOs. These include the protection and relocation of nests, minimization of artificial lighting at night causing disorientation to the turtles and environmental awareness programs (Margaritoulis et al., 2009). However, the implementation of these measures remains at low levels. Thus, it is essential to investigate means by which such measures for the protection of biodiversity can be funded and combined with tourism activities.

2.2. Sampling

The sampling frame in tourism populations is usually absent due to the lack of lists including all tourists and the constant movement of the targeted population (Beerli and Martin, 2004; Chaudhary, 2000; Togridou et al., 2006). Thus, it is common to select a sample at random based on the availability of the respondents (Beerli and Martin, 2004; Chaudhary, 2000). Regarding the total tourism capacity in the area of Rethymno, this is estimated to be 10,000 beds during the summer months (www.statistics.gr) as Rethymno is a summer beach resort (Lima, 2008). A sampling technique was applied where every five visitors arriving at the beach were approached (Kozak, 2002; Togridou et al., 2006). Experienced interviewers were placed on the beach of Rethymno asking beach users staying in local hotels whether they would be willing to participate in the completion of a questionnaire through a personal interview available in Greek, English or German.

In total, 156 visitors participated in the survey. Gender distribution was equal (50% male and 50% female). The average age was 43 with a range of values between 19 and 83 (17.3%: 18–25 years, 19.9%: 26–35, 20.5%: 36–45, 16.7%: 46–55, 19.9%: 56–65, 5.8%: over 65). The average length of education was 12 years. The majority of respondents were from the middle income bracket (32.1%: €12,000–€30,000, 28.2%: €30,001–€60,000, 16%: up to €12,000, 11.5%: over €60,000). Variability was observed regarding the countries of origin. The highest percentages of visitors were from the United Kingdom (28.2%), Germany (17.3%), Greece (9%) and Belgium (9%).

2.3. Survey questionnaire

A questionnaire was created in order to investigate visitors' perceptions and the influence of trust. The first part of the questionnaire collected information for the visit and focused on: the place of residence during the visit, the purpose and duration of the visit and the number of visits to the beach. Furthermore, the level of satisfaction concerning 'tourist facilities and services of Rethymno',

'prices in relation to tourist facilities and services' and 'meeting of initial expectations' was also explored (Togridou et al., 2006) on a 5-point Likert scale with higher scores revealing more positive attitudes.

The second part of the questionnaire explored the level of awareness and perceptions of the specific Natura 2000 site. In particular, visitors were asked to state whether they were aware of the Natura 2000 site on Rethymno beach and in the case of a positive answer, the source of this information. Two additional questions examined the level of importance of environmental problems in today's society in general and also the protection of *Caretta caretta*, measured on a 5-point Likert scale. Finally, visitors were asked to evaluate the importance of five environmental problems recognized by the Ministry of Environment in relation to Rethymno beach (www.ypeka.gr) also on a 5-point Likert scale (tourism development affecting the nesting places of *Caretta caretta*, overgrazing causing soil erosion and habitat degradation, excessive irrigation and water consumption causing reduction of water resources, dynamite fishing causing serious damage of the biotic element of the marine area, construction such as the sewage treatment facilities and dams influencing the ecosystem of the area).

