



Automobile transport system analysis and ranking in Lithuanian administrative regions

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Identifying accessibility is a standard issue of transport analysis, which can be of interest to many socio-economic applications. In this paper we propose and discuss the accessibility-based Lithuanian automobile transport system analysis and GIS (geographical information systems) calculation method for searching a potential territory under different conditions. In our analysis the main parameter is time-based accessibility from the centres of Lithuanian administrative regions to all the territory. According to accessibility and regional statistics, i.e. road network density in regions, density of local roads in regions, length of roads per 1000 inhabitants in administrative regions, length of local roads per 1000 rural inhabitants in administrative regions, GIS application computes the ratings for administrative regions. The first stage of GIS decision support system is based on two calculation methods: Topsis (Technique for Order Preference by Similarity to Ideal Solution) and SAW (Simple Additive Weighting). The second stage of GIS application is used for planning accessibility in the Lithuanian administrative regions. Major input into GIS data for this application is the road and street network. Minor data is as follows: a layer of buildings, engineering utilities and landscape, hydrology, objects of cultural heritage. The application user can also enter different technical parameters: driving time from the centre, possible distance from major road, distance from specific utility, etc. Percentage of territorial distribution for the accessibility in half an hour from the administrative centre was used as a criterion for the calculation of municipalities ranking.

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