

ANALISIS HUBUNGAN LOKASI KAWASAN INDUSTRI DENGAN
PENYAKIT INFEKSI SALURAN PERNAPASAN AKUT (ISPA) PADA
BALITA DI KECAMATAN GENUK MENGGUNAKAN PENGINDERAAN
JAUH DAN SISTEM INFORMASI GEOGRAFIS

Inggit Nuryani

19/441723/GE/09062

INTISARI

Infeksi Saluran Pernapasan Akut (ISPA) merupakan penyakit menular yang disebabkan oleh masuknya mikroorganisme seperti bakteri dan virus ke dalam saluran pernafasan. Salah satu faktor yang dapat menjadi pemicu dari penyakit ISPA berasal dari lingkungan. Penelitian ini bertujuan untuk mengetahui hubungan jarak kawasan industri dengan penyakit ISPA balita di Kecamatan Genuk, mengetahui akurasi Citra *Planetscope* dalam memetakan penggunaan lahan, serta memetakan pola sebaran penyakit ISPA pada balita di Kecamatan Genuk secara spasial. Citra penginderaan jauh *Planetscope* yang memiliki resolusi cukup tinggi digunakan untuk mengidentifikasi kawasan industri. *Average Nearest Neighbor* (ANN) digunakan untuk mengidentifikasi pola sebaran spasial dari ISPA balita di Kecamatan Genuk. Hubungan jarak kawasan industri dengan penyakit ISPA balita dianalisis dengan regresi OLS (*Ordinary Least Square*).

Hasil interpretasi penggunaan lahan menggunakan Citra *Planetscope* menghasilkan akurasi keseluruhan yang cukup tinggi yaitu sebesar 94,79%. Adapun untuk hasil interpretasi kawasan industri tersendiri memiliki akurasi sebesar 80,95%. Pola sebaran ISPA balita berdasarkan analisis *Average Nearest Neighbor* (ANN) menunjukkan pola yang cenderung mengelompok secara signifikan. Hasil analisis regresi OLS menjelaskan bahwa adanya pengaruh signifikan jarak kawasan industri terhadap kasus ISPA balita di Kecamatan Genuk dengan kontribusi pola pergerakan arah dan kecepatan angin serta jarak jalan.

Kata kunci: ISPA (Infeksi Saluran Pernafasan Akut), Kawasan Industri, *Average Nearest Neighbor* (ANN), *Ordinary Least Square* (OLS)

ANALYSIS OF THE RELATIONSHIP BETWEEN THE LOCATION OF INDUSTRIAL AREAS AND ACUTE RESPIRATORY INFECTIONS (ARI) IN CHILDREN UNDER FIVE YEARS OF AGE IN GENUK SUB-DISTRICT USING REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS

Inggit Nuryani

19/441723/GE/09062

ABSTRACT

Acute Respiratory Infection (ARI) is an infectious disease caused by the entry of microorganisms such as bacteria and viruses into the respiratory tract. One of the factors that can trigger ARI disease comes from the environment. This study aims to determine the relationship between the distance of industrial areas and ARI disease in toddlers in Genuk Subdistrict, determine the accuracy of Planetscope Imagery in mapping land use, and map the spatial distribution pattern of ARI disease in toddlers in Genuk Subdistrict. Planetscope Imagery that have a high enough resolution are used to identify industrial areas. Average Nearest Neighbor (ANN) was used to identify the spatial distribution pattern of ARI among children under five in Genuk Sub-district. The relationship between industrial area distance and ARI disease among children under five was analyzed with OLS (Ordinary Least Square) regression.

The results of land use interpretation using Planetscope Imagery produced a fairly high overall accuracy of 94.79%. As for the results of the interpretation of a separate industrial area has an accuracy of 80.95%. The distribution pattern of ARI among children under five based on Average Nearest Neighbor (ANN) analysis shows a pattern that tends to cluster significantly. The results of OLS regression analysis explain that there is a significant effect of industrial area distance on ARI cases under five in Genuk Subdistrict with the contribution of movement patterns of wind direction and speed and road distance.

Keywords: *ARI (Acute Respiratory Infection), Industrial Area, Average Nearest Neighbor (ANN), Ordinary Least Square (OLS)*