



Bayesian Hierarchical Model for Evaluating Yield Improvement in District Hospitals Systems, Tanzania

Kamya Muthukumar^{1,2}, Chitu Makwaya^{3,4}

¹ Mkwawa University College of Education

² Department of Epidemiology, Tanzania Commission for Science and Technology (COSTECH)

³ Department of Public Health, Mkwawa University College of Education

⁴ Tanzania Commission for Science and Technology (COSTECH)

Published: 28 August 2008 | **Received:** 14 April 2008 | **Accepted:** 31 July 2008

Correspondence: kmuthukumar@hotmail.com

DOI: [10.5281/zenodo.18879096](https://doi.org/10.5281/zenodo.18879096)

Author notes

Kamya Muthukumar is affiliated with Mkwawa University College of Education and focuses on Medicine research in Africa.

Chitu Makwaya is affiliated with Department of Public Health, Mkwawa University College of Education and focuses on Medicine research in Africa.

Abstract

District hospitals in Tanzania face challenges in improving healthcare outcomes efficiently. A Bayesian hierarchical model was employed to assess the impact of interventions on yield measures within different districts. Uncertainty quantification was achieved through robust standard errors. The model revealed significant variation in intervention effectiveness across districts, with some yielding substantial improvements (20-30%). Bayesian hierarchical modelling provided nuanced insights into district hospital performance and highlighted the importance of tailored interventions. District health managers should prioritise targeted support based on local yield data to enhance healthcare delivery. district hospitals, yield improvement, Bayesian hierarchical model, Tanzania Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Tanzania, Bayesian, Hierarchical, Evaluation, Intervention, Outcome*

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