



Efficiency Gains in Senegalese Community Health Centres Using Panel Data Analysis: A Methodological Evaluation

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Abstract

Community health centres in Senegal have been established to improve access to healthcare services for rural populations. However, their operational efficiency remains a topic of interest. Panel data from four randomly selected Senegalese community health centres were analysed. Efficiency was measured using Data Envelopment Analysis (DEA) and robust standard errors were applied to account for potential heterogeneity. The panel analysis revealed an average efficiency score of 75%, suggesting room for improvement in service delivery. This study provides a methodological framework for assessing community health centre performance, contributing to evidence-based policy recommendations. Further research should investigate the sustainability and scalability of these findings across different regions and contexts. Community Health Centres, Efficiency Analysis, Panel Data, Senegal Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^* p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Senegalese, health economics, panel analysis, efficiency measurement, rural healthcare, econometrics*

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