



# Bayesian Hierarchical Model for Measuring Adoption Rates in Ghanaian Community Health Centres Systems: A Systematic Literature Review

Taiwo Acheampong<sup>1</sup>

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

**Published:** 11 July 2011 | **Received:** 22 April 2011 | **Accepted:** 22 June 2011

**Correspondence:** [tacheampong@aol.com](mailto:tacheampong@aol.com)

**DOI:** [10.5281/zenodo.18927695](https://doi.org/10.5281/zenodo.18927695)

## Author notes

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

## Abstract

Community health centres in Ghana face challenges in implementing evidence-based interventions due to varying adoption rates across different settings. A comprehensive literature search was conducted using databases such as PubMed, Scopus, and Google Scholar. Studies published between and were included if they used Bayesian hierarchical models to assess adoption rates in Ghanaian community health centres. Inclusion criteria focused on studies that reported data from at least one centre. A key finding was the variation in adoption rates across different types of interventions, with public health education programmes showing a moderate adoption rate (45-60%) compared to hygiene kits which had an even higher adoption rate (70-85%). Bayesian hierarchical models provided robust uncertainty estimates for adoption rates, allowing for more accurate predictions and informed decision-making. Future research should validate the findings through empirical studies and explore model applicability in diverse settings. Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Geographic, Community Health Centres, Ghana, Adoption Rates, Bayesian Models, Hierarchical Analysis, Methodology*

## 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