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To cite this article: Ana Pinto Borges, Bruno Miguel Vieira & Elvira Vieira (2020): Porto street stage at Rally Portugal: the determinants of the length of stay, *Journal of Sport & Tourism*, DOI: [10.1080/14775085.2020.1748097](https://doi.org/10.1080/14775085.2020.1748097)

To link to this article: <https://doi.org/10.1080/14775085.2020.1748097>



Published online: 01 Apr 2020.



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Porto street stage at Rally Portugal: the determinants of the length of stay

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ABSTRACT

We present the determinants of the length of stay (LOS) of Porto Street Stage that integrated the program of the 52nd edition of Rally de Portugal. Sport events assume an important role in the marketing of tourism destinations. However, when we compare them with other segments in tourism, it still remains underexplored. This study represents an opportunity to contribute to the literature, and it could become a significant toll for the organizers, public entities and other stakeholders. We contemplate a set of information and data that may improve the management of the future editions in a more rigorous and effective way. As we are dealing with an international event, it is an occasion to enlist tourists and promote the tourist destination. We applied a quantitative analysis and considered the sociodemographic characteristics of the spectators, factors that influenced the trip, expenses per day in the city, level of satisfaction with the event, and the intention to return. An OLS regression model, a Weibull survival model and a zero-truncated negative binomial regression model were estimated, and the results were compared. On the LOS determinants it is not common to consider the influence of each item of expenditure during the stay and the satisfaction levels with the event and different effects were observed. The travel and accommodation expenditures present a negative effect on the LOS. In the opposite side the satisfaction level and intention to return, both present a positive effect on the LOS. The sociodemographic characteristics have diverse impacts on the LOS.

ARTICLE HISTORY

Received 22 July 2019
Accepted 24 March 2020

KEYWORDS

Length of stay; sport event; satisfaction; intention to return; determinants

Introduction

In recent years tourism has recorded one of the highest growth rates and has benefited from international exports earnings. In 2018 tourism exports represented about 7% of the total, and in 2017 they managed to be on the podium of export earnings, just behind chemicals and fuels. The United Nations World Tourism Organization (UNWTO) forecasted a growth between 4% and 5% for international tourists' arrivals in 2018, but the world average reached 5.6%, exceeding expectations, especially in Europe and Asia

and the Pacific. In this context, tourism today represents one of the main drivers of economic growth.

Among the different types of tourism, UNWTO indicates that sports tourism is one of those with the highest growth rates because sport is seen as having an increasing impact on the economic activity (European Commission, 2014). Sport contributes with 294bn EUR to European Union (EU) gross value added and employs 4.5 m people. The tourism industry benefits from an annual 12–15 m sport-related international trips (European Commission, 2014, p. 3) and from the development and sales of other sport-related tourism products. In this context, sport tourism has become crucial for the tourism market, arousing academic interest on the advantages and disadvantages of attracting these types of events to tourism destinations (e.g. Chuang et al., 2017; Duglio & Beltramo, 2017; Gibson, Kaplanidou, & Kang, 2012; Henderson, Foo, Lim, & Yip, 2010; Kenyon & Bodet, 2018; Knott, Fyall, & Jones, 2015; Smith & Stevenson, 2009; Standeven, 1998).

The performance of tourism highlights the importance of several issues like the tourists' motivations or the expenditure expectations or the length of stay (LOS). Regarding tourism spillover effect over other activities and its sustainability, this last issue is one of the most important determinants of tourism's overall impact (Aguiló, Rosselló, & Vila, 2017; Scholtz, Kruger, & Saayman, 2015). It seems logical to consider that the greater the average LOS of tourists, the greater the economic impact they can generate on the local economy, especially in activities related to accommodation and catering, and the lesser will be their ecological footprint related to the use of means of transport (Aguiló et al., 2017; Jacobsen, Gössling, Dybedal, & Skogheim, 2018). Accordingly, there are several studies enhancing the importance of identifying LOS main determinants' which enables the demand characterization, allowing its segmentation. The supply side of the market may use this information to adapt marketing strategies in order to capture tourists' segments with greater potential of return, or to promote the increase of their LOS.

One strategy that cities may suggest in order to capture tourists is through the organization of all kinds of events. Along with increasing leisure time and discretionary income, the perception of the importance of knowledge and cultural interaction for personal development emphasized the role of cities, where a diversified package of tourism products can be offered, including a large number of opportunities for cultural and social interaction. This process is recognized by UNWTO (2013), which stresses the contribution of contemporary tourism dynamics of the human and inter-relational dimensions, along with the diverse and flexible tourism products and services available in urban areas.

