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INFLUENCE OF WEATHER - AS A CHANGING PART OF LANDSCAPE ELEMENTS - ON THE TOURISTICAL POTENTIALS OF THE KÁLI BASIN

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Összefoglalás - A dolgozatban összefüggést keresünk a Káli-medencébe látogató turisták száma és a napfénytartam között. A kutatás során arra a kérdésre keressük a választ, hogy a napfénytartam - mint változó tájelem - milyen irányban, és milyen mértékben befolyásolja a terület turisztikai vonzerejét, látogatottságát. Az 1999 nyarán végzett méréseink feldolgozása során június 25. és augusztus 20. között erős negatív korrelációt kaptunk eredményül, amely arra utal, hogy a fenti időszakban a medencét zömmel a Balaton partja mentén szabadságukat töltő üdülővendégek keresik fel. Ez az összefüggés a június 25. és augusztus 20. közötti hétköznapokra, és hétvégékre is érvényes. Ebben az időszakban tehát a borultabb, direkt napfénytartamban szegényebb időjárás emeli a terület turisztikai vonzerejét, mivel nem kedvez a strandolásra. Az augusztus 21. és szeptember 1. közötti időtartam alatt az előző időszakkal ellentétben pozitív korrelációs együtthatót kaptuk, amely jól mutatja, hogy a szezonális fürdőturizmus lezárultával a napfényben gazdagabb napokon magasabb volt a turisták száma, mivel ekkor már zömmel a környék nagyvárosaiból, valamint a fővárosból érkező kirándulók keresték fel a medencét. Ebben az időszakban a napfénytartam növekedése erősítette a Káli-medence turisztikai potenciálját. A Káli-medencében a napfénytartam alapján kimutattuk, hogy a medence a balatoni üdülőövezet vonzáskörzetéhez tartozik, turizmusának időbeni alakulása a nyári szezon idején partmentén üdülők migrációjától jelentős mértékben függ.

Summary - The aim of this study is to find out the connection between the amount of sunshine hours, as changing part of landscape elements, and the touristical attractiveness and the popularity of visitors in the Káli Basin in Hungary. The data have been collected between 25 June and 13 September 1999. The analysis of the data shows that in the period from 25 June to 20 August, strong, negative correlation exists between the above mentioned two variables; and the basin is visited by those tourists, who spend their holiday in the resorts at Lake Balaton. In the studied period the touristical frequentation of the area grew on cloudy days - when the amount of direct solar radiation is decreased - , probably because this weather is not favourable for bathing. Later, between 21 August and 13 September a positive correlation was found, which presents quite well that after the end of the bathing season tourists preferred to visit this area in days characterised by sunshine, and they mostly came from the neighbouring towns and from the capital. In this period the increasing amount of sunshine hours intensified the touristical potential of the Káli Basin. The above mentioned facts suggest, that the Káli Basin belongs to the touristical attraction zone of Lake Balaton and the number of visitors in the summer season depends on the migration of visitors of Lake Balaton.

Key words: recreation, sunshine duration, touristical potential, evaluation of landscape, weather conditions

INTRODUCTION

Significant question of the climate and weather related studies is to find out which climate elements influence the recreation and in what extent (*Perry*, 1997). *Smith* (1993) divides the tourism into two main groups: weather-sensitive and climate-determinated types. While in the first case the climate is not the most important influential factor, the

latter includes the mass tourism along the shorelines of seas and lakes. *De Freitas* (1990) studies the effect of climate elements (UV-radiation, solar radiation, temperature, wind speed) on the comfort sensation of tourists in seaside holiday resorts, using questioners and statistical data analysis. Several authors study the relationship between the climatic elements and the number of visitors. Most of the studies (e.g. *Brotherton et al.,* 1980) analyse the statistical relationship between the number of visitors and the deviation of mean daily temperature from the mean monthly temperature; or they compare (*Muir et al.,* 1974) the amount of solar radiation with the popularity. These afore-mentioned studies resulted positive (0.60) correlation, but it is not surprising, if we consider that they made their investigation in the cloudy Great Britain.

Part of the Káli Basin, which belongs to the Balaton Recreational Area, has several touristical attractions, most of them are natural values (*Fig. 1*).

