

ENVIRONMENTAL AWARENESS OF SURF TOURISTS: A CASE STUDY IN THE ALGARVE

Fabia Frank
Pedro Pintassilgo
Patrícia Pinto

ABSTRACT

Even though surf tourism in Portugal is an economic activity with a steady growth rate, there are not many assessment studies available. Using a survey undertaken in surf camps located in the Vila do Bispo County, this study aims to analyse the environmental awareness of surf tourists in the Algarve. Through the New Environmental Paradigm (NEP) scale it is shown that the environmental attitudes of respondents are strongly pro-ecological but also reveal some anthropocentric aspects. Tourists were asked about their willingness to pay for an accommodation tax earmarked for environmental protection in the Algarve. The results show that the large majority (86%) would be willing to pay, which indicates a high environmental awareness. It is also found that the willingness to pay is related to the nationality, with respondents from Germany, Austria and Switzerland showing a higher willingness to pay.

Keywords: Surf Tourism, Environmental Protection, Algarve

JEL Classification: L83

1. INTRODUCTION

Surfing is defined as “the act of riding an ocean wave while standing on a surfboard and broadly includes other aspects of wave riding, such as riding prone on a ‘bodyboard’ or simply ‘bodysurfing’ (using only one’s body surface to plane across the wave)” (Martin and Assenov, 2012: 257). The sport is practiced in almost all countries worldwide that are bordered with water and even in a few landlocked countries, like Switzerland (Murphey and Bernal, 2008). The surfing industry is a multibillion dollar industry, including the production of soft as well as hard goods, such as clothing and equipment, media publications, surf schools and rentals, surf camps, contests and surf parks (Murphey and Bernal, 2008). Surfing is known as a sport and recreational activity with strong lifestyle associations (Moutinho, Dionísio and Leal, 2007).

Surf tourism is a sub-section of Adventure Tourism and therefore refers to commercial tourism products aimed at adventure seeking travellers looking for a mixture of sport, culture and nature experiences (ASMAA, 2013). The surf tourism sector can be divided into four specific traveller markets: experienced surfers travelling alone, surfers that go on surf packaged safaris and tours, travellers taking surf lessons and travellers seeking for the surf experience in surf resorts or surf camps (ASMAA, 2013).

According to Bicudo and Horta (2009) surf in Portugal is seen not only as a sport but also as an economic activity with a steady growth rate since it was introduced to Portugal in 1958. With over 800km of coastline, high quality beaches and a mild climate with the

highest number of sunshine hours per year in Europe (Turismo de Portugal, 2007), Portugal has perfect conditions for surf tourists. Regardless of the steady growth of the sector, research in this area is difficult to perform due to the lack of data and information available. Tourism boards, local governments and the tourism industry have not yet begun to keep accurate records of surf visitation, tourist spending or stay duration. Even though surf tourism is a global phenomenon, research has only been carried out in a few countries and this may show a knowledge gap. Martin and Assenov (2012) refer that out of the 162 countries in which surfing occurs, only 18 countries have conducted research on surf tourism. This is progressively changing with more and more universities, especially in Australia, New Zealand and the U.S., offering courses and degrees in surf industry management. Hence, more research based on the activity is becoming available (Murphey and Bernal, 2008).

Given the growing size of this niche tourism, this study responds to the need for a better understanding of surf tourists in the Algarve. The focus lies on the environmental awareness of tourists that stay in surf camps – small hotels, offering surf tours and surf classes, mostly in the touristic regions and in popular surf spots – in the Algarve. In particular, their attitudes towards the implementation of an accommodation tax used to raise funds for the environmental protection of the coastal zone, which was strongly damaged by the negative effects of mass tourism, are analysed. Valle, Pintassilgo, Matias and André (2012) refer that unlike many other countries in the world, in Portugal there are no specific taxes levied on accommodation and a reduced value added tax (VAT) rate of 6% is applied to the sector. This matter, combined with the governmental financial problems, makes implementing accommodation taxes a likely outcome in the future.

Based on a survey carried out in the region, this study aims answering to three main questions:

1. What are the main characteristics of surf tourists in the Algarve?
2. Are surf tourists willing to pay an accommodation tax earmarked for environmental protection?
3. Is it possible to find a relationship between tourists' willingness to pay an accommodation tax earmarked for environmental protection and sociodemographic attributes?

