

# Who values what in a tourism destination? The case of Madeira Island

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This research studies the importance placed on different aspects of a tourism destination – Madeira Island – at the time tourists make their decision to visit. The authors use an ordered probit model to see how the socio-demographic characteristics of the tourists and different aspects of the trip affect the valuation given to 30 different aspects of the destination. They conclude that males tend to value 12 of the aspects less, while valuing golf more. Older tourists place a higher value on the scenery of the destination and a lower value on the more active/sport aspects. The more educated tourists value *levadas* (man-made water channels with pathways used for pedestrian walks) more and organized tours less. British tourists value the climate and Portuguese tourists value extreme sports. These results are very useful when preparing any marketing strategy and extremely important when preparing development plans for the tourism sector.

*Keywords:* destination aspects; attractiveness; socio-demographic characteristics; ordered probit; Madeira

*JEL classification:* C25, D12, Q57

The valuation of the different characteristics of a tourism destination has long standing in tourism research. Some authors have focused on studying the tourism destination image (see, for example, Gallarza *et al.*, 2002 for a review of the literature and Son, 2005), while others have been more interested in evaluating, in particular, the importance of natural attractions to tourism (see, for example, Deng *et al.*, 2002; Melián-González and García-Falcón, 2003; Gios *et al.*, 2006; or Kim *et al.*, 2006) and the importance of tourism development sustainability and management (see, for example, Sickie and Eagles, 1998; García-Falcón and Medina-Muñoz, 1999; Priskin, 2003; Buultjens *et al.*, 2005; or Petrosillo *et al.*, 2007).

Trauer's (2006) 'Conceptualizing special interest tourism—frameworks for analysis' concludes with '... further research directions incorporating the involvement concept are suggested to also investigate gender, cultural differences and age differences for international marketing. ...'. This conclusion is the motivation for our research, as it seems very important for any marketing strategy, especially for mature tourism destinations, to know, as a contribution to segmentation strategies, tourists' valuation of different aspects of the destination (Kline, 2001; Litvin, 2007).

In this paper, we take a new perspective and study how different socio-demographic characteristics of the tourist, such as gender, age, education and nationality, influence their valuation of different aspects of the destination at the time of making their decision to visit. Also, we consider the various aspects of the trip, such as length of stay and the number of times the tourist has visited the destination. The results should be taken into account when marketing the destination, as segmentation is essential in any marketing strategy (Tocquer and Zins, 1999).

The structure of the paper is as follows. In the first section, the empirical application to the case of Madeira is presented. Next is a literature review and then the study methods are given, where a description of the data used can be found. The next section describes the estimation procedure and, subsequently, the results are shown. The paper ends with some concluding remarks.

### Empirical application to the case of Madeira

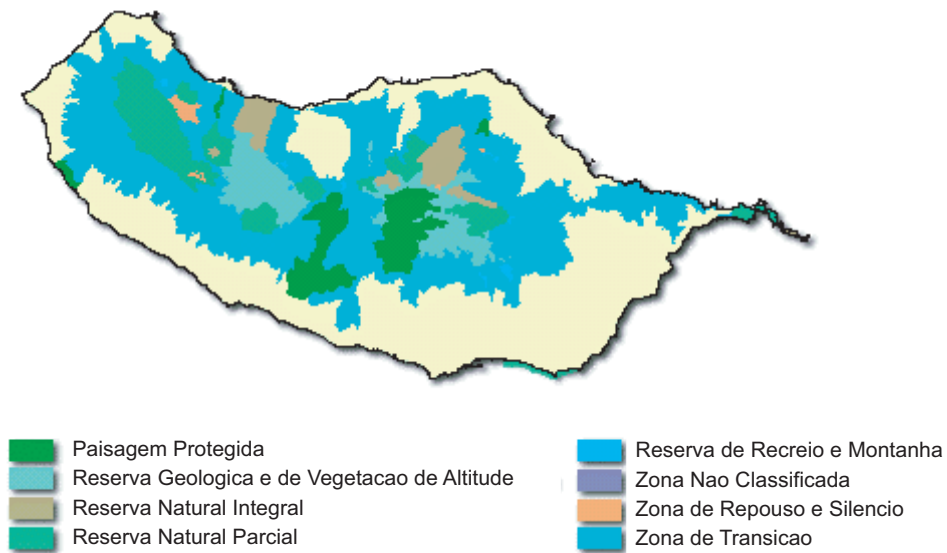
Madeira Island is part of the Madeira Archipelago, along with Porto Santo and the Desertas and Selvagens Islands. It is located in the North Atlantic, 900 km from mainland Portugal, 600 km from the Moroccan coast and 450 km north of the Canary Islands.

