

Disability Needs and Sustainable Public Transport Management in the Metropolis of Upper Silesia and Zagłębie: The Role of Smart Solutions in Planning and Implementation

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Abstract

This study aimed to identify the needs and barriers experienced by people with disabilities in accessing sustainable public transport in the Metropolis of Upper Silesia and Zagłębie (GZM), and to assess the potential of smart solutions in enhancing service accessibility and quality. A mixed methods approach was applied, combining quantitative surveys with qualitative in-depth interviews, enabling a comprehensive understanding of both systemic challenges and individual mobility experiences. The findings indicate the presence of significant infrastructural, informational, and organizational obstacles that continue to hinder the full inclusion of persons with disabilities in the urban mobility system. At the same time, several areas were identified where smart technologies—such as real-time passenger information systems, personalized mobility apps, and adaptive infrastructure—could support accessibility improvements. Based on the collected data, recommendations were developed for integrating smart and inclusive mobility strategies into the planning and governance processes of GZM's public transport system. The study emphasizes the importance of universal design principles and participatory planning involving users with disabilities to ensure the effectiveness and sustainability of implemented solutions.

Keywords

Disability, accessibility, public transport, smart mobility, sustainable development, urban inclusion, Upper Silesian-Zagłębie Metropolis.

