



TOURISM CLIMATE INDEX IN KUTAISI (GEORGIA)

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Summary: The data about the Tourism Climate Index (TCI) in Kutaisi (Imereti region of Western Georgia) useful for the development of the health resort-tourism potential of this locality are cited. The intra-annual distribution of the TCI values for Kutaisi has bimodal nature with the extremum during May and September (“Excellent”). In December, January and February values of TCI varied from 31 to 38 (“Unfavorable”). Thus, for the development of mass tourism the months from March through November are favorable.

Key words: Tourism Climate Index, health resort-tourism potential.

Introduction

Tourism is an important sector of the global economy. Weather and climate are two factors that in many respects influence decisions regarding areas to be visited. Many climate indices for tourism have been applied in past research [1]. The most widely known and applied index is the tourism climate index proposed by Mieczkowski [2]. This index is combination of seven factors and parameters. Mieczkowski’s “Tourism Climate Index” (TCI) was designed to use climate data, being widely available for tourist destinations worldwide.

TCI is used in many countries of world. In south Caucasus countries, monthly value of TCI be calculated in Georgia, first for Tbilisi [3], then for Batumi and Anaklia [4,5]. Later the monthly values of TCI for 21 locations of Georgia, 6 locations of North Caucasus, and also for the cities Baku and Yerevan were calculated [6-10].

Study area, Material and Methods

The region of studies is Kutaisi town (42.27° N, 42.69° E, 150 m a.s.l., population – 148000, distance from Tbilisi – 184 km), a historical area in western Georgia. Kutaisi is Georgia's third largest metropolitan area and currently serves as the parliamentary legislative capital. It is located in the central western region of Imereti on the banks of the Rioni River. Kutaisi was the capital of the fabled Kingdom of Colchis. The myth of the Golden Fleece originates here as the waters of the Rioni were once panned for gold using sheep skin.

Kutaisi's appeal lies in both its natural scenery and its historic and architectural monuments, particularly its unique river bridges, sacred cathedrals and monastic structures. The city is rich with regional Georgian cuisine, museums and shopping. Kutaisi also serves as a transportation hub for domestic and trans-European air travel, lending a cosmopolitan vibrancy to its small town charm.

The landmark of the city is the Bagrati Cathedral, built by Bagrat III, king of Georgia, in the early 11th century. The Gelati Monastery a few km east of the city, is a UNESCO World Heritage Site. One

of the famous churches in Georgia is Motsameta Church. It is named after two saints, brothers David and Constantine. They were the Dukes of Margveti, and were martyred by Arab invaders in the 8th century. Besides the churches, there are many interesting places in Kutaisi, such as: Sataplia Cave, where one can observe footprints of dinosaurs; Geguti Palace, which was one of the residences of Georgian monarchs; "Okros Chardakhi" – Georgian Kings' Palace; and the Pantheon, where many notable citizens are buried. The Kutaisi Synagogue which was built in 1885 is also an interesting sight.

In recent years in Kutaisi, as in entire Georgia, vigorously is developed the tourist sector of economy. Therefore, for the optimum development of this sector it is important to have an information about the bioclimatic characteristics of the indicated city, connected with the mass tourism. One of similar of characteristics is TCI.

TCI is a combination of seven parameters, three of which are independent and two in a bioclimatic combination:

$$TCI = 8 \cdot C_{ld} + 2 \cdot C_{la} + 4 \cdot R + 4 \cdot S + 2 \cdot W$$

Where C_{ld} is a daytime comfort index, consisting of the mean maximum air temperature T_{max} (°C) and the mean minimum relative humidity RH_{min} (%), C_{la} is the daily comfort index, consisting of the mean air temperature T_{mean} (°C) and the mean relative RH_{mean} humidity (%), R is the precipitation (mm), S is the daily sunshine duration (h), and W is the mean wind speed (m/s).

In contrast to other climate indices, every contributing parameter is assessed. Because of a weighting factor (a value for TCI of 100), every factor can reach 5 points. TCI values ≥ 80 are excellent, while values between 60 and 79 are regarded as good to very good. Lower values (40 – 59) are acceptable, but values < 40 indicate bad or difficult conditions for understandable to all tourism [2].

For the TCI calculation data of Hydrometeorological Service of Georgia was used.

Results and discussion

Results in fig. 1-2 and the table are presented.

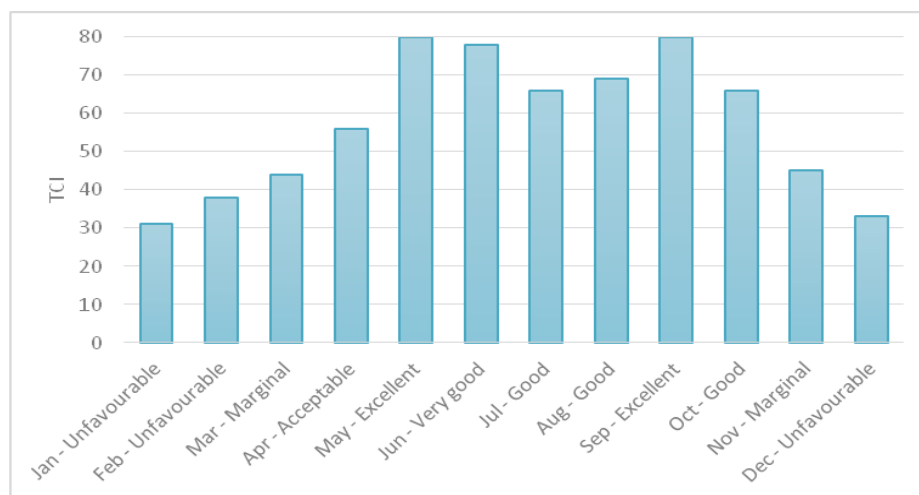


Fig. 1. The intra-annual distribution of Tourism Climate Index in Kutaisi.