Madeira Island is 57 km long and 23 km wide, with a total area of 73,675 km<sup>2</sup>. It has a population of around 240,000. Due to its volcanic origin, it is very mountainous, with a central mountain range 1,200 m above sea level. The weather is always mild, with summer highs of 24°C and lows of 17°C, while winter temperatures are 4°C lower. Sea temperature, due to the Gulf Stream, varies from 17°C to 22°C.

The economy of Madeira is based on the tertiary sector, with a high weight of public administration and tourism. Tourism (hotels and restaurants) accounted for around 9.8% of GDP and constituted around 10.1% of total employment in 2003. In 2005, more than 1,010,000 tourists visited the island.

A large part (two-thirds) of the island is a natural park,<sup>1</sup> as can be seen from Figure 1. *Levadas* (man-made water channels with pathways used to check their condition) cover almost all the island and residents and tourists use them for taking walks – see Figure 2. These channels carry water from the areas where it is abundant (highland or the north coast) to the areas where it is most used due to urbanization or agricultural activities. A typical *levada* is shown in Figure 3.

As a result, Madeira Island is a well-known and established tourism destination. There are tourists who come to Madeira almost every year and some come more than once a year for short visits. But how do they value the different



**Figure 1.** Madeira Natural Park – zoning.

Notes: Scale – 1:100,000. Parque Natural – Natural Park. Paisagem Protegida – Protected Landscape. Reserva Geológica e Vegetação de Altitude – Geological Reserve and Highland Vegetation. Reserva Natural Integral – Full Nature Reserve. Reserva Natural Parcial – Partial Nature Reserve. Reserva de Recreio e Montanha – Recreational and Mountain Reserve. Zona Não Classificada – No Classification Zone. Zona de Repouso e Silêncio – Rest and Silence Zone. Zona de Transição – Transition Zone

Source: *Atlas do Ambiente Digital*, Instituto do Ambiente.



**Figure 2.** Geographical distribution of *Levadas*.

Notes: Scale – 1:100,000. *Superfície* – open air. *Túnel* – tunnel.

Source: *Atlas do Ambiente Digital*, Instituto do Ambiente.



**Figure 3.** *Levadas* – man-made water channels with pedestrian pathways.

aspects of the island? And what is the relationship between the evaluation made and personal characteristics? These two questions have not been addressed before and this paper aims to provide the answers.

### Literature review

The influence of the socio-demographic characteristics of individuals on their perception of the tourism experience appears in McKercher and Cross (2007), where they conclude, for the case of cultural tourism, that ‘no significant differences were found on any of the demographic variables tested except for age’ and ‘likewise, no differences were noted among trip characteristics (such as length of the stay, total trip duration, repeat visitation. . .)’. Kinnaird and Hall (1996) stress the importance of gender on the tourism process. Petrosillo *et al* (2007) find that awareness of being in a marine protected area is largely dependent on education, ‘with aware people showing a significantly higher education background’. In the same direction, Fabiani (1995), studying the consumption of urban nature in Paris, concludes that individuals using forests are the same as those using cultural goods. Differences in nationality are taken

into account by Mykletun *et al* (2001), where they find that 'results of a series of multiple logistic regression functions revealed that country of residence (Denmark, Germany and Sweden) was the most salient factor to consider in discriminating between high versus low spenders, visitor reported measures of satisfaction, value and probability of repeat patronage'. Litvin (2007) shows that 'attractions have difficulty in drawing guests in repeat visitor dominated markets'.