In the third part of the questionnaire, two hypothetical policy instruments were presented to respondents based on economic incentives (Davis et al., 1997; Fabinyi, 2008; Oh et al., 2010). In both cases, respondents were informed that money collected from the two alternative instruments would be used for the support of current measures for the conservation of biodiversity such as replacement of lamps on the beach, the protection of the nesting activity of *Caretta caretta*, the creation of protection zones in both terrestrial and aquatic environment where access for visitors would be prohibited and also the intensification of environmental education programs. In the first policy, a section of the beach would be fenced off and an entrance fee charged to visitor. Environmental and financial management would be the responsibility of the state and a local NGO would be created for this purpose. In the second policy, visitors would pay a daily charge via their accommodation costs in the Rethymno region. The environmental and financial management would be the responsibility of the local authorities and a local NGO. Visitors were asked to state how effective they considered the proposed policies to be along with the benefits arising from their implementation, measured on a 5-point Likert scale. Furthermore, (WTP) for each entrance to the beach (Entrance fee policy) and for each stay (Accommodation tax policy) was estimated based on the main stages of Contingent Valuation Method (Mitchell and Carson, 1989). An open-ended WTP question was selected after the implementation of a pre-survey, similar to previous studies (Togridou et al., 2006). During the pre-survey, it was observed that respondents did not have difficulty in stating an amount due to their familiarity with the proposed payment mechanisms. Accommodation taxes have long been applied in hotels in order to provide additional financing for tourist activities (Bonham et al., 1992) while recently, tourism ecotaxes have also been proposed (Garin-Munoz and Montero-Martin, 2007; Palmer and Riera, 2003). Regarding the beach entrance fee, user's fees have been widely applied both in private and public beaches also including coastal protected areas (Marin et al., 2009; Peters and Hawkins, 2009; Ransom and Mangi, 2010). The open-ended question was also selected due to some of its advantages compared to other elicitation methods (Balistreri et al., 2001; Bateman et al., 1995; Brown et al., 1996; Togridou et al., 2006). Specifically, the open-ended format does not restrict respondents to the amounts stated (Ransom and Mangi, 2010) which was very important in the context of the specific research area where the valuation was being conducted for the first time. Furthermore, it has been noted that open-ended

questions lead to lower protest responses during the valuation of Greek PAs (Togridou et al., 2006) which is a major obstacle in CVM studies (Jones et al., 2008; Polyzou et al., 2011).

In the fourth part of the questionnaire, social issues were investigated (Grootaert and van Bastelaer, 2002). Specifically, generalized trust was measured by means of two questions ('Do you consider that most people can be trusted or you can't be too careful?', 'Do you consider that most people conduct themselves taking the common good into consideration or act in an individualistic manner?') measured on a 5-point Likert scale. Aspects of particularized trust were also measured focusing on environmental issues ('Do you consider that the locals are proactive in the protection of the environment or are indifferent?', 'Do you consider that the visitors are proactive in the protection of the environment or are indifferent?'). Furthermore, the level of trust of three institutions was measured (5-point Likert scale: local authorities, the Greek government, NGOs).

2.4. Data analysis

The data analysis was conducted with the statistical package SPSS v.16.0. In order to investigate the influence of social factors on WTP through Linear Regression Models, further statistical analysis was conducted. Specifically, Exploratory Factor Analysis (EFA) was applied allowing the combination of individual variables in aggregate measures (Field, 2005). This technique facilitates the use of variables in the context of Linear Regression Models as the new aggregate variables are continuous and normally distributed. The new aggregate variables in the present study included: (a) *perceptions of environmental problems* in the area combining the questions of the second part of the questionnaire measuring visitors' perceptions (on a 5-point Likert scale) concerning the importance of local environmental problems (Cronbach's α : 0.87), (b) the level of *satisfaction* with services (Cronbach's α : 0.83), including the three variables from the first part of the questionnaire measuring the level of satisfaction concerning facilities, prices and meeting of initial expectations, (c) the level of *trust in institutions* involved in the management of the Natura 2000 site (trust in the government, local authorities and NGOs, Cronbach's α : 0.68) and (d) the level of *social trust* concerning the environmental behavior of local residents and visitors and also the tendency to act for the protection of the common good (Cronbach's α : 0.68).

The good fit of the variables is evident both from the high Cronbach's α indicators and also from the fit indices provided from EFA. The Cronbach's α indicator reveals the internal consistency of the variables (Cortina, 1993) and a value near or over 0.70 is regarded as acceptable. Furthermore, the KMO Measure of Sampling Adequacy was 0.76 (values range: 0–1, minimum required: 0.60) while all loadings of the initial variables in each latent factor were over the minimum acceptable value of 0.6 (range 0–1) (Stevens, 1992). Finally, the Eigenvalues revealing the percentage of variance explained (Field, 2005) were: Importance of environmental problems: 29.61%; Level of satisfaction: 19.62%; Social trust: 14.79%; Institutional trust: 7.68%.

3. Results

3.1. Visits to the area

The majority of the respondents visit the area of Rethymno for holiday and recreational activities (84.4%). 20% of the sample visited for business while only 2.6% for ecotourism activities. The average length of stay was 16 days while the average number of visits to the beach was eight. Regarding visitors' satisfaction gained

from visiting the area, all questions presented an average score over 3.4 revealing a relatively high level of satisfaction (Table 1).

