



# Cost-Effectiveness Analysis of Community Health Centre Systems in Uganda Using Panel Data: An Evaluation Study

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## Abstract

Community health centres in Uganda face challenges in resource allocation and operational efficiency. A panel data econometric model was employed to estimate costs and outcomes across multiple health centres over time. The estimated marginal effects show that increased investment in healthcare infrastructure reduced patient wait times by an average of 15% (95% CI: -20% to -10%). Community health centre systems can be cost-effective with targeted investments, enhancing service quality and efficiency. Allocate resources towards upgrading facilities and training staff for better patient care outcomes. community health centres, panel data analysis, cost-effectiveness, Uganda healthcare 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:** *African health systems, Cost-effectiveness analysis, Health economics, Longitudinal data, Panel models, Regression analysis, Resource allocation*

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