As Madeira's natural environment is its strongest asset in attracting tourists, we can make a parallel with the willingness to pay a fee to enter a national park with an awareness of the natural attractions of a park. In this way, we can see how demographic characteristics influence the valuation of being in a natural park and use the results as guidelines in our study.

In the case of Greek National Parks, Machairas and Hovardas (2005) showed that the willingness to pay was significantly higher for females and increased with age and education. In the case of Korean National Parks (Lee and Han, 2002), the use value of some of the parks was higher for females and more educated people, while it was lower with age. In the case of the valuation of urban green spaces in Guangzhou, China, Jim and Chen (2006) found that gender and education did not influence significantly the willingness to pay. The coefficient for 'male' was negative but not significantly different from zero and their study used income as an explanatory variable, which can be correlated with education, and showed a positive and significant coefficient.

Taking into consideration the results above, we looked at gender, age, education and nationality as socio-demographic variables and, as characteristics of the trip, length of stay and number of previous stays.

From this review of the literature, we expected females to be more nature oriented than males, younger people more active than older people, more educated people oriented more towards nature activities than less educated people and tourists on repeat visits less prone to use man-made attractions.

## Study methods

In the first phase, Paulo Oliveira interviewed 158 people for a parallel study about the Madeira Natural Park and its relationship with tourism demand and offer. From these interviews, and analysis of publications about Madeira, he gathered 30 aspects that could be important when making the decision to visit Madeira.

In the second phase 1,517 tourists were surveyed (sampling error of 2.5% and confidence interval of 95%): 1,098 tourists completed the questionnaire at the airport while they were waiting to return home, 364 completed it at the Hotel Jardim Atlantico and 55 at Hotel São Roque do Faial (both nature oriented hotels). As there were differences in the way the surveys were undertaken at the airport and at the hotels, and the time of the survey was also different, we decided to use only the surveys that were taken at the airport.

The tourists were selected randomly, first by destination of the flight (nationality), so some flights were chosen to do the survey, and then by individual; tourists were selected at random and asked to fill in the questionnaire. The questionnaire was written in Portuguese, Spanish, French, German

and English and the survey took place in March–April 2005 (both months with around 9% of the total yearly number of tourists) at the airport.

Of the respondents, we selected those individuals who had answered the questions on all 30 aspects of the destination and who had also responded to the questions on their individual characteristics and on aspects of their trip. We ended up with 381 observations.

Of the tourists surveyed, 51% were female, 17.1% were aged below 30 (Age\_2), 25.2% were aged 31–45 (Age\_3), 42.5% were aged 46–60 (Age\_4) and 15.2% were older than 60 (Age\_5). 25.5% had less than 12 years of education (Education\_3), 21% had 13–15 years of education (Education\_4); 20% had 16–17 years of education (Education\_5) and 33.6% had more than 18 years of education (Education\_6). 75.1% were departing from their first visit to Madeira (NVisits\_1), 11.2% from their second visit (NVisits\_2) and 13.7% from their third or more visits (NVisits\_3). 16.5% stayed for less than one week (DVisit\_6), 63.8% stayed for one week (DVisit\_7) and 19.7% stayed for more than one week (DVisit\_8). 5.5% were Portuguese (por), 34.9% were English (eng), 12.3% were German (ger), 3.9% were Spanish (spa), 2.4% were French (fre) and 40.9% were other nationalities.

