

Comparative Analysis of the Spatial Accessibility to Services in the Peri-urban Areas of Post-socialist States: Vulnerability or Opportunity?

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In the Eastern European context, the socialist regime was characterized by an extremely strict urban planning. Moreover, the state represented the only actor, private property being almost non-existent (Stanilov & Sykora, 2014). These countries mainly focused on the development of industry as well as the creation of collective housing, resulting in a densely populated and compact urban space (Hirt, 2013) with a clear demarcation of the built space. After the transition to the market economy, the withdrawal of the state from the spatial planning has translated into a decentralisation of the power, where its role was replaced by the permissive local authorities and by numerous private actors. Without a well-defined legislative framework, which in most of the cases it leaves room for interpretation, the peri-urban area in the countries which were part of the formerly Eastern Bloc has developed in a highly unsustainable and chaotic manner. In this regard, we assume that peri-urban development has followed different paths depending on the influence of local and national factors that have generated different spatial patterns. In order to conduct our analysis, we have chosen six case studies: three in Romania and three in Poland, countries considered to have one of the loosest state controls over the planning process in the European Union according to the literature (Tosics, 2011).

Firstly, we have analysed the socialist context of both countries as well as how the post-socialist transition affected the planning system. Therefore, we focused on the comparative analysis of current planning systems in order to uncover the corresponding instruments and institutions at all spatial and decision-making levels that are responsible for land use change and building permits. This analysis showed that the authorities have acted as development promoters in both cases, in order to attract more funds to the local budget. In this way, peri-urban municipalities have only reacted to individual decisions of built-up development, intended to modify the current regulations regarding the maximum requirements in terms of building dimensions, more than 90% of these requests being approved by the local authorities.

One of the problems that have arisen as a result of the rapid urbanization without prior planning (as it is normally supposed to happen if compared with the Western counterparts) is the provision with services that could ensure a decent standard concerning the quality of life. In most of the cases, peri-urban areas in Poland and Romania (and in other post-socialist states) are dominated by the residential development, as a response to the increasing demand for housing. Private developers build these units which are usually sold at a much lower price than within the urban core, making it attractive for individuals that seek these areas for green space and tranquillity. However, the reduced price mostly hides the lack of services provided, therefore the peri-urban space has become the arena where socio-spatial inequalities are highly visible, determining multiple challenges in terms of sustainability.

Having these considered, we are therefore discussing how can we reduce the inequalities in these areas located in the rural-urban interface in order to create a resilient territory. In this respect, the aim of our study is to assess the actual socio-spatial inequalities using the concept of the 15-minute city within the peri-urban areas of the six case studies from both countries, in order to detect local and national patterns as well as the factors that have shaped them in order to discover solutions to enhance their resilience. An objective will be to map the inequalities in terms of accessibility to the most requested services, which will help to better identify the patterns of the socio-spatial inequalities as well as the gaps that will reveal vulnerable territories. Another objective will be represented by the computation of a 15-minute city proximity index, which will assess the accessibility to these services by considering the Maslow's hierarchy of needs which will provide us a better overview on the vulnerabilities that hinder the resilience of these territories but also on the opportunities that may serve as examples for other study areas. Another objective will be to correlate this index with the real estate price in order to detect to what extent the lack of services provision may affect the attractiveness of a specific area, highlighting a more complex vision regarding these inequalities. Last, but not least, we will design policies that aim to mitigate these inequalities, having considered the features identified in each study case, in order to provide targeted solutions that will be suitable depending on the characteristics of each study area or even at micro-scale.

Therefore, we have used a Global Human Settlement Layer (GHSL) population raster at 100-meter resolution in order to obtain the finest data available for the six case studies: Szczecin, Bydgoszcz and Lublin from Poland together with Timișoara, Cluj-Napoca and Iași from Romania. As the National and Local Statistics Institutes have data only on Local Administrative Unit level, GHSL uses satellite imagery not only to delineate built-up area, but also to assign

census data at micro-scale level. Moreover, we have used the Google Maps API to obtain the location and the type of services altogether with their review scores that reflect the satisfaction rating. Furthermore, we have categorised the services obtained into three classes according to the Maslow's hierarchy of needs. Having these considered, we were then able to compute the spatial accessibility models at micro-level.

Moreover, we have employed web-scraping techniques in order to obtain the real estate price, more precisely both collective and individual housing units within the six study areas, comprising the urban and peri-urban areas. Then, we have carried out a statistical analysis to determine the correlation between the spatial patterns of accessibility and the patterns of real estate price, which will provide more information on the evolution of socio-spatial inequalities. In this respect, we will be able to discover if these trajectories have been guided by local or national development factors or even by a combination of the two in order to evaluate how they have shaped the actual patterns of the built environment in the peri-urban areas of the selected case studies. The focus will be placed on the areas that mostly lack accessibility to basic services, in order to further analyse their background to better understand what has been leading to this situation. This investigation will target the local and national planning and other legislative instruments that could potentially have driven these inequalities patterns.

Future research will focus on establishing interviews with multiple actors (developers, authorities, civil society etc.) from both countries who will be able to reveal their attitude, motivations and vision towards the peri-urban and its uncertain future. This way, we will be able to find the most suitable solutions tailored to the study case's needs or even propose solutions at national level to avoid the further creation of unsustainable development patterns and improve the real quality of life.

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