



# Efficiency Gains in Ghanaian Community Health Centres Systems: A Panel Data Estimation Approach

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## Abstract

Community health centres in Ghana face challenges in efficiency, leading to suboptimal service delivery and resource utilization. A panel data estimation approach was employed, incorporating both exogenous and endogenous variables to assess the performance metrics of the healthcare systems over a five-year period. The analysis revealed that community health centres in Ghana exhibit an average efficiency score of 75%, with significant variations across different regions. The findings suggest that targeted interventions, such as training programmes for frontline staff and improved supply chain management, could enhance the operational efficiency of these facilities. Health policymakers should prioritise resource allocation towards underperforming health centres and implement continuous quality improvement initiatives to address identified inefficiencies. Treatment effect was estimated with  $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Sub-Saharan, rural, econometrics, productivity, healthcare delivery, resource allocation, cross-sectional analysis*

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