



# Methodological Evaluation of Public Health Surveillance Systems in Tanzania: Quasi-Experimental Design for Efficiency Gains

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## Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in Tanzania. However, their efficiency can be improved through methodological evaluation. A mixed-method approach was employed, combining quantitative data analysis with qualitative interviews to assess system performance and identify areas for improvement. The preliminary results indicate that the current surveillance system detects approximately 70% of infectious disease outbreaks but has room for enhancement in timely reporting. Improvements are needed in coordination between health authorities and community clinics, as well as in data processing speed to ensure efficient outbreak management. Enhanced communication protocols and streamlined database systems should be implemented to improve surveillance efficiency. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Tanzania, Geographic Information Systems (GIS), Quasi-experimental design, Public health surveillance, Spatial analysis, Data quality assurance, Evaluation methodologies

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