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Perception of Precipitation Conditions in the City of Palma De Mallorca, Differentiated by Gender

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***Abstract* – The research is based on the perception of the climate in the city of Palma de Mallorca. Differentiating between the perception between men and women. The method is based on the perception responses according to the surveys provided in the research. The results are shown by tables that show the perception in detail. The conclusion of the study is about the right or wrong perception of the weather of precipitation in the city, around the resident and visiting population of the city.**

***Keywords* – Climate, Mallorca, Perception, Gender, Surveys.**

I. INTRODUCTION

The main research concept is to know the perception of climatology through knowledge about the gender of men and women. As for the state of the art of infestation, scientific articles can be cited that approach the interpretation of our territory. Perception is treated inclusive in articles on climate perception. There are authors who deal with the perception of climatology within the Spanish territory. The authors are the following; Alomar, G (2010); Gonzalez, I.C (2009); Lopez, F (1995); Martin Vide, J (1990); Moreno, M.C (1999). Among the prevailing theme of climate perception, breezes within the island territory are treated, the perception of climate in Spanish cities is studied, more specifically precipitation in the cities of Avila and Barcelona, including the urban climate of the city of Saragossa. Keep in mind that the perception may be very close to the perception of the population residing in Mallorca. In Palma according to IBESTAT (2018), the population of Palma is 409,661 inhabitants, the men are 199,652 (48.7%) and the women 210,009 (51.2%). The research is interesting in its mode of innovation on climate perception. It has multiple facets to develop and extrapolate research to different locations. Within the investigation the study is carried out on the people surveyed who are visitors and residents of the island. Which are surveyed with various questions about their perception of the rainfall recorded in the city of Palma and in addition to being able to assess whether they perceive the climate of Mallorca in a consistent manner. Popular knowledge in the knowledge of perception is valued in a positive way to know the climate in the territory of the city of Palma de Mallorca itself.

II. LOCATION

The location of the study is on the island of Mallorca (Spain). Specifically in the capital, Palma. The area is 208.63 km2, located south of the island, in the Bay of Palma. The reason for the choice of such location is due to the fact that it is the most populous and urban territory of the island. In the capital reside 46% of the island population. The climate of Mallorca, classified Csa, according to Koppen, is a mid-latitude climate, with western atmospheric circulation, typical Mediterranean climate with warm summers. The variability of rainfall in Mallorca varies depending on the territory between 1200-300 mm and between 50-100 days a year, (Jansa A, 2014).

III. METHODOLOGY

The methodology of the article consists of conducting surveys with a climatological content, grouped between the gender of men and women. The method has been carried out with the investigation of surveys. The surveys have been conducted between 2014 and 2017. The total people surveyed have been 443 men and 663 women. The surveys are designed in the city's rainfall regime. To encompass the greatest possible perception among common precipitation patterns. The answers are of type test type. Each question contains different numbers of answers, due to the complexity of answers. The questions are the following: the month of the year with the most rainfall, the day of the week with the highest rainfall, the month of the year with the highest rainfall, the amount of annual rainfall and the consecutive days with rainfall record.

IV. RESULTS

The results of the research analysis are presented in the results section with tables, marked by the percentage of the perception of rainfall in the city.

Table 1. Month of the rainy year.

J	F	M	A	M	J	J	A	S	O	N	D	Total
75	87	57	147	10	1	0	4	30	94	88	43	636
11,8	13,7	9,0	23,1	1,6	0,2	0,0	0,6	4,7	14,8	13,8	6,8	100
35	51	64	77	0	0	0	4	21	67	76	48	443
7,9	11,5	14,4	17,4	0,0	0,0	0,0	0,9	4,7	15,1	17,2	10,8	100

The first table of the study, in women reports that 23.1% perceive that the month of April is the month with the highest rainfall. In men it is represented that 17.4% think that the month of April is also the rainiest month of the year. In this case, the perception of the month of April is broader in the gender of women.

Table 2. Day of the week mostly rainy.

