

**ANALISIS SPASIAL
TINGKAT RISIKO LEPTOSPIROSIS BERDASARKAN
KASUS MANUSIA, KEPADATAN POPULASI TIKUS, DAN
PENEMUAN KEBERADAAN TIKUS
DI KALURAHAN TIRENGGO DAN BANGUNJIWO
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ABSTRAK

Latar Belakang: Leptospirosis masih menjadi masalah kesehatan di Kabupaten Bantul dengan variasi distribusi kasus yang diduga berkaitan dengan kepadatan populasi tikus relatif, karakteristik habitat tikus, dan kondisi lingkungan. Sehingga analisis spasial diperlukan untuk menganalisis wilayah berisiko.

Tujuan: Menganalisis tingkat risiko leptospirosis berdasarkan distribusi kasus manusia, kepadatan populasi tikus relatif, dan karakteristik habitat tikus serta membandingkan karakteristik risiko di Kalurahan Tirenggo dan Bangunjiwo.

Metode: Penelitian kuantitatif dengan desain observasional analitik dan pendekatan studi ekologis berbasis analisis spasial. Analisis dilakukan menggunakan *Average Nearest Neighbor*, *Ripley's K Function*, *Kernel Density Estimation*, dan buffer. Kepadatan populasi tikus diukur menggunakan *trap success*, sedangkan hubungan antarvariabel dianalisis menggunakan uji Spearman dan Kruskal Wallis.

Hasil: Kalurahan Tirenggo memiliki 21 kasus leptospirosis dan Kalurahan Bangunjiwo memiliki 8 kasus. Pola kasus di Tirenggo cenderung mengelompok (*clustered*), sedangkan di Bangunjiwo cenderung menyebar (*dispersed*). Nilai *trap success* lebih tinggi di Bangunjiwo dibandingkan Tirenggo. Habitat tikus di Tirenggo didominasi habitat peridomestik, sedangkan di Bangunjiwo ditemukan kecenderungan habitat *indoor* pada beberapa dusun. Pemetaan risiko menunjukkan 7 dusun kategori risiko tinggi di Tirenggo (46,7%), dan 4 dusun di Bangunjiwo (40,0%). Hasil uji statistik menunjukkan tidak terdapat hubungan yang signifikan antara variabel yang dianalisis dengan jumlah kasus leptospirosis pada kedua wilayah penelitian.

Kesimpulan: Tirenggo dan Bangunjiwo memiliki karakteristik spasial, kepadatan populasi tikus relatif, habitat tikus, dan distribusi risiko leptospirosis yang berbeda. Hasil pemetaan risiko berbasis spasial dapat digunakan untuk menentukan wilayah prioritas pengendalian leptospirosis.

Kata Kunci: leptospirosis, *trap success*, habitat tikus.

**SPATIAL ANALYSIS
OF LEPTOSPIROSIS RISK LEVELS BASED ON
HUMAN CASES, RODENT POPULATION DENSITY, AND
RODENTS PRESENCE
IN TIRENGGO AND BANGUNJIWO VILLAGES
IN 2025**

ABSTRACT

Background: Leptospirosis remains a public health problem in Bantul Regency, with variations in case distribution across areas that may be influenced by rodent population density, habitat characteristics, and environmental conditions. Spatial analysis is needed to identify areas at risk.

Objective: To analyze leptospirosis risk based on the distribution of human cases, relative rodent population density, and rodent habitat characteristics, and to compare risk characteristics between Tirenggo and Bangunjiwo.

Methods: This quantitative study employed an analytical observational design with an ecological approach based on spatial analysis. Average Nearest Neighbor, Ripley's K Function, Kernel Density Estimation, and buffer analysis were used to assess spatial patterns. Relative rodent population density was measured using trap success, while relationships between variables were analyzed using Spearman and Kruskal Wallis tests.

Results: Tirenggo recorded 21 leptospirosis cases, while Bangunjiwo recorded 8 cases. The spatial distribution of cases in Tirenggo tended to be clustered, whereas Bangunjiwo showed a dispersed pattern. Trap success was higher in Bangunjiwo than in Tirenggo. Rodent habitats in Tirenggo were predominantly peridomestic, whereas indoor habitats were more common in several hamlets of Bangunjiwo. Risk mapping identified seven high-risk hamlets in Tirenggo (46,7%) and four in Bangunjiwo (40,0%). Statistical analysis showed no significant association between the analyzed variables and the number of leptospirosis cases in either area.

Conclusion: Tirenggo and Bangunjiwo showed differences in spatial patterns, relative rodent population density, habitat characteristics, and leptospirosis risk distribution. Spatial risk mapping can support the identification of priority areas for leptospirosis control.

Keywords: leptospirosis, trap success, rodent habitat.