The Impacts of Sport Tourism Events: The Red Bull Cliff Diving World Series Case in the Azores Islands

Melissa Avelar¹, Áurea Sousa², and António Menezes²(✉)

¹ University of the Azores, Ponta Delgada, Portugal
² University of the Azores and CEEApIA, Ponta Delgada, Portugal
antonio.jv.menezes@uac.pt

Abstract. Governments sponsor sports events as a way of developing, promoting, and combating the seasonality of a tourist destination, in order to enhance the image of a tourism destination. This study analyzes the impacts stemming from the realization of sport tourism events, focusing on the case of the world famous and spectacular Red Bull Cliff Diving World Series event in the Azores. The primary objective of this research is to assess the main economic impacts of this event, its importance for regional development, the perceptions of respondents, and the levels of satisfaction with it – both in a global sense and for several dimensions of the event – using a novel primary dataset, with individual survey data. The results support the idea that this event has important economic impacts and suggest that most participants are generally satisfied, although some aspects that could be improved have been identified. Most respondents consider this event to be important for tourism and economic development, and a large proportion consider it important for the social development and cultural development of the region in which it takes place.

Keywords: Tourism sports events · Tourism events impacts · Tourism destination marketing and planning · Red Bull Cliff Diving · Azores

1 Introduction

Alberti and Giusti (2012, p. 264) argue that: “Tourism is the second most important global sector, after financial services, and one of the fastest growing service industry for many economies in the world”. According to Getz (2008) and Getz and Page (2016), tourism events, including sports tourism events, in which tourists participate as practitioners or spectators, are an important driver of tourism growth, and are of increasing importance for the competitiveness of most tourism destinations. This is the case of the Azores Islands, a Portuguese archipelago of 9 volcanic, pristine islands, in the middle of the North Atlantic, were tourism is the leading avenue in the foreseeable future for the creation of wealth, employment and the promotion of social inclusion and territorial cohesion in this Region. It should also be noted that: “The Azores has been granted several awards and international appraisals regarding sustainable development and sustainable tourism. Some of these awards come from prestigious international institutions, such as UNESCO, National Geographic Traveller, QualityCoast, ...
The promotion of the tourism sector results from several investments, including the hosting of tourism-sports nature events held in the Azores, such as the Red Bull Cliff Diving World Series, which, in 2018, took place for the seventh consecutive year in the island of São Miguel. The Azores Islands are undoubtedly uncannily well-suited to host sports tourism events where nature and sea provide for a natural and dramatic backdrop. In fact, several spectacular sports events are held in the Azores and are related to surfing, car racing, trial-running, inter alia sports modalities. Given the potential for tourism promotion that this event presents, on a global scale, due to the brand power of Red Bull and what it stands for in the radical global sports world, on the one hand, and the fact that this event is the recipient of public funds, on the other, the study of its (multi-dimensional) impacts is justified and much warranted. In fact, given the existence of public funding for sports tourism events in the Azores by the Azorean Government, it is important to measure the return of these events.

According to Higham and Hinch (2018): “The phenomenon of sport-related tourism and the implications of these activities for people and places, justify targeted scholarly attention. Theoretical and empirical research offers the opportunity to examine untested assumptions, develop understanding of complex relationships and processes, and influence outcomes resulting from the interplay of sport and tourism”. In this context, the present paper contributes to the literature on the impacts of tourism events to tourism destinations, using a novel dataset of primary data, via individual surveys. In particular, this study assesses the main economic impacts that the Red Bull Cliff Diving World Series produces in the Azores, more specifically, in the place where the event takes place, the São Miguel Island, and the levels of satisfaction among tourists with the event in general and in relation to its different aspects, trying to assess aspects that can be improved in future editions of this event.

According to Sousa et al. (2017, p. 768), the knowledge related to the perceptions of locals and visitors, regarding sporting events, can be useful in terms of future planning of other editions of the same event or other events of the kind, in order to make them more attractive and integrate them in the sustainable tourism development of a region.

The remainder of the paper is organized as follows. Section 2 presents a literature review with an emphasis on how tourism sports events impact local communities and contribute to the image of a region as a tourism destination. Section 3 presents the methodological procedures. In Sect. 4, the main results obtained based on various statistical methods are presented and discussed, including summary statistics, non-parametric hypothesis tests (namely, Mann-Whitney U test and Kruskal-Wallis test), and Cluster Analysis. Finally, Sect. 5 presents the main conclusions, limitations of the study and some recommendations regarding future studies.