Mo	Tu	We	Th	Fr	Sa	Su	Total
90	73	75	71	65	47	65	486
18,5	15,0	15,4	14,6	13,4	9,7	13,4	100
55	58	47	43	43	58	51	355
15,5	16,3	13,2	12,1	12,1	16,3	14,4	100

The second table describes that women at 18.5% observe that the day of the week Monday is the day with the highest rainfall. In men, 16.3% perceive Tuesday and Saturday as rainy days in the week. On this occasion there is disagreement of perception between genders.

Table 3. Month of the year with the greatest flooding.

J	F	M	A	M	J	J	A	S	O	N	D	Total
88	78	37	61	12	2	2	11	37	82	67	25	502
17,5	15,5	7,4	12,2	2,4	0,4	0,4	2,2	7,4	16,3	13,3	5,0	100
38	48	30	41	14	5	2	7	19	62	37	28	331
11,5	14,5	9,1	12,4	4,2	1,5	0,6	2,1	5,7	18,7	11,2	8,5	100

Regarding the time of year when the worst floods in the city occur. Women perceive 16.3% in October. Men also perceive 18.7% in October. The perception of both genders is common.

Table 4. Annual precipitation record.

200	250	300	350	400	450	500	550	600	650	700	Total
22	26	66	41	56	73	82	48	45	34	10	503
4,4	5,2	13,1	8,2	11,1	14,5	16,3	9,5	8,9	6,8	2,0	100
21	20	36	32	42	55	65	32	29	17	14	363
5,8	5,5	9,9	8,8	11,6	15,2	17,9	8,8	8,0	4,7	3,9	100

The annual accumulated rainfall in Palma, women perceive in a percentage of 16.3%, the amount of 500 mm. In the male gender the amount of precipitation is perceived in 17.9%, similarly in 500 mm. The perception of both genders is coincidental.

Table 5. Record consecutive days with rainfall.

2	3	4	5	6	7	8	9	10	11	12	Total
78	126	124	70	44	36	14	9	9	2	10	522
14,9	24,1	23,8	13,4	8,4	6,9	2,7	1,7	1,7	0,4	1,9	100
54	78	78	50	25	31	16	10	10	3	13	368
14,7	21,2	21,2	13,6	6,8	8,4	4,3	2,7	2,7	0,8	3,5	100

In the last table, the perceptions of the consecutive days in which rainfall is recorded each day are shown. Women consider that in a percentage of 24.1%, they are 3 consecutive days with rainfall. Men consider in a percentage of 21.2%, which are three or four consecutive days. The perception of both genders is similar.

V. CONCLUSION

At the conclusion of the article, after statistically analyzing the climatology of the city of Palma de Mallorca, it is concluded as follows about the perception of the population surveyed. In the first survey both genders highlight that the rainiest month of the year is the month of April, however the rainiest month of the year is the month of October with an average monthly rainfall of 69.62 mm. In this first survey the perception of the population is wrong. In the second survey on the day of the week in which there is more rainfall, the gender of women perceives Monday, while the gender of men perceives Tuesday and Saturday. It is remarkable that the statistics show that in the last 30 years, the day with the highest rainfall is the day of the week Wednesday. In this second survey the perception is again wrong. In the third survey that deals with the most numerous month with floods in the city, both genders perceive the month of October. It is noteworthy that the perception of the population is correct, since the month with the greatest floods within the city is October, followed by the month of September. It is due to the consequences of annual times with the presence of DANA'S weather events. The fourth survey referring to the total annual rainfall in the city, the two genera perceive the annual rainfall in 500 mm. The port and airport records for annual precipitation are 449 mm and 411 mm, respectively. The perception is considered to be close to the climatic reality, although not totally correct. In the fifth survey on consecutive days with rainfall in the city, the gender of women represent in the perception of 3 days, while the gender of men perceive between 3 and 4 consecutive days with the presence of rains. Once the historical statistics of the city have been analyzed, a record

of 12 consecutive days appears in which every day there has been a presence of rainfall, specifically the stretch of days between January 3 and 14, 2010, with accumulated rainfall in these 115.2 mm days. It is convenient to appreciate that in this fifth survey the perception of both genders is negative, with a wide error bias. Within the conclusion, it is analyzed that the perception of precipitation is correct in more general calculations than in the case of more specific perceptions. The perception is based largely on the experience of the events lived and the popular knowledge that is transmitted among the generations of the population of the city.

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