

SUMMARY OF THE DOCTORAL DISSERTATION:

"THE ROLE OF TRANSPORT INFRASTRUCTURE IN BUILDING THE COMPETITIVE ADVANTAGE OF A TRANSPORT MODE. STUDY BASED ON THE EXAMPLE OF PASSENGER RAIL TRANSPORT".

The economic growth and an increase in affluence and mobility of the population will raise the demand for passenger transport, while changes in the demographic structure of the population will increase the interest in collective transport.

In meeting this demand, rail transport can be an alternative to road transport and in some relations also to air transport. However, an increase in the importance of rail transport in passenger transport requires a number of changes aimed at meeting the quality expectations of potential passengers, including a fairly large number of elderly people in the future.

The aim of this dissertation is to examine the role of transport infrastructure in building the competitive advantage of passenger rail transport and to indicate directions of infrastructure development necessary to implement the idea of sustainable transport development. To this end, the main hypothesis put forward states that the adjustment of rail transport infrastructure to contemporary challenges is a basic condition for increasing the competitiveness of this mode of transport. In addition, four specific hypotheses have been formulated. The thesis also assumes that the specificity of transport infrastructure makes it difficult to adapt it to changing challenges.

The dissertation shows that the development of rail transport is consistent with the idea of sustainable transport development in the social, economic and ecological aspects. Unfortunately, the condition of rail transport infrastructure in Europe very often does not meet modern requirements. The railway infrastructure is spatially diversified in terms of technical, qualitative and quantitative parameters. For example, the share of multi-track lines and high-speed lines is different. Similarly, network density, the degree of electrification of the railway network, voltage on electrified lines and track gauge are different. Various railway traffic control systems in different countries result in difficulties in international transport. The diversification of rail transport infrastructure has become the main barrier to the development of this mode of transport. The effect of the lack of adjustment of rail transport infrastructure to modern requirements is, for example, different competitiveness levels of rail transport in individual countries or regions, and, as a consequence, quantitative and qualitative diversity of rail transport. Closing of local railway lines results in the limitation of access to this mode of transport, hence contributing to isolation of less developed regions and social exclusion of the rural population. The dissertation shows that the basic directions of railway infrastructure development which may increase the

competitiveness of this mode include: development of high-speed rail network as well as development of regional and urban infrastructure to make it possible to use modern rolling stock, implementation of smart transport systems and ensuring interoperability in rail transport. Modernization of railway stations is another important direction of desirable changes in the rail transport mode.

Against the background of problems and tendencies in the development of rail infrastructure in Europe, the dissertation presents problems related to the development and operation of rail transport infrastructure in Poland. It has been shown that it is the rail transport infrastructure in Poland which is the key factor limiting the competitiveness of this mode of transport and thus of the sustainable development of passenger transport. The assessment of the attractiveness of this mode of transport in Poland has been carried out with surveys of the level of satisfaction and expectations of railway transport passengers. The results of the study have been subjected to detailed statistical analysis and compared with the results of other European studies on similar issues. The studies have shown that satisfying of a significant part of passenger expectations depends on infrastructure changes. In addition, the studies have allowed to indicate infrastructure development directions determining an increase in the competitiveness of rail transport in passenger transport in Poland.

The research hypothesis has been proved that adapting rail transport infrastructure to contemporary challenges is a basic condition for increasing the competitiveness of rail transport in passenger transport.

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