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## **RESUMO/ABSTRACT**

### **The Satisfaction of the Nordic Tourist with the Azores as a Destination**

Tourism is considered a strategic economic sector for the outermost regions of Europe. In the Azores, Tourism is a dynamic and growing activity. New segments have emerged, such as ecological and sustainable tourism, nautical tourism and wildlife tourism. Currently, new niches are being developed around sports (surf, paragliding and diving are recent examples), religion, nature, healthcare and wellbeing. The latest products and services serve as alternatives or complements to the more traditional venues of hotels and restaurants. The latter have managed to continuously upgrade their standing in global markets via large investments in modernization, innovation and employee training. Progressively, the Azores are becoming a desirable destination to inhabitants of modern and stressful urban areas of Europe and North-America. Specifically, Northern European markets are considered strategic for the region. The typical Nordic Tourist seeks products and services easily found in the Azorean touristic market. Also, visitor inflows from Northern Europe can mitigate the effects of seasonality, a phenomenon still very visible in the region's sector. Because tourism is a very competitive business worldwide, it is crucial to employ policies that enhance competitiveness. It is reasonable to argue that these policies should be guided by accurate knowledge of the strong and weak characteristics of the Azores, as a destination competing in a global market. Under this context, this paper seeks to comprehend how the typical Nordic visitor feels pleased with his stay in the Azores. Using a large database of responses from tourists, we employ econometric methods to assess the degree of satisfaction of the average Nordic visitor with the Azores as a destination.

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## **Abstract**

Tourism is considered a strategic economic sector for the outermost regions of Europe. In the Azores, Tourism is a dynamic and growing activity. New segments have emerged, such as ecological and sustainable tourism, nautical tourism and wildlife tourism. Currently, new niches are being developed around sports (surf, paragliding and diving are recent examples), religion, nature, healthcare and wellbeing. The latest products and services serve as alternatives or complements to the more traditional venues of hotels and restaurants. The latter have managed to continuously upgrade their standing in global markets via large investments in modernization, innovation and employee training. Progressively, the Azores are becoming a desirable destination to inhabitants of modern and stressful urban areas of Europe and North-America. Specifically, Northern European markets are considered strategic for the region. The typical Nordic Tourist seeks products and services easily found in the Azorean touristic market. Also, visitor inflows from Northern Europe can mitigate the effects of seasonality, a phenomenon still very visible in the region's sector. Because tourism is a very competitive business worldwide, it is crucial to employ policies that enhance competitiveness. It is reasonable to argue that these policies should be guided by accurate knowledge of the strong and weak characteristics of the Azores, as a destination competing in a global market. Under this context, this paper seeks to comprehend how the typical Nordic visitor feels pleased with his stay in the Azores. Using a large database of responses from tourists, we employ econometric methods to assess the degree of satisfaction of the average Nordic visitor with the Azores as a destination.

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# **1. Introduction**

It is increasingly recognized that quality is an important differentiation factor of products and services (see Box, 1983; McDougall & Levesque, 1994; Zeithaml et al., 1996; Sweeney et al., 1997; Duffy & Ketchand, 1998; Bloemer et al., 1999; Norsworthy & Tsai, 1999; Wong & Sohal, 2003; Thach e Olsen, 2006; Rabinovich, 2007; Alexandris et al., 2008). Companies, regions and countries increasingly invest in this strategic and competitive factor.

Globalization has increased competition and reinforced the role of quality. Tourism is certainly one of the sectors, among many others, where quality plays a crucial role. Every destination seeks to maximize its visitor's overall satisfaction.

Tourism is considered a strategic economic sector for the outermost regions of Europe (see, for example Solbes, 2011). In the Azores, Tourism is a dynamic and growing activity. From 2001 to 2011, the number of bedrooms increased from 2.140 to 4.066. Additionally, new segments have emerged, such as ecological and sustainable tourism, nautical tourism and wildlife tourism. Currently, new niches are being developed around sports (surf, paragliding and diving are recent examples), religion, nature, healthcare and wellbeing. For example, recently the Regional Government has approved the implementation of a new 4 star resort that caters, particularly, to the practitioners of surf and other outdoor sports. The government declared the new venue of regional interest and provided funding in a reasonable percentage of the total investment. The most recent products and services serve as alternatives or complements to the more traditional venues of hospitality and food. The latter have managed to continuously upgrade their standing in global markets via large investments in modernization, innovation and employee training. These investments are also eligible under the many incentive programs available in the region, because of the strategic role of Tourism as an economic activity.

Among others, the Azores offer peace and quiet, an unspoiled nature, warm weather all-year round, various outdoor activities (ranging from extreme sports to golf) and heartfelt hospitality. Given its characteristics as a tourism destination, the Azores have gained various awards from the National Geographic Traveller Magazine and other publications specializing in Tourism. Progressively, the Azores are becoming a desirable destination to inhabitants of modern and stressful urban areas of Europe and North-America. Specifically, and as described in the National Strategic Plan for Tourism, put forward by Turismo de Portugal, an institute of the

Ministry of the Economy and Labour, Northern European markets are considered strategic for the region.

Thus, and given the importance of assuring a quality standard in par with the expectations of visitors from Northern Europe, this paper aims to analyze the satisfaction of the later with the Azores as a destination. The conclusion will be policy oriented and will be based on solid and state-of-the-art methodology.

The paper is organized in the following manner; in section 2, we argue how tourism is important for the growth and development process of the Azores and about the role of quality. Section 3 presents a review of relevant literature. Section 4 describes the data used. Section 5 provides the theoretical background. Section 6 exposes the empirical framework and hypotheses. Section 7 includes the findings from the econometric model estimation and, finally, section 8 provides the major conclusions.

## **2. Tourism as a strategic sector for the Azores**

In a small economy, the growth and development process always has to encompass the production of goods and services intended for export. Thus, along with the other industries, tourism plays a strategic role in the development of the Outermost Regions, as stated, for example, in Solbes, 2011. Smart and sustainable growth will depend on the capacity of Azores for diversifying their economic base (Solbes, 2011).

Apart from low unemployment, the Azorean economy is not very different from the other outermost regions of Europe. Natural constraints affect the socioeconomic development of the islands, while the bulk of economic activity revolves around a few sectors, particularly, the agro-food industry.

Considering the idiosyncratic characteristics of the Azores, as well as the expansion of global demand, tourism is undoubtedly a promising sector. Tourism is part of a limited number of opportunities capable of widening and diversifying the export economic base of the Azores.

