African Environmental Contamination (Environmental Science)

The Urban Slums' Environmental Health Atlas: A Methodological Approach to Epidemiology

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Abstract

Urban slums in Nigeria face significant environmental health challenges due to inadequate infrastructure and poor sanitation facilities. The methodology involves the creation of an environmental health atlas using GIS technology. A multivariate regression model will be employed to analyse data from 100 randomly selected households in two slums, incorporating variables such as water supply, waste disposal, and household characteristics. A preliminary analysis indicates a higher incidence rate of malaria (35%) compared to respiratory infections (20%) among the sampled population. This study establishes a robust methodological framework for epidemiological research in urban slums, particularly focusing on environmental factors contributing to disease prevalence. The findings should inform policy interventions aimed at improving sanitation and water supply systems in urban slums. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Geographic Information Systems, Community Health Surveillance, Spatial Analysis, Field Epidemiology, Geographic Markers, Remote Sensing Techniques, Quantitative Risk Assessment*

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