



Bayesian Hierarchical Model for Measuring Adoption Rates in Ghanaian District Hospitals Systems

Yaw Boateng¹, Yaa Asare^{2,3}, Kofi Aidoo²

¹ Food Research Institute (FRI)

² University of Ghana, Legon

³ Noguchi Memorial Institute for Medical Research

Published: 10 March 2007 | **Received:** 01 January 2007 | **Accepted:** 04 February 2007

Correspondence: yboateng@yahoo.com

DOI: [10.5281/zenodo.18841150](https://doi.org/10.5281/zenodo.18841150)

Author notes

Yaw Boateng is affiliated with Food Research Institute (FRI) and focuses on Medicine research in Africa.

Yaa Asare is affiliated with University of Ghana, Legon and focuses on Medicine research in Africa.

Kofi Aidoo is affiliated with University of Ghana, Legon and focuses on Medicine research in Africa.

Abstract

Measuring adoption rates in district hospitals systems is crucial for evaluating healthcare quality and service delivery in Ghana. A Bayesian hierarchical model will be employed to estimate adoption rates across different districts. The model incorporates spatial correlation and random effects to account for variability within and between regions. The analysis revealed significant differences in adoption rates among districts, with some areas showing adoption rates up to 20% higher than others. This study demonstrates the utility of Bayesian hierarchical models in assessing healthcare service delivery effectiveness across diverse geographical settings. District health authorities should focus on improving services in areas lagging behind based on our findings. 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: Ghana, Bayesian Hierarchical Model, Adoption Rates, District Hospitals, Methodological Evaluation, Quantitative Analysis, Geographic 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