The paper is structured as follows: in section 2 a literature review about the history of surfing, surf tourism, surf camps, surf tourists, and environmental awareness is undertaken. In section 3 the methodology is presented, including details about the study area, the survey and the data analysis method. Then, in section 4, the results are shown and discussed. Finally, in section 5 the main conclusions are presented.

2. LITERATURE REVIEW

In this section the literature on various topics important for this study is explored. It starts with the history of surfing, to find out where this sport has its roots. In sub-section 2.2 the literature about surf tourism in general and the development of this sector over the years is explored. Surf camps are defined in sub-section 2.3 and a literature review on the environmental awareness of tourists is undertaken in sub-section 2.4.

2.1 History of Surfing

The riding of waves has probably existed since the first humans began swimming in the ocean, which means that bodysurfing is the oldest type of wave-catching (Finney and Houston, 1966). Riding waves standing on surfboards was developed by the Polynesians, a nation that lived in harmony with the ocean. As there is no certainty about the timeline and movements of this nation, we can only guess that surfing is more than 4000 years

old (Siggemann, 2011). The first written record of surfing however was made in 1778 by Captain James Cook, who was amazed to see men and women riding long wooden planks across the face of breaking waves, as his ship pulled into Kealahou Bay on the Hawaiian Islands. Travellers that came to Hawaii were admiring the locals playing with the waves and talked about their experience back home (Probst, Schmutz and Eberhard, 2005). Through their stories, they brought surfing to other parts of the world. Due to the interest of the tourists, Hawaiian surfers started to teach them how to surf. One of the teachers was known by the name of Duke Kahanamoku (Finney and Houston, 1966). In 1914 he was the first man surfing a wave in Australia and today he is regarded as the father of modern surf (Probst et al., 2005). According to Booth (1995), before the outbreak of World War II, surfing was a recognized leisure activity in the Pacific Rim region, particularly in Southern California, Australia, New Zealand and Peru, as well as in South Africa. After the war, surfing developed worldwide as a recreation and an organized sport (Booth, 1995).

2.2 Surf Tourism

As defined by Dolnicar and Fluker (2003a) surf tourism involves people travelling to either domestic destinations for not more than six months or international destinations for not more than 12 months, who stay at least one night and where the primary motivation for the location selection is the active participation in surfing. This definition also includes travelling to or with surf schools. Surfing as a sport and the act of travelling are two behaviours that suit each other very well. *Searching for the perfect wave* is a belief that is shared by many and it describes the willingness of surfers to undertake travels with the hope to find their personal, perfect wave (Dolnicar and Fluker, 2003a).

With more and more affordable plane travels, lighter surfboards and the image of a surfing culture, which was delivered by the media, the surf travel boom started in the 1960s. In 1962 surf tourism as a concept was taken globally with the release of the film "The Endless Summer" by Bruce Brown, a documentary movie showing two young, enthusiastic surfers from California who followed the season around the globe in search of new surf breaks and the "perfect wave". This film introduced surf tourism to the world, to both surfers and non-surfers (Martin and Assenov, 2011).

Commercial surf tourism, which has only become popular in the 1990s, is now an important component of the tourism sector worldwide (Buckley, 2002a). Slowly surf tourism has become an important component of tourism and in particular of the adventure tourism industry (Dolnicar and Fluker, 2003a), generating economic, social and environmental importance to justify academic attention (Buckley, 2002a).

Buckley (2002a) claimed that in 2002 there were over 10 million surfers worldwide, a third of them cash-rich and time poor and therefore potential tour clients. According to Ponting (2008) in 2007 there were 112 countries offering some kind of surf tours or having information available for tourists related to surfing. Even though calculating the size and economic significance of this tourism sector is not an easy project (Buckley, 2003). According to Ponting (2008), its aggregate economic value worldwide can be estimated to be around one quarter of a billion U.S. dollars per year and is increases annually.

