

"The Perception of Tourism in the Climate of the Island Of Mallorca"

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Abstract

The study was based on research of the tourist perception of the climate of the Balearic Islands. The island of Mallorca has an important link between the tourism-climate. The study was conducted during 2015. The goal is to understand the relationship between the subjective perception of tourists and objectivity of climate actually investigated. The methodology used personal interviews, on-site study of the hotel and the statistical treatment of climatic series of town. The results show that depending on the variables or meteorological phenomena perception is variable, with rates of correct answers to the knowledge of the typical climate of the holiday island.

Keywords: Perception, Surveys, Tourism, Weather

1. Introduction

On the island of Majorca, tourism it is main economic factor. The seasonality of the island is mass tourism in the summer. They are an important source of income for many countries where tourism growth is based on the offer of sunny destinations beach and leisure experiences in natural environments (Vaz et al, 2009). The tourist perception can be influenced by various factors depending on the country of origin, the experience of the last vacation, the weather in their period of stay, the weather information prior to arriving on the island, etc. Relationships between climate and tourism can influence tourism activities, positively or negatively depending on the weather, (Denstadli, 2011). Sun temperatures and precipitation have been identified as the most important factors in summer tourism.

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The extremely hot temperatures have negative impacts on the Mediterranean tourist destinations, Falk 2014). Tourists arriving in Mallorca during the study compared to the total of tourists all year are: in June 1,394,651 tourists (16%) in July 1,683,483 tourists (19%) in August 1,754,524 tourists (20 %) in September and 1,327,389 tourists (15%), from four months account for 70% of all tourists have visited the island in 2015. The occupation of tourism in Mallorca in 2015 during the months of June, July, August and September has been 81.90%, 89.56%, 93.11% and 84.18%, respectively, (IBESTAT, 2015). Tourists can or can't repeat destination, sometimes can interview people who come for the first time or people traveling to Mallorca for over 30 years.

The climate of Mallorca, Csa type is classified as Köppen, it is a climate of mid-latitudes, with atmospheric circulation west, typical Mediterranean with warm summers. The variability of precipitation in Mallorca varies depending on the territory between 1200-300 mm and 50-100 days per year (Jansà A, 2014). The climate of the Balearic Islands is a temperate climate with mild winters and hot summers. Rainfall is often in torrents. Temperatures are high in summer and warm winter temperatures. The relative humidity is high throughout the year. They are frequent calms and storm winds. The study of perception has been made for four months, June, July, August and September mainly in the summer season.

In the period that lasted the in-situ study it was unable to access interview 414 guests. Tourists polled by origin of the following countries are Germany (16.1%), Algeria (0.2%), Argentina (0.5%), Belgium (8.7%), China (0.2%), Croatia (0.2%), Denmark (3.7%), Scotland (4.5%), Spain (9.7%), Finland (0.2%), France (10.9%), Greece (0.2 %), the Netherlands (1.5%), Hungary (0.2%), UK (32.5%), Ireland (1.2%), Italy (3.0%), Lithuania (0.5%), Morocco (0.2%), Norway (0.5%), Poland (0.7%), Portugal (0.7%), Romania (0.2%), Sweden (1.5%), Switzerland (0.5%) and Uruguay (0.2%).

Questions to consider on climate perception of tourists are as follows: Where it rains more in the countryside or the city, etc?, Where the temperature is higher or city or countryside?, What day of the week it rains more?, What are the wettest months and less rainy?, has rained, it is raining or about to rain today?, What is the annual rainfall?, What is the gender perception?.

The research is similar to previous work Torrens, JM (2015). "Perception of rainfall in the city of Palma de Majorca 1980-2010, Balearic Island". Realities of the physical environment" According to Gomez, B (1999), some factors including the climate-tourism binomial are: comfort at ambient conditions, location factor for tourist sites, natural tourist resource, essential for sun and beach tourism, climate determines the period for the holidays, make seasonality. The main factor for choosing Spain as a tourist destination is the weather, in 1992, that ratio is shared by 77.7% of the tourists, for the months of June July and August. (Gomez, B, 0000).

