



Prace Komisji Geografii Komunikacji PTG

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INTRODUCTION

Wprowadzenie

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We would like to present the fifth volume of Transport Geography Papers of Polish Geographical Society published in 2022. It includes six research articles which represent various subjects – from a general overview of transport on national scale to regional and urban public transport and challenges connected with electrification of road transport.

The first article by Oleksandr Radchenko, Aleksander Kuczabski, Alina Boychuk and Serhiy Klimovych presents an overview of the development of transport sector in the Ukraine over the last decade and discusses its current state. Like the entire country, also transport has been affected by numerous challenges including structural, energy and financial crises, COVID-19 pandemic and the geopolitical situation with the Russian occupation of Crimea in 2014, the anti-terrorist operation in East of Ukraine and the full-scale intervention of the Russian Federation started on 24 February 2022.

So far, national transport development programs have not brought to systemic improvements of transport in the Ukraine and at present the war situation represents a completely new dramatic conditions for the development of transport.

The second paper by Miroslava Trembošová and Samuel Kohutiar discusses the relationship between public transport and regional development in the rural self-governing region Trnava in Western Slovakia. This issue is very important because public transport at a regional level is a tool for improving the quality of life. Its deterioration can reduce the quality of life and lead to the problem of transport-related social exclusion. Although a strong relationship between the public transport domain and regional development was not confirmed in Trnava region, it can be stated that unfavourable geographical location and low concentration of inhabitants predispose peripheral

areas to reduced public transport services, which results in direct negative effects on the quality of life of their inhabitants.

The authors of the third article – Sławomir Goliszek, Julia Wójcik and Patryk Duma –

analysed the accessibility to various important destinations including the nearest kindergarten, primary school, hospital, cinema, shopping centre and indoor swimming pool by public and private transport in the north Polish city of Szczecin. For the purpose of the study the authors developed an original model of an individual transport system using Google Maps API data. Both static and dynamic approach was used. The authors did not observed any significant disparities between the public transport means and private cars, however the overall level of accessibility by the means of private transport turned out to be higher.

Also the following paper by Roman Panov is devoted to urban transport problems. This author analysed the development of the spatial structure of subway networks in China – country which is characterised by the most dynamic growth of this means of public municipal transport. The author used the methodology developed by K. Kinsky and S. A. Tarkhov based on graph theory. He analysed the dynamics of the main quantitative and topomorphological indicators

of Chinese subway systems. The analysis shows that the characteristic features of the evolution of subway networks and their spatial structures allow to highlight a special “Chinese” type of metro networks.

The subject of the last article – electrification of road network – is still analysed rather rarely, although it represents a very important challenge for the future of transport in the context of its decarbonisation. Hasan Huseyin Coban and Wojciech Lewicki estimate growth in electricity demand in the case of electrification of selected motorway sections in Turkey. The authors came to a conclusion that if eight main roads in the country are electrified the daily electricity demand can be increased by 3.7% but if all roads in Turkey are converted to an electric road system (ERS) and all land vehicles use it, the corresponding peak power increase will be as high as 100%. The authors calculated also the influence of road electrification on CO₂ emission. The electric powertrain on the selected eight roads will reduce CO₂ emissions caused by road transport in Turkey by 0.022% assuming that electricity generation consists of only renewable sources.

On behalf of the Editorial Board, I wish all readers an interesting and pleasant reading and inspiration for further scientific research.

Jakub Taczanowski