The Azores are a small archipelago, compromised by dispersed islands. About 2.5% of the Portuguese population lives in the Azores. As measured by GDP per capita, wealth was about 94% of the Portuguese national average in 2009.

The Azores are eligible as a Convergence Region, by European Structural Funds. In matters related with regional cohesion policy, the catching-up process with the European average, has been notable and very significant. To prove it, one just needs to take into account that, in 1995, the GDP per capita, in the Azores, was only 49% of the EU average (Eurostat values). In 2009, the same indicator had risen to 63%.

The standard of living significantly improved in the Azores over the last few years. As it is known, the model of development was based on transfers of funds coming from the exterior and exporting natural resources. Regarding the transfers, these originated in the National Budget and the European Union and were destined not only to the Regional Budget for also to the Local Councils. For the time being, the export sector is essentially based on the agro-food industry, especially on milk and dairy products. Tourism, however, is catching up in terms of its importance in the overall exportations.

As for the future, transfers from the National Budget and the European Union are expected to decrease, and a significant growth in the production of milk also does not seem likely. Therefore, a new development model is needed, where entrepreneurship, high-value added activities and a diversified basket of exportations have crucial roles.

The lower than national average GDP per capita is not the result of lower labor productivity but essentially of a smaller participation of the population in the labor market. This happens, in particular, because women's participation is lower in the Azores (38.8% in 2010), when compared to the national average (56.3% in 2010).

In the past, the model of development did not incorporated women into the labor market, since agriculture and construction predominantly employed men. Moreover, the industrialization model of the Mainland based on the textile and footwear industries was not replicated in the Region. Opportunities only appeared with the introduction of the autonomous regime and the expansion of public services, but the latter would not expand continuously, due to the restrictions of the State Budget.

Once more, entrepreneurship and high-value added activities, such as Tourism, appear as new opportunities for women. The diversification and enlargement of the export economic base,

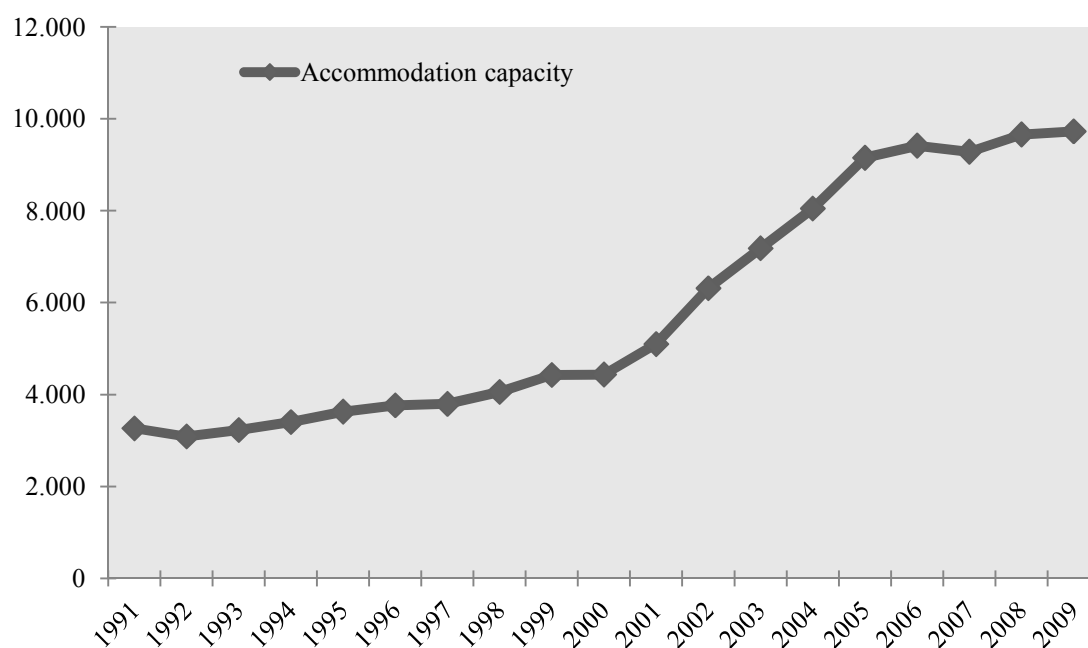


along with women's employment, depends on a commitment on the development of tourism. Some, namely the World Tourism Organization, forecast that revenue from this industry will surpass, in little over a decade, that of other important sectors, such as the oil and car industries.

It is obviously important to commit to growing industries. Tourism is, therefore, a sector that has been correctly identified, over the last few years, as strategic to continue the growing and development process of the Azores.

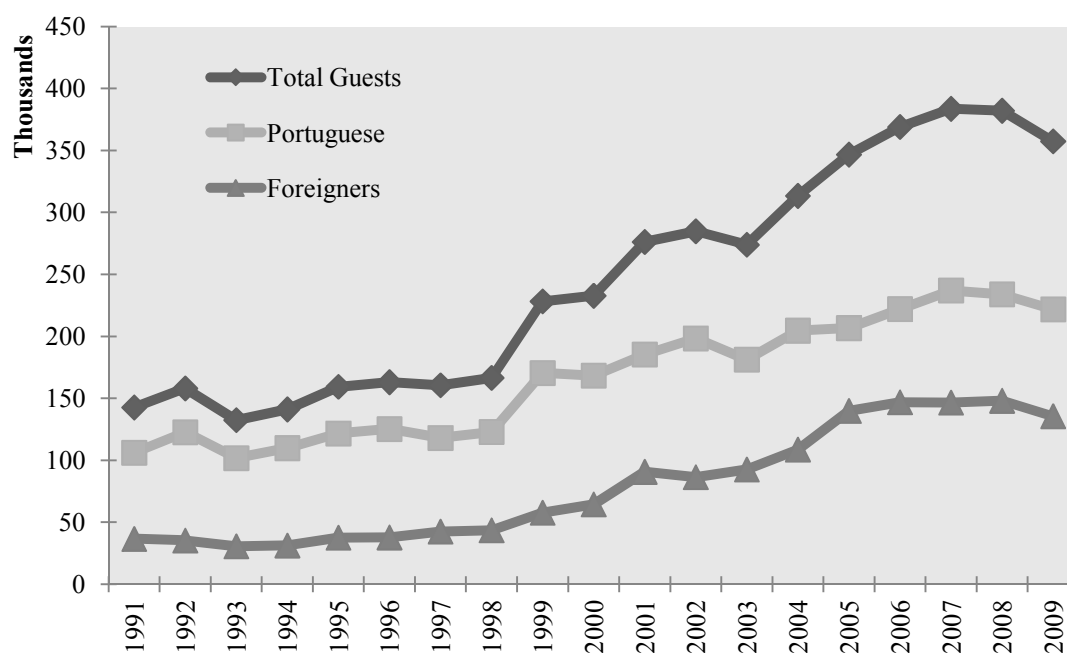
Tourism is in expansion and tends to become the main worldwide economic activity. The Azores could not lose this opportunity, and the answer of public and private players has precisely been in this direction over the last few years.

