

## Assessing the Spatial Distribution of Urban Parks Using Remote Sensing and Geographic Information Systems Techniques

**Authors :** Hira Jabbar, Tanzeel-Ur Rehman

**Abstract :** Urban parks and open spaces play a significant role in improving physical and mental health of the citizens, strengthen the societies and make the cities more attractive places to live and work. As the world's cities continue to grow, continuing to value green space in cities is vital but is also a challenge, particularly in developing countries where there is pressure for space, resources, and development. Offering equal opportunity of accessibility to parks is one of the important issues of park distribution. The distribution of parks should allow all inhabitants to have close proximity to their residence. Remote sensing and Geographic information systems (GIS) can provide decision makers with enormous opportunities to improve the planning and management of Park facilities. This study exhibits the capability of GIS and RS techniques to provide baseline knowledge about the distribution of parks, level of accessibility and to help in identification of potential areas for such facilities. For this purpose Landsat OLI imagery for year 2016 was acquired from USGS Earth Explorer. Preprocessing models were applied using Erdas Imagine 2014v for the atmospheric correction and NDVI model was developed and applied to quantify the land use/land cover classes including built up, barren land, water, and vegetation. The parks amongst total public green spaces were selected based on their signature in remote sensing image and distribution. Percentages of total green and parks green were calculated for each town of Lahore City and results were then synchronized with the recommended standards. ANGSt model was applied to calculate the accessibility from parks. Service area analysis was performed using Network Analyst tool. Serviceability of these parks has been evaluated by employing statistical indices like service area, service population and park area per capita. Findings of the study may contribute in helping the town planners for understanding the distribution of parks, demands for new parks and potential areas which are deprived of parks. The purpose of present study is to provide necessary information to planners, policy makers and scientific researchers in the process of decision making for the management and improvement of urban parks.

**Keywords :** accessible natural green space standards (ANGSt), geographic information systems (GIS), remote sensing (RS), United States geological survey (USGS)

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