

Estimation of Suburbanization intensity of the Olomouc Region By Geographical Information Systems http://pohos.upol.cz

previous case.

Studied Area

Functional Urban Area (FUA) delimits the area that has strong precondition for the process of suburbanization.



Model Description

In ArcGIS environment model is represented by Toolbox Suburban Analyst, which contains two tool sets (Calculate Intensity and Calculate Suburbanization). The advantage of the model is its intuitive graphic design, through which all sub-models can be run separately and repeatedly. It is also possible to modify individual input parameters.

After the definition of FUA the period in which the populations of central city (Olomouc) fall down due to population migration is set. This period of high probability of suburbanization (1996 -2008) was estimated on data from the Czech Statistical Office through migration balance. To determine the intensity of suburbanization by the model, following criteria were defined: the migration intensity (weight 0.4), the built-up areas intensity (0.3), the housing intensity (0,2) and the commuting intensity (0,1). To calculate the intensity of suburbanization weights of individual criteria were fixed according to multi criteria analysis. All reclassified intensities (annualized for comparison per 1,000 residents or per municipality area) to values 0-10 are calculated

residents or per municipality area) to values 0-10 are calculated by these weights automatically and finally these values are added together.

Final Results

In the final step the values of suburbanization intensity are calculated by influence of Olomouc city (proportion of cumulative number of immigrants from Olomouc to the cumulative number of all immigrants to the community for the period 1996-2008). According to the results of model "Suburban Analyst" is possible to estimate 21 municipalities in witch the suburbanization intensity (influence of all municipalities) is higher than average value (2.13). The highest values of suburbanization intensity are in following municipalities: Hlušovice, Bystrovany, Dolany, Bukovany, Tovéř, Samotišky, Velký Týnec and Mrsklesy. If only the influence of Olomouc is considered, the suburbanization intensity is higher than average value (1.23) in 23 municipalities. The rank of these municipalities is almost the same as in



Suburban_Analyst.tbx
Calculate_Intensity
Built-up_Areas_Intensity
Commuting_Intensity
Housing_Intensity
Migration_Intensity
Calculate_Suburbanization
Influence_of_central_city
Suburbanization_Intensity



SUBURBANIZATION INTENSITY in 1996 - 2008







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