As it can be seen in Chart 2, accommodation capacity substantially increased threefold over the period running from 1991 to 2009.



**Chart 1 - Evolution of the accommodation capacity.**

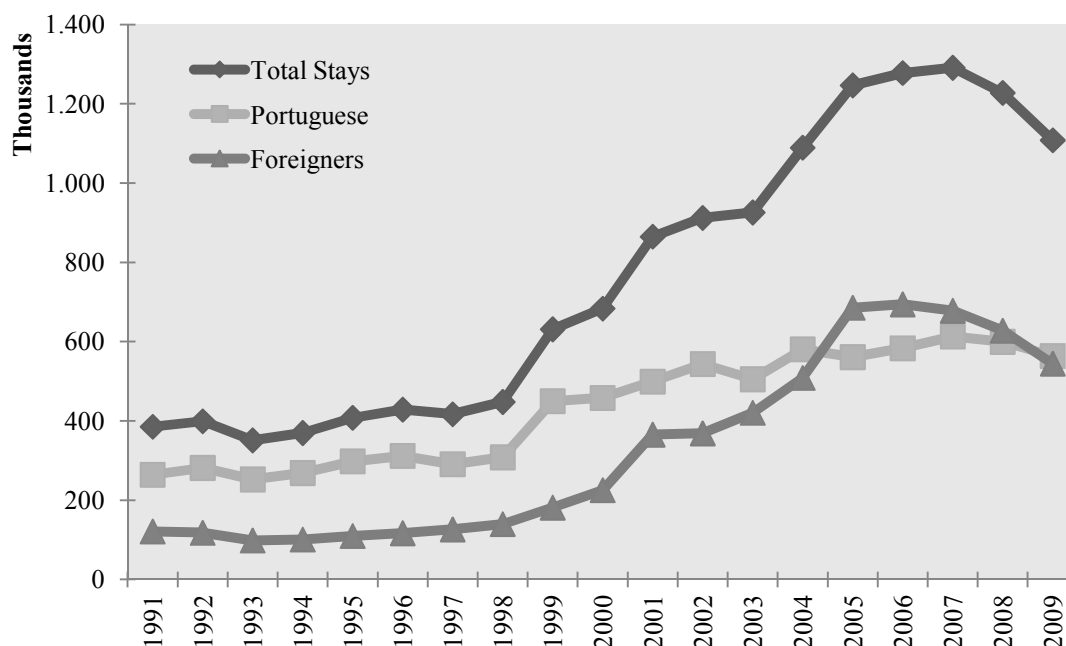
The expansion of capacity and the promotion of the Azores in the exterior have contributed to significantly increase the number of guests and overnight stays in the Region, as it can be seen in Chart 2 and Chart 3 respectively.



**Chart 2 - Evolution of the number of guests at accommodation units.**

Portugal is the major emitter market for the islands but that tendency is being reverted. Since 2001, the ratio between Portuguese and foreign guests has started to narrow down. In 2009, Portuguese visitors compromised 62% of the total touristic market, whereas in 1991, that number was 74.33%<sup>1</sup>.

<sup>1</sup> For an alternative approach on the study of arrivals to the Azores, see Barros, C.P. et al., 2008.



**Chart 3 - Evolution of the number of overnight stays at accommodation units.**

As with the number of visitors, the total number of overnights has almost increased threefold, from 1991 to 2009. From 1991 to 2004, overnight stays were led by Portuguese visitors. In 2003, for example, Hotels and similar venues registered 580,652 overnight stays from visitors coming from inside Portuguese territory, against 508,603 stays originated by visitors coming from abroad. From 2005 to 2008, foreigners tended to stay more than Portuguese in overnight accommodation. In 2008, for example, there were 627,743 stays of non-domestic tourists against 599,733 registrations from visitors hailing from Portugal. In 2009, 49% of visitors came from outside Portugal.

These numbers prove that the primary emitter market has been significantly diversified, moving away from a strategy focused only on attracting Portuguese visitors.

The region has strived to keep its touristic sector sustainable, either at environmental or economic levels.

According to Gössling & Hall, 2008, there is the widespread misconception that tourism is a harmless activity, at an environmental level. In their work<sup>2</sup>, the authors argue that tourism contributes to global emissions of greenhouse gases through various processes, namely: (1)

<sup>2</sup> See Gössling, S. & Hall, C., 2008.

Transport, either of tourists or goods and products related to touristic activities; (2) Accommodation, in the case of energy usage for construction, refurbishing and maintenance of lodging units; and (3) Energy use for enabling tourist activities. However, the work of Gössling & Hall doesn't account for other types of pollution, such as noise generation, littering and waste production. Nonetheless, one can easily conclude that tourism can have a severe impact on the environment of any destination.

Tourism can also have a detrimental impact a region in economic terms. As seen before, this has not been the case of the Azores, because the region has invested on specific market segments that take into account the island many attractions, while moving away from “mass-tourism”, highly seasoned or highly volatile segments. An example of a market, from which the region has kept its distance, is the second home tourism segment. For example, according to Müller, 2007, Nordic Tourists seem to prefer spending their vacations in second homes located on their own country, instead of buying a home abroad. Therefore, the second home tourism segment may not have viability, at least if the region tries to cater only to tourists from Northern Europe.

Keeping in mind that tourism is not, necessarily, a pollution free activity and that not all segments are economic and socially viable, the Regional Assembly of the Azores passed, in 2008, the Regional Legislative Decree n.º 38/2008/A. The diploma approved a plan, which purpose is to define a sustainable strategy for the development of Tourism, as an economic sector.

However, the process of consolidating the competitiveness and sustainability of Tourism in Azores is far from over. As stated before, Tourism is a dynamic market and competition from other destinations has increased, both in terms of quality and availability of alternatives. The success of the Azores in the fight for the global market will depend upon the quality and diversity of the products and services that they have to offer visitors, and, at the end, at its ability to effectively cater to the needs of its visitors.

Landscape and architectural heritage are not enough to thrive in this market, and these alone do not enable the full potential of the archipelago. Thus, it is important to design and implement policies that allow us to satisfy the most demanding standards of quality, and appeal to the expectations of visitors from strategic markets, particularly, the ones coming from Northern Europe.