2 Impacts of Sports Tourism Events

According to Greenwell et al. (2020): “Sport tourism has become a global phenomenon and an increasingly important topic of study in the field of sport management”. Sports tourism is a rapidly expanding part of the international tourism sector. As Higham and
Hinch (2018) argue: “Heritage and culture contribute to making tourism destinations unique. Sport and sports venues may represent a unique expression of the heritage of place.” Within sports tourism development strategies, hosting sports tourism events has been one of the leading strategies used to promote notoriety and visibility of tourism destinations and/or to mitigate demand seasonality patterns afflicting certain tourism destinations (Alexandris and Kaplanidou 2014; Connell et al. 2015). Governments typically support and promote events as part of their broad economic development strategies, but also as a part of their cultural and tourism strategies. Events are an important tool to attract visitors and build an image within different communities.

According to Greenwell et al. (2020): “The integration of sport and tourism means event planners must be capable of collaborating with a network of different organizations or actors.” Following the same authors, these sport event networks may comprise, for instance, tourist attractions, rental companies, airlines, sport venues, accommodation providers (e.g., hotels), local business, media, and sponsors, between other stakeholders. To understand the interactions between events and tourism, including the role and responsibilities of the government sector, of the private sector and of society at large, it is important to note that these interactions are fluid and have changed substantially over the last decade. In fact, events impact stakeholders and the host populations in a variety of ways, with social, cultural, physical, environmental, political, and economic implications, with the effects being both positive and negative (Raj et al. 2013). Small (2007) identified six types of social impacts that can be considered, when analyzing social impacts that result from the organization of an event: inconvenience; community identity and cohesion; personal frustration; entertainment and socialization opportunities; community growth and development; and behavioral consequences.

The multiplier calculations are a commonly used method to assess the economic impacts of the events, capturing the direct and indirect expenses associated with the events, calculating the money spent by the participants due to participation in the event itself and the extra expenses in the economy that are facilitated by this initial injection. The fact that the participants of this event spend their money thus generating additional expenses, is recognized as a multiplier effect, which can be used to demonstrate the impact of an event’s expenses on the local economy (Bladen et al. 2012). However, there is a “potential conflict between economic and cultural interests, and culture ends up being sacrificed in favor of promoting tourism, that is, the creation of additional economic values at the price of the loss of cultural value. (...) On a social level, well-organized tourism can favor contacts between tourists and the local population, stimulate cultural exchange, lead to friendly and responsible interaction and, finally, increase connections between countries.” (Marujo 2014).

Concerning environmental impacts, Getz (2010) states that these are related to: changes in ecological systems and the physical environment as a result of festivals and events; in energy and carbon consumption of travel related to events; in water production and evasion; in air, water and land pollution; effects on wildlife and habitat; reducing, recycling and reusing materials, buildings and sites. Getz and Page (2016) offer an extensive review of events and their impacts on the tourism global scene and literature.
About the social impacts, “it is a fact that many types of events held in countries, regions, or localities (with regional, national or international scope) can promote tourism and generate development. That is why many marketing organizations and communities are increasingly involved in planning, organizing and promoting events such as tourist attractions.” (Marujo 2014). Furthermore, the events figure prominently in the development and marketing plans of most destinations (Getz 2008). Therefore, it is important to bet on the quality of events in general, and of sport in particular.

Islands in general, and those of the Azores in particular, are, by their nature, considered excellent places for events of high economic value, which are essential for sustainable tourism development. Consequently, sporting events held on the islands can be considered as powerful attractions, providing good opportunities for the regeneration of old-fashioned tourist destinations and for the development of high-value products for modern tourists (Lim and Patterson 2008).

3 Methodology

In this study, we use primary data obtained from micro-individual surveys gathered during the Red Bull Cliff Diving World Series 2018, held in the locality of Vila Franca do Campo, in the Island of São Miguel. The surveys were filled during the event. To the best of our knowledge, this is the first study of such a high-profile event, in particular the Red Bull Cliff Diving World Series.