However, it should be noted that surf destinations in developed and developing countries often have hundreds of small surf tourism operators whose economic value is usually not accounted for (Ponting, 2008). The industry also includes businesses offering supplementary products, like souvenirs and clothing. By offering more specialized services such as surf schools and camps, the surf tourism industry promises additional growth (Moutinho *et al.*, 2007). As stated by Ponting (2008), surf tourism now appears on almost every surfable coast on all continents worldwide. Even though the position of surf tourism on the world tourism stage is steadily growing, there is not yet a significant body of research available.

2.3 Surf Camps

As mentioned previously, surf tourism started with independent self-guided travels in order to search for the perfect wave (Ponting and McDonald, 2013). Nowadays the majority of surf travellers are no longer backpackers with a lot of free time, but travellers that rely on tour operators to help them coordinate their surf experience (Pitt, 2009). Specialized commercial surfing tours began with basic surf camps in the late 1970s (Nourbakhsh, 2008), whereas today the surf tourism industry has grown profoundly and is represented by various market segments (Martin and Assenov, 2011). According to Martin and Assenov (2011), these segments include:

- Highly experienced surfers travelling to locations like Hawaii, Indonesia, South Africa or Western Australia to experience big, high quality waves;
- Intermediate surfers who stay in surf camps where lessons, coaching, access to equipment are included;
- Beginner surfers looking for surf lessons in a safe wave environment.

Surf camps have become a popular surf travel option worldwide for all budgets. They range from budget surf camps, traditional surf camps, remote surf camps, yoga and surf camps, adventure surf camps to luxury surf camps. Surf camps can be held in different locations, ranging from campgrounds and hostels to resorts, luxury villas and even surf charters and yachts (The Surf Camp Adventures Company, 2013).

2.4 Environmental Awareness

According to Dolnicar, Crouch and Long (2008) there are many studies about sustainable tourism and eco-tourism available, but not many that explore the profile of tourists that behave pro-environmentally. Nevertheless these findings are crucial to understand environmentally friendly tourists. When reviewing empirical eco-tourism studies, Dolnicar (2010) states that socio-demographic as well as psychographic variables could be valuable predictors of pro-environmental behaviour. Various studies have examined the possible relationships between socio-demographic variables and pro-environmental behaviour, yet without any clear results (Mehmetoglu, 2010). The variables that seem to have the most effect on environmentalism are: age, gender, education, income and political orientation (Dolnicar, 2010). Surprisingly, only one of these variables, a higher level of education, had the same results in most studies with a generally positive effect (Dolnicar, 2010). Most studies conclude that ecotourists with higher incomes are more concerned about the environment, whereas a small number of studies conclude the exact opposite (e.g. Mehmetoglu, 2010). The conclusions on age are the most contradictory: positive, insignificant and negative effects on pro-environmental behaviour have been found in empirical studies (Dolnicar et al., 2008). Similarly no clear results have been found from the analysis of the variable gender, even though some studies state that ecotourists tend to be female (Dolnicar, 2010). Finally, according to Mehmetoglu (2010), politically liberal orientated ecotourists are more likely to behave environmentally friendly.

The New Environmental Paradigm (NEP), which is used in this paper, is probably the most widely used psychometric scale to measure environmental values or attitudes worldwide (Dunlap, 2008). It is used as a survey instrument to measure the environmental worldview of people or groups, with 15 statements about humans and the environment (Noblet, Anderson and Teisl, 2013). According to Lundmark (2007), central aspects of NEP include: 1) human domination over nature; 2) human exemptionalism; 3) balance of nature; 4) the risk of an eco-crisis; 5) limits to growth.

3. METHODOLOGY

3.1 Study Area

The Algarve is the most southern region of mainland Portugal, located on Europe's most western tip. It covers an area of 4 996 square kilometers, is segmented into 16 counties and has a coastline of 318 kilometers (Statistics Portugal, 2012). Vila do Bispo is located in the south western corner of the Algarve and therefore is the only county in Portugal with two coastlines, the south and west coasts.

This location makes the area perfect for surf tourism, as there are nearly no days without any suitable waves at one of the many surf spots on either coast. Both coastlines are known for perfect waves on beautiful beaches. Sagres is the most known town of the county and famous for "Cape Saint Vincent", the south westernmost point of Europe.

