

PEMETAAN KUALITAS PERMUKIMAN MENGGUNAKAN CITRA WORLDVIEW-2 DAN HUBUNGANNYA DENGAN KONDISI SOSIAL EKONOMI PENDUDUK DI KECAMATAN TINGKIR, KOTA SALATIGA

Aldi Setio Irfan

20/461442/GE/09402

INTISARI

Urbanisasi secara signifikan mempengaruhi perkembangan permukiman sebagai bagian dari perkembangan kota yang makin pesat. Salah satu dampak negatif dari perkembangan kota yang pesat adalah penurunan kualitas permukiman. Citra satelit resolusi tinggi WorldView-2 dapat digunakan untuk mengekstraksi parameter kualitas permukiman. Penelitian ini bertujuan untuk : (1) membangun kunci interpretasi kualitas permukiman dan memetakan tingkat kualitas permukiman menggunakan citra WorldView-2 di Kecamatan Tingkir, Kota Salatiga, (2) mengkaji hubungan kualitas permukiman dengan kondisi sosial ekonomi penduduk mencakup pendidikan, pekerjaan, dan pendapatan di Kecamatan Tingkir, Kota Salatiga. Data kondisi permukiman diperoleh dengan penilaian setiap parameter kualitas permukiman menggunakan interpretasi visual citra WorldView-2. Survei kondisi sosial ekonomi penduduk dilakukan pada sampel uji akurasi interpretasi citra. Hasil penilaian seluruh parameter penelitian diolah menggunakan perangkat lunak sistem informasi geografis untuk mengetahui hasil akhir kualitas permukiman. Uji akurasi Somers' *D* digunakan untuk mengetahui tingkat hubungan kualitas permukiman dengan kondisi sosial ekonomi penduduk mencakup pendidikan, pekerjaan, dan pendapatan. Hasil penelitian menunjukkan bahwa proses deteksi kualitas permukiman melalui interpretasi visual memerlukan beberapa unsur interpretasi yang paling berpengaruh dalam membangun kunci interpretasi, meliputi warna, ukuran, pola, dan asosiasi. Sebagian besar permukiman termasuk ke dalam kriteria kelas kualitas permukiman sedang dengan persentase luas blok permukiman sebesar 59,65% terhadap luas seluruh blok permukiman, sedangkan persentase luas blok permukiman yang termasuk ke dalam kriteria kelas kualitas permukiman baik sebesar 40,35%. Hasil uji korelasi Somers' *D* menunjukkan nilai korelasi yang cukup kuat sebesar 0,307 antara kondisi sosial ekonomi penduduk dengan kualitas permukiman. Pendidikan memiliki nilai korelasi paling rendah, sedangkan pendapatan memiliki nilai korelasi paling tinggi. Pendidikan memiliki nilai korelasi sebesar 0,276 terhadap kualitas permukiman, pekerjaan memiliki nilai korelasi sebesar 0,413 terhadap kualitas permukiman, dan pendapatan memiliki nilai korelasi sebesar 0,414 terhadap kualitas permukiman.

Kata-kata kunci: kualitas permukiman, interpretasi visual, sistem informasi geografis, citra WorldView-2, kondisi sosial ekonomi penduduk

***SETTLEMENT QUALITY MAPPING USING WORLDVIEW-2 SATELLITE
IMAGERY AND ITS CORRELATION WITH SOCIOECONOMIC CONDITIONS
IN TINGKIR DISTRICT, SALATIGA CITY***

Aldi Setio Irfan

20/461442/GE/09402

ABSTRACT

Urbanization significantly influences settlement development as part of rapid urban expansion. One notable negative consequence of this accelerated growth is the decline in settlement quality. High-resolution satellite imagery from WorldView-2 serves as a powerful tool for extracting indicators related to settlement quality. This study aims to: (1) develop an interpretation key and map the levels of settlement quality using WorldView-2 imagery for the Tingkir District, Salatiga City, and (2) examine the relationship of settlement quality with socio-economic conditions of the population covering education, occupation, and income in Tingkir District, Salatiga City. Settlement condition data were obtained by assessing various quality parameters through visual interpretation of WorldView-2 imagery. In parallel, a socio-economic survey was administered to the sample population used in the interpretation accuracy assessment. All data were processed using Geographic Information System (GIS) software to produce the final settlement quality classification. The Somers' D correlation test was used to evaluate the strength of the relationship between settlement quality and socio-economic variables, including education, occupation, and income. The research results show that the process of settlement quality detection through visual interpretation requires several interpretation elements which are most influential in building an interpretation key, including color, size, pattern, and association. Most settlements fall into the medium settlement quality class criteria, with a settlement block area percentage of 59.65% of the total settlement block area, while the percentage of settlement block area classified as good settlement quality class is 40.35%. The results of the Somers' D correlation test show a fairly strong correlation value of 0.307 between the socioeconomic conditions of the population and settlement quality. Education has the lowest correlation value, while income has the highest correlation value. Education has a correlation value of 0.276 with settlement quality, occupation has a correlation value of 0.413 with settlement quality, and income has a correlation value of 0.414 with settlement quality.

Keywords: *settlement quality, visual interpretation, geographic information system (GIS), WorldView-2 imagery, socioeconomic conditions*