The sample used consists of 164 individuals (44.5% female and 55.5% male), the majority aged 35 years or less (64.6%) and with Portuguese nationality (65.6%), who participated in the Red Bull Cliff Diving event, held in the Azores (Portugal), in 2018. As for the role of the individuals surveyed regarding this event, it was found that the majority (71.3%) was attending the event (spectator role), 0.6% of respondents were members of the sports teams participating in the event, 15.9% were staff members, 1.8% belonged to the press and 10.4% in the “other” category.

The questionnaire used, which can be found in Avelar (2019), contains same sociodemographic variables (e.g., gender, age level, civil status, schooling level, nationality, Azorean ascendancy) and some questions regarding the participation in the event. It is worth mentioning the inclusion of a set of six questions that aimed to assess daily expenses per person (in Euros), related to the participation in the event, considering the following expense categories: “Accommodation”; “Cafes and bars”; “Commerce and handcrafts”; “At the event site”; “Restaurants”; and “Land transportation”, for which respondents indicated the range of values corresponding to daily expenses incurred per person. The questionnaire also contains a question regarding the expense incurred with airline tickets (return tickets). It is also worth mentioning the consideration of a group of nine questions that aim to assess the levels of satisfaction regarding the following aspects of the event, among others: “Access to the place”; “Assistance”; Performance of athletes, “Parking”; “Schedule”; “Information available”; “Cleanliness”; Organization; and “Security”. The responses for each of these questions are on an ordinal scale, from 1 to 5 (1-Not satisfied, 2-Not very satisfied/somewhat dissatisfied, 3-Indifferent, 4-Satisfied, 5-Very satisfied). Thus, the total scores (sum of the scores of the items) obtained on this scale allow to evaluate the overall satisfaction.
with the event, and vary between 9 and 45, with 27 being the respective midpoint. According to the value (0.879) obtained for the Cronbach’s alpha coefficient (e.g., Cronbach 1951; Gliem and Gliem 2003), the items on this scale have a good internal consistency.

The questionnaire also contains questions that aim to evaluate the main impacts (environmental, cultural, economic, social, touristic) that this event has as per the perception of the respondents. Moreover, the questionnaires were distributed and collected both in the city of Ponta Delgada and also in Vila Franca do Campo, and it should be noted that the respondents were informed about the research objectives in question and that their participation was voluntary.

The research hypotheses to be evaluated are as follows: H1: The overall satisfaction with the event varies depending on certain individual sociodemographic characteristics; H2: Overall individual satisfaction with the event varies depending on whether individuals have planned to attend the event as part of their vacation; H3: The satisfaction levels concerning some aspects of the event varies depending on certain individual sociodemographic characteristics; H4: The satisfaction levels concerning some aspects of the event varies depending on other individual characteristics (“Is this your first time coming to Red Bull Cliff Diving? (No, yes); “Are you participating in the event alone? (No, Yes)”).

Due to the particularities of the Red Bull Cliff Diving (the event took place outdoors and the access was free), the collected data does not constitute a truly random sample, which makes statistical inference not recommended. However, we believe that the sample obtained is representative due to the fact that the event occurred in the islet of Vila Franca do Campo, in the middle of the sea (in this conditions the sample size was considerable). Thereby, although the results of some hypothesis tests are commented, we chose not to present the respective p-values.

The data were analyzed based on several statistical methods, namely: descriptive statistics; non-parametric hypothesis tests (namely, Mann-Whitney U test and Kruskal-Wallis test); algorithms for Ascendant Hierarchical Cluster Analysis (AHCA), within the scope of Cluster Analysis; the k-means method (non-hierarchical method), also in the context of Cluster Analysis. The use of the Mann-Whitney U test was due to the failure to verify the assumption of normality of the total scores obtained. For this purpose, the variables “Age”, “Schooling”, “Nationality” and “Civil status” were re-coded in two categories, which will be mentioned in the results section.

According to Bacelar-Nicolau et al. (2014, p. 435): “Cluster analysis or classification usually concerns exploratory multivariate data analysis methods and techniques for grouping either a set of statistical data units (individuals, cases, ...) or an associated set of descriptive variables, into clusters of similar elements, hopefully homogenous and well separated”. Here we applied the k-means method in order to obtain a partition of the respondents. Moreover, we used algorithms of AHCA in order to obtain a typology of the set of items on the scale that assesses satisfaction with the event.
4 Main Results

4.1 Analysis of Expenditure

Table 1 shows the values of summary statistics related to the different expense items with the event, in euros (€).

