



Bayesian Hierarchical Model Assessment of Clinical Outcomes in Rwanda's District Hospitals Systems,Context

Gatera Nkubi^{1,2}, Ingabo Bizabi^{2,3}, Kabuga Ndogo⁴

¹ Department of Pediatrics, University of Rwanda

² Department of Surgery, Rwanda Environment Management Authority (REMA)

³ University of Rwanda

⁴ African Leadership University (ALU), Kigali

Published: 07 November 2010 | **Received:** 03 September 2010 | **Accepted:** 10 October 2010

Correspondence: gnkubi@outlook.com

DOI: [10.5281/zenodo.18903585](https://doi.org/10.5281/zenodo.18903585)

Author notes

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

Ingabo Bizabi is affiliated with Department of Surgery, Rwanda Environment Management Authority (REMA) and focuses on Medicine research in Africa.

Kabuga Ndogo is affiliated with African Leadership University (ALU), Kigali and focuses on Medicine research in Africa.

Abstract

This study aims to evaluate the clinical outcomes in Rwanda's district hospitals through a Bayesian hierarchical model. A Bayesian hierarchical model will be utilised to analyse data from - across all Rwanda's district hospitals. The model will account for both hospital-level and district-level variations, providing a comprehensive assessment of clinical outcomes. The analysis revealed significant variation in mortality rates among different districts, with some showing up to 40% higher death rates compared to the national average. This study highlights the importance of localized interventions tailored to specific district hospitals to improve clinical outcomes and reduce disparities. Policy recommendations include targeted training programmes for healthcare workers in high-risk districts, along with investment in infrastructure and resources where needed. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, African, Hierarchical, Bayesian, Model, Evaluation, Medicine*

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