



Methodological Evaluation of Public Health Surveillance Systems in Uganda Using Panel Data for Cost-Effectiveness Analysis

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Abstract

Public health surveillance systems in Uganda are crucial for monitoring diseases and managing outbreaks effectively. A mixed-method approach will be employed, including quantitative panel data analysis with robust standard errors estimated using generalized linear models (GLMs) to assess system performance and economic impact over time. Initial findings suggest that the proportion of disease cases detected through surveillance exceeds 80%, indicating a high detection rate but also highlighting the need for further optimization in resource allocation. The study will contribute valuable insights into optimising public health surveillance systems, potentially reducing costs and enhancing outbreak response times. Based on findings, specific recommendations for system enhancement will be provided to improve cost-effectiveness and operational efficiency. Public Health Surveillance, Cost-Effectiveness Analysis, Panel Data, Uganda Treatment effect was estimated with $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: African, Panel, Epidemiology, Cost-Benefit, Surveillance, Regression, Evaluation

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