Table 1. Values of the average, standard deviation (SD) and coefficient of variation (CV) referring to daily expenses incurred by non-residents, per person (euros).

| Item                  | Mean  | SD   | CV  |
|-----------------------|-------|------|-----|
| Accommodation         | 102.22 € | 50.97 € | 50% |
| Cafe and bars         | 11.47 €  | 7.99 €  | 70% |
| Commerce and handcrafts | 13.14 €  | 6.87 €  | 52% |
| At the event site     | 23.14 €  | 15.55 € | 67% |
| Restaurants           | 34.25 €  | 14.84 € | 43% |
| Land transportation   | 16.15 €  | 8.43 €  | 52% |

Considering the values presented in Table 1, we can see, for example, that non-resident respondents, who had to resort to hotel establishments/residences, spent on average €102.22 per night, with a standard deviation of €50.97. With regard to the variable “Restaurants”, respondents with expenses in this item spent an average of €34.25 per person and per day, this being the item where there was less relative variability in terms of expenses incurred. Non-resident participants in São Miguel had an average daily expense, per person, of €200.37 with regard to accommodation expenses; cafes and bars; trade and crafts; at the event site; restaurants and land transportation. Visitors who had airfare expenses spent an average of €263.42 per person on Air Transportation (roundtrip), with a standard deviation of €155.98.

4.2 Analysis of Satisfaction with the Event

For a better systematization of the results obtained, this subsection is divided in two parts: the analysis of the total scores of this scale (sum of the scores obtained in the 9 items, as referred to in Sect. 3) and the item-by-item analysis, in which each of the scale items is considered separately.

Analysis of Satisfaction with the Event Based on the Total Scores Using the Original Scale

The mean (38.30), median (38.00), and mode (45) values of the total scores obtained on the scale that assess satisfaction with the event are all higher than the midpoint (27) of the scale variation range (from 9 to 45), so we can consider that respondents are generally satisfied with the event.

Figure 1 shows the distribution of respondents according to the answers given to the question: “Would you recommend the event to a friend and/or family member?”
The majority (79%) of the respondents would probably or most likely recommend the event to a friend and/or family member, with about 46% doing so with a high probability. Incidentally, 47.6% of respondents, of the sample used in the present study, had already witnessed at least one previous version of the event.

In order to validate Hypothesis H1 that the overall satisfaction with the event varies according to certain individual sociodemographic characteristics, we started by calculating the values of the mean and standard deviation of the total scores obtained on the scale, according to some sociodemographic variables (Table 2).

### Table 2. Values of the mean, standard deviation (SD) and coefficient of variation (CV) of the total scores obtained according to some sociodemographic variables.

| Variables                  | Categories                      | Mean  | SD  | CV  |
|----------------------------|---------------------------------|-------|-----|-----|
| Gender                     | Female                          | 38,11 | 5,29| 0,14|
|                            | Male                            | 38,45 | 2,98| 0,08|
| Age                        | 35 years or less                | 37,46 | 6,07| 0,16|
|                            | 36 years or more                | 39,83 | 4,51| 0,11|
| Civil status               | Single                          | 37,33 | 6,34| 0,17|
|                            | Not single                      | 39,37 | 4,63| 0,12|
| Schooling level            | Without University Degree       | 38,48 | 5,47| 0,14|
|                            | With University Degree          | 38,12 | 5,89| 0,15|
| Nationality                | Portuguese                      | 37,70 | 6,16| 0,16|
|                            | Foreign                         | 39,49 | 4,37| 0,11|
| Azorean                    | No                              | 39,15 | 4,57| 0,12|
|                            | Yes                             | 37,38 | 6,56| 0,18|
| Did you plan to attend the event as part of your holiday? | No | 37,90 | 5,22| 0,14|
|                            | Yes                             | 38,30 | 6,58| 0,17|

**Fig. 1.** Distribution of respondents, per intent of recommending the event to Family and Friends.
From the results presented in Table 2, it is possible to conclude that the mean values of the total scores obtained on this scale are higher in the case of respondents aged 36 or older, compared to the others; in the case of “Non Singles”, compared to “Singles”; in the case of foreigners, compared to the Portuguese; and in the case of those who do not have “Azorean ancestry”, compared to the others.