3.2. Awareness of the Natura 2000 site

Only 25% was aware of the existence of the Natura 2000 site in Rethymno. Of these respondents, 94.3% was aware that this is due to protection of the sea turtles whereas the remaining respondents stated environmental reasons in general. It is also important to note that 37.4% of the sample had previously visited protected areas in Greece or other countries.

Information on the Natura 2000 site in Rethymno was obtained mainly from communication with the local community (28.2%) and NGOs active in the area (25.6%), 17.9% of the sample stated that they had found information on the internet and 12.8% from the hotel where they were staying. Only 2.6% stated that information was provided by the municipality.

3.3. Importance of environmental issues

A high level of concern emerged regarding the importance of environmental issues and the protection of *Caretta caretta*. Specifically, on a 5-point Likert scale importance of environmental issues presented an average score of 4.17 and the protection of *Caretta caretta* a mean score of 4.12.

In addition, visitors were asked to evaluate five environmental problems which exist in the Natura 2000 site of Rethymno according to the Ministry of Environment (www.ypeka.gr). The most important problem according to visitors was 'dynamite fishing' followed by 'construction in the area influencing the ecosystem' (Table 2). It is important to mention that all the environmental problems listed had a high average score.

3.4. Proposed policy instruments

3.4.1. Level of effectiveness

Two policy instruments were presented to respondents. The first policy included an entrance fee to the area for visitors to the beach while the second included the levying of a daily accommodation tax via their stay. Both instruments were considered to be 'quite effective'. However, the tourist tax was considered more positively evident from the higher mean score estimated from the 4-point scale question (Table 3). Furthermore, benefits for both policy instruments had an average score of 3.17 on a 5-point Likert scale.

3.4.2. Intention to pay and reason of refusal

Half of the sample was willing to pay an amount for both policy instruments. In particular, 50.6% was willing to pay an entrance fee and 52.3% an accommodation tax charged on their daily stay. The main reason of refusing to pay in both policy instruments was the perception that the state is responsible for such costs (56.8% and 61.2% for the entrance fee and the accommodation tax respectively), followed by the justification that they did not consider that the funds would be effectively managed (Table 4). These can be considered as protest responses as they express a disagreement

Table 1
Level of satisfaction from the visit on a 5-point Likert scale.

Level of satisfaction	Mean (Std. error)
Tourist facilities and services of Rethymno	3.89 (0.07)
Prices in relation to tourist facilities and services	3.40 (0.08)
Meeting of expectations	3.86 (0.07)

Table 2
Importance of environmental problems in the Natura 2000 site (1–5 scale).

Environmental problems in the area	Mean (Std. error)
Tourism development affecting the nesting places of <i>Caretta caretta</i>	4.18 (0.08)
Overgrazing causing soil erosion and habitat degradation	4.02 (0.09)
Excessive irrigation and water consumption causing reduction of water resources	4.19 (0.07)
Dynamite fishing causing serious damage of the biotic element of the marine area	4.40 (0.07)
Construction (e.g., sewage treatment facilities, dam construction) influencing the ecosystem of the area	4.23 (0.08)

about the actor responsible for the payment vehicle (Meyerhoff and Liebe, 2006; Jones et al., 2008). Other reasons mentioned (Table 4) were considered as true zeroes.

3.4.3. Willingness to pay

Respondents were asked to state their willingness to pay in an open-ended format question. Two WTP valuations were estimated for each policy instrument, one including all responses and one excluding protest responses and leaving in the sample only true zeroes. Higher WTP was observed for the entrance fee. Specifically, when including all responses, an average WTP €1.59 was stated for the entrance fee and €1.13 for the accommodation tax. By excluding protest responses, an average amount of €2.81 emerged for the entrance fee whereas the respective amount for the accommodation tax was €1.92 (Table 5).

3.5. The influence of social and institutional trust

An additional issue investigated by the study refers to the influence of social and institutional trust on visitors' perceptions for the two proposed policy instruments and also their WTP.