The tourists were asked to use a scale of 1–5 (1, none or very low importance, to 5, highest or very high importance) to evaluate the importance of 30 aspects in their decision to visit Madeira ('How do you classify the importance of the following aspects in your decision to visit Madeira?'). The results are shown in Table 1. The five aspects valued most were the landscape, the weather, the flora, the *levadas* and the walks, all with an average above 3.5. The lowest importance was given to paragliding/hang-gliding.

### Estimation procedure

As the dependent variable is discrete, multiple and ranked, we used an ordered probit estimation. This is a straightforward extension of the binary probit model. In this case, the dependent variable takes five values (1 to 5). First, we have to subtract one from all values, so they become zero to 4. The dependent variable  $Y$  takes the values 0, 1, 2, 3 or 4. Similar to the binary probit model, we start by defining an unobserved index function  $Y^*$  as:

$$Y^* = X\beta + \varepsilon$$

and assume:

$$Y = 0 \text{ if } Y^* < k_1,$$

$$Y = 1 \text{ if } k_1 \leq Y^* < k_2,$$

$$Y = 2 \text{ if } k_2 \leq Y^* < k_3,$$

$$Y = 3 \text{ if } k_3 \leq Y^* < k_4,$$

$$Y = 4 \text{ if } k_4 \leq Y^*,$$

where  $k_1$ ,  $k_2$ ,  $k_3$  and  $k_4$  are 'cut points' and  $k_1 < k_2 < k_3 < k_4$ .

Table 1. Tourists' responses to the questionnaire survey.

Variable	Obs	Mean	Std dev
Landscape	381	4.209974	0.9107575
Climate	381	4.03937	0.8831902
Flora	381	4.036745	1.025318
Fauna	381	3.286089	1.189666
Birdwatching	381	2.304462	1.105825
Laurel Forest <sup>a</sup>	381	2.685039	1.227111
Ecological park <sup>b</sup>	381	2.598425	1.241348
Madeira Natural Park <sup>c</sup>	381	2.926509	1.315837
Garajau <sup>d</sup>	381	2.272966	1.220021
Rocha Navio <sup>e</sup>	381	2.246719	1.20395
Desert island	381	2.152231	1.223853
Walks	381	3.611549	1.165862
<i>Levadas</i> walks	381	3.619423	1.222397
Trekking	381	2.068241	1.235682
Climbing	381	1.650919	1.018994
Tours	381	2.745407	1.343899
Mountain biking	381	1.498688	0.9937295
Paragliding	381	1.401575	0.8937783
Canoeing	381	1.430446	0.9139372
Canyon	381	1.52231	0.9639016
Jeep safari	381	1.632546	1.081612
Horseback	381	1.456693	0.9298209
Scuba diving	381	1.64042	1.123596
Golf	381	1.627297	1.161981
Other sports	381	1.981627	1.312763
Leisure activities	381	3.104987	1.295539
Playful activities	381	2.3328084	1.254455
Recreational	381	2.732283	1.234049
Gastronomic	381	3.354331	1.168856
Cultural heritage	381	3.249344	1.173515

Notes: <sup>a</sup>The *Laurisilva* of Madeira is an outstanding relic of a previously widespread laurel forest type. It is the largest surviving area of laurel forest and is believed to be 90% primary forest. It contains a unique suite of plants and animals, including many endemic species such as the Madeiran long-toed pigeon. It has been a UNESCO World Heritage site since 1999 (source: UNESCO). <sup>b</sup>Funchal Ecological Park occupies about 1,000 hectares. 'In this park, you will find Pico Alto, in the Ribeira das Cales area, with its excellent belvedere looking out over Funchal, and Chão da Lagoa, which will take you to two of the highest points in Madeira: Pico do Areeiro (1,810 m) and Pico Ruivo (1,862 m)' (Madeira Islands Tourism). 'The Madeira Natural Park takes up around two-thirds of the island with total and partial natural reserves and protected areas. 'It was created in 1982 in order to preserve a huge natural heritage, which is part of the world's heritage and includes some species in danger of extinction, as well as some high-quality human habitats. It has been classified as a Bioenergetic Reserve and it contains flora and fauna unique in the whole world' (Madeira Islands Tourism). <sup>d</sup>Reserva do Garajau – a marine partial reserve on the south coast. <sup>e</sup>Reserva da Rocha do Navio – a marine and small island reserve on the north coast.

