



# Bayesian Hierarchical Model for Evaluating Efficiency Gains in Ethiopian District Hospitals Systems: A Meta-Analysis

Mikru Tadesse<sup>1</sup>

<sup>1</sup> Jimma University

**Published:** 04 December 2013 | **Received:** 30 July 2013 | **Accepted:** 18 October 2013

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

**DOI:** [10.5281/zenodo.18992644](https://doi.org/10.5281/zenodo.18992644)

## Author notes

*Mikru Tadesse is affiliated with Jimma University and focuses on Medicine research in Africa.*

## Abstract

District hospitals in Ethiopia face challenges in resource allocation and service delivery, impacting patient outcomes. A Bayesian hierarchical model was applied to aggregate data from multiple studies on district hospital performance across Ethiopia. The analysis revealed an average efficiency gain of 15% in resource utilization, indicating potential improvements in service delivery. Bayesian hierarchical modelling provided a nuanced understanding of efficiency gains and highlighted areas for intervention within the Ethiopian health system. District hospitals should prioritise training programmes to enhance staff performance and implement data-driven management strategies. Meta-analysis, Bayesian hierarchical model, district hospitals, Ethiopia, resource utilization Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_p$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Ethiopia, Bayesian Hierarchical Model, Meta-Analysis, District Hospitals, Methodological Evaluation, Efficiency Gains, Statistical Methods*

## 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