As follows from fig.1 the intra-annual distribution of the TCI values for Kutaisi has bimodal nature with the extremum during May and September (“Excellent”). It is known, that the bimodal type of distribution of TCI values in many other places is observed [6-10]. TCI categories change from “Unfavorable” (December, January, February) to “Very good” and “Excellent” (May, June, September). For the development of mass tourism the months from March through November are favorable.

As it follows from table and fig. 2 the values of daytime comfort index (Cld varied from 40.6 % to 60.6 % with average value 50.3 %) and daily sunshine duration (S varied from 12.1 % to 21.2 % with average value 17.3 %) make the greatest share to the mean annual values of TCI in Kutaisi. The values of daily comfort index Cla, precipitation R and wind W make the a smaller share to the mean annual values of TCI (Cla varied from 8.9 % to 15.2 % with average value 11.6 %, R varied from 6.1 % to 14.3 % with average value 9.7 %, W varied from 8.9 % to 13.6 % with average value 11.1 %).

Table. Share of Cld , Cla, R, S and W in Tourism Climate Index in Kutaisi (%).

	Cld	Cla	R	S	W
Jan	51.6	12.9	6.5	19.4	9.7
Feb	52.6	10.5	10.5	15.8	10.5
Mar	45.5	9.1	13.6	18.2	13.6
Apr	50.0	8.9	14.3	17.9	8.9
May	50.0	10.0	12.5	15.0	12.5
Jun	46.2	12.8	10.3	17.9	12.8
Jul	42.4	15.2	9.1	21.2	12.1
Aug	40.6	14.5	11.6	20.3	13.0
Sep	50.0	12.5	7.5	17.5	12.5
Oct	60.6	9.1	6.1	15.2	9.1
Nov	53.3	11.1	8.9	17.8	8.9
Dec	60.6	12.1	6.1	12.1	9.1
min	40.6	8.9	6.1	12.1	8.9
max	60.6	15.2	14.3	21.2	13.6
average	50.3	11.6	9.7	17.3	11.1

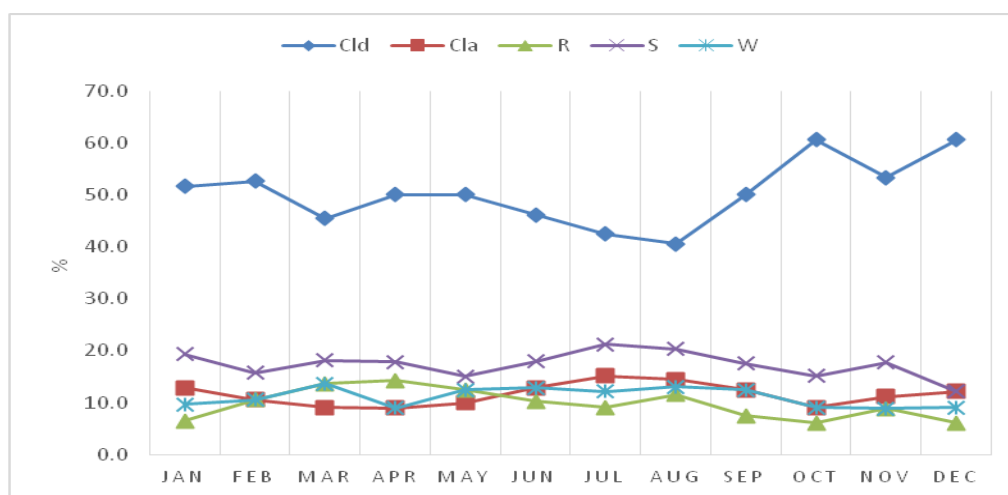


Fig. 2. Share of different components in Tourism Climate Index in Kutaisi.

As a whole, the relatively lowered values of TCI in Kutaisi (in comparison with Baku, Yerevan, Tbilisi, Telavi, different location of Iran, Turkey etc.) are caused by more rainy climate, decreasing the contribution share R to the general value of TCI [6,9]. At the same time values of TCI in Kutaisi are close to their values for the cities Batumi, Kobuleti and Khulo, located on the coast area of Black sea, Tskaltubo, Mukhuri, Mestia (Western Georgia), Pyatigorsk, Yessentuki, Zheleznovodsk Teberda, Nalchik (North Caucasus) [10].

Conclusion

Climate has a strong influence on the tourism and recreation sector and in some regions represents the natural resource on which the tourism industry is predicated. In this work the new data about such bioclimatic characteristics as “Tourism Climate Index” for Kutaisi (Western Georgia) is obtained. Therefore, information about TCI for this locality will be useful for the more rational planning here of one form or another of mass tourism, and also of organization of the treatment of people in different seasons of year. In the future we plan a more detailed study of the climate resources of this location for the tourism development.

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