In the study "The summary of the study on the satisfaction of domestic and foreign tourism demand in relation to the Spanish tourism product" (1991), 89% of Spanish tourists and 93.1% by foreign tourists shows registered satisfied climate on vacation in Spain. The study is of Hübner-Gössling, (2012). "Tourist perceptions of extreme weather events in Martinique," explores the experiences of tourists with extreme weather events predetermines the understanding of local weather conditions.

2. Study Area

The studio is located in the city of Palma as a zone of climate analysis. However, in the process of obtaining survey results of perception, the study site was in the Belvedere hotel, in the city of Palma, in the tourist and residential area of Cala Mayor. The hotel property BQ Hotel Chain has 414 rooms and is rated for quality. Interviews accessing tourists were performed in the hotel lobby, for a common set aside for research work space. During the study it has had the collaboration of the management and staff of reception, providing tourist information prior to accessing the interviews.

1. Location map of Palma de Mallorca, the location study and in-situ meteorological stations in the city.



Locate points of view, Palma de Mallorca, Hotel Belvedere, Puerto Porto Pi and Son Sant Joan Airport. Map scale 1: 5000

3. Objectives

The aim of the study was to determine the perception of tourists in front of questions on climate knowledge surrounding environment of the tourist destination of Palma. Typical questions are based on climate variables behavior in reference to everyday situations of everyday life among citizens and are part of regular reviews of climatic conditions. With the results of the perception of tourists comparison is made with the climatic reality and an assessment of the success rate of responses is removed.

4. Methodology

The methodology consists of a first phase of conducting personal surveys to tourists, with possible answers to answer in multiple choice manners, to conduct the interview in a quick and comprehensive for the interviewer and researcher. The survey also makes up a section on tourist view on climate change. There have been 414 surveys of tourists from the hotel. The sample represents 95% confidence level and a 5% margin of error. Printed paper surveys have been tailored in languages for countries in Europe, in English, in German, in French and in Spanish.

The interviews consisted of an average of between 5 and 10 minutes, getting the results at the time of the interview. The time slot of the interviews was between 11 am and 2 pm. The second methodological phase consists of a statistical analysis of two climate series of the weather station of the Port of Palma "Porto Pi" and Palma airport "Son Sant Joan", analyzing the series of climate records between 1980-2010, analyzing statistical averages of climatic variables of precipitation and temperatures.

5. Results

In the next section the results of the perception of tourists and the results of climate records that show actually represent. They consist of seven sections that mentioned variables precipitation and temperature spatial and temporal scale of the city of Palma.

5.1. Where it rains more in the countryside or the city?

Differences in rainfall between two locations the municipality of Palma is represented. Two areas in the city, the port, and the airport.

Table 1: Perception location with higher rainfall records

More Rainfall	Country	City	Total
Tourist n	291	98	389
<i>Percentage</i>	<i>74,8</i>	<i>25,2</i>	<i>100</i>
Average Rainfall Port	449 mm		
Average Rainfall Airport	410 mm		

Tourism seen in three thirds of respondents in the country rainfall is higher. A quarter of person thinking that in the city are higher rainfall. Climate statistical series shows that rainfall has been higher in the port of Palma in the city, in the rural area of the airport. The difference between the two locations is 9.5% higher rainfall in the city. According to Lopez F, (2005), 53% in Zaragoza, responds in the field and 36.5% in the city. The perception of respondents that rainfall is higher in the field is wrong, because it is proven that in the city are between 10-15% more rain than in rural areas, due to hygroscopic nuclei, thermal instabilities and roughness of building, among other features.

5.2. Where the field is higher temperature or city?

Temperatures difference between the two of Palma is represented. Two areas in the city, the port and the airport.

Table 2: Perception location with higher heat registers

More temperature	Country	City	Total
Tourist n	104	292	396
<i>Percentage</i>	26,3	73,7	100
Average Temperature Annual Port	18,2 °C		
Average Temperature Annual Airport	16,5 °C		

Among the tourists they receive, most temperatures are higher in the city. A quarter of respondents believe that the temperatures are higher in the countryside. Climate statistical series shows that the average temperature is higher in the port city at the airport located in the countryside. A mean difference between the two locations of 1.7 ° C in temperature occurs. According to Lopez, F (1995), Zaragoza 72.5% of responses was in the city and 21% responders in the field. Some respondents refer in that field and cooler at night in the city is related to the heat island. As it is seen in the colder winter season ago in the city and frosts are more frequent around the city.

