

Commuting by fast public transport and car to work during the morning traffic peak

The impact of public transportation is greater the more competitive it is compared to car transport, making it a more frequently chosen mode of transportation by residents, for example, in commuting to work. The main objective of the project is to compare the catchment areas around public transportation stops (origin - working-age population and destination of trips - workplaces) with public transportation (rapid tram and metro) and private transportation (car), and to indicate the possibilities of replacing private cars with public transportation. The research issues considered in the project focus on determining the accessibility by public transportation (rapid tram and metro) and private transportation (car) around the catchment areas of direct influence and residents' mobility. It involves determining the optimal spatial (temporal) distance from the public transportation stop, which will dominate in terms of public or private transportation usage. The second group of research topics pertains to determining whether rapid public transportation connections can compete with cars, for example, in commuting to work.

This project will compare the accessibility to workplaces by public transportation (rapid tram-LRT) and private cars. LRT is an abbreviation for "Light Rail Transit," which refers to a light rail system in English. LRT is a type of public transportation system that combines features of trams and suburban trains. It is typically characterized by low-floor vehicles that travel on tracks or dedicated road lanes, often separated from car traffic. LRT is commonly used in larger cities as a form of mass transit, connecting urban areas, suburban neighborhoods, and other important points in the transportation network. It is an environmentally-friendly alternative to private cars that aims to improve the accessibility and efficiency of urban transportation.

Investing in light rapid rail transportation (LRT) services brings social, environmental, and economic benefits. A transportation system based on LRT offers advantages such as pollution and congestion reduction, energy consumption reduction, and promoting more compact development along the transportation corridor. However, if not supported by an appropriate transport-oriented policy context and strategies, it may fail to achieve its intended benefits.

Ensuring good public transportation allows cities to develop and fulfill their economic, environmental, and social aspirations. Public transportation provides basic mobility for passengers who do not have other vehicles. It also provides locational efficiency by facilitating easy access to workplaces and alleviating peak hour congestion. It connects various land uses in the city center, which can enable access to jobs and services, activate job markets, facilitate business activities, and enhance the attractiveness of the city.

The outcome of this study will involve determining and comparing the accessibility of selected modes of public transportation in relation to car usage. This will allow for identifying the positive impact of infrastructure investments on changing car usage habits within the city in favor of environmentally-friendly public transportation. It is also significant in the attempt to promote other investments that improve accessibility within the rail-based public transportation system, such as implementing tram priorities or integrating LRT with railways or metros. Demonstrating competitive areas in terms of commute time will contribute to promoting environmentally-friendly and low-emission attitudes and directions in the development of public transportation.