

# **ANALYSIS OF GREEN INFRASTRUCTURE ACCESSIBILITY IN DIFFERENT EUROPEAN CITIES**

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Green infrastructures are configured as elements of great importance in cities, because provide a wide range of ecosystem services to population. At this point, the accessibility to them, becomes a factor of marked importance because influences a large number of parameters, such as: use variability, safety, quality and quantity.

**Keywords:** Green infrastructure; ecosystem services; accessibility; mapping; urban.



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## INTRODUCTION

- Green infrastructures are configured as elements of great importance in urban areas, due to their ability to provide ecosystem services to society. Within these, human health and wellbeing are some of the main topics of study. In relation to them, the accessibility study is configured as an element of great importance (La Rosa, 2014).
- Accessibility can be understood as the ability to approach something, and refers to the spatial characteristic related to the possibility of urban habitants to arrive from a place of origin, usually their residence, to a particular place, such as a green area (Quatinni et al. 2018).
- Accessibility to green infrastructures can be studied following different methods: buffer zone, minimum distance method, gravity model and network analysis (Jing Ma, 2016). The best and most reliable method is the network analysis, which is based on actual roads and associated speeds.
- The objective is to measure quantitatively the accessibility of the population to the selected green infrastructures, in four study cities: Coimbra, Gent, Leipzig and Vilna.

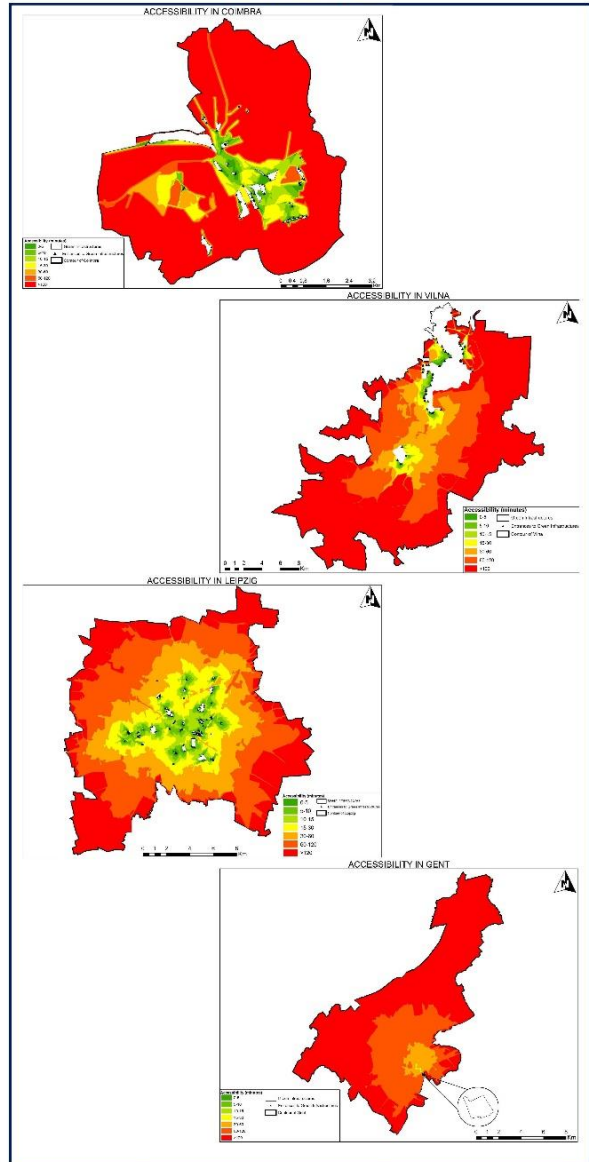
## STUDY AREAS



## NATURE BENEFITS OF GI

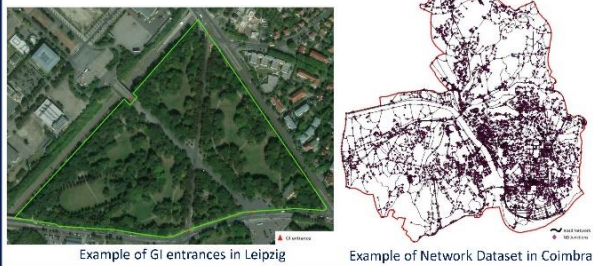


## RESULTS



## METHOD FOR MAPPING ACCESSIBILITY

1. Establishment of dataset for each study area, including green infrastructure, road network and urban boundary, in ArcGIS.
2. Delimitation of potential entrances to GIS through aerial orthophotos and digitizing each entry.
3. Building a Network Dataset (taking as reference 4km/h as the average speed of a pedestrian walking (Stanners and Bordeau, 1995).
4. Identification of Service Area, defined as the region including all the streets that can be accessed from a point in the space from the entrance to the green infrastructures, based on the road network (Unal et al. 2016)



## CONCLUSIONS

- Distinct number of GI and their accessibility was found in the four study sites, with Coimbra being the most accessible city.
- The connectivity between GI must be improved, particularly in Gent, in order to enhance ecosystem services provided.
- Network analyses to investigate accessibility is a reliable method to investigate accessibility.

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