



Methodological Assessment and Cost-Efficiency Evaluation of Public Health Surveillance Systems in Tanzania Using Difference-in-Differences Models

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Abstract

Public health surveillance systems in Tanzania are crucial for monitoring diseases and implementing effective interventions. However, their effectiveness can be undermined by various factors such as resource allocation and implementation strategies. The study employs DiD regression analysis to compare pre-intervention and post-intervention periods. Data from six districts were analysed to identify any significant changes in disease prevalence. A notable proportion of the districts showed a decrease in disease incidence, suggesting that the surveillance systems are effective in reducing health risks. The DiD models reveal substantial cost savings associated with improved surveillance and intervention strategies. Further research should focus on integrating technological advancements to enhance system efficiency and scalability. Public Health Surveillance, Difference-in-Differences, Cost-Efficiency, Tanzania 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, Spatial Analysis, Cost-Benefit Analysis, Difference-In-Differences, Public Health Surveillance, Evaluation Methodology*

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