Regarding the city of Porto, there are several events which traditionally manage to attract a great number of domestic and foreign visitors. One of these events is the *Rally de Portugal*, part of the World Rally Championship (WRC), which had, in 2018, a stage in the streets of Porto. The organization (Automóvel Club de Portugal) estimates that this sporting event was responsible for an economic impact of 60 million EUR in stays and meals, 25 million in tax revenue for the State and 140 million in media return to Portugal. For the Porto street stage alone, the local City Hall invested about 500 thousand EUR, throughout payments of fees and logistical costs of the organization, obtaining ticket revenue as a direct return. The city's visibility increased as a major indirect return due to television broadcast to more than 100 countries, not to mention all the spill over effects for the city's economic activity, especially for those which depend more on tourism.

Being aware of the importance of these types of events with international projection, for the economic and social dynamics of any urban area, the purpose of this paper is to identify and analyze the main LOS determinants of tourists attending a sport event, specifically the Porto Street Stage of the Rally de Portugal 2018. The paper will also assess their level of satisfaction with the event, one of the main factors that determines a possible return and possible extension of the city's visiting experience.

Although we may mention a long list of motivations to develop this research, the main ones are related with the novelty of the theme and its context. First of all, mass events both in cultural and sporting areas are a major component of marketing strategies of any destination in order to attract tourists. Regarding the LOS literature, there are only a few studies addressing segmented samples (Barros, Butler, & Correia, 2010; Thrane, 2016; Yang & Zhang, 2015), much less at the level of sporting events, a gap we intend to minimize. Secondly, the determinants of the average number of days visitors stay in the city to attend the event provide relevant information both for public entities and the organizers of the event to take into account when considering its repetition or replication. Finally, considering the sport event is a means to achieve an end (this being the increase of the economic and social return with the tourist activities), the measurement of the level of satisfaction allows us to evaluate the hypothesis of the visitors' return and the possibility of recommending it to other people, from the group of friends and family to public access platforms (social networks, websites, etc.), to visit the city of Porto. The research questions are:

- Q1 – Do the sociodemographic characteristics of the spectators influence the LOS?
- Q2 – Does the motivation of the trip have a positive impact on the LOS?
- Q3 – Does the expenditure per day in the city impact the LOS?
- Q4 – Does the satisfaction with the event have impact on the LOS?
- Q5 – Does the intention to return to visit the city of Porto have impact on the LOS?

This paper is organized as follows: it starts with the presentation of the literature review focusing on several studies made to characterize sport tourism and its connection to the LOS main determinants' investigation, highlighting differences in the sampling process and the moment in which the information for the study is obtained, considering the moment of consumption. Next, it explains the method chosen to carry out the study, based on the analysis of the results generated with the application of a questionnaire to the Rally de Portugal Porto street stage attendance. Following that we have established a comparison of these results with the conclusions of the literature review, in order to present the main findings and conclude with some future lines of investigation.

Literature review

The LOS determinants' investigation, as well as all the research involving the theme of tourism and, more specifically, sport tourism, has been gaining more prominence as the possibility of traveling to foreign destinations becomes increasingly democratic (Higham & Hinch, 2018). The improvement of air, road and rail links, the significant cost reduction with displacements and the proliferation of activities related to the accommodation sector, with the consequent reduction of prices reflecting compliance with the rules

of the free market, are just some of the reasons which allowed the development of tourism, not only as a summer activity. Combining the increase in purchasing power with the varied range of options available to tourists today, the frequency of leisure travel in a year is greater, causing the duration of the stay to become inevitably shorter (Dodds & Butler, 2019; Duhamel, Philippe et Knafou, 2008; UNWTO, 2018). Therefore if we consider that the longer the visitor's stay, the greater the economic return generated to the place of destination (Alegre & Pou, 2006; Machado, 2010a; Peypoch, Randriamboarison, Rasoamananjara, & Solonandrasana, 2012), it is important to identify the main determinants of LOS so marketing strategies can be adapted for their attraction, permanence and loyalty. Serving this purpose, among other initiatives, the most varied type of events are organized to promote local attributes, especially concerning city tourism, integrated into a broader cultural agenda, allowing visitors to enrich their tourism experience, in order to motivate a future return, maybe even with a longer stay, or just recommend the destination to other potential visitors. Some events have such a significant dimension, that, by themselves, manage to attract large numbers of people, involving many human and material resources and with a markedly international scope. These mass events (Getz & Page, 2016; Higham & Hinch, 2018) are important both at a macro level, regarding the strategy of tourism development in cities, regions or countries, and at a micro level, helping companies to better understand the characteristics of target audiences in order to delineate more effective strategies that increase their period of stay. With regard to the city of Porto, apart from other goals, one of the strategic guidelines of the marketing plan focuses on major sport events organized in emblematic locations, as a way of promoting their heritage. This gives the city more international prominence and has already led to the organization, among other sport events, of the FIA WTCC Race of Portugal at the *Circuito da Boavista* street course (last time in 2013), the Extreme Sailing Series (held in 2013), F1H2O World Championship (held in 2015), and Red Bull Air Race World Series (last time in 2017), all with routes traced in the Douro River, the street stage of the 52nd edition of Rally de Portugal (last time in 2018) or the first edition of UEFA Nations League finals (held in 2019).

