

Significance of transport accessibility components in Szczecin with particular focus on collective transport in the period of 2009-2018 (TraCoM)

Everyday commuting in cities generates road traffic which mainly depends on distribution of transport components. In the case of Szczecin, the fact that the city is divided by the river and that it has a very specific river-port layout shapes everyday movement of people. Commuting is also affected by specific conditions of formation of different transport components (transport, spatial, time and individual component).

The possibilities and tools that modern researchers have (GIS and large data bases) allow to investigate the influence which time and individual transport components exert what was impossible just several decades ago. Nowadays, research on transport accessibility is conducted in regional and local scales. Thanks to the GTFS it is possible to investigate socio-spatial differentiation, with special attention paid to socially disadvantaged groups. The GTFS format is a format of schedule data which allows to better understand of changes in accessibility using the components, e.g. in the case of accessibility to health services or supermarkets. The GTFS format makes it possible to compare transport systems in different cities.

The project is of great cognitive importance and the implementation techniques used will help to determine the significance of distribution of transport components in everyday movement of people. Using diversified spatial data (concerning services, population, workplaces) and analysing different transport modes (individual and collective) will allow to delimit a commuting zone spreading between start points and destinations of everyday journeys. The results obtained will be of universal usage and they could be applied to research on other cities divided by a river where demand for transportation services is observed on both banks of the river. Not only the existing river layout of the city plays an important role in analysis, but also the port which affects everyday movement paths of many people and its location is significant for shaping optimal linkages between different transport components. In cities of this type, lots of companies are located near the port and the so-called industrial zone is created. This zone is the destination for many people commuting to work throughout the day.

The duration of the project is 3 years. During this period of time an attempt will be made to resolve some certain scientific problems which regard covering distances using means of individual and collective transport in Szczecin. One of the main research problems is spatial distribution of start points and destinations of everyday journeys. Investigating possibilities of certain groups of people (taking their age and gender structure under consideration) to reach different destinations at different times of a day will allow to predict behaviour patterns of people using a transportation network in the city. Being capable of predicting where and when the largest traffic emerges will allow to plan and implement some facilitations. Increasing road system capacity is especially important in cities, where the traffic is mainly concentrated on bridges.

The project findings may significantly contribute to development of research on regional and local studies on transport systems. The novelty of the project is implementation of modern and highly advanced GIS techniques to evaluation the impact the individual and time components exert on transport accessibility. Both components are very important for urban transportation systems operation. The information on the means of transport that are used by citizens (individual or collective) is essential as less traffic congestion means less negative factors affecting citizens.