Scale: 1 – no or very low importance; 2 – low importance; 3 – average importance; 4 – high importance; 5 – highest or very high importance.

Then, the conditional probabilities  $Pr(Y = 0 | X)$ ,  $Pr(Y = 1 | X)$ ,  $Pr(Y = 2 | X)$ ,  $Pr(Y = 3 | X)$  and  $Pr(Y = 4 | X)$  can be written as:

$$\begin{aligned} Pr(Y = 0 | X) &= Pr(X\beta + \varepsilon < k1) = Pr(\varepsilon < -X\beta + k1) \\ &= F(-X\beta + k1), \end{aligned}$$

$$\begin{aligned} Pr(Y = 4 | X) &= Pr(X\beta + \varepsilon > k4) = Pr(\varepsilon > -X\beta + k4) \\ &= 1 - F(-X\beta + k4), \end{aligned}$$

$$\begin{aligned} Pr(Y = 2 | X) &= Pr(k1 \leq X\beta + \varepsilon < k2) = F(-X\beta + k2) \\ &- F(-X\beta + k1), \end{aligned}$$

and so on,

where  $F$  is the cumulative distribution function of residual  $\varepsilon$ . In the ordered probit model, we assume that the residual  $\varepsilon$  has the standard normal distribution  $N(0,1)$ . Thus,  $F$  is the cumulative function of  $N(0,1)$ .

We then use the maximum likelihood procedure to obtain the results.

### Estimation results

Table 2 presents the direction and significance of results of the ordered probit estimation. The comparison individual is a female, aged below 30, with 12 or fewer years of education, on her first visit to Madeira, staying less than one week and of a nationality not mentioned above. Males value 12 aspects significantly less (landscape, flora, gastronomy, cultural/heritage, fauna, the Natural Park, tours, laurel forest, Funchal Ecological Park, Garajau Nature Reserve, 'Rocha do Navio' Nature Reserve, birdwatching) and value golf more than females.

If we consider the five aspects with the highest percentage of answers of high, very high or highest importance, we see that all are related to nature: landscape, weather, flora, *levadas* and walks. Older tourists tend to value almost all these aspects more, while more educated individuals tend to value *levadas* and walks more. Tourists on longer stays value these natural aspects more and the number of previous stays does not influence the value of these aspects. In terms of nationality, the British tend to value all the natural aspects less, with the exception of the weather. French value landscape and flora less, while Portuguese value walks less than other nationalities.

Older individuals seem to value all the aspects that are related to physical activity less, but they seem to value tours and birdwatching more than younger people. The more educated tourists seem to value tours less, as well as the more extreme activities, such as trekking, climbing, canyoning, canoeing. The number of times a tourist has previously visited Madeira does not seem to influence the way he or she values the different aspects, with the exception of golf and the Funchal Ecological Park, which are valued positively, while tours and climbing seem to be valued less.

Tourists on longer stays value the natural aspects cited above and birdwatching more, but tend to value tours, leisure and playful activities, as well as most of the extreme activities, less.



In terms of nationality, the French and Germans seem to be very similar to the group we call 'other nationalities'. The French value birdwatching more and landscape and flora less, while the Germans value leisure and playful activities more and tours, birdwatching and mountain biking less. The Spanish value the *Laurisilva* (Laurel Forest), birdwatching, jeep safari, mountain biking and paragliding/hang-gliding more.

The Portuguese and British are different from the other national groups. The Portuguese value extreme sports and cultural activities/heritage more. The British value the nature aspects cited above less, but they value leisure and playful activities more.