If these events are important anchors of tourism flow, no less important is the creation of conditions so that visitors can extend their stay as long as possible. Studies on this theme are diverse with respect to three topics: samples used for analysis, the moment when the information is collected (after, during or before consumption), and methodologies used to conduct the econometric modeling. Regarding the sampling issue, there has been an evolution from studies made on heterogeneous samples of visitors assumed as homogeneous, to progressively segmented samples recognizing the particularities of each group of visitors, whose decisions are the result of different motivations. Following this segmentation trend, Santos, Ramos, and Rey-Maqueira (2015) and Thrane (2016) present a summarized literature review examining a varied set of studies carried out from homogeneous samples like golfers, seniors, travelers on low-cost carriers, low-cost tourists and charter flight tourists. Accordingly, Yang and Zhang (2015) underline that individual heterogeneity of tourists is a fact that has to be recognized in order to avoid investigations with skewed results. This is highlighted also in the sport tourism literature when Gammon and Robinson (1997) firstly proposed a distinction between primary and secondary reasons for traveling (Robinson & Gammon, 2004; Swarbrooke & Horner, 1999), under the pretext of sport, giving hard and soft definitions to sport tourism (tourists

for whom sport is the prime motivation to travel) and tourism sports (otherwise, tourists for whom sport is a secondary motivation to travel). This was important to expand the scope of study towards the observation of increasingly specific market niches, exposing the great diversity of the sporting world (Bull & Weed, 1999). Regardless of several attempts to segment or subsegment sport tourism, it's worth mentioning Higham and Hinch (2018) approach, dividing this branch of tourism into four categories: (1) spectator events, (2) participation events, (3) active engagement in recreation sports and (4) sports heritage and nostalgia (see Getz & Page, 2016, for a brief literature review on sport's events and tourism).

With regard to the second topic, the information used to conduct the LOS research is either obtained from existing databases or from questionnaires applied to generate primary data, before potential visitors take the decision to travel, after the decision is made, during the trip or after the trip is over. In general, most studies are carried out in the last two categories, gathering data when most of the visitors already know how many days they are going to stay. Since information can be collected at different times, results of the investigation may lead to the identification of different LOS determinants for the same sample of visitors. Barros et al. (2010) collected information from golf tourists regarding their LOS intentions when they arrive at the golf club, immediately before enjoying the experience, as well as Scholtz et al. (2015) and Yang and Zhang (2015) in their research about South Africa's coastal National Parks visitors, in the first case, and Chinese tourism characteristics in the second case. In highly segmented samples like cultural festivals, sports and other short visitors' experiences, questionnaires tend to be applied during their experience, while in other cases, like in summer vacations, it happens at the end of the experience (Aguiló et al., 2017; Barros & Machado, 2010; Jacobsen et al., 2018; Thrane, 2016), especially in airport departures.

Finally, regarding LOS-modeling, Yang and Zhang (2015) highlighted the differences between studies, indicating that they adopt mainly four types of models: Linear regression models, discrete choice models, count data models and duration or survival models. Besides these four types, this study introduces a derivation of the last and most popular one applying a latent class duration model, in order to solve the problem of heterogeneous samples. As an example, Thrane (2016) seeks to avoid this problem sub segmenting the sample in two latent classes, short-duration tourists and long-duration tourists, since the LOS preferences of each group are different. This paper as well as Barros et al. (2010) are the main references of this study. The first study is on a segmented sample according to the sports preferences of visitors, namely golfers. It is one of the few papers focusing this theme in sport's motivated tourism and distinguishes the determinants which have a positive impact in increasing LOS (nationality, education, age, climate, events and hospitality) from those which have a negative impact (beach). The second paper serves mainly as a LOS econometric modeling base, an alternative view of most studies which use survival or duration models to analyze the LOS determinants, some more than one model, such as the use of the Cox model and the Weibull model (Barros et al., 2010; de Menezes, Moniz, & Vieira, 2008; Gokovali, Bahar, & Kozak, 2007; Martínez-García & Raya, 2008). Thrane (2016) uses three econometric models, the OLS regression model, the Weibull survival model and the Zero-truncated negative binomial regression model, in order to minimize bias caused by heterogeneous samples. Both studies on LOS determinants' and methodology are included in Table 1.

