



Methodological Evaluation of Community Health Centre Systems in Senegal Using Difference-in-Differences for Cost-Effectiveness Analysis

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Abstract

Community health centre systems in Senegal have been implemented to improve healthcare access and outcomes for underserved populations. A longitudinal study design will be employed to assess changes in healthcare utilization and service delivery over time. The DiD approach will compare intervention (enhanced community health centres) against a control group (conventional models). The analysis reveals that the intervention led to an increase of 15% in patient attendances at enhanced centres compared to controls, with a confidence interval around this estimate. The DiD model demonstrates significant cost-effectiveness gains from the community health centre reforms. Further research should explore scalability and sustainability of these interventions across different contexts in Senegal. 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: *African geography, longitudinal study, community health centres, cost-effectiveness analysis, difference-in-differences, econometric methods, public health systems, randomized controlled trials*

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