Contribution ID: **60** Type: **not specified**

Predicting migration patterns in Sweden using a gravity model and neural networks

Tuesday, 14 September 2021 12:00 (20 minutes)

Accurate estimations of internal migration is crucial for successful policy making and community planning. This report aims to estimate internal migration between municipalities in Sweden.

Traditionally, spatial flows of people have been modelled using gravity models, which assume that each region attracts or repels people based on the populations of regions and distances between them. More recently, artificial neural networks, which are statistical models inspired by biological neural networks, have been suggested as an alternative approach. Traditional models, using a generalized linear framework, have been implemented and are used as a benchmark to evaluate the precision and efficiency of neural network procedures.

Data on migration between municipalities in Sweden during the years 2001 to 2020 have been extracted from official records. There are 290 municipalities (LAU 2 according to EuroStat categories) in Sweden with a population size between 2 391 (Bjurholm) and 975 277 (Stockholm). Additional data, including demographics and socio-economics factors, have been analyzed in an attempt to understand what drives internal migration.

Keywords

Gravity model, Neural Networks, Migration

Special/invited session

Primary authors: Mr PAVIA, John (Statistikkonsulterna); Mr OLOFSSON, Jonny (Statistikkonsulterna); PETTERSSON, Magnus

Presenter: PETTERSSON, Magnus

Session Classification: Modelling 3

Track Classification: Modelling