

19-21 de Octubre 2022 | Granada

## INTERNATIONAL CONFERENCE ON REGIONAL SCIENCE

*Challenges, policies and governance of the territories in the post-covid era*

Desafíos, políticas y gobernanza de los territorios en la era post-covid

XLVII REUNIÓN DE ESTUDIOS REGIONALES

XIV CONGRESO AACR



*Young Researcher Sessions*

## ABSTRACT

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### **Abstract:**

**Title:** Analysing the Potential of the 15-minute City Concept and Related Transport Equity Aspects in Spain

The concept of the 15-minute city summarizes the idea of compact, mixed-used and connected cities where function density and sustainable transport options allow their residents to travel less to meet their daily needs. In this framework both the number and the length of the trips is reduced. As a result, the 15-minute city contributes to decreasing transport demand and commuting times with positive environmental, health, social and economic consequences. Aiming to reverse urban sprawl and reveal the negative effects of urban mobility, the implementation of the 15-minute city principals can be a viable strategy for many cities.

We propose a reproducible and scalable methodology to analyse the relevance and potential of the 15-minute city concept using open data and open-source software. We calculate accessibility metrics for different destination categories on census district level in Spanish cities and propose a cumulative accessibility metric as well. This approach lets us analyse and compare the performance of multiple cities considering different requirements of the 15-minute city. Besides that, census level socio-demographic data is used to analyse the related transport equity and further social aspects of different accessibility levels across census districts.

Using the results of the analysis, we discuss how accessibility metrics differ across different types of destinations and across metropolitan areas comparing metrics of the core cities and their functional urban areas. The efficient operation of various services is linked to optimal service area and population that uses and supports the services. Therefore, core and dense areas outperform urban peripheries in terms of accessibility. However, the relations of accessibility and income levels are less evident, especially when wealthy, car-dependent satellite cities are considered. Based on our results, we also propose policy relevant recommendations to facilitate the implementation of the 15-minute city concept and reveal the potential social consequences.