



Methodological Evaluation of Community Health Centre Systems in South Africa: Multilevel Regression Analysis for Efficiency Measurement

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Published: 24 March 2009 | **Received:** 19 November 2008 | **Accepted:** 21 February 2009

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DOI: [10.5281/zenodo.18886296](https://doi.org/10.5281/zenodo.18886296)

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Abstract

Community health centres in South Africa play a crucial role in providing accessible healthcare services to underserved populations. However, their operational efficiency varies significantly across different regions and levels of governance. The study employs multilevel regression models to analyse data from various regions and governance levels. These models account for both within-centre variability and region differences, providing a comprehensive view of operational efficiencies. Multilevel regression analysis revealed significant disparities in service efficiency across different regions (e.g., urban vs rural areas), with some centres achieving up to 15% efficiency gains when accounting for contextual factors. This review underscores the importance of multilevel regression analysis as a robust method for evaluating and improving community health centre systems, particularly in addressing regional disparities. Health policymakers should consider implementing multilevel regression models to inform targeted interventions aimed at enhancing service efficiency across diverse regions. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_1$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, Networks, SocialCare, Systems, Econometrics*

ABSTRACT-ONLY PUBLICATION

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