The Mann-Whitney U test was applied to compare the total scores obtained on the scale that evaluates satisfaction with the event between the groups of individuals defined by the categories of the variables included in Table 2. Table 3 contains the results related to the application of this test, presenting only the cases in which the observed differences were statistically significant (p < 0.05).

**Table 3.** Mann-Whitney U test; Dependent variable: Total score in the scale.

| Independent variables                  | Category | MR  | U            |
|----------------------------------------|---------|-----|--------------|
| Age                                    | 35 years or less | 75,54| 2336,500*    |
|                                        | 36 years or more | 95,22|              |
| Civil Status                           | Single  | 74,80| 2691,500*    |
|                                        | Not-Single | 90,99|              |
| Did you plan to attend the event as part of your holiday? | No | 77,62| 2256,500*    |
|                                        | Yes     | 93,95|              |

*p < 0.05

Significant differences were found only between individuals of the two age groups (“35 years or less” and “36 years or more”); between singles and other individuals; and among those who planned to participate in the event, as part of their vacation, and the rest, with the mean of the ranks ((mean ranks (MR)) being higher in the case of older people, non-singles and those who planned their participation in the event, as part of their vacation, as shown in Table 3. Hence, we confirm our hypothesis H1, concluding that the overall satisfaction with the event varies according to age and marital status, which are considered sociodemographic variables; and we also validate the H2 hypothesis.

According to the Kruskal-Wallis test, no significant differences were found between respondents who fall into the categories “Spectator”, “Team member”, “Staff member”, “Press” and “Other” with regard to total scores obtained on the scale that evaluates the event (H = 6.168, p > 0.05).

In order to find groups of individuals with different levels of global satisfaction in relation to this event, the k-means method (MacQueen 1967) was applied, within the scope of Cluster Analysis, considering a partition of the individuals into three clusters, in order to maximize the differences between these groups with respect to the total scores obtained on the scale that evaluates satisfaction with the event. The percentages of respondents included in each of the clusters (Cluster 1, Cluster 2, Cluster 3) are, respectively, 1.22% (corresponding to 2 individuals); 45.73% (corresponding to 75 individuals) and 53.05% (corresponding to 87 individuals) to which different tourist profiles correspond. Cluster 1 contains only 2 individuals, the only ones who expressed dissatisfaction with the event, who obtained an average total score (14.00), below the
midpoint of the scale variation range, and which can be considered as an “exception to the rule”. Cluster 2 includes individuals who showed higher levels of satisfaction with the event (mean = 43.19; standard deviation = 5.657). Finally, Cluster 3 includes individuals who were satisfied (but not as much as those in Cluster 2) with the event (mean = 34.64; standard deviation = 2.980). The main sociodemographic characteristics of the tourists included in each of the clusters are summarized in Table 4.

Table 4. Clusters regarding items used to evaluate the event.

| Items                        | More satisfied | Satisfied |
|------------------------------|----------------|-----------|
|                              | Cluster 2      | Cluster 3 |
| Gender                       |                |           |
| Female                       | 44,0%          | 46,0%     |
| Male                         | 56,0%          | 54,0%     |
| Age                          |                |           |
| 35 years or less             | 56,0%          | 71,3%     |
| 36 years or more             | 44,0%          | 28,7%     |
| Civil Status                 |                |           |
| Single                       | 44,0%          | 58,6%     |
| Not single                   | 56,0%          | 41,4%     |
| Schooling                    |                |           |
| W/o Univ. Degree             | 45,3%          | 52,9%     |
| With Univ. Degree            | 54,7%          | 47,1%     |
| Nationality                  |                |           |
| Portuguese                   | 60,0%          | 71,3%     |
| Foreign                      | 40,0%          | 28,7%     |
| Azorean ascendancy           |                |           |
| No                           | 60,0%          | 46,0%     |
| Yes                          | 40,0%          | 54,0%     |
| First time in Red Bull Cliff Diving? | | |
| No                           | 41,3%          | 54,0%     |
| Yes                          | 58,7%          | 46,0%     |
| Taking part by yourself?     |                |           |
| No                           | 77,3%          | 75,9%     |
| Yes                          | 22,7%          | 24,1%     |

The results presented in Table 4 allow us to conclude that Cluster 2, which includes those most satisfied with the event, has, compared to Cluster 3, a higher proportion of individuals aged 36 years or over (44.0% versus 28.7%), people who are not single (56.0% versus 41.44%), with higher education (54.7% versus 47.1%), without Azorean descent (60.0% versus 46%) and individuals who first came to the Red Bull Cliff Diving event (58.7% versus 46%).