### 3. A Survey of the Literature

As stated before, quality is an important differentiation factor of products and services<sup>3</sup> and success is achieved by ensuring customer satisfaction. In tourism, a destination can assure visitor satisfaction if it caters to their needs<sup>4</sup>.

Tourism is an important economic activity for the Azores<sup>5</sup> and, as described in the National Strategic Plan for Tourism<sup>6</sup>, Northern European markets are considered strategic for the region.

Under this context, it is important to analyze the satisfaction of Northern Tourists with the Azores as a destination.

Thus, the scope of this paper falls into satisfaction analysis.

The Ordered Probit analysis is often employed to examine the degree of satisfaction of customers, employees and households<sup>7</sup>.

Examples of applications of the Ordered Probit analysis to tourist satisfaction include Oliveira & Pereira, 2008, and Santos et al., 2010.

The first work was conducted in Madeira Islands. Oliveira and Pereira used an Ordered Probit model to see how socio-demographic characteristics of tourists and different aspects of the trip affected the valuation given to 30 different aspects of Madeira, as destination. In a nutshell, the results showed how the different characteristics of tourists influence the importance they attribute to various aspects of Madeira. The conclusions weren't explicitly oriented to policy making, being directed, according to the authors, to marketing campaigns. However, in Portugal (including its autonomous regions), Tourism is of such high importance that marketing

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<sup>3</sup> See Box, 1983; McDougall & Levesque, 1994; Zeithaml et al., 1996; Sweeney et al., 1997; Duffy & Ketchand, 1998; Bloemer et al., 1999; Nornworthy & Tsai, 1999; Wong & Sohal, 2003; Thach e Olsen, 2006; Rabinovich, 2007; Alexandris et al., 2008.

<sup>4</sup> See, for example, Ilieska, 2005.

<sup>5</sup> See Solbes, 2011

<sup>6</sup> See Turismo de Portugal, I.P, 2011.

<sup>7</sup> See, for example, Kekre, et al., 1995, Kang, 2009, Ward-Warmedinger et al., 1999, Lichfield et al., 2010, Petrescu, A. & Simmons, R., 2008,

campaigns are often conducted at a macro level (e.g.: destination) instead of at a micro level (e.g.: hotels, chain of motels, restaurants, among other operators), for example. This means, that outgoing publicity to emission markets centers around Portugal as a destination and do not pertains, particularly, to a specific company or chain of venues. Destination publicity in Portugal, and its autonomous regions, is organized by specific government entities and, thus, marketing is often done by policy makers. Given this context, one can assume that the results achieved in Oliveira & Pereira, 2011, end up geared towards public policy.

Santos et al., 2010, applied a similar methodology to the Azores. By using a regression analysis Santos et al. concluded that the evaluation of the global quality of the Azores, by tourists of various nationalities, varied according to the individual characteristics of visitors. As in Oliveira & Pereira, 2008, the conclusions were not explicitly oriented towards policy makers, but because of what was stated before, in terms of how marketing to outgoing emission markets is done and to who falls the ultimate responsibility of conducting such campaigns, the results achieved by Santos et al., 2010, are directed to public policy deciders.

On at all, one can conclude from the papers of Oliveira & Pereira, 2011 and Santos et al., 2010, that:

- Results from an Ordered Probit analysis can be used as the basis for decisions concerning tourism policy;
- Overall satisfaction with a destination is affected by visitor attributes; and
- Overall satisfaction can be expressed as a function of partial indicators of satisfaction.

#### **4. Dataset Description and Preliminary Analysis**

The dataset used in this work was retrieved from a larger database, and was kindly made available by the Regional Observatory of Tourism. We restrained the nationality of the tourists to match only the countries from Northern Europe (in this case, Denmark, Sweden, Norway and Finland).

The larger database was gathered, between the summer of 2010 and the summer of 2011, by inquiries made randomly to visitors at check in's and touristic hotspots located at the islands of S. Miguel, Terceira and Faial<sup>8</sup>.

The universe compromised near 286 thousand guests. The sample is composed by a total of 2,265 inquiries and carries a 93% degree of confidence. 819 inquiries were conduct during the summer of 2010, 702 during the winter of 2010/11 and the last 753 during the summer of 2011.

The inquiry is composed by 5 parts.

The first part surveyed 38 items related with the satisfaction of guests with the intrinsic characteristics of the Azores as a touristic destination, using a Likert-type scale ranging from 1 (very displeased) to 5 (very pleased).

The second part considered a group of 22 venues that may of importance to tourists, such as Thermal Spas, Eco-resorts, Camping Parks and Casinos. For this part, the Likert-type scale goes from 1 (not important) to 5 (very important).

The third part asked questions specific with the travel. Answers are either binary (Yes/No), chosen from a list or expressed in the form of a quantity (e.g. amount spent).

The fourth part is composed by questions that assess the tourist's satisfaction with the Azores. The answers are either binary (Yes/No), chosen from a list or expressed in the form of a quantity.

Finally, questions in the fifth part gathered some information about the respondent.

Table 1 includes some descriptive statistical elements to characterize the survey.

<i>Attributes</i>	<i>Total Observations</i>	<i>Frequency</i>	<i>Relative Frequency</i>
35<Age <54	598	385	64.38%
Age 55+	598	160	26.76%
Not Self Employed	598	204	34.11%

<sup>8</sup> In 2010, the hotels and similar venues of these three islands received about 87.64% of the total guests staying in the Azores.

Retired	598	75	12.54%
Male	598	300	50.17%
Secondary Education	598	118	19.73%
Higher Education	598	307	51.34%
Married	598	434	72.58%
Danish	598	119	19.90%
Norwegian	598	16	2.68%
Swedish	598	243	40.64%
Finnish	598	220	36.79%

**Table 1 – Summary of some of the respondent's attributes.**

As it can be seen, 64.38% of the participants had between 35 and 54 years of age. Respondents above the age of 55 were about 26.76% of those who were interviewed. Regarding occupation, 34.11% of the surveyed were not self employed and only 12.54% reported being retired. Males constituted 50.17% of the sample. In respect to education, the majority (51.34%) had higher education degrees (including Master and Doctorates). In terms of marital status, the bulk of the respondents reported being married (72.58%). Nationality wise, interviewees were mostly Swedish (40.64%) or Finnish (36.79%). Norwegians were the least surveyed (2.68%).

Some results are included in Table 2 regarding the quality of the Azores as a tourism destination, according to the respondent's perspective.

