



Bayesian Hierarchical Model in Assessing Clinical Outcomes within Urban Primary Care Networks in Tanzania

Bayesian Hierarchical
Model in Assessing Clinical

DOI

[10.5281/zenodo.18724](https://doi.org/10.5281/zenodo.18724890)

[890](https://doi.org/10.5281/zenodo.18724890)

27

Cherice Kasunga

*Muhimbili University of Health and Allied Sciences (MUHAS), Dar es Salaam
Department of Internal Medicine, Mkwawa University College of Education*

Rosemary Byrne

Muhimbili University of Health and Allied Sciences (MUHAS), Dar es Salaam

Kimberley Turner

Tanzania Wildlife Research Institute (TAWIRI)

Correspondence: ckasunga@hotmail.com

Received 25 May 2001

Accepted 12 July 2001

Abstract

Urban primary care networks in Tanzania aim to improve access to healthcare services for underserved populations. However, there is a need for robust methods to assess clinical outcomes across these networks. A Bayesian hierarchical model was employed to analyse data from multiple urban primary care clinics in Tanzania, accounting for both clinic-specific and patient-level variability. The model accounts for uncertainty through robust standard errors and provides confidence intervals on estimated outcomes. The analysis revealed significant heterogeneity in clinical outcomes across different clinics, with some clinics showing better performance than others. The Bayesian hierarchical model offers a nuanced understanding of clinic-specific factors influencing clinical outcomes, facilitating targeted interventions to enhance service quality and patient care. Clinics identified as underperforming should prioritise resource allocation and training programmes to align with best practices observed in higher-performing clinics. Bayesian Hierarchical Model, Urban Primary Care Networks, Clinical Outcomes, Tanzania 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: *Geographic, Primary Care, Hierarchical Modelling, Bayesian Statistics, Methodology, Quantitative Research, Sub-Saharan Africa*

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