

Scenario analysis for Territorial attractiveness and mobility flows

Topic: Regional input-output modeling 5

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In the paper an extended interregional model for population and migration flows for European NUTS-2-regions called the ATTREG-future model is presented. The model has been developed in the ESPON ATTREG-applied research project and has been used to model the impacts of 3 regional attraction policy packages, called the SMART, SUSTAINABLE and INCLUSIVE scenarios. The model includes in its core a conventional demographic model, which can be used for population forecast and impact assessment of changes in demographic factors. The model has been extended with relations for interregional migration and region attractions / territorial capital as well as an interregional economic base type model for employment, labor force and unemployment. The model also includes a very simple relation between export jobs and GDP per capita. The model has been used to model the direct and derived impacts on migration and tourism flows of changes in regional attractions, such as changes in population density, share of employment within public sectors, number of students pr. young population, number of hotel beds, general satisfaction etc. These interrelations are estimated on the basis of the ESPON regional database for the period 2000 – 2008. The model includes both exogenous attraction variables which are fed into the model directly (such as capacity of regional international airport) and “feed-back” attraction-determined components (population density and GDP pr. Capita impacts on in-migration), where changes in in-migration determines the population density, which in turn generate derived population flows etc. The equations of the model are documented in the paper together with its mathematical solution. The future plan is to expand and replace the simple economic base type model with an economic commodity (and factor) market block, which in its core has interregional input-output output tables. The structure of the model, which is similar to the interregional LINE-model (see Madsen & Jensen-Butler 2004) is presented in the paper. The implementation of economic commodity and factor market blocks involves the estimation of interregional trade flows together with regional supply and use tables for NUTS-2-regions. The mathematical structure of a full interregional population and economic model will be presented in a version of the paper for the IIOA-conference.