



**ABSTRACT OF THE
DOCTORAL DISSERTATION**

**Modeling of the location of public transport stops with the application of methods of
spatial analysis**

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Urban areas face nowadays numerous problems that arise from transport activity and the dominance of private cars in everyday trips. Different actions are taken in order to increase the number of trips made using means of public transport and, at the same time, decrease the use of cars. These actions include development of methods that support making decisions on the most advantageous location of public transport stops.

The proper location of a public transport stop is crucial for passengers when they decide which mode of transport to choose and therefore it influences the number of trips that can be made from said stop. There are many methods that allow to assess the validity of a location of a stop. Those methods are based on various factors that influence the potential of the location of a stop.

In this dissertation an assumption was made that potential of the location of a stop may be evaluated on the basis of factors associated with land use in the vicinity of the stop. According to this assumption a method of the estimation of the potential of a location of a public transport stop was developed. During the studies chosen methods of spatial analysis were applied, e.g., methods of the division of the area using Voronoi diagram.

First chapter of the dissertation includes the introduction, as well as research questions, thesis, goals of the study and its scope. In second and third chapters there is a literature review in the aspect of methods of location, spatial analysis and ways to locate public transport stops. Fourth chapter contains assumptions of the method and its formal description. Fifth chapter is dedicated to verification of the method and sixth contains an example of the application of the method. The last, seventh, chapter contains summary and directions for further research.

Keywords: public transport, location of stops, spatial analysis, land use, taxonomic methods

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