

VACANCY: population simulation for travel demand model

INTRODUCTION

Octavius¹, the tour based microscopic travel demand model of Dat.mobility, models daily activity patterns for all persons and households within a study area. Being a microsimulator, derivation of a synthetic population is the starting point for any Octavius application, being either a description of the current (a reference) or (expected) future situation (a scenario).

Currently, in both cases Octavius uses a population synthesizer to derive the most probable synthetic population from observed person- and household distributions and zonal margins. For future scenario's, the same household distributions from the reference run are combined with prognosed zonal margins from demographic forecasts.

PROBLEM DESCRIPTION

Although Octavius' population synthesizer generates the most probable populations for both the current as well as the future situation, there is no relation between the individual agents in the two populations.

To add such relationships to Octavius, methods that derive a future population by applying year on year mutations to the current population (so called population simulators) could be used, but such approaches may not guarantee a match with prognosed zonal margins.

RESULT / OBJECTIVE

The goal of this research is to adopt and/or develop a population simulator that allows to establish relationships between different populations generated by the Octavius' population synthesizer.

ASSIGNMENT

The assignment requires literature research into Octavius as well as various approaches for population simulation. Then, the approaches found should be assessed to determine their potential. One or a limited number of approaches should then be implemented or adopted in prototypical form within the Octavius framework. Then, a case study should demonstrate the capabilities of the most viable approach.

INFORMATION

When interested in this internship assignment please contact: Luuk Brederode (lbrederode@dat.nl). More information on Dat.mobility and Goudappel can be found via www.dat.nl and www.goudappel.nl.

Footnote

¹<https://www.slideshare.net/LuukBrederode/development-of-a-microscopic-tour-based-demand-model-without-statistical-noise2>