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Tourism Climate Index analysis in Romania's big cities

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Tourism is one of the most dynamic economic sectors in the Romanian economy. Cultural and event-related tourism appear to be the most important sub-sectors, with the strongest development, in the urban area.
This study is focused on the detection of the favourable season for open air tourism in 10 of the most populated cities in Romania, Botosani, Bucharest, Cluj-Napoca, Constanta, Craiova, Galati, Iasi, Oradea, Sibiu, and Timisoara.
The climate conditions were assessed by using modified tourism climate index, initially developed by Z. Mieczkowski (1985) at a temporal scale of 10 days, over a period on 56 years (1961-2016). Mean values of temperature, relative humidity and wind speed (10 m), total daily precipitation and sunshine, as well as maximum temperature, minimum relative humidity, and wind speed at 1.2 m hight were used for calculation. The trend detection methods were the Mann-Kendall test combined with Sen's slope and the parameters considered for change detection were: the frequency of days ranked as good, very good, excellent and ideal for outdoor tourism; the length of the occurrence interval, the first and the last day of occurrence of each of the above-mentioned classes.
We found that the most appropriate weather for open-air tourism (events, festivals and fairs), including good, very good, excellent and ideal conditions, begins usually in the third 10-days period of April for the great majority of the cities and ends during the first or the second 10-days period of October. Since no important change was detected for the considered parameters of the four classes, we consider that this study could become an extremely useful tool for a better planning of the events on short and mid-term future.