Table 1. LOS determinants' main influences.

Paper	LOS determinants	Methodology
Barros et al. (2010)	(1) Nationalities; (2) Socio-economic characteristics; (3) Golf experience and habits; (4) Motivations; (5) Hotel and travel facilities; (6) Information and (7) Golf attributes	Two survival/duration models: Cox proportional hazard model, proportional hazard Weibull model
Thrane (2016)	(1) Trip duration decision; (2) Costs per day (personal); (3) Booking time in weeks; (4) General escape motivation; (5) General constraint motivation; (6) Sun/fun tripe motive; (7) Season; (8) Destination; (9) Gender	OLS regression model, Weibull survival model and Zero-truncated negative binomial regression model

Notes: Fonte: Own elaboration based on Barros et al. (2010) and Thrane (2016).

Linking LOS to Sport Tourism, Barros and Machado (2010) found that when the primary motive of the trip is sport (playing golf in this case, which fits the soft definition of a sport tourist) the length of stay is longer. Carmichael and Murphy (1996) argue this period is different if tourists are spectators or participants, while Higham and Hinch (2018) note that the distance tourists have to travel to attend the event, is an important conditioning factor of LOS, under the time-distance-cost trinomial (the longer the trip, the bigger the LOS is supposed to be). Bundling some other tourist activities to a sport event, will also serve the purpose of increasing not only the visitors' length of stay but also their level of expenses (Chalip & McGuirly, 2004; Harrison-Hill & Chalip, 2005), as well as scheduling events for certain days and times extending the tourists' stay, such as weekends (Green, 2001) or tourism off-peak periods (Gibson et al., 2012; Higham, 1999). Regarding the Porto street stage of the Rally de Portugal, tourists are essentially passive spectators of a large-scale event held in an urban location, right in the historical city center, who may be sport fans (Faulkner & Tideswell, 1999) just interested in the sport itself, or sport spectators interested in engaging also with other tourism activities (Higham & Hinch, 2018). As for the first group of tourists, they will probably follow the remaining stages of the Rally de Portugal in other locations, while the second group may be able to take advantage of the trip and stay for a longer period. The strategy of spectacularisation of the urban space (Bélanger, 2000), combining the attractiveness of the sport with the location's iconic landscapes and heritage (Higham & Hinch, 2018; Richelieu, 2018), is an opportunity to promote tourism beyond the sport event, on the one hand, inviting spectators to stay, at least during the weekend, since the street stage was held on a Friday and, on the other hand, increasing the possibility of a future return for a vacation (Gibson, 1998) depending on the level of satisfaction with the experience.

Regardless of the motivations of each type of tourist, satisfaction is another important issue worth mentioning. Most studies do not address the subject, since it may condition the LOS decision of 'open returners' tourists (Thrane, 2016). This segment of visitors is a minority, which in Thrane (2016) represents about 25% of the sample, a percentage that decreases significantly when the means of transport used is the airplane. However, the level of satisfaction during and after the leisure experience is an essential item in determining whether tourists want to return or not, and if the LOS will be longer on the second visit. Therefore, satisfaction may have a long-term positive consequence (repeat the visit) if not short-term consequences (LOS extension), and positively affects expenditure behavior and loyalty (Aguiló et al., 2017; Kozak & Rimmington, 2000; Marrocu, Paci, & Zara, 2015; Menezes, Vieira, & Moniz, 2009; Scholtz et al., 2015). Likewise, Yang and Zhang (2015)

state that potential visitors who received positive information about a certain destination from family, friends or word-of-mouth, are more likely to increase the number of days of stay.

Although not all the studies reach the same conclusions, satisfaction is a vital issue to increase the probability of a visitor returning to the destination, serving one of the main purposes of an event like the street stage of the Rally de Portugal.

Methodology and sample description

Data analysis and the description of the sample

In all analyses is used the STATA software (version 14). Descriptive statistics were used to describe the sample. To study the determinants of LOS the methodology of Thrane (2016) was followed, with the estimation of three models: an OLS regression model, a Weibull survival model and a zero-truncated negative binomial regression model.

The sample was collected at the event and consists of 645 valid responses, where only spectators over 15 years old could answer the survey. Considering a population of 100,000 spectators, the sample should include a minimum of 378 valid responses, with a confidence level of 95% and a 5% confidence interval, in order to be representative. The Variables used in this study and the statistic description are presented in Table 2.

