

DASYMETRIC MODELING OF SPATIAL DISTRIBUTION AND DAILY FLUCTUATION OF POPULATION

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Abstract

Dasymetric mapping of population distribution is relatively mature, but very functional visualization method in demographic analysis. The main advantage of dasymetric mapping over other methods used for population density mapping is its ability to realistically place population data over predefined geographic space. The application of dasymetric population mapping becomes wider with the expansion of powerful and efficient GIS software and tools. In the work presented in this paper, spatial distribution of "constant" population was modeled based on census data of the year 2002 by using environmental predictors: land use/cover (CORINE data base), road networks, and functional importance of settlements. In further analysis, daily fluctuation of population was modeled based on the data of daily migration of workers and students, i.e. commuters. As the case study we choose Vojvodina, northern region of Republic of Serbia, with total population of over 2 million inhabitants dispersed in over 460 settlements. About 25% of total active population and students are daily migrants. This research presents the attempt of developing applicable methodology for spatial planning practice at national and regional scale. Modeling daily fluctuation of the number and structure of population (age, sex, professions) is very important in decision making process, for determining strategies and developing different procedures of spatial planning.

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