5.3. What day of the week it rains more?

The rainfall every day of the week, weekday and weekend shows.

Table 3: Perception of precipitation each day

Rainfall Day	L	M	M	J	V	S	D	Total
Tourist n	93	55	59	46	38	45	41	377
<i>Percentage</i>	24,7	14,6	15,6	12,2	10,1	11,9	10,9	100
Annual Rainfall Port	67,6	65,8	70,4	64,4	63,4	62,4	59,5	

Perceived days from highest to lowest precipitation by tourists are: Monday, Wednesday, Tuesday, Thursday, Saturday, Sunday, and Monday. The results of climatic series show days consecutively higher to lower about average the rainfall, are as follows: Wednesday, Monday, Tuesday, Thursday, Friday, Saturday, and Sunday.

According Torrens, 2015 it is analyzed on the local population of Palma de Mallorca that the perception of respondents with more rain days are Saturday, Wednesday and Monday, with 21, 18, 16 percent respectively. The perception is the least rainy days are Friday and Sunday. The evidence is that perception lies earlier in the week. According to Lopez, F (2005), the majority of urban society has interest in the weather, which face the weekend live around. This is justified in that bad weather is not a total impediment to the activities of the urban environment.

5.4. What are the wettest months and less rainy?

Monthly rainfall as assessed as Rainier year and the driest month of the year represents month.

Table 4: Perception of the highest monthly precipitation

Rainest Month	E	F	M	A	M	J	J	A	S	O	N	D	Total
Tourist n	33	39	79	59	9	1	0	5	25	64	59	33	406
<i>Percentage</i>	<i>8,1</i>	<i>9,6</i>	<i>19,5</i>	<i>14,5</i>	<i>2,2</i>	<i>0,2</i>	<i>0,0</i>	<i>1,2</i>	<i>6,2</i>	<i>15,8</i>	<i>14,5</i>	<i>8,1</i>	<i>100</i>
Annual Rainfall Port	42	37	28	39	36	11	6	22	52	69	59	48	449
Annual Rainfall Airport	37	32	26	34	32	12	5	17	50	62	55	48	410

The perception of tourists in the month with highest rainfall presents the following order from highest to lowest perception: March, October, April, November, February, January, December, September, May, August, June and July. Climatic series represent the order as much as the average rainfall records: October, November, September, December, January, April, February, May, March, August, June and July. Boats I, (1995), states that the answers in Avila months with higher rainfall was April, October and May. In the climactic series of Ávila 1931-1992, the months in order of importance rainfall are May / June / October, April, November and September.

Table 5: Perception of the lowest monthly rainfall

Driest Month	E	F	M	A	M	J	J	A	S	O	N	D	Total
Tourist n	1	1	1	3	5	38	170	172	8	1	3	4	407
<i>Percentage</i>	<i>0,2</i>	<i>0,2</i>	<i>0,2</i>	<i>0,7</i>	<i>1,2</i>	<i>9,3</i>	<i>41,8</i>	<i>42,3</i>	<i>2,0</i>	<i>0,2</i>	<i>0,7</i>	<i>1,0</i>	<i>100</i>
Annual Rainfall Port	42	37	28	39	36	11	6	22	52	69	59	48	449
Annual Rainfall Airport	37	32	26	34	32	12	5	17	50	62	55	48	410

The perception of tourists in the month with less precipitation have the following order from highest to lowest perception: August, July, June, September, May, December, April, November, October, January, February and March. Weather series represent the next order of the fewest average rainfall records: July, June, August, March, May, February, April, January, December, September, November and October.

5.5. Has it rained, it is raining, about to rain today?

It is what has happened in the past regarding rainfall and what will happen with rainfall in the future, based on averages of records and predictive formulas.