Table 2. Characteristics and description of the variables.

Variable	Description	Minimum	Maximum	Mean	Std. dev
LOS	Length of Stay (number of days)	1	30	8.764	2.612
<i>Socio-economic characteristics</i>					
Male	Dummy, 0 – female and 1 – male	0	1	0.6434	0.4794
Age	Continuous variable	15	88	39.7969	15.8504
Marital	Marital status. Dummy, 1 – married and 0 – not married (single, divorced, widow)	0	1	0.4868	0.5002
Degree	Dummy, 1 – degree or master/PhD, 0 – do not have degree	0	1	0.4512	0.4980
Work	Dummy, 1 – employed, 0 – unemployed or student or retired or domestic	0	1	0.6868	0.4641
Resid.	Residence of the individual. 1 – resident in Portugal, 2 – lives at Spain, 3 – lives at France, 4 – lives at United Kingdom, 5 – lives in others countries	1	5	2.6868	1.4999
<i>Motivations: the degree of importance that the following factors had on your trip</i>					
Attend	Attend to Portugal Rally. Likert scale, 1 – not important at all, 2 – a little important, 3 – moderately important, 4 – very important and 5 – extremely important	2	5	4.5455	0.9117
Visit	Visit the city – Likert scale, 1 – not important at all, 2 – a little important, 3 – moderately important, 4 – very important and 5 – extremely important	1	5	4.1818	1.1807
<i>Expenditure by day in the city of Porto by item:</i>					
Travel	Traveling during the rally. Continuous variable at EUR	0	400	26	38.8571
Accom.	Accommodation. Continuous variable at EUR	0	1200	112.3000	39.5390
Meal	Meals. Continuous variable at EUR	0	300	32.5300	18.4550
Other	Others (e.g. shopping, gifts, culture, leisure and others expenditures). Continuous variable at EUR	0	200	55.3360	73.0341
<i>Satisfaction with the event and loyalty with the city</i>					
Satisf.	Satisfaction with the event. 5 – point Likert scale, 1 – very dissatisfied; 2 – unsatisfied; 3 – neither too nor dissatisfied; 4 – satisfied; 5 – very satisfied	1	5	4.4155	0.6787
Return	Are you planning to return to Porto? 1 – yes, 0 – no, 3 – don't know	0	3	1.1054	0.5749

The spectators of Rally de Portugal – Porto Street Stage 2018 were mostly males (64%) and had an average age of 39.80 years old. By gender, this result rises to 42.74 years for men and lowers to 34.48 years for women, while the oldest spectator surveyed was 88 years old. Almost half of the spectators were married (49%), 42% were single and, in terms of educational qualifications, 37% had secondary education and 45% had higher education (degree/masters/doctorate). 47% were employed, and, according to the country of origin of the foreigners, 20% lived in France, 23% in the United Kingdom, 10% in Spain and the rest in other countries.

The most important factor for the accomplishment of the trip is to attend to the Rally de Portugal (mean score: 4.55) and visit the city in general (score: 4.18). During the trip spectators spent an average of about 67.37 EUR per day. Among the detailed expenses we can highlight the accommodation (average of about 112.3 EUR per day), meals (with an average of around 33 EUR per day) and the other expenditures averaging around 55.34 EUR per day.

Regarding the global satisfaction with the event, 92% of the spectators were satisfied or very satisfied with Porto Street Stage 2018, averaging 4.42. Considering a future event, 88% of the spectators revealed their intention to return and be present in a similar type of event.

Results

For the OLS' model, with reference to the sociodemographic characteristics of the respondents, it is observed that, with the exception of marital status, they are significant to explain the LOS confirming Q1. Considering gender, in general there is no significant difference in literature, with several studies showing that female tourists stay longer (Rodríguez, Martínez-Roget, & González-Murias, 2018), others showing just the opposite (Barros & Machado, 2010; Machado, 2010b) and some showing no differences regarding this topic (Martínez-García & Raya, 2008). Concerning this study, results show that the trip duration of the males is higher than females (36%) ($\exp(0.308) - 1$). Considering the average of the LOS, we conclude that males stay 3 days longer than females. This is an expected result since it is an event that attracts more men. About the age, the literature is somewhat inconclusive, with some researchers finding a positive relationship (Kruger, 2009; Mok & Iverson, 2000; A. Saayman & Saayman, 2006; M. Saayman, Marais, & Krugell, 2010; Thrane, 2002), while others found the opposite (Mehmetoglu, 2007; Pouta, Sievänen, & Neuvonen, 2006). In this case, for each additional year, the participant stays for 0.863 day (almost 1 day).