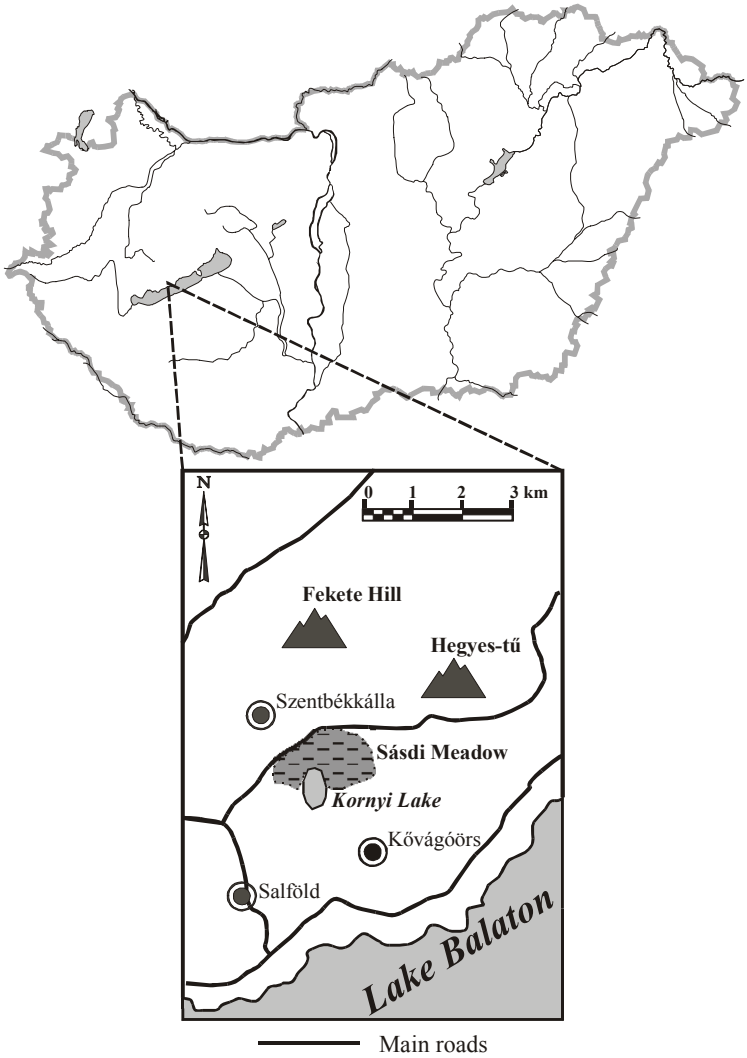

Fig. 1 Location of the Káli Basin in Hungary, touristical spectaculars and the sampling sites

The most well-known natural wonders are the block fields in the vicinity of Salföld, Kővágóörs and Szentbékkálla. The abandoned quarry of Hegyes-tű (a peak) represents an important geological value; moreover there is an open-air geological museum and an excellent vista point as well. The wetland habitats in the centre of the basin carries great botanical values, especially the Sásdi Meadow with several botanical unique species, and the lakes of the Fekete Hill (i.e. Kálomis Lake) or the greatest lake of the basin, the Kornyi Lake, are also valuable. The touristical potential of the area is raised by its richness in monuments and historic buildings. These unique landscape values appears as objective fundamentals, but the touristical attractiveness is influenced by the climatic elements as well.

THE AIMS OF THE STUDY

In this paper we draw a relationship between the number of visitors in the Káli Basin and the sunshine duration which is one of the most important weather elements. We would like to find out, whether the sunshine duration influences the touristical attractiveness, popularity of the area in the summer and in the autumn seasons; and if so, how and in what extent.

The aim of the present investigation is to answer the following questions by comparing the solar radiation with the number of visitors:

- Is there a statistical correlation between the number of visitors on the vista point of Hegyes-tű and the solar radiation measured in the basin (Salföld) (*Fig.1)*?
- Is this correlation valid for the whole studied period?
- What will be the sign and degree of this correlation, if we divide the studied period into summer season and autumn season?
- What will be the sign and degree of this correlation, if we analyse the weekdays separately from holidays and weekends?

The answers will help to draw a conclusion, whether the tourism in the Káli Basin depends on the tourism of the Balaton, if so it is important to study that when and how it depends on. Thus, we would like to know that the touristical attractiveness is strengthened or weakened by the increasing amount of solar radiation of a given period.

METHODS

The amount of sunshine duration was measured by Campbell-Stokes type of sunshine duration recorder in the neighbourhood of Salföld, between 25 June and 13 September 1999. We have summarised the direct solar radiation data for every 5 minutes. The amount of the astronomically possible sunshine duration is less by 185 minutes in 13 September than in 25 June; therefore, we have expressed the amount of real sunshine in percentage of astronomically possible sunshine by days.

The number of visitors was registered at Hegyes-tű, in its open-air geological museum. They must pay an entrance-fee, therefore we have exact data about their number.

We have taken out of the analysis the data of 11 August, because on this day, visitors came to this excellent vista point to see the total sun eclipse, and their number was far the greatest, approximately 1000.