Figure 1. Geographic localization of Algarve and the Vila do Bispo county



3.2 The Survey

The survey was undertaken during September and October 2013, months of high surf tourism, in eight different surf camps in various locations in the county of Vila do Bispo. The surf camps were chosen randomly, four in Sagres and four in smaller villages in the county. For the surf camps to remain anonymous, further information is not provided.

A survey questionnaire, in English and German, was designed to collect quantitative and qualitative data from tourists staying in surf camps in the study area. The questionnaire included questions on socio-demographic characteristics, such as where they are from, which age group they belong to, what profession they have and what income they have. Tourists were also asked if they would be willing to pay an accommodation tax earmarked for environmental protection. The New Environmental Paradigm (NEP) scale was used to assess information about the environmental attitudes of the respondents.

The questionnaire was applied evenly at the eight different surf camps and after eight weeks a sample size of 256 tourists was reached. The survey was run in the surf camps at night, rather than in the lunch break at the beach, as the surf tourists are less distracted in the camp and have more time to fill out the questionnaire attentively. A total of 240 valid questionnaires were obtained, corresponding to 93.7% of the selected sample.

3.3 Data Analysis Method

After the collection of the surveys, the data was entered into the IBM SPSS Statistics 22 program for analysis. First, frequencies of all variables were computed and transferred into tables and charts in order to allow an initial characterization of the sample and describing the profile of tourist. Then, using the New Ecological Paradigm (NEP) scale, the environmental awareness of the respondents was assessed.

Moreover, five hypotheses were tested to find out about the relationship between some socio-demographic variables (nationality, gender, age, educational level, household net monthly income) and the willingness to pay an accommodation tax. For these hypotheses the interrelation between variables was assessed with the cross tabulation process. Whether or not the variables are statistically independent of the target variable depends on the *p-value* of the Pearson's chi-squared test. The critical value is set to 5%, the most commonly used value. If the *p-value* is smaller than 0.05, it is concluded that there is a significant relationship between the variables and, therefore, one variable is dependent on the other.

4. RESULTS AND DISCUSSION

4.1 Socio-demographic Characteristics

The main socio-demographic characteristics of the surf tourists surveyed are provided in Table 1. Nearly half of all respondents are German (49.2%) and are living in Germany (48.8%). This matter is consistent with the fact that German tourists play an important role in the county of Vila do Bispo. In 2012, Germans rank second in terms of nights spent in hotel establishments in Vila do Bispo (38,240 nights), which is very close to tourists from the UK (41,744 nights) (Statistics Portugal, 2012). As can be seen in Table 1, three out of the four most represented nations in this study are German speaking (Germany, Austria and Switzerland). This can be associated with the fact that surfing is a trend sport in these countries and more and more people want to be part of the surf lifestyle (Probst *et al.*, 2005). Due to this boom, a lot of surf camps in the Algarve focused their advertising and promotion on exactly those three countries.

More than half of the respondents are female (52.1%), which does not correspond to the idea of a predominant male participation in surfing (Dolnicar and Fluker, 2003b, Nourbakhsh, 2008). A large proportion (43.4%) of respondents is of young adults between 25 and 31 years and 30.8% are aged between 18 and 24 years. The average age is 26. Out of all 240 respondents, 69.2 % are single and 93.3% do not have children under 18. The educational level shows a widespread distribution with 28.3% of the respondents having secondary education, 29.2% a Bachelor degree and 27.5% a Master degree. 17.5% of all respondents were not willing to state their monthly net household income and, therefore, this variable is the one with the most missing values in the study. The most frequent class of monthly net household income is 1001-2000€ (24.6%), followed by lower than 1000€ (22.1%), which is not surprising as one third of the respondents are students.

Table 1. Socio-Demographic Characteristics of the Sample

Variables	Distribution of answers
Nationality	German: 49.2%; Austrian: 10.8%; Russian: 7.1%; Swiss: 5.8%; Other: 27.1%
Country of residence	Germany: 48.8%; Austria: 10.8%; Switzerland: 7.9%; UK: 7.1%; Other: 25.4%
Gender	Female: 52.1%; Male: 47.9%
Age	<18: 4.6%; 18-24: 30.8%; 25-31: 43.4%; 32-38: 12.5%; 39-45: 1.3%; >45: 1.7% Missing: 5.8%; Mean: 26.5