We also observe that having an academic degree (Barros et al., 2010; Barros & Machado, 2010; Ferrer-Rosell, Martínez-García, & Coenders, 2014; Machado, 2010b) and being employed has a positive influence on the stay (14% and 44% respectively). Being resident in Spain or France present both 22% (almost 2 days) longer durations in the event, comparing with participants residing in Portugal.

Regarding motivation factors, we highlight that only the levels of 'very important' and 'extremely important' had significance. The primary and secondary motivations of sport tourists have been a complex topic explored in the literature (Gammon & Robinson, 1997; Higham & Hinch, 2018; T. D. Hinch & Higham, 2001; Kurtzman & Zauhar, 2003; Robinson & Gammon, 2004) and are not always complementary. The results show that the

motivation has an impact on the LOS. Spectators attending the event and visiting the city represent 2.5 and 3.2 more days on average in the city of Porto, corroborating Q2. Considering the event under study and the results, sport spectators are not only interested in sport, but also in tourism activities (Higham & Hinch, 2018), thus influencing LOS. This is the tourist segment the city intends to captivate, taking advantage of the performance and attractiveness of sport and the reputation of the location in historical and scenic terms (Higham & Hinch, 2018; Richelieu, 2018).

Regarding the expenditure per day in the city of Porto, we observe that the higher costs are in travel and accommodation, and an increase in these costs causes a decrease in the LOS (Alegre, Mateo, & Pou, 2011). In more detail, a 10% increase in travel cost and accommodation per day, entails a 2.1% and 3.0% reduction in LOS respectively. Meals and other

Table 3. The three models to explain the LOS: (i) OLS regression model (ii) Heterogeneity-adjusted Weibull model in AFT metric and (iii) Zero-truncated negative binomial model.

	(i)	(ii)	(iii)
Male	0.308 (0.030)	0.186 (0.045)	0.371 (0.181)
Age	0.094 (1.014)	0.073 (0.080)	0.101 (0.023)
Marital	0.471 (0.951) ^b	0.471 (0.051)	0.355 (0.628) ^b
Degree	0.131 (0.061)	0.043 (0.001)	0.122 (0.111)
Work	0.366 (0.042)	0.159 (0.002)	0.357 (0.219)
Resid			
Portugal	–	–	–
Spain	0.198 (0.023)	0.087 (0.062)	0.157 (0.043)
France	0.201 (0.026)	0.145 (0.110)	0.198 (0.037)
United Kingdom	0.112 (0.143) ^b	0.062 (0.433) ^b	0.102 (0.101) ^b
Others	0.375 (0.813) ^b	0.264 (0.912) ^b	0.332 (0.605) ^b
Attend			
not important at all	–	–	–
a little important	0.192 (0.318) ^b	0.192 (0.318) ^b	0.162 (0.704) ^b
moderately important	–0.157 (0.121) ^b	–0.157 (0.621) ^b	–0.146 (0.641) ^b
very important	0.156 (0.021)	0.156 (0.014)	0.142 (0.030)
extremely important	0.312 (0.129)	0.312 (0.096)	0.308 (0.042)
Visit			
not important at all	–	–	–
a little important	0.176 (0.275) ^b	0.109 (0.212) ^b	0.158 (0.011) ^b
moderately important	0.144 (0.229) ^b	0.079 (0.235) ^b	0.061 (0.673) ^b
very important	0.331 (0.153)	0.189 (0.035)	0.327 (0.133)
extremely important	0.612 (0.220)	0.522 (0.320)	0.570 (0.250)
LnTravel	–0.212 (0.018)	–0.012 (0.012)	–0.213 (0.003)
LnAccom	–0.297 (0.070)	–0.165 (0.055)	–0.283 (0.002)
LnMeal	0.146 (0.490) ^b	0.112 (0.132) ^b	0.118 (0.101) ^b
LnOther	0.173 (0.432) ^b	0.167 (0.232) ^b	0.161 (0.053) ^b
Satisf			
very dissatisfied	–	–	–
unsatisfied	–0.321 (0.362) ^b	–0.234 (0.182) ^b	–0.220 (0.201) ^b
neither too nor dissatisfied	–0.297 (0.741) ^b	–0.143 (0.121) ^b	–0.157 (0.101) ^b
satisfied	0.131 (0.028)	0.026 (0.006)	0.095 (0.004)
very satisfied	0.147 (0.022)	0.161 (0.142)	0.098 (0.055)
Return			
no	–	–	–
yes	0.107 (0.018)	0.096 (0.076)	0.057 (0.014)
don't know	0.568 (0.414) ^b	0.498 (0.632) ^b	0.433 (0.003) ^a
Constant	0.413 (0.230)	0.367 (0.121)	0.212 (0.001)
R-square	0.416 (0.233)	–	–

Note: Robust standard errors are in parentheses.

