

15-minutes walking accessibility to primary schools across space and time

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Abstract

Efficient transport systems and high travel speeds have generated unprecedented levels of accessibility considering the larger travel catchment areas. On the flip side, such conditions lessened the need for proximity which in turn led to the distancing of human activities and car dependency. This is particularly concerning when considering young children, who find less opportunities for independent mobility and accessibility, fuelling physical and cultural car-dependency from a very young age.

In this presentation we develop a cross-section and longitudinal analysis of the levels of walking accessibility to primary schools in the northern region of Portugal (expanding over an area of more than 21.000 km²). We look at both urban dispersion and primary school concentration of the last decades. Using statistical data and contour accessibility measures, we explore how walking accessibility to primary schools evolved in the last decades (1991-2021) and how it enables or disables car-independency among young children and their households. We also explore the role of different urban environments in walking accessibility and car independence, by looking at a broad variety of urban contexts, from metropolitan, medium, and small size cities, peri-urban and rural environment.

Our results show a clear concentration of schools in the last decades, resulting in a significant decrease of walking accessibility to primary schools and phenomena of urban dispersion (moving away from schools and central areas). This concentration of schools significantly reinforced the relationship between population density and walking accessibility. The analysis also revealed a concerning increase in the proportion of population without access to school by walking, having to rely on less sustainable transport modes from a very early age.

Keywords: local accessibility, car independence, child mobility