

Spatial analysis for optimization of student assignments in cartography

Abstract

The aim of the diploma thesis is to perform a multi-criteria analysis of large spatial data, which will result in the identification of a predetermined number of the variants of the territory, which are optimal for creating the student assignments.

The main part of the thesis is to design and to calculate the spatial evaluation criteria. In the theoretical part, a theory of multi-criteria analysis and examples of its use in general in geoinformatics and assessment of landscape potential are presented. The practical part is devoted to the design of own methodology for assessment of the territory from the point of view of suitability for processing of student tasks, including its application over the territory of the Czechia in order to obtain information about the territory. Multi-criteria analysis was divided into two steps: pre-selection of the territory based on Boolean evaluation and subsequent sorting of the variants from the most suitable to the least appropriate using the TOPSIS method. The scales of the individual criteria were determined by the scoring method. The main result of the thesis is a new set of the variants of the territory, which are comparable with their processing demands.

Keywords

Spatial analysis, cartography, GIS, student assignments, multicriteria decision Analysis, TOPSIS