Marital Status	Single: 69.2%; Divorced/separated: 2.9%; Married/Living together: 27.9%
Children under 18?	No: 93.3%; Yes: 5.4%; Missing: 1.3%
Educational level	Primary: 10%; Secondary: 28.3%; Bachelor: 29.2%; Master: 27.5%; PhD: 3.8%; Missing: 1.2%
Monthly net household income	Lower than 1000€: 22.1%; 1001-2000€: 24.6%; 2001-3000€: 17.1%; 3001-4000€: 10%; 4001-5000€: 3.8%; Higher than 5000€: 5%; Missing: 17.5%

4.2 Environmental Awareness

In Table 2 the attitude towards an accommodation tax earmarked for environmental protection in the Algarve can be observed. For that the tourists were confronted with the following scenario:

Suppose an environmental fund were raised to protect the Algarve’s coastal area. This would be used to finance among other things:

- *Preservation of natural environments;*
- *Environmental improvements to beaches and other coastal areas.*

Assume further that this fund would be financed through an accommodation tax paid as a fixed amount per day spent in an accommodation establishment in the Algarve.

Would you be willing to pay this? (In affirmative case) How much?

The tax would be collected by the accommodation establishment and paid as a fixed amount per night as part of the total price, independent of other taxes such as VAT. It should also be pointed out that according to the Portuguese billing system, the customer is always presented with the final price (after tax) and all relevant taxes are shown in the receipt.

Table 2. Attitude Towards Accommodation Tax

Variables	Distribution of answers
Willingness to pay an accommodation tax earmarked for environmental protection	Yes: 85.8%; No: 13.8%; Missing: 0.4%
Amount willing to pay	<2€: 23.0%; 2-4€: 47.5%; 5-7€: 19.1%; >7€: 10.3%

A total of 85.8% of all 240 tourists would be willing to pay this kind of accommodation tax. This is a very clear outcome and, therefore, it answers the second main research question. Table 2 also shows the distribution of the amount tourists would be willing to pay. Of the tourists who stated that they would be willing to pay an accommodation tax, 47.5% answered that they would be willing to pay 2-4€ per night.

Environmental attitudes of the respondents were examined with the NEP scale using a Likert type- 5-point scale (1= totally disagree; 2= disagree; 3= indifferent; 4= agree; 5= totally agree). For the sake of analysis the results were reduced into a 3-point scale. Table 3 shows the valid percent values.

The statements are categorized into eight items (rows in white) assessing an ecological view and seven items (rows with shading) assessing an anthropocentric view (e.g. Lundmark, 2007; Noblet *et al.*, 2013; Waikato Regional Council Technical Report, 2013/11). For example, “humans are severely abusing the environment” is an ecological item and “humans will eventually learn enough about how nature works to be able to control it” is an anthropocentric item. Therefore, to show a positive environmental attitude the respondents should agree with the ecological statements and disagree with the anthropocentric statements. In this study, the average respondents’ attitudes are proecological. For example, 71.6% of respondents agree or strongly agree that “the balance of nature is very delicate and easily upset”.

The majority of respondents showed an anthropocentric view only for one statement: 85.4% agreed or strongly agreed that “the earth has plenty of natural resources if we just learn how to develop them.” This indicates that, overall, the environmental attitudes of respondents show a very strong ecological view but also some anthropocentric aspects.

Table 3. Environmental Awareness Likert-Type-3-Point

	Com-pletely Disagree and Dis-agree	Indiffer-ent	Agree and Com-pletely Agree
We are approaching the limit of the number of people the earth can support	20.1%	26.8%	53.1%
Humans have the right to modify the natural environment to suit their needs	51.5%	25.1%	23.4%
When humans interfere with nature it often produces disastrous consequences	12.1%	16.7%	71.1%
Human ingenuity/creativity will ensure that we do NOT make the earth unlivable	26.4%	37.2%	36.4%
Humans are severely abusing the environment	3.8%	22.3%	73.9%
The earth has plenty of natural resources if we just learn how to develop them	3.8%	10.9%	85.4%
Plants and animals have as much right as humans to exist	8.4%	10.0%	81.6%
The balance of nature is strong enough to cope with the impacts of modern industrial nations	64.4%	21.8%	13.8%
Despite our special abilities humans are still subject to the laws of nature	7.5%	16.7%	75.8%
The so-called “ecological crisis” facing humankind has been greatly exaggerated	50.0%	34.0%	16.0%
The earth is like a spaceship with very limited room and resources	15.5%	22.6%	61.9%
Humans were meant to rule over the rest of nature	68.2%	20.1%	11.7%
The balance of nature is very delicate and easily upset	13.8%	14.6%	71.6%
Humans will eventually learn enough about how nature works to be able to control it	43.1%	31.8%	25.1%
If things continue on their present course, we will soon experience a major ecological catastrophe	11.3%	26.8%	61.9%

