SPINE
Smart Public transport Initiatives for climate-Neutral cities in Europe

Activity-Based Model in Tallinn

About

The Activity-Based Model (ABM) is a transportation modelling approach that simulates individuals' daily activity travel patterns and models "when", "where" and "how" people participate in activities. In this way, they capture the full sequence of their activities and trips during a day, and provide transport planners and policy makers with the digital representation of travel behavior. The ABM uses disaggragate data collected through large-scale surveys. In SPINE, the ABM is being developed to explore citizens' choices related to activity type, destination and transport mode. In addition, behavioral models are being developed to assess the potential impact of introducing a cargo bike-sharing system, providing insights into user adoption and demand patterns.

Key Features

Explore individual daily activity–travel patterns with explicit time, location, and mode choices

Integrate socio-demographic characteristics to reflect travel behavior

Who will use it:

The Transport Department of the city of Tallinn, responsible for city's mobility strategy.

What could be the impact?

The city of Tallinn will benefit from the models by better understanding people's travel behavior and supporting evidence-based transport policy decisions. Policy makers will have a tool to investigate cargo bike sharing system demand patterns and predict the acceptance of the service.

Development & testing in SPINE:

In Tallinn, the different components of the ABM (e.g. start time, activity participation and duration, destination choice, mode choice) are being developed using disaggregate travel diary data from more than 2500 residents in Tallinn. In addition, a Stated Preference survey is ongoing in Tallinn to collect citizens' preferences and choices regarding the introduction of a cargo bike-sharing system in the city.

Can it be transferred?

Implementation of the ABM in Tallin, is city-oriented, analysing the activities of the examined area while taking into account start time, activity participation and duration, destination and mode choice along with socio-economic characteristics of the end users. Within SPINE, recommendations and lessons learnt will be provided, offering guidance for other cities on minimum data needs, benefits, potential risks and challenges.

What's next:

Tallinn will have available a transportation model for the city to evaluate the impact of mobility interventions.

Within SPINE, the ABM will provide estimations to support the deployment of the cargo bike sharing system. After SPINE completion, the city of Tallinn will have a robust transportation model to deploy mobility scenarios