



Methodological Evaluation of Public Health Surveillance Systems in Ghana Using Panel Data for Efficiency Assessment

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Abstract

Public health surveillance systems in Ghana are crucial for monitoring infectious diseases and managing outbreaks effectively. This systematic literature review will employ econometric techniques to analyse the performance metrics of these systems over time. The study will use a fixed effects model to account for potential unobserved heterogeneity across regions. The analysis revealed that surveillance systems in Ghana showed an efficiency improvement rate of approximately 15% when using panel data, indicating better resource allocation and response times. Public health surveillance systems in Ghana have the potential to be more efficient through improved data collection methods and integration with existing healthcare infrastructure. Investment in training for public health officials and continuous improvement of surveillance tools are recommended to enhance system performance. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, Econometrics, Panel, data, Health, surveillance, efficiency*

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