<i>Attributes</i>	<i>Total Observations</i>	<i>Frequency</i>	<i>Relative Frequency</i>
Nature and Landscape	598	564	94.31%
Security	598	521	87.12%
Environmental Quality	598	491	82.11%
Cleanliness	598	487	81.44%
Hospitality	598	472	78.93%
Quality/Price of Hotels	598	467	78.09%
Climate	598	420	70.23%
Touristic Information	598	418	69.90%
Quality/Price of Restaurants	598	410	68.56%
Knowledge of Foreign Languages	598	392	65.55%
Touristic Signaling	598	391	65.38%
Gastronomy	598	386	64.55%
Sea Water Quality	598	370	61.87%
Quality/Price of Air Transport	598	369	61.71%
Excursions	598	362	60.54%



Pedestrianism	598	351	58.70%
Beaches and Pools	598	333	55.69%
Mobility and Accesses	598	327	54.68%
Cultural Offering	598	314	52.51%
Taxi Services	598	271	45.32%
Rent-a-Car Services	598	243	40.64%
Cetaceans	598	243	40.64%
Public Transports	598	179	29.93%
Night Animation	598	129	21.57%
Maritime Transport	598	119	19.90%
Other Sporting Activities	598	102	17.06%
Birds	598	79	13.21%
Golf	598	34	5.69%

**Table 2 - Percentage of Nordic Tourists who answered being “Very Satisfied” or “Satisfied” with the attributes of the Azores.**

In accordance with the information presented, and for the purpose of brevity, we will analyse the 5 most voted and the 5 least voted attributes.

So, the Nature and Landscape of the Azores is the top most satisfying feature to Nordic Tourists that responded to the inquiry, with a remarkable 94.31% correspondence. Next, 87.11% of interviewees report being “Very Satisfied” or “Satisfied” with the Security found in the islands. The Environmental Quality is the next most appealing feature to those who were surveyed (82.11%). Cleanliness (81.44%) and Hospitality (78.33%) close the Top 5 most pleasant features to visitors from Northern Europe.

In the Bottom 5, Golf (5%) is the feature least classified with the “Very Satisfied” or “Satisfied” marks. Birds comes next with 13.21% of respondents reporting being “Very Satisfied” or “Satisfied”. Other Sporting Activities also score low, with only 17.06% of interviewees agreeing with their high level of appeal. Maritime Transports (19.90%) and Night Animation (21.57%) close the list of features that are the least satisfying to visitors.

<i>Indicator</i>	<i>Total Observations</i>	<i>Frequency</i>	<i>Relative Frequency</i>
Global Satisfaction	598	520	86.96%
Price Level	598	92	15.38%

**Table 3 – Percentage of Nordic Visitors who responded as being, globally, “Very Satisfied” or “Satisfied” with the Azores as destination and percentage of tourists who reported that the overall price level was “Very Cheap” or “Cheap”.**

According to Table 3, 86.96% of interviewees were reportedly “Very Satisfied” or “Satisfied” with the Azores as a touristic destination. In terms of Price Level, 15.38% responded that the destination was either was “Very Cheap” or “Cheap”.

## 5. Theoretical Background<sup>9</sup>

### 5.1 The Ordered Probit Model

The dependent variable, which measures the tourists’ global satisfaction with the Azores destination, is defined in an ordinal scale. For this reason, a large part of the analysis uses the Ordered Probit model.

The propensity for individual  $i$  to attribute a certain rating to the global satisfaction with the Azores destination should be considered according to the following process:

$$(1.) \quad I_i^* = \beta'X_i + \varepsilon_i, \quad i = 1, 2, \dots, N$$

Where  $I_i^*$  is a (non-observed) latent variable,  $\beta$  a vector of parameters to be estimated,  $X$  a vector of explicative (or exogenous) variables and  $\varepsilon_i$  a random component that is independent and identically distributed  $N(0,1)$ .

It is not the variable  $I_i^*$  that is observed in the sample, but an  $I$  indicator that represents the satisfaction level to which the individual belongs, where:

$$(2.) \quad \begin{array}{lll} I = 1 & \text{if} & I^* \leq \mu_1 \\ I = 2 & \text{if} & \mu_1 < I^* \leq \mu_2 \\ I = 3 & \text{if} & \mu_2 < I^* \leq \mu_3 \end{array}$$

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<sup>9</sup> For a more detailed discussion on the Ordered Probit Model, see Wooldridge, 2002, Davidson & MacKinnon, 1999, and Greene, 1990.

$$I = 4 \quad \text{if} \quad \mu_3 < I^* \leq \mu_4$$

$$I = 5 \quad \text{if} \quad I^* > \mu_4$$

The  $\mu_k$  ( $k = 1, 2, 3, 4$ ) thresholds are known parameters of the partition of the standard normal distribution in five intervals. These parameters are estimated together with the vector of parameters  $\beta$ .

Thus, the probabilities of an individual being in each one of the possible alternatives, regarding Global Satisfaction with the Azores destination, are provided by:

$$P(I = 1|X_i) = P(I^* \leq \mu_1) = P(\varepsilon_i \leq \mu_1 - \beta'X_i) = \Phi(\mu_1 - \beta'X_i)$$

$$\begin{aligned} P(I = 2|X_i) &= P(\mu_1 < I^* \leq \mu_2) \\ &= P(\mu_1 - \beta'X_i < \varepsilon_i \leq \mu_2 - \beta'X_i) \\ &= \Phi(\mu_2 - \beta'X_i) - \Phi(\mu_1 - \beta'X_i) \end{aligned}$$

$$\begin{aligned} P(I = 3|X_i) &= P(\mu_2 < I^* \leq \mu_3) \\ &= P(\mu_2 - \beta'X_i < \varepsilon_i \leq \mu_3 - \beta'X_i) \\ &= \Phi(\mu_3 - \beta'X_i) - \Phi(\mu_2 - \beta'X_i) \end{aligned}$$

$$\begin{aligned} P(I = 4|X_i) &= P(\mu_3 < I^* \leq \mu_4) \\ &= P(\mu_3 - \beta'X_i < \varepsilon_i \leq \mu_4 - \beta'X_i) \\ &= \Phi(\mu_4 - \beta'X_i) - \Phi(\mu_3 - \beta'X_i) \end{aligned}$$

$$(3.) \quad P(I = 5|X_i) = 1 - P(I^* \leq \mu_4) = 1 - \Phi(\mu_4 - \beta'X_i)$$

Where  $\Phi$  indicates the distribution function of the standard normal probability.

