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# Comparative Evaluation of Human Bioclimatic of Isfahan city using the Terjung methods, TCI, PET, PMV

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**Extended abstract**

**1-Introduction**

It is very important to study and identify climatic limitations and threats and know attractions and potentialities of climatic specifications nationwide during different seasons in order to consider them in planning of national, provincial and urban levels.

Thus, we can achieve a balance in climatic elements assessing bioclimate to create welfare for mankind. Thereby man can pave the ground to do livelihood activities. Therefore, the issue of welfare is very important and considerable for the continuity of human activities and his mental and physical evaluation.

Since benefiting the available capacities in every region is a dynamic factor to develop region, Isfahan can play a very important role in job creation and economic and human development mainly because of its rich natural attractions. Therefore, the results of this research are very important in recognizing and introducing the changes of climatic elements and factors during different periods and the role of these factors in providing welfare in Isfahan.

The aim of this research is to know human bioclimate and the influence of climatic parameters on the physiological structure of human in every month in Isfahan and to compare the results of various methods with each other.

**2-Methodology**

Descriptive, deductive and statistical methods have been used in this research. First, statistics were transferred to Excel Software and S-PLUS and then to Rayman Software fitting PET and PMV methods and finally the outputs were analyzed.

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To assess human bioclimate of Isfahan comparatively on the basis of PMV, PET, TCI and Terjung methods, climate parameters such as the mean average, the minimum and maximum temperature, the minimum and maximum relative humidity, average of sunshine hours, mean average of wind speed, average of vapor pressure, the amount of cloud in three synoptic stations including Isfahan, east of Isfahan and Kabootar-Abad during a eighteen- year statistical period (1992-2010) have been used.

**3-Discussion**

According to the assessment of different methods, it was determined that based on Terjung method the climate of three stations was pleasant in April and October and based on TCI factor, it was pleasant in April, September and October and partly pleasant in August. In east of Isfahan it was pleasant in May, September and October and partly pleasant in April. Kabootar-Abad had the best climatic condition in April, May and October and it was partly pleasant in November. Based on PET and PMV methods, all stations have pleasant climatic condition in May and September and partly pleasant in April and October in spite of the light cool thermal sensitivity.

In general, although these methods are a combination of climatic parameters, evaluation of different methods for stations studied within Isfahan represents this fact that most of methods except Terjung indicate that May and September have been the best months of bioclimate and April and October have been partly pleasant.

**4-Conclusion**

Evaluation of methods and Parameters shows that climatic condition of Isfahan has been different in different months and based on the results of comparative assessment, most of methods indicate that May and September are the best months in terms of climatic welfare and people feel comfortable in these two months but in January, February and December which are cold months, climate of Isfahan province is influenced by the climate system import from the west and climatic condition is unpleasant and people do not feel comfortable. In June, July and August Isfahan is under the domination of high pressure torrid that results in CT air mass. This air mass is very warm and dry and causes serene, intense sun radiation and severe fall of humidity. Subsequently, climatic conditions of studied stations become unpleasant. All stations in April and October have the best climatic condition based on Terjung method. And based on TCI method Isfahan has this situation in April, September and October, east of Isfahan in May, September and October, Kabootar-Abad in April, May and October. All three stations are in the best climatic condition in May and September based on PET & PMV Method.

**5-Suggestions**

Regarding the role of climatic parameters in creating condition of bioclimate welfare, it's suggested that Cultural heritage department, handicrafts and Tourism Organization, tour and travel agencies and other related organizations try to prepare daily bioclimate calendar of Isfahan.

**Keywords:** Bioclimatic, Terjung, TCI, PET, PMV, Isfahan.

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