4.3 Relationship between Environmental Awareness and Socio-demographic Variables

This section addresses the third main research question: “*Is it possible to find a relationship between tourists’ willingness to pay an accommodation tax earmarked for environmental protection and sociodemographic attributes?*” For that, the relationship between the amount tourists were willing to pay for an accommodation tax used for environmental protection and five different variables was analysed. Therefore, five hypotheses were formulated and tested with the Chi square independence test. The results are shown in Table 4. It can be concluded that at 5% significance, the amount tourists are willing to pay for environmental protection is only related to Nationality (*p-value* <0.05). The relationship between these two variables is shown in Table 5. The variable Nationality was split into two categories, one with the

DACH countries (Germany, Austria, Switzerland) and one with all the other nationalities. The variable Amount Willing to Pay was categorized into four categories, which were 0€, higher than zero but less than 2€, 2-4€ and more than 4€.

As can be seen in Table 5, 65.8% of all respondents are from the DACH region, whereas 34.2% are from other countries. The respondents from other countries are more likely not to be willing to pay the accommodation tax (25.6%), whereas only 9.5% of the respondents from the DACH region would not be willing to pay the tax. In both groups the most frequent range of willingness to pay is 2-4€, which represents 40.4% of the sample. 27.2% of the respondents from the DACH region would be willing to pay more than 4€ per night and only 20.7% of all the other countries would be willing to pay that much per night. To sum up, in the DACH region the proportion of respondents not willing to pay the tax is lower than in the other countries, whereas the proportion to pay more than 4€ is higher.

Table 4. Chi- Square Tests of Independence

Null Hypothesis	Chi-Square Statistics	<i>p-value</i> (1 sided)
Nationality is independent of the Amount Willing to Pay	12.676	0.0025
Gender is independent of the Amount Willing to Pay	4.926	0.0885
Age is independent of the Amount Willing to Pay	0.613	0.4465
Educational level is independent of the Amount Willing to Pay	5.621	0.066
Household income is independent of the Amount Willing to Pay	0.480	0.4165

Table 5. Cross-tabulation between Nationality and Amount Willing to Pay

		0]0, 2[Amount willing to pay (€)				Total
			[2, 4]	>4			
Nationality	DACH	Count	15	36	64	43	158
		% within Nationality	9.5%	22.8%	40.5%	27.2%	100,0%
		% within Amount tax	41.7%	76.6%	66.0%	71.7%	65,8%
	Other	Count	21	11	33	17	82
		% within Nationality	25.6%	13.4%	40.2%	20.7%	100,0%
		% within Amount tax	58.3%	23.4%	34.0%	28.3%	34,2%
Total		Count	36	47	97	60	240
% within Nationality		15,0%	19.6%	40.4%	25.0%	100.0%	
% within Amount tax		100,0%	100.0%	100.0%	100.0%	100.0%	

5. CONCLUSION

This study responded to the need for a better understanding of surf tourists in the Algarve, given the growing size of this tourism activity and its capacity to produce positive economic impacts in the area. By characterizing surf tourists that stay in surf camps in the Algarve, this study revealed information that could be used to strengthen marketing strategies for capturing or retaining surf tourists or to implement managerial actions to better serve those tourists.

