

Possibilities and directions of limiting spatial mobility in large cities in Poland - what is left of transportation behavior after pandemic restrictions

Numerous scientific and popular publications prove that it is difficult to find a sphere of human life that has not been transformed by the disruptions and restrictions on the spatial mobility of the population that have taken place in recent years (especially by the COVID-19 pandemic, but also as a result of war and the energy crisis). One of these - of great social and economic importance - is transport. The changes taking place provide an opportunity to gain a better understanding of the factors shaping the mobility of people in space. The rationale for undertaking the research is therefore the emergence of extraordinary factors whose impact on urban systems has been observed for several years. Armed conflict on Ukrainian territory, mass immigration, inflationary pressures or the occurrence of a global pandemic with such far-reaching consequences for the organisation of people's lives are extremely rare events. As a result, they create a unique opportunity to carry out research that was impossible before. At the same time, it is very important to be able to use the latest information technology in the form of, for example, Intelligent Transport Systems.

Therefore, the aim of the research undertaken is to identify and analyse (using modern techniques and geographical information systems) structural and territorial changes in the transport behaviour of the inhabitants of large urban centres in Poland, in three time sections: a) before the pandemic eruption (2018-2019), b) during the pandemic (2020-2021) and c) after its informal end (2022-2023). We are most interested in those transformations that also persisted during the last period under study (proved to be permanent). At the same time, we would like to identify factors influencing the restriction of spatial mobility of the inhabitants of large cities in Poland. We are interested in both factors resulting from the supply of transport (especially public transport) and from demand (the transport habits of the inhabitants). In this way, we assess which socio-economic characteristics and processes determine the degree to which urban transport systems are prepared for mobility constraints. We also attempt to determine the willingness of residents of large cities to reduce the number of journeys they make and to divert them in space. The issue is examined from the point of view of both residents and business entities, transport operators and local authorities (transport organisers).

We want to verify two important research hypotheses: (1) Spatial mobility in large cities in Poland has been modified during the pandemic period, both quantitatively, qualitatively and in terms of travel directions; (2) the extent of these changes varies and depends on the socio-economic characteristics and the functional-spatial structure of the city. The results obtained will allow better planning of urban transport systems and their preparation for operation in unstable external conditions.