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*Sayyed Mohammad Hosseini*<sup>1</sup>  
*Batool Zeinali*<sup>2</sup>  
*Fakhry Sadat Fateminiya*<sup>3</sup>

## **Tourism Climatology in Tabriz by identify Weather Types and TCI Index**

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### **Introduction**

Iran is due to the diversity of wildlife and beautiful nature itself among the world's countries. Due to geographical conditions in north of the country, such as Alborz and Azarbaijan mountainous and forested areas of north west river are probe the most abundant natural tourist attractions and ecotourism in the northern half of the country. Among the elements of climate, air temperature has been greatest effect on the human body and feels comfortable. But many other climate elements are affected on the air temperature and human body. Humidity, solar radiation and wind or air currents are the most important elements.

### **Materials and Methods**

In this study, to investigate the tourism climatology in Tabriz used two methods to identify weather types and TCI Index. Data base have been created with using daily

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1- Climatology Department, University Jamaluddin Asadabadi.

2- Department of Ecology and researcher at the University of Ardebil.

3- Ph.D Student Agriculture Climatology, Mohaghegh Ardabili University.

data for 22 climatic variables including: dry and wet temperature, relative humidity, daily mean maximum and minimum temperature, daily rain, speed and direction wind in during 1981-2011 in Tabriz(For 30 years). Considering the goal of the research, which was weather typing recognition, matrix was prepared whit "P" decoration. "P" is decoration of data base matrix in which the rows are time and columns are the indicators of climatic variable. Because the data are different measurement units before the cluster analysis, standardization is necessary to weigh all the variables in the same air separation plant species. Then we calculate the Euclidean distance, using the method of hierarchy and ward linkage, cluster analysis was performed on a standard matrix  $10457 * 22$ . Finally, using MATLAB software was drawn to Tabriz, total dendrogram and six dendrogram.

### **Discussion and Conclusions**

A cluster analysis which "Ward linkage" and "Euclidean distance" carried on standardized data and six synoptic types were identified: frost, fog and calm; moderate; windy; rainfall-cold; warm and dry and hyper hot and dry types. The results of calculation showed that the TCI Tabriz June and September with the ideal qualification and final coefficients above 90 in Tabriz are the best months for tourism why the CIA and CID index highest score compared to other months. In other words, in this two-month high proportion of daily comfort index reflects the high level of thermal comfort at a time, when tourists have maximum daily activities and overnight index showed an increase in heat even when sleeping.

### **Conclusions**

To identify the optimal time and place and enjoy ecotourism aimed at an area of the fundamental aims of tourism climatology research. The results in research showed that the types of frost, fog and calm is the most abundant species in weather Tabriz, unfortunately was reduced in recent years. Also transition from one season to the

other weather types will raise and mortality. On the other hand, during the last decades, significant changes in the weather types have been observed annually. The results show that the Tabriz tourism climate index, the best time for tourists to thermal relaxation time of maximum activity is the late spring and throughout the summer, because in this case, thermal comfort during the day and during the peak tourism activity has its best condition in terms of climatic elements. Worst time is in the January and February.