## Conclusions

The importance of natural environments and their authenticity in the development of countries and regions has a long tradition in the economic literature (see Pereira, 1983, and Reisinger and Steiner, 2005, for the importance of authenticity). Madeira as a tourism destination lives up to the image of a natural environment destination.

The percentage of tourists who value landscape and climate (in their decision to visit Madeira) as of high importance or of highest or very high importance is always very large. However, we found that British people valued the climate more and the landscape less than the average tourist surveyed. Of the average tourist, only 15.75% value landscape as average or below average importance, 23.31 % of the British value it that way (for an interesting discussion about what landscape is, see Haber, 2004). In the case of climate, only 12.78% of British value it as average or below average, while 19.95% of the tourists classify it that way.

In the case of tourists staying for one week (or more than one week), only 9.47% (9.33) value landscape of average or below average importance; the average tourist values it this way in 15.75% of cases.

Almost 50% of females (49.48%) value landscape of the highest or very high importance, while only 38.5% of the males value it in this way. Nature tourism in Madeira is associated with the beauty of the landscape. Due to its volcanic origin, the island has mountain ranges, with the highest peak at 1,862 m. Tourists can enjoy nature walking along the *levadas*, where they are surrounded by unique vegetation and fauna. The importance that tourists place on nature and leisure activities at the time of making their decision to visit the destination seems to be compatible with what is currently on offer. While older tourists seem to value landscape more, younger tourists tend to value activities organized in the countryside, such as trekking, climbing or canyoning.

The British tourists continue to consider the weather as the most valuable asset of Madeira. The mild climate and the influence it was believed to have on peoples' health has been, for more than a century, the main attraction of the destination (Câmara, 2002).

In the case of extreme sports, it seems that tourists visiting for shorter stays are more attracted by this type of activity. The same is true for Portuguese tourists.

Golf seems to be valued by tourists on repeated visits. Litvin (2007), in a

Table 2. Results of the ordered probit estimation.

	% < 4	% > 3	Male	Age_3	Age_4	Age_5	Edu- cation -4	Edu- cation -5	Edu- cation -6	N Visits 2	N Visits 3	D Visits 7	D Visits 8	por	eng	ger	spa	fre
Landscape	15.75	84.25	nnn		pp							pp	ppp		nnn			nn
Climate	19.95	80.05		pp					n				pp		pp			n
Flora	24.15	75.85	nnn	ppp	ppp	ppp							pp		nnn			
Levadas walk	39.63	60.37		pp				ppp				pp	ppp		nnn			
Walks	40.94	59.06		pp	p			pp				pp	ppp	n	nnn			
Gastronomic	48.29	51.71	nnn									nnn	ppp					
Cultural heritage	53.54	46.46	nnn									nnn	ppp		p			
Fauna	56.69	43.31	nn					n		ppp				ppp	n			
Leisure activities	57.48	42.52		n	nnn	nnn							nn	ppp	ppp	ppp		
Madeira Natural																		
Park	63.78	36.22	nn					n		p					nnn			
Tours	64.3	35.7	nnn			ppp		nnn	nn		nn		nnn	pp		nnn		
Recreational	72.44	27.56			nn	nnn						nn	n					
Laurel forest	74.8	25.2	n											pp	nnn		p	
Ecological park	76.38	23.62	nn				n				p							
Playful activities	81.63	18.37		nnn	nnn	nnn	n						nn	ppp	p	pp		
Other sports	83.2	16.8		nnn	nnn	nnn								ppp				
Garajau	84.51	15.49	n			nn	nnn	n						p	nn			
Rocha Navio	85.3	14.7	n		n		n	nn						pp	n			
Desert island	85.83	14.17					nn	nn	nnn					pp	nn			



completely different context (Charleston tourism), found that 'repeat visitors are more likely to spend their time at the beach and playing golf than are first-timers'.