The model may be estimated through the maximum likelihood method. Given the probabilities defined in (3.), the likelihood function is provided by:

$$(4.) \quad L = \prod_{i=1}^N \prod_{j=1}^4 \{\Phi(\mu_j - \beta'X_i) - \Phi(\mu_{j-1} - \beta'X_i)\}^{Z_{ij}}$$

Where  $Z_{ij}$  is an indicator function of the type:

$$Z_{ij} = \begin{cases} 1, & \text{if } i \in j \\ 0, & \text{if } i \notin j \end{cases} \quad \text{to } i = 1, \dots, N \text{ and } j = 1, \dots, 4$$

Nonetheless, to facilitate the optimization process, we have opted to maximize the following function:

$$(5.) \quad L = \sum_{i=1}^N \sum_{j=1}^4 \{\Phi(\mu_j - \beta' X_i) - \Phi(\mu_{j-1} - \beta' X_i)\}^{Z_{ij}}$$

As long as  $X_i$  contains a constant limit, the parameters to be estimated are not identified. To overcome this problem, we use a normalization process in which we establish that  $\mu_1 = 0$ .

Tourists' global satisfaction with the Azores destination corresponds to variations of the partial indicators, allowing the formulation of political options, taking into consideration, namely, the relative value and the relevance of each one of the Region's attributes. It equally corresponds to variations in the characteristics of individuals and of the trip, something which, once again, allows the definition of policies to turn the Azores into an increasingly pleasant destination.

These variations may be obtained through the marginal effects, determined in the following manner:

$$(6.) \quad \begin{aligned} \frac{\partial P(I=1)}{\partial X_f} &= -[\phi(\mu_1 - \beta' X)]\beta_f \\ \frac{\partial P(I=2)}{\partial X_f} &= -[\phi(\mu_1 - \beta' X) - \phi(\mu_2 - \beta' X)]\beta_f \\ \frac{\partial P(I=3)}{\partial X_f} &= -[\phi(\mu_2 - \beta' X) - \phi(\mu_3 - \beta' X)]\beta_f \\ \frac{\partial P(I=4)}{\partial X_f} &= -[\phi(\mu_3 - \beta' X) - \phi(\mu_4 - \beta' X)]\beta_f \\ \frac{\partial P(I=5)}{\partial X_f} &= -[\phi(\mu_4 - \beta' X)]\beta_f \end{aligned}$$

Where  $\varphi$  indicates the standard normal density function.

In the case of artificial variables, the marginal effects may be determined through the following formula:

$$(7.) \quad \Delta = P(I = j|d = 1) - P(I = j|d = 0), \quad j = 1, \dots, 5$$

Which provides the marginal effect of the respective probability when the artificial variable changes from 0 to 1.

## 5.2 Hypothesis Tests

The hypothesis test for a number of variables (indicators) is relatively easy, and under some conditions, the values of the restricted likelihood function  $LogL_R$  and of the unrestricted likelihood function  $LogL_I$  allow a test of the likelihood ratio of the type:

$$(8.) \quad LRT = -2(LogL_R - LogL_I)$$

This function has a chi-square distribution with  $m$  degrees of freedom, with  $m$  corresponding to the number of restrictions imposed.

## 6. Empirical Framework and Hypotheses

As said before, in order to obtain the overall satisfaction of visitors from Northern Europe with the Azores as a destination, participants were asked about their overall satisfaction with the Azores, as a destination, based on rating scale ranging from 1 (Very Dissatisfied) to 5 (Very Satisfied). Under the methodological framework employed in this study, this question takes the role of a global indicator of satisfaction.

For the partial indicators of quality we used selected questions from part one of the inquiry. Among the several features, there are the satisfaction with the ratio between the quality and cost of air travelling, rent-a-car services, golf facilities, environmental quality, landscape, the

weather/climate, the beaches, the historical heritage, the hospitality, the tourist information, the taxi and bus services, the hotels, the restaurants, the bars and cafes, the shops, the nightlife and entertainment, the security, the cleanliness and the general attractions (whale watching, museum, etc.).

We expect this global indicator of satisfaction to correspond to variations in the partial indicators of quality. In other words, the global indicator of satisfaction is assumed as a weighted sum of the partial indicators.

In the regression analysis, the dependent (or to be explained) variable is the visitor's satisfaction with the global quality of the Azores destination. The independent (or explicative) variables are the partial indicators of satisfaction<sup>10</sup>.

Following the review on Oliveira & Pereira, 2008, and Santos et al., 2010, and the summary statistics presented previously, we can lay down some hypothesis on the results obtained under the empirical framework.

So, let us consider the case of the Nordic Tourists that declare that they are "Very Satisfied" or "Satisfied" with the Azores, as a destination.

Their response should have been influenced, the most, by high levels of satisfaction with the attributes presented in the following table of hypotheses:

Hypothesis	Attribute	Answer	Impact
1	Nature and Landscape	"Very Satisfied" or "Satisfied"	Highest Positive
2	Security	"Very Satisfied" or "Satisfied"	Highest Positive
3	Environmental Quality	"Very Satisfied" or "Satisfied"	Highest Positive
4	Cleanliness	"Very Satisfied" or "Satisfied"	Highest Positive
5	Hospitality	"Very Satisfied" or "Satisfied"	Highest Positive

**Table 4 - Table of hypotheses.**

<sup>10</sup> See Oliveira & Pereira, 2008, and Santos et al., 2010, for similar approaches.

The rating of the global satisfaction with the Azores destination may, nonetheless, vary according to some characteristics of the visitor, such as marital, age, gender and education. Therefore, with the aim of gathering this heterogeneity in the perception of the global satisfaction with the Azores destination, the regression also controls for the characteristics of the participants.

Following Oliveira & Pereira, 2008, and Santos et al., 2010, we can set two hypotheses based on the attributes of tourists and their satisfaction with the Azores:

- *Hypothesis 6.* Male tourists have a lower probability of answering that they are “Very Satisfied” or “Satisfied” with the Azores; and
- *Hypothesis 7.* Tourists with higher levels of education have a higher probability of answering that they are “Very Satisfied” or “Satisfied” with the Azores.