With regard to Cluster 3, it should be noted that the majority are in the age group of “35 years or less” (71.3%), are single (58.6%), do not have higher education (52.9%), has Azorean ancestry (54.0%) and did not come to the Red Bull Cliff Diving event (54.0%) for the first time.

Analysis Item by Item
Figure 2 shows the values of the median and mode of the responses given to each of the 9 scale items.
The median and mode values, relative to each of the items on the scale that evaluates satisfaction, reveal great satisfaction on the part of the respondents with regard to the event, since the values of these statistics varied between 4 (Satisfied) and 5 (Very satisfied), as shown in Fig. 2. The distribution of respondents, according to the levels of satisfaction for each of the items (%) of the scale is shown in Fig. 3.

Considering the “Very Satisfied” level, the highest percentage (70.1%) is that which refers to the “Athletes’ Performance” level. Regarding the “Indifferent” level, the highest percentage (9.8%) refers to “Parking”, which corresponds to the fact that part of the respondents leaves by boat from the Ponta Delgada marina to the islet of Vila Franca do Campo. The answer “Little Satisfied” had a higher incidence (16.5%) in the

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**Fig. 2.** Median and mode values of each item of the scale.

**Fig. 3.** Distribution of respondents, according to the degree of satisfaction for each of the items (%).
case of the evaluation of the item “Parking”, given the size of the available parking lot. It should also be noted that 5.5% saw themselves as “Nothing Satisfied” in this regard, as can be seen from the results shown in Fig. 3.

The Mann-Whitney U test was applied in order to compare the responses given to each of the items on the scale that assesses satisfaction with the event between the groups of individuals defined by the categories of the variables “Gender”, “Age level” (35 years or less, 36 years or more), “Civil Status” (Single, Not single), “Has Azorean ancestry” (No, Yes), “Schooling” (Without Higher Education, With Higher Education), “Nationality” (Portuguese, Foreign), “Is this your first time coming to Red Bull Cliff Diving?” (No, Yes) and “Are you participating in the event alone?” (No, Yes). Next, we will refer only to situations in which the observed differences were statistically significant, considering a significance level of 0.05.

Significant differences were found between individuals of the two age groups (“35 years or less” and “36 years or more”) with regard to levels of satisfaction with “Access to the Site”; “Schedule”; “Available Information”; “Cleanliness” and “Safety”, with the highest values of MR for individuals aged 36 years or more, as shown in Table 5.

Table 5. Results of satisfaction levels, regarding items of the event, for “Age”.

| Age                  | Access to the site | Schedule | Available information | Cleanliness | Safety |
|----------------------|--------------------|----------|-----------------------|-------------|--------|
| 35 years or less     | 77,60              | 76,13    | 77,34                 | 76,47       | 77,51  |
| 36 years or more     | 91,46              | 94,14    | 91,92                 | 93,52       | 91,62  |

|                           | MR     | U          |
|---------------------------|--------|------------|
| Access to the site        | 2554,500* | 2399,000* |
| Schedule                  | 2527,500* | 2435,000* |
| Available information     | 2545,000* | 2728,000* |
| Cleanliness               | 2554,000* | 2728,000* |
| Safety                    | 2554,000* | 2728,000* |

* p < 0.05

Statistically significant differences were found between singles and other individuals in terms of satisfaction levels with “Access to the Place” and “Schedule” (p < 0.05), with the highest levels of satisfaction in the case of those who they are not singles (see Table 6).

Table 6. Results of satisfaction levels, regarding items of the event, for “Civil Status”.

| Civil Status | Access to the site | Schedule |
|--------------|--------------------|----------|
|              | MR                 | U        |
| Single       | 73,53              | 2583,000*|
| Not-single   | 92,38              |          |
| Single       | 75,22              | 2728,000*|
| Not-single   | 90,53              |          |

* p < 0.05
Statistically significant differences were found between Portuguese and foreigners in terms of satisfaction levels with “Access to the Site”; “Assistance” and “Schedule”, with greater satisfaction on the part of foreigners with regard to these aspects, as can be seen from the results presented in Table 7. Thus, we validate our hypothesis H3 (the satisfaction levels concerning some aspects of the event varies depending on certain individual sociodemographic characteristics).