The results show how the different characteristics of tourists influence the importance they attribute to various aspects of Madeira Island. If we accept, as Tocquer and Zins (1999) claim, that the family decision-making process concerning vacations changes during its life cycle, then gender differences can have an extremely important effect on the valuation. The decision starts by being made together as a young couple (less than 35 years old), then it is made more by the husband (age 35–45). After that, the wife takes the lead, until the couple is in their sixties, when decisions are made together again, to return to the wife leading in the final part of life; therefore, gender differences can be extremely important.

Nature is assumed as a vector of essential importance in the configuration of Madeira Island as a territory for recreation and tourism where 'the nature of the island is rediscovered under a leisure perspective by means of a search for authenticity as an element differentiator of the tourist product' (Oliveira, 2005). Tourism as an economic activity is central in a society that more and more values leisure time and the different ways to use it.

Mobility is a key factor in the concept of freedom as young generations have access to the possibilities of consumption abroad, whereas older generations have only had the opportunity to enjoy it in the later stages of their lives (Baptista, 2005).

The possibility of a latent conflict appears as young tourists prefer extreme sports in the natural environment more, while older tourists prefer a quieter way to enjoy nature. Nature and the activities that people enjoy in a natural environment are important factors in the choice of Madeira Island as a destination. This can be seen not only as part of the acceptance of ways and lifestyles that have spread in western societies which value nature and the interaction with it (not only as scenery), but also as the spread of the idea of leisure away from the urban context.

While, from the demand side, the preference for nature is clear, we see on the supply side the acceptance of the leisure aspect, even in places 'that didn't have that experience before. The town, the territories, the mountains, the rivers, the coastal maritime zones, the dry zones and humid zones, the high peaks and lowlands all became part of an inventory for its potential as tourism attractions' (Baptista, 2005).

Hinch and Higham (2001) state that Leiper (1990) raised the idea of a nuclear mix and hierarchy of attractions. In the case of Madeira, the nuclei the tourist wishes to experience is nature, as landscape, flora, climate, the *levadas* walks and walks were all considered of very high importance by more than 30% of the tourists surveyed. The hierarchy of the attractions was shown to depend on tourist characteristics.

The interaction between the tourist and nature seems to have changed. At present, tourists seem to be attracted more by the possibility of being surrounded by nature and walking through natural environments. However, this study shows that the valuation of the different aspects of a destination is not independent of the characteristics of the individual. This fact should be taken into account when preparing marketing campaigns and the strategy

development of the tourism offer, as potential tourists should learn more about the aspects they value more (particularly in a region whose economy depends strongly on tourism).

Younger tourists look forward to being in a natural environment while doing leisure activities associated with risk and requiring some physical endurance (extreme sports, for instance). Older tourists look forward to being in touch with nature as scenery, while learning more about some of its aspects, as in the case of birdwatching.

Nature as a way to attract tourists is correlated with the ideology that associates leisure/well-being with nature, which is disseminated in the urban culture as a way to evaluate and return to human natural origins.

Different generations understand and appropriate the relationship between leisure and nature differently. While older generations see nature more as an economic space, younger generations consider it more as a leisure space.

The results of this study have to be taken into consideration in marketing campaigns. Campaigns for potential young tourists have to show risky activities and the overcoming of physical limits. For potential older tourists, more scenery should be shown side-by-side with more relaxed physical activities while watching endemic flora and fauna. For the more educated, nature should be promoted with the explanation of past human activity, as in the case of the *levada* walks.

Nationality should be considered, as valuation depends on it. As an example, when marketing to the British, good weather should be stressed. Booklets in different languages should not be strict translations and should point out different aspects of the destination.

To finalize, the Portuguese and people on short visits should be attracted by extreme sports. Some images in the departure lounge of the airport showing people playing golf can encourage people to revisit. Previous marketing campaigns should be evaluated to see if some aspects that were shown in those campaigns are considered not important.

## Endnotes

1. The equivalent of a National Park in, for example, the UK.

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