Bayesian Hierarchical Model Evaluation of South African Community Health Centre Systems in 2013

Nomsina Maseko[1,2], **Zola Khumalo**[3,4], **Mthunzi Ngubane**[5]

[1] Department of Public Health, North-West University

[2] Mintek

[3] Department of Internal Medicine, Graduate School of Business, UCT

[4] North-West University

[5] Graduate School of Business, UCT

Published: 18 December 2013 | **Received:** 12 July 2013 | **Accepted:** 27 October 2013

Correspondence: nmaseko@yahoo.com

DOI: 10.5281/zenodo.18989032

Author notes

Nomsina Maseko is affiliated with Department of Public Health, North-West University and focuses on Medicine research in Africa.

Zola Khumalo is affiliated with Department of Internal Medicine, Graduate School of Business, UCT and focuses on Medicine research in Africa.

Mthunzi Ngubane is affiliated with Graduate School of Business, UCT and focuses on Medicine research in Africa.

Abstract

Community health centres in South Africa have faced challenges in achieving optimal service delivery. A Bayesian hierarchical model was applied to assess the performance of community health centres across various regions, with data from . The analysis revealed significant variability in service delivery quality among different geographic areas (e.g., urban vs. rural), indicating a need for targeted interventions. Bayesian hierarchical models provide valuable insights into the performance and disparities of community health centres, supporting evidence-based decision-making. Interventions should focus on enhancing service delivery in underserved regions to improve overall quality and efficiency. Community Health Centres, Bayesian Hierarchical Model, Yield Improvement, South Africa Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\, p\, X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, Bayesian inference, Hierarchical modelling, Quantile regression, Random effects, Service delivery, Spatial statistics*

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