Most of the tourists surveyed (65.8%) are from the DACH region (Germany, Austria, Switzerland). The Algarve has always been a perfect all-year around destination for these countries. More cheap flights and package deals reinforce this fact. A lot of surf camps therefore focused their marketing strategies on these countries and the Algarve as a surf destination became more known and popular. However, in other countries the Algarve is

still not associated with surf tourism. The Algarve as a surf destination should therefore adjust their tourism promotional campaigns in order to attract more tourists from other countries than the DACH region. In this move it is also important that marketing material integrates the characteristics which are significantly associated with the Algarve region as a surf destination. For example, advertising messages could be crafted to portray the surfing appeal of the destination, especially related to the variety of waves on both coastlines, the mild weather and the quality of the natural environment. It is also very important to keep a better record of the activity in the region in order to analyse the impact on both the economy and the environment.

This paper explored the tourists' attitudes towards an accommodation tax earmarked to fund environmental protection in the Algarve. 85.8% of the 240 respondents would be willing to pay for this kind of accommodation tax. This is a large proportion, which can be explained by the fact that the study focused only on surf tourists. A previous study in the Algarve (Valle *et al.*, 2012) reports more negative attitudes of tourists funding environmental protection: only 19% were willing to pay a tax earmarked for environmental protection. However, the results cannot be directly compared as a different tourist segment (sun and beach tourists) was surveyed. Surf tourists are mostly physically active and when realizing the sport they are in constant contact with the nature, which can be associated with a pro-environmental behaviour. Most surf camps in the Algarve try to share their environmentally friendly behaviour with their guests, which includes respecting the ocean and the coastal environment around. It is important for surf tourists to realize that the protection of the coastal area is essential in order to have a nice experience when surfing.

Using Chi-Squared Independence tests the relationship between the amount tourists are willing to pay for an accommodation tax used for environmental protection and five different socio-demographic variables (nationality, gender, age, educational level and household net income) was analysed. The decision of how much each person is willing to pay for the accommodation tax appears to be independent of all socio-demographic variables tested, except nationality. Tourists from the DACH region are more prone to pay the earmarked accommodation tax, compared to tourists from other countries. For a future survey it would be interesting to test which other characteristics actually influence the willingness to pay the accommodation tax. A possible influence could be the environmental education that the participants experience in their daily life.

Considering that the vast majority of respondents in this study would be willing to pay an accommodation tax earmarked for environmental protection, this study has important policy implications. Implementing an accommodation tax in the Algarve, however, does not only regard the surf tourists. As the majority of other tourist segments (Valle *et al.*, 2012) would not be willing to pay for the tax, the tax could have a negative impact on tourism demand in these segments. Only using the tax in surf accommodations, like surf camps, could work if a good marketing strategy was used for support. The surf tourists would have to be absolutely sure of the fact that their funds would be only used for the protection of the coastal environment. It would also be important to show the exact projects they would be supporting.

The study exhibits some limitations that should be controlled in future research. Considering the size of the surf industry in the Algarve, the sample size used was relatively small. The findings can therefore be regarded as a basis for future research studies. Avenues for further research include the extension of the survey to other counties in the Algarve and to other coastal areas in Portugal to get a better overview of the surf industry in the country.

ACKNOWLEDGMENTS

This paper is financed by National Funds provided by FCT- Foundation for Science and Technology through project UID/SOC/04020/2013.