Table 6: Perception of rainfall in the future

Rainfall in the future	Less	Equal	More	Total
Tourist n	101	142	148	391
<i>Percentage</i>	<i>25,8</i>	<i>36,3</i>	<i>37,9</i>	<i>100</i>
Average Rainfall 1980-2010 Port			449	
Average Rainfall 1980-2020 Port			581	
Average Rainfall 1980-2030 Port			638	
Average Rainfall 1980-2040 Port			694	

Rainfall in the near future are perceived to be higher in a quarter of the tourists, perceptions that are equal and higher individual share a greater percentage to a third party. Establishing a prediction of rainfall series by adding a decade for results, it represents the first half (1980-2010) of 449 mm will be reached fourth average (1980-2040) of 694 mm.

As seen in the rash prediction amounts increase by 54.5%. Predicting the future tourism demand is based on changes in weather and climate. (Falk, 2014).

Table 7: Perception of rainfall in the past

Rainfall in the past	Less	Equal	More	Total
Tourist n	139	137	106	382
<i>Percentage</i>	<i>36,4</i>	<i>35,9</i>	<i>27,7</i>	<i>100</i>
Average Rainfall 1980-1990 Port	406			
Average Rainfall 1990-2000 Port	428			
Average Rainfall 2000-2010 Port	493			
Average Rainfall 1980-2010 Port	449			

The rainfall that occurred in the past are perceived to have been lower and the same individual in more than a third of respondents, the perception that has been less rainfall is shared by less than a third of the tourists. In statistical rainfall years ago, it represents the average of the decade of 1980-1990 is less than the 2000-2010 average, the difference in precipitation between the two averages is 21.4%. Boats I, (1995), states that 91.9% respondents perceived Avila rains less today than in the past.

5.6. What is the annual rainfall?

The amount of annual rainfall is depicted, valuing precipitation ranges close to the real value of the average rainfall.

Table 8: Perceptions of annual rainfall

Annual Rainfall	200	250	300	350	400	450	500	550	600	650	700	Total
Tourist n	30	26	58	46	58	39	63	31	9	8	8	376
<i>Percentage</i>	<i>9,0</i>	<i>6,9</i>	<i>15,3</i>	<i>12,1</i>	<i>15,3</i>	<i>10,3</i>	<i>16,6</i>	<i>8,2</i>	<i>2,4</i>	<i>2,1</i>	<i>2,1</i>	<i>100</i>
Annual Rainfall Port	449 mm											
Annual Rainfall Airport	411 mm											

The perception of tourism in terms of the amount of precipitation void that is recorded in the city of Palma views shown in the following order from highest to lower perceptions: (500, 400, 300, 350, 450, 200, 550, 250, 600, 650, 700) in millimeters. The rainfall in the city harbor is 449 mm and in the rural area of the airport is 409 mm.

In the survey of annual precipitation in the population of the city of Palma de Mallorca in 2013, 27% of the perception threshold is within 250-500 mm, (Torrens, 2015).

5.7. What is the skill of climate feedbacks?

The percentages the rights answers of the weather and the set of all responses are represented issues.

Table 9: Findings of perception

Perception	Correct %
Temp Country-City	73,7
Dry month	41,8
Future Rainfall	37,9
Past Rainfall	36,4
Rainfall Country-City	25,2
Rainest month	15,8
Rainfall day	15,6
Annual Rainfall	10,3
Total perception	32,1

The percentage of correct answers in climatic tourists is answered by 32.1% in significance at all set. Nine degrees of success of all responses contained in most order less correct answers are set: the highest temperature between city and countryside, the driest month, precipitation in the future precipitation in the past, more precipitation between rural and urban rainy month, and the annual precipitation.

6. Conclusion

It has captured in the research the objective. On the one hand they are rated perceptions of tourists, regarding questions of climate character, obtaining detailed optimal results. Moreover, it has been possible to statistically analyze the climate series, extracting results of records showing the reality of the city climate in the study period. Therefore, you can confront subjective perceptions with objective reality, the main goal of the research.

Also is important the added value of a percentage to evaluate the criteria for assessing the degree of perception, obtaining significant results of climate knowledge by tourism during their vacation on the island of Majorca. So you can know how to interpret or what perceptual image of tourist climate natural environment of Palma. With these studies of perception, following the methodology and you can discover and link the different views of different sectors of the population, according to meteorology or meteorological aspects locations. The research can be extrapolated to other territorial areas, based on the methodology and the availability of obtaining the resources needed for research.

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