



Methodological Assessment of Public Health Surveillance Systems in Nigeria Using Difference-in-Differences Models

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Abstract

Public health surveillance systems in Nigeria are crucial for monitoring and responding to infectious diseases. However, their effectiveness is often unquantified. A systematic review was conducted to identify studies employing difference-in-differences methodology in assessing these systems. Studies were selected based on their use of this econometric technique for evaluating system reliability. One study used a difference-in-differences model to assess the impact of surveillance system implementation, reporting an estimated effect size with a 95% confidence interval. The systematic review found that while some studies applied difference-in-differences effectively, methodological consistency and data quality varied widely across different regions in Nigeria. Future research should focus on improving data collection methods and increasing the robustness of model application to enhance system reliability evaluations. Public Health Surveillance Systems, Difference-in-Differences Model, Methodological Assessment, Nigeria 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: Nigerian, surveillance, public health, methodology, evaluation, difference-in-differences, geographic analysis

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