



# Methodological Evaluation of Community Health Centre Systems in Kenya Using Multilevel Regression Analysis for Cost-Effectiveness Measurement

George Mugo Nyegaña<sup>1</sup>

<sup>1</sup> Jomo Kenyatta University of Agriculture and Technology (JKUAT)

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**Correspondence:** [gnyegaa@yahoo.com](mailto:gnyegaa@yahoo.com)

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## Author notes

*George Mugo Nyegaña is affiliated with Jomo Kenyatta University of Agriculture and Technology (JKUAT) and focuses on Medicine research in Africa.*

## Abstract

Community health centres (CHCs) in Kenya face challenges in providing effective healthcare services. A multilevel regression model will be applied to assess the impact of various factors on service delivery outcomes within CHCs. CHCs in this study showed a significant improvement ( $p < 0.05$ ) in patient satisfaction scores after implementing quality assurance measures. The findings suggest that multilevel regression analysis is effective for measuring cost-effectiveness of CHC systems. Implementing quality assurance measures and continuous monitoring are recommended for future CHCs to enhance service delivery. Community Health Centres, Cost-Effectiveness, Multilevel Regression Analysis, Patient Satisfaction Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, multilevel analysis, regression modelling, cost-effectiveness, health systems, community healthcare, geographical variation*

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