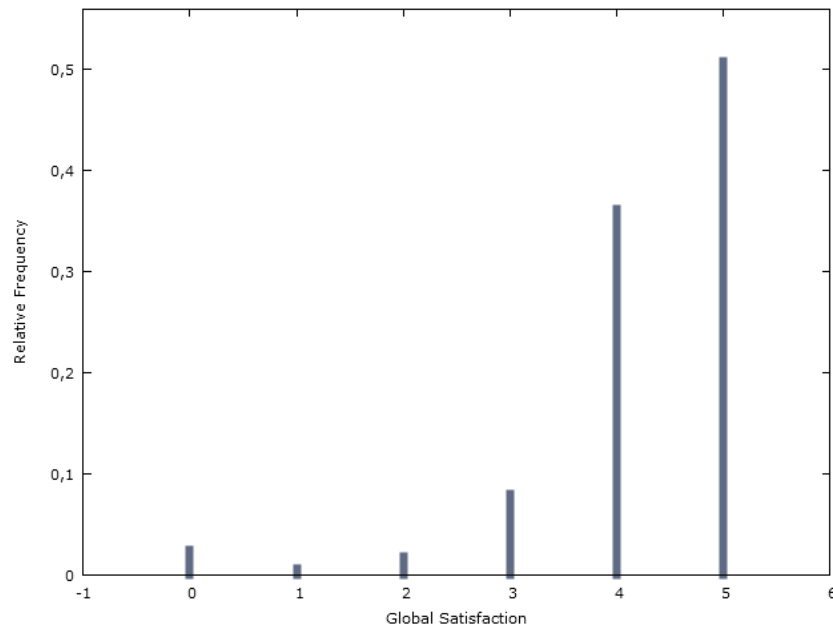
## **7. Regression Results**

This section attempts to analyse the variations in the global satisfaction of the Nordic tourist with the Azores as a destination, controlling for the attributes of the participants and the attributes of the archipelago.

As it can be seen in Chart 3, 0.67% of the participants responded being “Very Dissatisfied” with the Azores as a Tourism Destination, 1.84% as “Dissatisfied”, 8.03% were “More or Less Satisfied”, 36.12% were “Satisfied” and 50.84% were “Very Satisfied” (Missing values were 2.51% of the overall sample).

Thus, the global satisfaction with the Azores as a tourism destination is represented as a numerical indicator. Due to the small amount of replies given in the two lower levels of the scales (poor or adequate), these results were grouped in a single level along with the missing values.

Therefore, the new scale for global satisfaction indicator is 0 (“Very Dissatisfied/ Dissatisfied /Missing Value) to 3 (Very Satisfied).



**Chart 4 - Global Satisfaction of the Nordic Tourist with the Azores as a tourism destination (%).**  
**Scale: 1 (Very Dissatisfied) to 5 (Very Satisfied); 0 –Missing Value.**

As previously mentioned, the global satisfaction with the Azores destination may vary in accordance to some attributes of the visitor. In Table 5 this possible heterogeneity is captured by a regression analysis<sup>11</sup> (Ordered Probit).

Attributes	Coefficient	Standard Error	p-value
35<Age <54	0.0322329	0.178224	0.85648
Age 55+	0.143686	0.218583	0.51096
Not Self Employed	-0.104471	0.112062	0.35120
Retired	-0.28124	0.163996	0.08636 *
Male	-0.0830942	0.0946416	0.37995
Secondary Education	0.0494942	0.136613	0.71713
Higher Education	0.102674	0.109928	0.35030
Married	0.000765309	0.111515	0.99452
$\mu_1$	-1.64381	0.210299	<0.00001 ***
$\mu_2$	-1.12195	0.202551	<0.00001 ***
$\mu_3$	-0.011576	0.198888	0.95359

**Table 5 – Ordered Probit regression. Endogenous variable: Global Satisfaction. Exogenous Variables: Visitor's Attributes.**

<sup>11</sup> Nationality was not accounted for, because of collinearity problems.



Note: \* Significant at  $\alpha = 10\%$ ; \*\* Significant at  $\alpha = 5\%$ ; and \*\*\* Significant at  $\alpha = 1\%$ .

All coefficients, but one (Retired at  $\alpha = 10\%$ ), are not statistically significant. However, it is important to highlight some aspects.

Firstly, and from the eight attributes, three seem to increase the probability of a negative response regarding the responder's global satisfaction with the Azores. If the interviewee is either Retired (about -0.28), Not Being Self Employed (-0.10) or Male (-0.08), the probability of the answer not being "Very Satisfied" or "Satisfied" increases.

By contrast, a Higher Education (which includes not only undergraduate but also graduate degrees) and age above 55 increase the probability that the response will be either "Very Satisfied" or "Satisfied".

So, both Hypotheses 6 and 7 hold under these results.

Table 5 tries to capture the fact that the global quality indicator corresponds to the variations of the partial indicators. For this purpose, and in addition to the individual characteristics of the participants, some partial indicators related to the satisfaction with some of destination's attributes are also included.

Attributes	Coefficient	Standard Error	p-value
Quality/Price of Air Transport	0.0757801	0.11093	0.49452
Taxi Services	0.249331	0.1045	0.01704 **
Public Transports	-0.283217	0.113212	0.01236 **
Maritime Transport	-0.189857	0.13905	0.17213
Rent-a-Car Services	0.0255688	0.107777	0.81247
Mobility and Accesses	0.239389	0.106835	0.02504 **
Quality/Price of Hotels	0.287907	0.129043	0.02568 **
Quality/Price of Restaurants	0.0642384	0.127222	0.61361
Environmental Quality	0.289649	0.13691	0.03438 **
Nature and Landscape	0.293588	0.239404	0.22007
Cleanliness	0.0487804	0.139243	0.72609
Climate	0.351721	0.115646	0.00236 ***
Security	0.345119	0.153625	0.02467 **
Hospitality	-0.0858622	0.131733	0.51454
Gastronomy	0.202105	0.123218	0.10096
Beaches and Pools	0.125094	0.118865	0.29262
Sea Water Quality	0.132715	0.119872	0.26823
Knowledge of Foreign Languages	0.110697	0.109403	0.31162

Touristic Information	0.111335	0.11963	0.35203
Touristic Signaling	0.255513	0.115531	0.02699 **
Cultural Offering	0.071727	0.110646	0.51682
Pedestrianism	0.151277	0.109704	0.16791
Excursions	0.0594409	0.109723	0.58800
Cetaceans	0.155574	0.115733	0.17887
Birds	0.21258	0.179784	0.23704
Golf	-0.0546463	0.232186	0.81393
Other Sporting Activities	0.12443	0.159696	0.43588
Night Animation	-0.0413788	0.143729	0.77343
35<Age <54	0.0590947	0.192841	0.75927
Age 55+	0.406474	0.23921	0.08927 *
Not Self Employed	-0.0102335	0.119988	0.93203
Retired	-0.432589	0.175389	0.01365 **
Male	-0.157526	0.102768	0.12532
Secondary Education	0.0668869	0.143957	0.64220
Higher Education	0.0508074	0.11891	0.66918
Married	0.0150919	0.118658	0.89879
$\mu_1$	0.400335	0.313428	0.20150
$\mu_2$	1.04448	0.314755	0.00091 ***
$\mu_3$	2.39814	0.323859	<0.00001 ***

**Table 6 - Ordered Probit regression. Endogenous variable: Global Satisfaction. Exogenous Variables: Visitor's Attributes and Destination's Attributes.**

**Note:** \* Significant at  $\alpha = 10\%$ ; \*\* Significant at  $\alpha = 5\%$ ; and \*\*\* Significant at  $\alpha = 1\%$ .