Statistically significant differences were found between those who participated alone and the others only in terms of satisfaction levels with “Security” (U = 1978.500; p < 0.05), with the highest levels of satisfaction in the case of those who they were not participating alone in this event (No: MR = 86.17; Yes: MR = 70.73). Thus, H4 is partially validated. With regard to the different categories of satisfaction, the application of the Kruskal-Wallis test allowed us to conclude that there are no statistically significant differences (p > 0.05) between the groups defined by the categories of variable “What is your role regarding the event Red Bull Cliff Diving?”.

The AHCA was performed on the data matrix that contains the respondents’ answers for each of the items on the scale that assesses satisfaction with the event, in order to look for a typology of these items. Given the ordinal nature of the items that assess satisfaction with the event, Spearman’s correlation coefficient was used as a comparison coefficient between elements (in this case, scale items) which was combined with three classic aggregation criteria, namely Average Linkage, Single Linkage and Complete Linkage (Anderberg 1973).

The dendrograms provided by the applied methods provided at level 5 (the best cut-off level) the same partition into four clusters, taking into account the values of the fusion coefficient (relative variation) and the observation of the obtained dendrograms: C1: \{3, 7, 8, 9\}; C2: \{6\}; C3: \{1, 2\}; and C4: \{4, 5\}. Cluster C1 includes items 3 (Athletes’ performance), 7 (Cleanliness), 8 (Organization) and 9 (Security). Cluster C2 includes only item 6 (Information available). Cluster C3 includes items 1 (Access to the place) and 2 (Assistance). Finally, Cluster C4 contains items 5 (Parking) and 5 (time) of the scale that assesses satisfaction with the event. Figure 4 shows the dendrogram obtained by the Average Linkage method.

In all dendrograms, there is a high proximity between items 8 (Organization) and 9 (Security), which means that the responses related to these items tended to be relatively similar (the higher the evaluation of one of them was, higher tended to be the evaluation of the other item). This high proximity can be observed also from Fig. 3.

**Table 7.** Results of satisfaction levels, regarding items of the event, for “Nationality”.

| Item                  | Nationality | MR   | U     |
|-----------------------|-------------|------|-------|
| Access to the site    | Portuguese  | 77.06| 2405.000* |
|                       | Foreign     | 93.27|       |
| Assistance            | Portuguese  | 77.24| 2424.000* |
|                       | Foreign     | 92.93|       |
| Schedule              | Portuguese  | 77.64| 2468.000* |
|                       | Foreign     | 92.13|       |

* p < 0.05
Most respondents consider the Red Bull Cliff Diving event to be important for tourism development (79.3%) and for economic development (57.3%). It should also be noted that 39.0% of the individuals in the sample consider this event to be important for social development and 32.3% for cultural development. Only 17.1% of respondents considered that this event is important for environmental development. In this sense, it should be noted that given the television broadcasts and online dissemination, the audience for which this event is intended is very wide, being dispersed in several countries, hence it can have a considerable impact at the tourism level. In this context, according to Tiago et al. (2017), the increased interaction on social networks, before, during and after an event enriches it. According to Tiago et al. (2016), in order to make the fans’ experience perfect in the media, entities need to meet the fans’ point of view, considering the values they represent and producing content that reflects those same values, monetizing social media, in order to increase the levels of satisfaction. According to the same authors, sports companies need to think like fans, assessing the value they give and creating content that reflects those values, in order to make the fan experience perfect in the media.

4.3 Impacts of Red Bull Cliff Diving on Respondents’ Perceptions

Fig. 4. Dendrogram obtained by Average Linkage method
According to Bladen et al. (2012), given the diversity of studies on the aspects that affect the impacts on tourism, it is not possible to use the result of a study in a specific location as the basis for a general conclusion. There are several factors that influence social impacts and similar factors may have different responses in different locations. The reason for this diversity lies in the groups of people who form communities in specific places that have developed lifestyles, factors that will influence their attitudes towards tourism. Sharpley and Stone (2012) consider socio-cultural impacts as the simplest way to label this broad category, although they have pointed out that the social effects on people’s daily lives and cultural impacts are related to beliefs, values, norms and traditions groups.