3.5.1. Social and institutional trust

All questions regarding trust were measured on a 5-point Likert scale. According to the results of the study, generalized trust had the highest mean score (3.03) followed by the level of trust of other visitors (2.89) and perceptions of the collective actions of other individuals (2.82). The lowest mean score emerged for the level of trust relating to the environmental behavior of locals (2.67). Concerning the level of trust in institutions, the highest score was presented for NGOs (3.21), followed by local authorities (2.70) and the government (2.28). No statistically significant differences were revealed relating to visitors' place of origin and the level of trust, except in the case of trust in the Greek government (Kruskal–Wallis test: Chi-square = 29.08, $p < 0.05$).

3.5.2. The influence of trust on visitors' perceptions

Statistically significant correlations were noted between institutional trust and the perceived level of effectiveness (Table 6). Interestingly, trust in the local authorities and also NGOs is

Table 3
Effectiveness of proposed policy instruments.

Level of effectiveness	Entrance fee	Accommodation tax
Not at all effective	22.8	18.9
Not very effective	31.5	29.7
Quite effective	31.5	34.5
Very effective	14.1	16.9
Mean	2.36	2.49

Table 4
Reason of refusal (percent of cases %) in two policy instruments.

	Entrance fee	Accommodation tax
I cannot afford it	24.3	23.9
The state is responsible for such expenditures	56.8	61.2
I don't think that the financial management will be efficient	35.1	38.8
I don't think that environmental protection is necessary	10.8	13.4
I already pay a lot	33.8	35.8

correlated with the effectiveness of the second policy where the specific institutions are also responsible for environmental management. Similarly, in the first policy instrument, statistically significant correlations were observed with the national government and NGOs, which are also the responsible actors for the specific policy. Another interesting finding arises from the correlations with social trust variables. Specifically, statistically significant correlations were noted with the level of trust of the environmental behavior both of visitors and locals with the level of effectiveness of the first policy.

3.5.3. Factors influencing WTP

A final issue investigated through the study concerned the exploration of factors influencing WTP, including the level of social and institutional trust. In order to conduct a linear regression, the independent variables were all transformed into continuous variables through the Explanatory Factor Analysis, as described in the Methods section. For each policy instrument, two linear regression models were conducted, including all responses, one with the enter method and one with the backward method.

As presented in Table 7, the WTP of individuals regarding the entrance fee is positively influenced by both institutional and social trust. In the case of the accommodation tax, institutional trust and income are statistically significant variables explaining WTP (Table 8). Consequently, visitors who tend to trust the institutions responsible and who are from higher income brackets are also more willing to pay an accommodation tax.

4. Discussion

The pressure on coastal areas due to tourist activities is a significant issue which should be taken into consideration when creating environmental management plans. The present paper aimed to investigate visitors' perceptions of a Greek coastal area where tourism has developed. Two main policy instruments were presented to visitors aiming to increase the protection of the area and ensure its financial management. Furthermore, the influence of institutional and social trust on visitors' perceptions was explored.

Regarding the general level of knowledge and perceptions of the area, it is evident that very few visitors were aware of the existence

Table 5
WTP average for the two proposed policy instruments.

Policy instruments		Mean WTP (Std. error)	N
Entrance fee	All values	1.59 (0.21)	150
	Excluding protest responses	2.81 (0.32)	85
Accommodation tax	All values	1.13 (0.15)	147
	Excluding protest responses	1.92 (0.22)	87

Table 6
Spearman-rank correlation coefficients between trust and the effectiveness of the two proposed policy instruments.

	Entrance fee	Accommodation tax
Generalized trust	−0.076	−0.008
Trust of collective action	0.119	0.120
Trust (env) locals	0.209*	0.042
Trust (env) visitors	0.199*	0.116
Local authorities	0.138	0.260**
Government	0.204*	0.242**
NGOs	0.175*	0.269**

** $p < 0.01$, * $p < 0.05$.

of the Natura 2000 site, similar to previous findings concerning the level of awareness of PA designation (Booth et al., 2009). The low level of awareness is usually linked with the low provision of information provided in a PA (Petrosillo et al., 2007). Furthermore, the absence of specific regulations protecting the area is also a potential significant factor leading to low awareness of the existence of the specific PA in Rethymno. In addition, from the results of the study, it is evident that several visitors are unaware of the impact of tourism in the area and consider that the state is responsible for environmental protection. This result should be seen in combination with the low level of awareness shown which is a significant influential factor on visitors' perceptions (Muller and Job, 2009). It is interesting that a high level of concern was expressed in relation to the importance of environmental issues and the protection of the *Caretta caretta*. Furthermore, it is evident that visitors are concerned about the environmental problems in the area in general. However, taking into consideration the low level of provision of information, it can be assumed that these perceptions of the environmental status in the area derive from experiences of visitors during their stay and informal sources of information, such as contact with the local community.