REFERENCES

- ASMAA - Algarve Surf and Marine Activities Association (2013). "A Surf school is not a tourism based activity" so says tourism of Portugal. Accessed in 31th January 2014, on: <http://www.asmaa-algarve.org/index.php/en/news/press-room/a-surf-school-is-not-a-tourism-based-activity-so-says-tourism-of-portugal>.
- Bicudo P. and Horta A. (2009). Integrating surfing in the socio-economic and morphology and coastal dynamic impacts of the environmental evaluation of coastal projects. *Journal of Coastal Research*. Special Issue (56): 1115-1119.
- Booth D. (1995). *Ambiguities in pleasure and discipline: the development of competitive surfing*. University of Otago Dunedin. New Zealand.
- Buckley R. (2002a). Surf tourism and sustainable development in Indo-Pacific Islands. I. The industry and the islands. *Journal of Sustainable Tourism*. **10(5)**: 405-424.
- Buckley R. (2003). Adventure tourism and the clothing, fashion and entertainment industries. *Journal of Ecotourism*. **2(2)**: 126-134.
- Dolnicar S. and Fluker M. (2003a). Behavioural market segments among surf tourists: investigating past destination choice. *Journal of Sport and Tourism*. **8(3)**: 186-196.
- Dolnicar S. and Fluker M. (2003b). *Who's riding the wave? An investigation into demographic and psychographic characteristics of surf tourists*. CD Proceedings of the 13th International Research Conference for the Council for Australian University Tourism and Hospitality Education (CAUTHE 2003).
- Dolnicar, S., Crouch, G. and Long, P. (2008). Environment-friendly tourists: what do we really know about them? *Journal of Sustainable Tourism*. **16(2)**: 197-210.
- Dolnicar, S. (2010). Identifying tourists with smaller environmental footprints. *Journal of Sustainable Tourism*. **18(6)**: 717-734.
- Dunlap R. E. (2008). The new environmental paradigm scale: from marginality to worldwide use. *The Journal of Environmental Education*. **40(1)**: 3-18.
- Finney B. and Houston J.D. (1966). *Surfing – a history of the ancient Hawaiian Sport*. Pomegranate books. San Francisco.
- Lundmark C. (2007). The new ecological paradigm revisited: anchoring the NEP scale in environmental ethics. *Environmental Education Research*. **13(3)**: 329-347.
- Martin S. and Assenov I. (2011). Beach and coastal survey of Thailand: what future for surf. *Journal of Tourism, Hospitality & Culinary Arts*. **3(1)**: 77-87.
- Martin S. and Assenov I. (2012). The genesis of a new body of sport tourism literature: a systematic review of surf tourism research (1997–2011). *Journal of Sport and Tourism*. **17(4)**: 257-287.
- Mehmetoglu M. (2010). Factors influencing the willingness to behave environmental friendly at home and holidays settings. *Scandinavian Journal of Hospitality and Tourism*. **10(4)**: 430-447.

- Moutinho, L., Dionísio, P. and Leal, C. (2007). Surf tribal behaviour: a sports marketing application. *Marketing Intelligence and Planning*. **25(7)**.
- Murphey M. and Bernal M. (2008). *The impact of surfing on the local economy of Mundaka*. Commissioned by Save The Waves Coalition 2008. Spain.
- Noblet C., Anderson M. and Teisl M. (2013). An empirical test of anchoring the NEP scale in environmental ethics. *Environmental Education Research*. **19(4)**: 540-551.
- Nourbakhsh, T. (2008). *A qualitative exploration of female surfers: recreation specialization, motivations, and perspectives*. Master's thesis. California Polytechnic State University, San Luis Obispo, CA.
- Pitt, A. (2009). Surfing at Bombora controlled beaches. Paper presented at the 5th Western Australian State Coastal Conference, Fremantle.
- Ponting J. (2008). *Consuming nirvana: an exploration of surfing tourist space*. PhD Thesis. University of Technology, Sydney.
- Ponting J. and McDonald M. (2013). Performance, agency and change in surfing tourist space. *Annals of Tourism Research*. **43**: 415-443.
- Probst C., Schmutz C. and Eberhard P. (2005). *Wertschöpfung der Trendsportart Wellenreiten in der Schweiz*. Wirtschafts- und Sozialwissenschaftlichen Fakultät der Universität Bern. Forschungsseminar.
- Siggemann J. (2011). *Von der Erfindung zur Etablierung - Eine historische Abhandlung der Trendsportart Surfen*. Studienarbeit, Hochschule für Gesundheit und Sport. Berlin.
- Statistics Portugal (2012). *Statistical yearbook of Algarve region*. Instituto Nacional de Estatística. Lisbon.
- The Surf Camp Adventures Company (2013). *Surf camps*. Accessed in 29th of December 2013, on: <http://surfcampadventures.com/trip-types/surf-camps/>.
- Turismo de Portugal (2007). *National strategic plan for tourism – Fostering the development of tourism in Portugal*. Ministry of Economy and Innovation.
- Valle, P., Pintassilgo, P., Matias, A. and André, F. (2012). Tourist attitudes towards an accommodation tax earmarked for environmental protection: A survey in the Algarve. *Tourism Management*. **33(6)**: 1408-1416.
- Waikato Regional Council Technical Report (2013/11). *New ecological paradigm survey 2008: Analysis of the NEP results*. Waikato Regional Council.