

CHILDREN'S EXPOSURE TO GREEN SPACE ON THEIR WAY TO SCHOOL: FROM OPERATIONALISATION TO THE APPLICATION OF A SPATIALLY DYNAMIC ENVIRONMENTAL JUSTICE CONCEPT

The environmental justice (EJ) focuses on who suffers from exposure to environmental bads, and who benefits from access to environmental goods, including green space provision. The concept has grown in recent decades to become one of the leading approaches to social-ecological analysis and an inherent part of the urban studies discipline. The ongoing debate on the EJ concept focuses on the possibilities to develop the understanding of EJ itself and linking it with other research frameworks, such as urban ecosystem services (ES). The great majority of EJ studies elaborated EJ regarding green space provision for the inhabitants' place of residence. When a residential location is used as a reference (spatial) point, then we are dealing with a spatially static approach to EJ. However, this might be insufficient and too narrow a view on EJ. Independent of whether or not EJ occurs in a given location, there could be inequities in the provision of greenery and the related ES in the routes of people's daily transits. The latter – spatially dynamic EJ – could be understood as the equitable provision of environmental benefits during inhabitants' movement, such as commuting to work/school.

A valid exemplification of the spatially dynamic EJ concept is the provision of greenery and ES for children during their home–school (home to school) routes. Children are often highlighted as one of the vulnerable socio-demographic groups, characterised by a provision of greenery in the place of living lower than others and a need for greenery and access to ES higher than others. In our initial work "*Children's green walk to school: An evaluation of welfare-related disparities in the visibility of greenery among children*" (Łaszkiwicz E. & Sikorska D.) published in *Environmental Science and Policy* in 2020 we demonstrated that, compared to other children, those who belong to a lower welfare-related status group might have a lower possibility to experience an aesthetic appreciation provided by the greenery they see during their home–school routes. Our study highlighted the need to further develop the spatially dynamic EJ concept and the necessity to conduct additional, more detailed social-ecological analysis which requires the collection of additional spatially explicit data.

The key research problem addressed in this project is how to extend the concept of EJ to account for spatial dynamics (the path that a person follows through a geographical space while moving from point A to B). The general objectives of the project are to develop a new, spatially dynamic approach to studying EJ, and to test this approach in the case of the provision of greenery and ES for children during their home–school route in Lodz (Poland). In this project we will develop conceptually the spatially dynamic approach and apply it to the following dimensions of EJ:

- distributive – equitable/fair provision of greenery and the related ES along children's home–school routes for children who belong to different socio-economic status groups;
- interactional/recognition – ensuring that the needs, values, and preferences regarding ES provided by that greenery that accompanies home–school routes of all children are recognised;
- procedural/participatory – enabling the involvement of all children and their parents in the decision-making process regarding the design of greenery that accompanies streets and pedestrian corridors.

This project contributes to advancing the understanding of urban systems by proposing a complex, interdisciplinary approach which allows for the analysis of linkages between the structure of greenery with the ES that this greenery provides and the preferences/needs regarding this greenery and the benefits it can offer. The project makes it possible to uncover the role of greenery in home–school routes, and it supplements the discussion on ES provided by the greenery accompanying these routes. The novelty of the research carried out within this project is that we will link social and ecological analysis. In particular, we will propose a procedure for mapping multiple ES in a very small spatial scale with the use of the latest methods from environmental science and GPS-based fieldwork. In addition, we will conduct the computer-assisted personal interviews with the spatial mapping of home–school commuting behaviours. Spatial quantitative analysis, based on these data, will be supplemented by the qualitative social science analysis of local planning documents.