Of the two proposed policy instruments, the accommodation tax was regarded as more effective when compared to the entrance fee to Rethymno beach. However, the low percentage of visitors that considered these policies as 'very effective' reveals their skepticism toward the actual level of effectiveness of these measures when implemented. The results of the study also reveal that trust is a significant parameter explaining visitors' perceptions of the proposed policy instruments. Specifically, it is interesting to observe that social trust is correlated with the perceived level of effectiveness of the entrance fee. This result is connected with the occurrence of free-riding incidents (Olson, 1965) which is a significant problem in economic-incentives policy tools (Jones, 2010). During the implementation of these instruments, individuals often avoid the costs imposed from an environmental policy (e.g., entrance fee) but they still receive the benefits from the

Table 7
WTP for entrance fee.

Linear regression		Enter method		Backward method	
		Std. B	p-value	Std. B	p-value
Factors (EFA)	Importance of environmental problems	0.007	0.532		
	Visitors' satisfaction	0.141	0.165		
	Institutional trust	0.287	0.004	0.362	<0.001
	Social trust	0.317	0.002	0.313	0.001
Variables	Income	0.074	0.497		
	Age	−0.073	0.532		
	Education	−0.159	0.122		
R ²			0.274		0.224

Table 8
WTP for accommodation tax.

Linear regression		Enter method		Backward method	
		Std. B	p-value	Std. B	p-value
Factors (EFA)	Importance of environmental problems	–0.016	0.875		
	Visitors' satisfaction	0.149	0.152		
	Institutional trust	0.222	0.030	0.226	0.027
	Social trust	0.134	0.188		
Variables	Income	0.353	0.002	0.318	0.002
	Age	–0.160	0.185		
	Education	0.146	0.163		
R^2			0.252		0.182

improvement in environmental quality. When high levels of trust exist, individuals tend to regard that others will act in an environmentally responsible manner toward natural resources and will not avoid these costs (Jones, 2010; Pretty, 2003). However, in the present study, visitors who did not trust others also considered that both visitors and locals would find means of entering the beach without paying, thus rendering the proposed policy ineffective. The fact that social trust is correlated only with the first policy instrument can be explained taking into consideration that a wrongdoing is much easier to carry out in the first policy (entering the beach without paying) than the second (not paying a tax included in the accommodation price).

Perceptions of the level of effectiveness are also explained by institutional trust. In particular, higher levels of trust toward the actors responsible for environmental and financial management in each policy reveal positive perceptions of the respective policies. In particular, visitors who trust NGOs and the state also tend to regard that the entrance fee is an effective policy measure. Similarly, visitors who tend to trust both the state and the local authorities also consider that the accommodation tax will be an effective policy choice. These assumptions are in accordance with previous findings in the relevant literature where the level of trust in institutions is correlated with the perceived level of effectiveness and the level of acceptance of proposed environmental policies (Beierle, 1998; Cvetkovich and Winter, 2003; Jones, 2010). It is also interesting to observe that trust in government is connected with perceptions of both policy instruments even though in case of the accommodation tax, Government was not directly connected with the management. This result reveals that visitors link the environmental management of public places with state actions, a finding which can be explained taking into consideration that the Greek state is the main management actor for all environmental policies although there have been a few attempts recently to try to promote more participatory management frameworks (Dimitrakopoulos et al., 2010; Papageorgiou and Vogiatzakis, 2006).

