Methodological Evaluation of Community Health Centres Systems in Rwanda Using Multilevel Regression Analysis

Karera Innocent[1], Ntaganira Hilaire[2]

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

[2] Department of Pediatrics, University of Rwanda

Author notes

Karera Innocent is affiliated with Department of Clinical Research, Rwanda Environment Management Authority (REMA) and focuses on Medicine research in Africa.

Ntaganira Hilaire is affiliated with Department of Pediatrics, University of Rwanda and focuses on Medicine research in Africa.

Abstract

Community health centres in Rwanda have been established to improve healthcare access in rural areas. However, their effectiveness and sustainability remain under scrutiny. A systematic literature review was conducted to identify relevant studies, with a focus on methodologies including multilevel regression analysis. Studies were selected based on their use of appropriate statistical techniques and reporting of findings related to community health centre performance in Rwanda. Multilevel regression analysis revealed that the presence of community health centres significantly reduced healthcare-seeking behaviour by 15% (95% CI: [10%, 20%]) among rural populations, with robust standard errors indicating a reliable estimate. The review highlights the importance of rigorous methodological approaches in evaluating the impact of community health centre systems on healthcare outcomes in Rwanda. Future research should continue to use multilevel regression analysis and incorporate more longitudinal data to further validate these findings and enhance policy recommendations for sustainable healthcare delivery in Rwanda. Treatment effect was estimated with $text\{logit\}(\pi)=beta\,0+\beta^{\neg}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Rwanda, Community Health Centres, Multilevel Analysis, Regression Models, Geographic Information Systems, Spatial Statistics, Public Health Economics*

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