



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

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## Abstract

Public health surveillance systems in Ghana are crucial for monitoring infectious diseases and ensuring timely interventions. A difference-in-differences approach was employed to assess changes in the adoption of public health surveillance systems across different regions and time periods. The DiD methodology will control for potential confounding variables and provide estimates of treatment effects. The analysis revealed a significant increase ( $p < 0.05$ ) in the adoption rates of surveillance tools post-intervention, suggesting that targeted training and policy support have been effective in enhancing system utilization. This study demonstrates the utility of DiD models for evaluating public health surveillance systems and highlights the importance of continued investment to sustain these systems' effectiveness. Public health authorities should prioritise regular evaluations and continuous improvement of surveillance systems, alongside community engagement initiatives to ensure sustained adoption and impact. public health surveillance, Ghana, difference-in-differences, adoption rates Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^{-1} p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Ghana, Sub-Saharan, Surveillance, Evaluation, Methodology, Difference-in-Differences, Metrics

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