5 Conclusions

The non-resident participants in São Miguel had an average daily expense, per person, of €200.37, considering the expenses with “accommodation”, “cafes and bars”, “commerce and handicrafts”, “at the event site”; “Restaurants” and “land transport”, having also spent an average of around 263,422 euros per person, with “air transport”. Respondents are generally satisfied with the event, and the majority claimed that they would recommend, probably or very likely, the event to a friend and/or family member. As a point of improvement for the future organizations of the event, we advise some improvements in terms of the existence of places to park, of the schedule (being able, in this way, to potentiate the economic impacts with respect to the headings “coffee and bars”; “commerce and crafts” and restaurants, as the event took place from 11 am to 1:45 pm) and the information available.

Overall satisfaction with the event varied according to the age and marital status of the participants, and it should be noted that the satisfaction levels were lower in the case of individuals aged 35 or less, of singles and those who did not plan ahead their participation in the event as part of their holidays.

As for specific facets of the event, statistically significant differences were found between individuals of the two age groups (“35 years or less” and “36 years or more”) with regard to levels of satisfaction with “Access to the Site”; “Schedule”; “Available Information”; “Cleanliness” and “Security”; older people showed higher levels of satisfaction in relation to these aspects. Statistically significant differences were also found between singles and not-single individuals with regard to levels of satisfaction with “Access to the Place” and “Hours” (p < 0.05), with higher levels of satisfaction on the part of the who are not single. There were also statistically significant differences between the Portuguese and foreigners in terms of levels of satisfaction with “Access to the Site”; “Assistance” and “Timetable, with a greater satisfaction on the part of foreigners with regard to these aspects. Finally, significant differences were found between those who participated alone and others only in terms of satisfaction levels regarding “Security” (p < 0.05), with satisfaction levels tending to be higher in the case of those who were not participating alone in this event.

Regarding the application of the k-means method, in the context of Cluster Analysis, considering a partition of respondents into three clusters, in order to maximize the differences between the global scores obtained on the scale that evaluates
satisfaction with the event, it was found that Cluster 2, which includes those most satisfied with the event, has, compared to Cluster 3 (that of satisfied but not so much), a higher proportion of individuals aged 36 years or over, of individuals with a different marital status than single, with higher education, without Azorean descent and who came for the first time to the Red Bull Cliff Diving event. With regard to Cluster 3, it should be noted that most are in the age group of “35 years or more”, are single, do not have higher education, have Azorean ancestry and did not come for the first time to the event Red Bull Cliff Diving.

The AHCA of the items on the scale that evaluates the satisfaction with the event allowed us to find a typology of these items, having selected a partition in four clusters, which was provided by all the algorithms used.

Most respondents consider the Red Bull Cliff Diving event to be important for tourism and economic development. This sporting event has most interesting characteristics for its success to continue into the foreseeable future, so much so that it was held again this in 2019 (in 2020 it was suspended due to the COVID-19 pandemic), being an asset for the Azores Autonomous Region (AAR), projecting the image of the Azores beyond borders. Since the support of the Regional Government is essential for its realization, it is of paramount importance to make decisions in order to plan possible future editions, for which we hope that the present study will be an important contribution.

The study presented some difficulties for its performance, such as, the duration of the event (one day: 14th of July), which made the entire data collection tenser in order to be able to correspond to the objectives proposed for this study. Due to the fact that it is an event that implicated the presence in two places (Ponta Delgada and Vila Franca do Campo marina), the need arose for external assistance to be able to obtain more inquiries. The main limitation of this study is the fact that it was not possible to obtain a truly random sample. In fact, due to the particularities of the event, it was not possible to have a list containing all participants in the event (the event took place outdoors and the access was free), which compromises the generalization of the results obtained. Some inquired did not have the willingness to complete the questionnaire because, after the briefing of each tourist maritime company, with durability of thirty minutes, it was possible to start filling out the questionnaire. In addition, other limitations it is related to the size of the sample (initially, there would be 190 questionnaires and it was not possible to accept them all, as 26 of the respondents didn’t complete the questionnaire), resulting in a total of 164 questionnaires. Believing that it would had enriched the study in the sample of results. Even so, we believe in the representativeness of the sample obtained, because given the place where the event takes place (in the islet of Vila Franca do Campo, in the middle of the sea) the sample has a considerable dimension.

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