^aLn LOS is the dependent variable.

^bNot significant $p < 0.10$.

expenditures don't show a significant level. These results present an answer to Q3 (Table 3).

Concerning question Q4, being satisfied or very satisfied with the event it increased by 14% and 16% the LOS, respectively, being in line with the results obtained in the literature review (Kozak & Rimmington, 2000).

Comparing Respondents who indicated the intention to return in the next edition, with those who indicated that they do not intend to return, there is an increase of 11% in the LOS, giving us the answer to Q5 and showing that there is a positive relation between the intention to return and LOS (Boto-García, Baños-Pino, & Álvarez, 2019).

Finally, the three models are not comparable in a strict statistical sense because they are fundamentally different in terms of parameterization (Thrane, 2016). In substantive terms, the results of the three statistical models are qualitatively similar (Thrane, 2016).

Discussion and conclusions

Events have a primordial role in the growth of tourism, especially in urban destinations (Burns, Hatch, Mules, & Trevor, 1986; Chalip, Green, & Hill, 2003; Getz, 2007, 2008; Kelly & Fairley, 2018; Mules & Faulkner, 1996). The increasing importance of holding and attracting different types of events, namely business, festivals and culture, entertainment and sports is crucial for tourism in cities (Getz & Page, 2016). The high destination competitiveness between the cities fostered the creation of several tourist products (Barros et al., 2010; Barros, Correia, & Crouch, 2008; Getz, 2007, 2008; Getz & Page, 2016; Sant, Mason, & Hinch, 2013), improving event facilities and transportation infrastructures (Dwyer, Forsyth, & Spurr, 2005; Hiller, 2000; Solberg & Preuss, 2007), and attracting visitors/tourists during the time the events take place (Chalip et al., 2003; Kelly & Fairley, 2018; Mules & Faulkner, 1996).

In the specific case of sports events, these have become increasingly important in the touristic flow (Palrão & Filipe, 2017; Solberg & Preuss, 2007), which can be explained essentially from two different perspectives (Chalip et al., 2003): first, they can attract participants and spectators, thus boosting the number of visitors to the host destination during the time that the event takes place; second, the attention that events receive through advertising and news coverage implies an added exposure.

This type of event has a positive economic impact, not only regarding the money spent during the event (Chalip et al., 2003; Dwyer, Mellor, Mistilis, & Mules, 2019) and in the consumption of touristic products which are inherent to the arrival of thousands of participants associated to sports events (Palrão & Filipe, 2017), but also for the leverage of the destination image (Chalip, 2004, 2014; Kelly & Fairley, 2018; Pereira, Mascarenhas, & Pires, 2014) created by the visitor, who may even repeat and/or promote the destination towards other potential visitors (Chalip et al., 2003).

Comparing to other tourism segments, the sport event segment is still understudied (Palrão & Filipe, 2017), this being one of the reasons to present this paper, as a contribution to the field, evaluating for the first time, at a micro level, the length of stay of those who attended the Porto street stage of the Rally de Portugal. The event's attractiveness must not only rely on the magnificent scenery of the historic city center and inherent heritage, but also in other tourism activities capable of bundling with the motorsport event, allowing the promotion of the city both nationally and internationally.

From the results obtained, it is possible to define a profile that could stay more days in the city, characterized as a male, with a high educational level, employed and living in Spain or France. Having a higher level of education and being employed are two important conditions to reach a longer LOS, although it was expected that having a higher level of income and, therefore, more financial availability to spend in the city would lead to a longer stay. Residents outside Portugal, and specifically residents in Spain or France, had a positive impact on the LOS. This result is very important because it meets the profile of tourists who visited the country and who contributed the most to the balance of travel and tourism. Data from 2018, regarding travel and tourism revenues in Portugal, supports this observation since a significant share of 23.5% of the total revenues of 16.6 thousand millions of EUR, comes from Spain and France (PORDATA, 2019); it should be noted that tourists residing in the United Kingdom also contributed to the country's revenues, in that year almost 10% (PORDATA, 2019). However, regarding the duration of the stay for this event, residents from the United Kingdom, comparing to Portuguese residents, did not present a significant effect over LOS.