RESULTS

As the first step of the investigation, we studied the statistical correlation between the real sunshine hours and the number of visitors during the whole study period (from 25 June to 13 September 1999). The correlation of 81 days′ data resulted a –0.10 correlation coefficient. At this case number the correlation coefficient should reach ± 0.28 (*Péczely,* 1979) for 99% probability, but in our case the resulted coefficient is not high enough, therefore we concluded that in the studied period there is no correlation at 1% significance level between the degree of cloudiness (i.e. amount of sunshine hours) and the number of visitors.

The next step was to divide the studied period into two intervals. The line between them was 20 August, because in most cases, people's holiday will end at this time, as well as the bathing season of the Balaton Recreational Area. Fifty-seven days belong to the first interval (from 25 June to 20 August) with a –0.50 correlation coefficient; the second one includes 24 days (from 21 August to 13 September) with a +0.50 correlation coefficient *(Fig. 2a-b).*

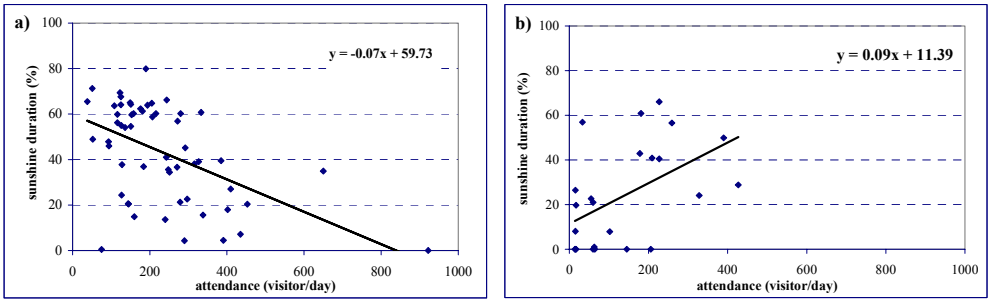

Fig. 2a-b Correlation of attendance and sunshine duration a) from 25 June to 20 August and b) from 21 August to 13 September

In the third part of our investigation we have examined the interval of 25 June - 20 August in details. Our aim was to know, whether the resulted negative correlation is right in case of analysing weekdays separately from holidays and weekends (*Fig. 3a-b).*

The resulted correlation coefficient was –0.50 for weekdays (39 case) and –0.54 for the weekends (19 days). The first correlation can be considered as a real one with 99% probability as far the correlation coefficient for the 39 cases should be ±0.40. The second correlation can be considered as a real one with 95% probability because the correlation coefficient for the 19 cases should be ±0.45 (*Péczely*, 1979). Therefore, both for weekdays and for weekends we have received a statistical correlation, referring to the fact that each day of the weeks of this period the holidaymakers from the Balaton visit the basin.

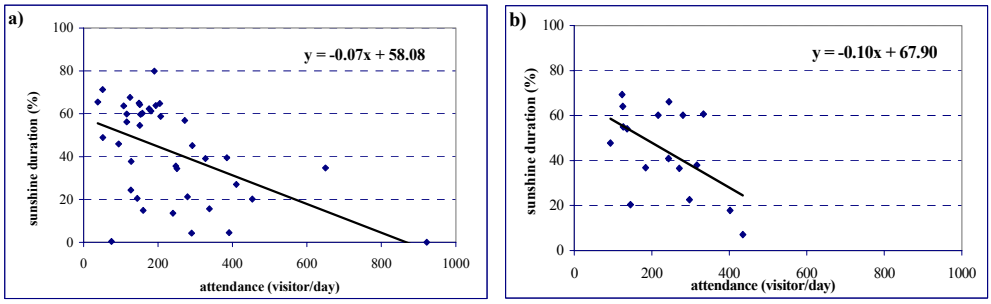

Fig. 3a-b Correlation of attendance and sunshine duration from 25 June to 20 August a) on weekdays and b) on weekends

CONCLUSIONS

Based on our analysis, it can be concluded that during the whole studied period (from 25 June to 13 September 1999) there is no real statistical correlation between the daily amount of sunshine hours and the daily number of visitors within the territory of the Káli Basin.

In the period of 25 June - 20 August there is a strong negative correlation, so the most probably visitors are the holidaymakers from the resorts at the Balaton. This relationship is valid for both weekdays and weekends. Thus, the cloudiness (e.g. the decrease of sunshine duration) increases the touristical attractiveness of the basin. In the interval of 21 August - 13 September the positive correlation suggests that in this period, visitors preferred sunny weather for travelling, and they came mostly from the neighbouring towns. In this period the sunshine supported the touristical potential of the Káli Basin.

Studying the amount of sunshine hours, we found that the basin belongs to the attraction of the Balaton Recreational Area. The temporal pattern of its tourism mostly depends on the migration of holidaymakers of Lake Balaton during the summer season.

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