

# DETERMINATION OF SOCIAL ACCESSIBILITY FOR GER DISTRICT IN ULAANBAATAR CITY USING GIS ANALYSIS

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The residential area increased by 27.5 percent for the last 32 years based on Landsat and Sentinel-2 images in Ulaanbaatar city. The accessibility of the residential area was divided into three sectors: access to health care, access to social services, and access to education. GIS applications enormously help science in making land assessments. This study was carried out in Ulaanbaatar city, capital of Mongolia. This study aims to estimate the inaccessibility of ger districts in Ulaanbaatar city using a GIS-based multi-criteria analysis (MCA) and remote sensing. This research employs the GIS-based spatial MCA among the Analytical Hierarchy Process (AHP) method. It is necessary to carefully determine the inaccessibility of the settlement area and to check the correctness of the assessment of the factors using the AHP method in the area with the weakest access, which was determined. Factors were ranked and relative weights were determined by establishing pairwise correlations. In the health sector, the consistency ratio is 32.7% or 0.327, the consistency of the ratio between the factors is low, and the availability of social services is 26% or 0.26, the ratio between the factors. weak, 41.3% or 0.413 for access to the education sector, which is related to the harmony of the relationship between the factors. The estimation of inaccessibility in the ger area of Ulaanbaatar city will ensure the essential reliability of the estimates, which will undoubtedly be helpful in the process of planning and decision making and improve the public services.

**Keywords:** inaccessibility, GIS, multi-criteria, AHP, Ulaanbaatar