Taxi Services, Public Transports, Mobility and Accesses, Quality/Price of Hotels, Environmental Quality, Climate, Security and Knowledge of Foreign Languages are the only variables considered significant, at specific significance levels.

From the list of attributes pertaining to the Azores, as a touristic destination, low levels of satisfaction with Public Transports, Maritime Transport, Hospitality, Golf and Night Animation decrease the probability with that the respondent would answer that he was “Very Satisfied” or “Satisfied”. Under this context, hypothesis 5 does not hold.

In the other hand, Climate, Security, Nature and Landscape, Environmental Quality and the ratio between Quality and Price of regional Hotels are the Top 5 features, to which higher levels of satisfaction contribute to a higher probability that the interviewee would respond as being “Very Satisfied” or “Satisfied” with the Azores as a destination.

Therefore, hypotheses 1 to 3 hold, while hypothesis 4 falls. The coefficient on Cleanliness turns out to be a small positive, so higher levels of satisfaction with this attribute have a small contribution to the probability that a tourist will answer that he was “Very Satisfied” or “Satisfied” with the Azores, as destination.

As for the characteristics of the participants, and when control for the destination’s attributes is introduced, changes are noted in the coefficients when compared to the previous model. Nonetheless, the conclusions remain valid. Overall, if the interviewee was either Retired, Not Self Employed or Male, the probability of him responding that he is “Very Satisfied” or “Satisfied” decreases. A note should be made to the observation that, in this model, the probability of Not Being Self Employed increases towards a “Very Satisfied” or “Satisfied” answer, but the value still shows a negative tendency.

In the other hand, a Higher Education and age above 55 increase the probability that the response will be either “Very Satisfied” or “Satisfied”. Comparatively with the model that only accounted for the attributes of visitors, Higher Education now features a lower coefficient, which indicates that the probability of the respondent answering either “Very Satisfied” or “Satisfied” is now lower. Age above 55, though, now yields a larger contribution to the probability of the surveyed reporting being “Very Satisfied” or “Satisfied” with the Azores, as a destination.

## **8. Conclusions**

As it is well known, the European Outermost Regions have few opportunities to diversify their economic base and their economies, overall, depend on exports. Although the Azores have, historically, reported lower levels of unemployment than its French and Spanish counterparts, its economy still lingers in problems related to a narrow basket of economic activities and exports. Under this context, Tourism has been regarded as a sector that can contribute to the development and growth of the Azores and, thus, is of high strategic significance.

This appears to be an adequate strategy as a major growth in tourism is expected worldwide. Nonetheless, this is a very competitive industry in which new destinations appear every year and others increase their market strength. Destinations are compared to each other, and expected satisfaction is an important factor in the consumer’s choice. Therefore, quality has to be

promoted, as to increase global satisfaction, and must always be present within the scope of any strategy that aims at being successful.

In accordance with the national strategy for Tourism, Northern European markets are regarded as strategic for the Azores. Therefore, policies must be oriented to prepare the Region and its touristic agents to successfully cater to the northern visitor's expectations.

Effective policies require information, which is normally drawn from technical support, based on strict and elaborate studies that use state-of-the-art methods. This study aims to aid policy orientation by evaluating the Satisfaction of the Nordic Tourist with the Azores as a Destination, based on recent data gathered by inquiries.

According to this study's findings:

- 86.96% of those interviewed responded that they were, globally, "Very Satisfied" or "Satisfied" with Azores as a touristic destination;
- Tourists with undergraduate or graduate degrees or aged above 55 were the most probable to respond as being "Very Satisfied" or "Satisfied";
- Retired, Not Self Employed or Male Tourists had the lowest probability of responding as being "Very Satisfied" or "Satisfied";
- Public Transports, Maritime Transport, Hospitality, Golf and Night Animation decreased the probability that the visitor would answer that he was "Very Satisfied" or "Satisfied". All of these should be improved in the future, in order to consolidate the Azores as a appealing destination to visitors from Northern Europe; and
- Higher levels of satisfaction with Climate, Security, Nature and Landscape, Environmental Quality and the Quality/Price of regional Hotels contribute to a higher probability that the interviewee would respond as being "Very Satisfied" or "Satisfied" with the Azores as a destination. In respect to Security, Environmental Quality and the Quality/Price of Hotels, it is reasonable to say that governmental policies that promoted security, the protection of the environmental riches of the archipelago and qualified private investments in Hotels and similar venues were successful, from a tourism oriented point of view. However this is not to say that these policies lost their strategic alignment.

Transport quality and efficiency is an ongoing process in the Azores. Pertaining to Night Animation, recent investments may have increased the levels of quality, but that remains to be seen.

However, Golf is an important matter to the Region.

In later years, the golf industry experienced a strong growth. In mainland Portugal, Golf enjoys an excellent international standing, is known to have a high economic impact and also contributes to decrease the seasonal impact of touristic flow. In Algarve, Golf generates around 337 million euros per year and golfers are known to spend, on average, much more per capita than other tourists, with 74% of revenue spent outside golf courses<sup>12</sup>.

The Azores have an established tradition in Golf. For example, Furnas Golf Course (among the oldest and most beautiful courses in Portugal) was open in 1936 and Batalha Golf Course boasts recent and modern installations. But as we have seen in the results obtained from the Ordered Probit model, Golf is not a well liked characteristic of the Azores. Therefore, and given the importance of Golf, public and private entities should debate a regional strategy to enhance the competitiveness of this industry, based on the lessons taken from other Portuguese regions<sup>13</sup> and according to the Azores own features of natural sustainability and heritage.

Overall, the results of the regression analysis also show that the global indicators of the satisfaction with the Azores as a tourism destination vary with the characteristics of the individuals (heterogeneity) and correspond to variations in some of the partial indicators of satisfaction.

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<sup>12</sup> See, for example, Barros, C.P. et al., 2007, and, Barros, C.P. et al., 2010.

<sup>13</sup> See Barros, C.P. et al., 2007, and, Barros, C.P. et al., 2010 for some of the features of golfers coming to Algarve.

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