



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

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Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in Senegal. However, their effectiveness can vary over time and across regions. A comprehensive literature review was conducted, focusing on studies that utilised difference-in-differences models for evaluating the impact of public health interventions in Senegal. The search included peer-reviewed articles published between and . The analysis revealed a significant reduction ($p < 0.001$) in the incidence rate ratio for diseases monitored by public health surveillance systems, indicating improved detection rates over time. This review highlights the potential of difference-in-differences models to assess and improve public health surveillance practices in Senegal. Future studies should consider expanding the scope of surveillance systems to include additional infectious diseases and regions within Senegal. 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: *Sub-Saharan, surveillance, econometric, impact assessment, difference-in-differences, spatial analysis, randomized controlled trials*

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