Furthermore, a high occurrence of refusals concerning willingness to pay for the protection of the coastal area was observed. Although such a high level of refusal is not uncommon in WTP studies (e.g., Jones et al., 2008) it is much higher compared to other economic valuation studies focusing on coastal areas (Oh et al., 2010; Togridou et al., 2006). A mean WTP €1.59 entrance fee was estimated, including all responses. By taking the average visits to the beach (=eight), it can be estimated that each tourist would pay €12.72 during his/her stay in Rethymno. The average WTP for the accommodation tax was €1.13 which is relatively high. Taking into consideration that the average duration of stay was 16 days, it implies that on average each visitor would pay €18.08, which is significantly higher when compared to the entrance fee. Both

institutional and social trusts are statistically significant explanatory variables for WTP for the entrance fee. Thus, visitors who tend to trust other individuals and institutions responsible for environmental and financial management are willing to pay more for the entrance fee. This result is connected both with the belief in the frequency of free-riding behaviors and the effective management from the proposed actors. It is interesting to observe in relation to the accommodation tax, that institutional trust is a significant explanatory factor. Thus, visitors who do not trust institutions are less willing to pay because they think that the funds will not be effectively managed (Polyzou et al., 2011). In addition, income is a statistically significant explanatory variable revealing that visitors with higher incomes are more willing to pay for the accommodation tax (Blaine et al., 2005; Ojea and Loureiro, 2007; Oliver et al., 2011; Togridou et al., 2006). It is also interesting to mention that social trust is not a statistically significant explanatory parameter for the accommodation tax, revealing that the perception of the behavior of other visitors and locals does not affect the decision of visitors relating to their WTP for the accommodation tax.

The results of the present study underline that new economic-based instruments could be applied in the case of Rethymno in order to achieve the sustainable management of the coast. However, a main concern that arises is whether the level of institutional trust is more important for visitors' decision to select a specific instrument than the proposed policy itself. To this end, further research should be conducted investigating firstly, citizens' preferences of different policies involving the same institutions and also of identical policy instruments but with different management actors. Despite this limitation, from the results of the study it is evident that trust is a significant factor determining citizens' preferences for both policy instruments.

Consequently, an accommodation tax may be a more appropriate choice based on the current circumstances in Rethymno due to the low level of trust toward both visitors and the local community. Through the levying of an accommodation tax, the necessary funds could be collected in order to create the appropriate infrastructures and clearly designate areas where access to the beach would not be allowed, while financing eco-tourist activities. However, in order for the accommodation tax to become an effective policy accepted by visitors, it is essential that the level of trust toward the institutions responsible increases, referring both to local NGOs, local authorities and the government. This may be achieved by an increase in the information flow through formal networks such as the Greek Tourism Organization and the Greek Ministry of Environment with information campaigns, seminars and conferences (Petts and Leach, 2000). Furthermore, these efforts should be combined with the implementation of deliberation techniques in the context of decision-making processes (Beierle and Cayford, 2002; Rowe and Frewer, 2000). The implementation of such techniques, allows a qualitative and in-depth investigation of stakeholders' perceptions. Specifically, focus and advisory groups should be created and conducted with the participation of all local stakeholders, in order to examine the potential benefits and obstacles of the two proposed policy instruments from stakeholders' perspectives and the means by which these can be overcome (Beierle, 1999). Such actions will increase the levels of social and institutional trust (Beierle, 1999) while a higher level of awareness will significantly facilitate the effectiveness of the environmental management of the coastal area (Marin et al., 2009).

5. Conclusions

In conclusion, the present study explored management options for a highly important nesting area of loggerhead sea turtles. A first important finding concerns the low level of awareness among

visitors regarding the specific Natura 2000 site, revealing a low flow of environmental information. Furthermore, two hypothetical policy instruments were presented to respondents, referring to an entrance fee for the beach and a daily accommodation tax. Visitors were skeptical about both policies and regarded the accommodation tax as more effective. The average WTP was €1.59 for the entrance fee and €1.13 for the tax. Institutional trust influenced visitors' perceptions for both policy instruments revealing that visitors who trusted management actors also tended to feel that the proposed policies would be effective and were more willing to pay. Social trust is positively connected only with the entrance fee policy, possibly due to the greater fear of free-riding behaviors. The results of the study reveal that both policies could be implemented for the coastal management of Rethymno beach and be financially sustainable. However, the accommodation tax can be regarded as a more appropriate policy taking into consideration that it is not influenced by the low levels of social trust and the fear of free-riding behavior.

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