



Evaluating the Cost-Effectiveness of Community Health Centers in Rwanda Through Multilevel Regression Analysis: An African Perspective

Nestor Mudacumura¹

¹ Department of Clinical Research, Rwanda Environment Management Authority (REMA)

Published: 17 December 2002 | **Received:** 15 September 2002 | **Accepted:** 02 November 2002

Correspondence: nmudacumura@yahoo.com

DOI: [10.5281/zenodo.18737774](https://doi.org/10.5281/zenodo.18737774)

Author notes

Nestor Mudacumura is affiliated with Department of Clinical Research, Rwanda Environment Management Authority (REMA) 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 Rwanda: multilevel regression analysis for measuring cost-effectiveness in Rwanda. 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 Rwanda: multilevel regression analysis for measuring cost-effectiveness, Rwanda, Africa, Medicine, original research This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Rwandan, Community Health Centers, Multilevel Analysis, Cost-Benefit, Regression, Evaluation, Public Health*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ **REQUEST FULL PAPER**

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa



Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge