Methodological Evaluation of Public Health Surveillance Systems in Tanzania Using Difference-in-Differences Models

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Abstract

Public health surveillance systems are crucial for monitoring disease outbreaks and improving population health outcomes in Tanzania. A systematic literature review will be conducted using rigorous methodology, including a comprehensive search strategy and inclusion/exclusion criteria based on study design and data quality. The analysis revealed that the application of difference-in-differences models in Tanzania yielded mixed results, with some studies showing significant yield improvements in disease detection rates compared to control groups. Despite variability across different studies, the use of difference-in-differences models provided valuable insights into the effectiveness and potential areas for improvement in public health surveillance systems. Further research should focus on standardising data collection methods and evaluating the longitudinal impact of these models to enhance their utility in Tanzanian public health surveillance. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Tanzania, Public Health Surveillance, Methodological Evaluation, Difference-in-Differences, Econometrics, Geographic Information Systems, Spatial Analysis*

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