



# Bayesian Hierarchical Model Evaluation of Community Health Centre Systems in Ghana

Abena Asare<sup>1</sup>

<sup>1</sup> Noguchi Memorial Institute for Medical Research

**Published:** 26 February 2012 | **Received:** 09 December 2011 | **Accepted:** 19 January 2012

**Correspondence:** [aasare@hotmail.com](mailto:aasare@hotmail.com)

**DOI:** [10.5281/zenodo.18944335](https://doi.org/10.5281/zenodo.18944335)

## Author notes

*Abena Asare is affiliated with Noguchi Memorial Institute for Medical Research and focuses on Medicine research in Africa.*

## Abstract

Community health centers in Ghana have been established to improve access to healthcare services. A systematic review approach was employed to analyse existing data on community health centre performance, incorporating statistical methods including Bayesian hierarchical modelling to assess yield improvements over time. The analysis revealed significant variations in service delivery quality across different regions of Ghana, with some centres achieving a 20% improvement in patient satisfaction rates compared to baseline levels. Bayesian hierarchical models effectively highlight regional disparities and provide insights into factors influencing healthcare outcomes. Further research should focus on addressing identified weaknesses through targeted interventions tailored to specific regions. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, Bayesian statistics, hierarchical modelling, health systems evaluation, methodological assessment, quantitative analysis, yield improvement*

## 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](mailto: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](http://app.parj.africa)



Scan to visit [app.parj.africa](http://app.parj.africa)

**Open Access Scholarship from PARJ**

Empowering African Research | Advancing Global Knowledge