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Managing the spatial variability of geosite assessment in the Balaton Uplands (Hungary)

Márton Pál and Gáspár Albert

Eötvös Loránd University, Faculty of Informatics, Department of Cartography and Geoinformatics, Budapest, Hungary (marchello@map.elte.hu)

Geoheritage protection and geotourism management both use geosite inventories of a particular area, which should include the most spectacular, significant and vulnerable sites. In the preliminary phase of our research we applied GAM (Geosite Assessment Model [1]) and M-GAM (Modified Geosite Assessment Model [2]), two quantitative methods to determine geotourism potential in our study area [3]. The M-GAM is affected by the Im (Importance) factor, which weights each of the GAM indicator parameters, thus modifying their values. The Im is calculated from questionnaires summing up the personal insights of the visitors about the natural, scientific and touristic indicators. Although it was theorized earlier that the Im is not constant, its spatial variability has not been studied yet.

The result of our preliminary research selected 24 geosites of the study area, and the 9 most visited ones have been presented in detail on the first large-scale geological hiking map of Hungary [4]. In our present study we have examined the Im factor of the nine most visited sites through online and personal questionnaires. The online platform was accessible from the field with the help of QR codes and URLs. The total number of fills was 147, varying between 6 and 33 per sites. After the evaluation of the forms we have determined an individual Im factor for each geosite. The results show that there is a high variability among the Im values calculated for our sites. It is also visible from the results that the Importance of the GAM indicators is considered differently by the visitors. At certain sites it shows a trend of preference: the touristic or the scientific values were weighted more. This is the modificatory effect of the new Im values that can be exploited for geotourism development purposes. The difference of the GAM and M-GAM score gives potential directions of development as is shows whether the site is expected to be scientifically or infrastructurally more attractive.

The application of this methodology makes it possible to produce more precise outcomes that are valid for a particular site. With site-specific data, the established inventory reflects the uniqueness of each formation and provides the possibility to make better plans. With our study we demonstrate that the spatial variability of the Im factor can be exploited to support the decision-making process in geosite management.

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[3] Pál, M. & Albert, G. (2018). Comparison of geotourism assessment models: an experiment in Bakony-Balaton UNESCO Global Geopark, Hungary. GEOTOUR2018 Abstract Book, p.21.

[4] Albert, G., Pál, M. & Schwarcz, Gy. (2018). Geological hiking map of the surroundings of Csopak. 1:30 000, Schwarcz Maps.