

Research on Accessibility and Fairness Evaluation of Green Space in Hefei City Center Based on Gaussian Two-step Mobile Search Method with Multiple Travel Modes

Yongqiang Zhu*

School of Architecture and Urban Planning, Beijing University of Civil Engineering and Architecture, Beijing, China

Email address:

Zhuyongqiang45@163.com (Yongqiang Zhu)

*Corresponding author

Abstract

Urban green space is an important infrastructure to improve residents' well-being, and its spatial accessibility configuration is an important index to measure urban planning layout and ecological civilization construction. Taking the central city of Hefei, a new first-tier city, as an example, the accessibility spatial pattern of four-level green spaces (community-level green spaces, street-level green spaces, district-level green spaces and municipal-level green spaces) in the study area was measured by using the Gaussian two-step mobile search method (G2SFCA). The results show that: (1) The accessibility distribution of the four-level green space presents the characteristics of "high in the west and low in the east, high in the south and low in the north", especially in the large-scale green space area with saddle-shaped position in the southeast and center, the accessibility of multi-trip green space is the highest. (2) Compared with walking and cycling, the accessibility of urban green space vehicles is the best, especially the spatial polarization phenomenon within the Second Ring Road is the most prominent, resulting in spatial unfairness. (3) We found that urban green space and community green space have the greatest impact on the spatial equity of green space. The increase of urban green space improves the service level of accessibility of bicycle riding and garage green space, while the renovation and renewal of community green space can improve the service blind area of accessibility of pedestrian green space and promote social equity. This study can significantly improve the quality and service level of urban green space system, and has important reference significance for decision makers, planners and stakeholders of green space systems in other big cities.

Keywords

Accessibility of Green Space with Multiple Modes of Travel, Equity, G2SFCA, Hefei City Center, Habitable City