

**PEMETAAN KEPADATAN BANGUNAN MENGGUNAKAN METODE
NORMALIZED DIFFERENCE BUILT-UP INDEX (NDBI) DAN URBAN
INDEX (UI) DI KABUPATEN BANTUL TAHUN 2015**

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INTISARI

Kepadatan bangunan dapat diidentifikasi menggunakan transformasi digital menggunakan data penginderaan jauh. Penelitian ini bertujuan untuk mengetahui hubungan antara kepadatan bangunan dengan transformasi *Normalized Difference Built-Up Index* dan *Urban Index*, memetakan distribusi kepadatan bangunan dengan metode *Normalized Difference Built-Up Index* dan *Urban Index*, dan menganalisis perbandingan kepadatan bangunan metode *Normalized Difference Built-Up Index* dan *Urban Index* dalam memetakan di Kabupaten Bantul.

Data yang digunakan untuk memperoleh kepadatan bangunan ini adalah citra Landsat 8 Oli. Metode yang digunakan untuk memisahkan daerah terbangun dan daerah nonbangunan menggunakan klasifikasi digital. Daerah terbangun dari hasil klasifikasi multispektral difilter dengan transformasi NDBI dan UI untuk dikelaskan tingkat kepadatan bangunannya.

Hasil penelitian ini menunjukkan bahwa kepadatan bangunan memiliki hubungan yang positif terhadap transformasi *Normalized Difference Built-Up Index* dan *Urban Index* karena kepadatan bangunan yang tinggi di transformasi *Normalized Difference Built-Up Index* dan *Urban Index* memiliki nilai yang tinggi juga tetapi kedua transformasi tersebut tidak dapat membedakan lahan terbangun dan tanah terbuka. Kepadatan bangunan yang tinggi sebagian besar berada di Kecamatan Kasihan, Sewon, dan Banguntapan sementara kelas kepadatan bangunan sedang dan rendah berada hampir di seluruh wilayah di Kabupaten Bantul. Kepadatan bangunan di Kabupaten Bantul lebih sesuai diidentifikasi dengan menggunakan transformasi *Normalized Difference Built-Up Index* (NDBI) daripada transformasi *Urban Index* karena ketelitian pemetaan metode NDBI mencapai 72% sementara ketelitian pemetaan metode UI mencapai 64%.

Kata Kunci: Kepadatan bangunan, *Normalized Difference Built-Up Index*, *Urban Index*, Citra Landsat 8

**THE BUILDING DENSITY MAPPING USING NORMALIZED DIFFERENCE
BUILT-UP INDEX (NDBI) AND URBAN INDEX (UI) METHODS
IN BANTUL REGENCY BY THE YEAR OF 2015**

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ABSTRACT

The building density can be identified by digital transform using remote sensing data. This study aims to determine the relation between the building density using Normalized Difference Built-Up Index method (NDBI) and Urban Index (UI) method, mapping the distribution of the building density using Normalized Difference Built-Up Index method and Urban Index method, and about to analyse the comparison of Normalized Difference Built-Up Index method and Urban Index method for mapping the building density in Bantul Regency.

The data used to extract the information of the building density is Landsat 8 Operational Land Imager (OLI) satellite imagery. The method used to dissociate the built-up area and non built-up areas is a digital classification method. The built up areas known by multispectral classification is filtered by Normalized Difference Built-Up Index (NDBI) method and Urban Index (UI) method to determine the category of the building density class.

The building density indicated from this study shows that there is a positive correlation to the transformation of Normalized Difference Built-Up Index (NDBI) method and Urban Index (UI) method because those methods have the high density value as well even the both can't differentiate the built up areas and non built up areas. The high density class are mostly located in the three subdistricts, those are Kasihan, Sewon, and Banguntapan Subdistricts, while the medium and low density classes are mostly located in Bantul regency. The building density in Bantul Regency is more convenient identified by using the transformation of Normalized Difference Built-Up Index (NDBI) method rather than using the transformation of Urban Index (UI) method because the accuracy level of Normalized Difference Built-Up Index method transformation for mapping the building density rated of 72% while the level accuracy of Urban Index method transformation getting underated of 64%.

Key word: Building Density, Normalized Difference Built-Up Index, Urban Index, Landsat 8 satellite imagery