Multilevel Regression Analysis for Evaluating Cost-Effectiveness of Community Health Centre Systems in Senegal

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Abstract

Community health centres in Senegal have been established to improve access to healthcare services, but their cost-effectiveness remains uncertain. A multilevel regression model was employed to analyse data from Senegalese health centres. The model accounts for both individual patient-level outcomes and contextual factors at the cluster level (e.g., region, district). The analysis revealed that while some systems showed cost savings over others, there were significant variations in healthcare outcomes across different regions. Our findings suggest that multilevel regression models can effectively measure cost-effectiveness of community health centre systems, providing insights for policy makers and resource allocation strategies. Policy makers should consider regional differences when implementing or evaluating community health centre systems to enhance effectiveness and efficiency. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, regression, multilevel, cost-effectiveness, health economics, data analysis, geographic information systems*

ABSTRACT-ONLY PUBLICATION

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