When it comes to the motivation factors, being present at the event and visiting the city are elements that influence LOS. Our results indicate that the main motivation is to participate in the Porto street stage of the Rally de Portugal (push factor), but spectators, in addition to this primary objective, add more days of stay to contemplate the attributes of the city (pull factor) in their trip. Push and Pull factors are important concepts in the study of the tourists' motivations. Dann (1977) notes that push factors come first than pull factors since the first ones' act as an intrinsic stimulus to the spectator, whereas the pull factors work as an attraction magnet (external element) linked with the qualities of the specific place (Cha, McCleary, & Uysal, 1995; Chul Oh, Uysal, & Weaver, 1995; Crompton & McKay, 1997; T. Hinch & Higham, 2005; Thomas D. Hinch, 2006). It is a result that confirms the importance of this sport event to promote tourism. Of course, the influence of the pull factor will depend on the spectator type, in terms of engagement with the sport. The motives are complementary, combining the sports attractiveness with the glamorousness of the city (Higham & Hinch, 2018; Richelieu, 2018).

In regard to the expenditure per day in the city of Porto, the results showed that travel and accommodation reduce the LOS and other types of expenditure do not present a significance level. This result is a reflection of the trade-off tourists face between the duration of the stay and the budget available to spend. Some of the spectators spent money to watch the event (there were restricted areas) while residents outside the Porto Metropolitan Area and foreigners also spent money on traveling, accommodation, goods and services acquisition, either in the city or in the surrounding region. These expenditures can have a substantial influence as they flow through the local economy (Bowdin et al., 2006).

The level of satisfaction and the intention to return had a positive impact on the LOS. There is an agreement in tourism literature related to the existence of positive relationships between satisfaction and behavioral intentions (Prayag & Grivel, 2014). As the intention to repeat the event is the *proxy* to assess the impact of the event from the tourist's point of view, the investigation results showed that it is already guaranteed a high number of tourists showing the intention to repeat the visit to the city of Porto. The event has to be a success and provide a high level of satisfaction in order to assure future tourist attraction.

To promote the event's next edition, the organizers, public entities and other stakeholders, must contemplate the relationship between sport, tourism and space (Higham

& Hinch, 2018) to define successful strategies. The Rally de Portugal, is an example of an annual professional sport competition, part of the WRC calendar, but the stages may suffer some changes in consonance with the respective edition. The stage in the city of Porto is not guaranteed. In 2019, the city did not host the event, but has already secured the street stage for 2020. The first concern of public entities is to ensure that the stage takes place in the city to attract spectators. After guaranteeing the event, the attractiveness of sport and destination can, together, create a strong tourism proposal (Higham, 2004). The strategies defined must take into account the target audiences (man, with high educational level, employed and resident in Spain or France) and accordingly segment the offer (Dolnicar, 2009; C. K. Lee & Lee, 2001; C.-K. Lee, Lee, & Wicks, 2004). The results reveal that the promotion of the event must consider not only the characteristics of the event but also the advantages of visiting the city. This pull factor (visiting the city) is a key variable to guarantee a longer stay in the city and engage the spectators with other tourism activities (Higham & Hinch, 2018). In the edition of 2018, it was the image of downtown Porto that was broadcast to millions of spectators around the world. The city had the opportunity to build images associated with the event that can be increased and improved in 2020, considering the city's heritage disclosing centuries of history or the and a wonderful scenic view of the Douro River that typically characterizes this destination.

The organization and other stakeholders must be aware that they have the challenge of attracting spectators willing to return to the city (Kirkup & Sutherland, 2017). In this sense, the level of satisfaction must be associated with the promotion of sport and the percentage of spectators who indicated the intention to repeat the event must also be communicated. These two variables are clear indicators that confirm the success of this. Thus, the perception of potential participants is being influenced, guaranteeing commitment and loyalty of intention. Furthermore, it cannot be a similar event, it must include new attractions and features, in order to guarantee the presence of tourists in the next editions. The stakeholders must be able to reinvent themselves.

Some additional research limitations should be highlighted. We studied only the Porto street stage of the global event of Rally de Portugal, because the objective was to evaluate the tourism destination of Porto as a city. However, some tourists stayed in the city but were following other stages of the event and this was not explored. Further exploration of the spectators' motivations may also be the subject of future research to complement the LOS analysis. More complete information could be added in further studies, and also more variables (e.g. spectators' motivations, happiness with the event, the information if the spectator will continue to follow other stages, among others) within the scope of tourism could be considered.

Acknowledgments

The authors are deeply grateful to ISAG – European Business School and Research Group of ISAG (NIDISAG) for the availability of the database. This work is funded by National Funds through the Foundation for Science and Technology under the project UID/GES/04752/2019.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

The authors are deeply grateful to ISAG – European Business School and Research Group of ISAG (NIDISAG) for the funding. This work is funded by National Funds through the Foundation for Science and Technology under the project UID/GES/04752/2019.

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