



Methodological Evaluation of Community Health Centre Systems in Ghana Using Quasi-Experimental Design to Measure Efficiency Gains

Yaw Asare¹, Abena Ameyaw^{1,2}

¹ Ghana Institute of Management and Public Administration (GIMPA)

² Department of Epidemiology, University for Development Studies (UDS)

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Correspondence: yasare@yahoo.com

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Author notes

Yaw Asare is affiliated with Ghana Institute of Management and Public Administration (GIMPA) and focuses on Medicine research in Africa.

Abena Ameyaw is affiliated with Department of Epidemiology, University for Development Studies (UDS) and focuses on Medicine research in Africa.

Abstract

This study addresses a current research gap in Medicine concerning Methodological evaluation of community health centres systems in Ghana: quasi-experimental design for measuring efficiency gains in Ghana. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A mixed-methods design was used, combining survey and interview data collected over the study period. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Methodological evaluation of community health centres systems in Ghana: quasi-experimental design for measuring efficiency gains, Ghana, Africa, Medicine, intervention study This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Community Health Centres, Quasi-Experimental Design, Outcome Evaluation, Resource Allocation, Performance Measurement, Cost-Benefit Analysis*

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