African Occupational Therapy Review (Research focus)

Bayesian Hierarchical Model for Measuring Yield Improvement in Ethiopian District Hospitals Systems

Yared Abeba[1,2], **Bedru Bikila**[3,4], **Tadesse Desta**[5,6]

[1] Department of Internal Medicine, Ethiopian Public Health Institute (EPHI)

[2] Department of Epidemiology, Bahir Dar University

[3] Department of Surgery, Mekelle University

[4] Department of Surgery, Ethiopian Public Health Institute (EPHI)

[5] Mekelle University

[6] Ethiopian Public Health Institute (EPHI)

Published: 19 September 2007 | **Received:** 01 June 2007 | **Accepted:** 24 August 2007

Correspondence: yabeba@yahoo.com

DOI: 10.5281/zenodo.18843817

Author notes

Yared Abeba is affiliated with Department of Internal Medicine, Ethiopian Public Health Institute (EPHI) and focuses on Medicine research in Africa.

Bedru Bikila is affiliated with Department of Surgery, Mekelle University and focuses on Medicine research in Africa.

Tadesse Desta is affiliated with Mekelle University and focuses on Medicine research in Africa.

Abstract

This study aims to evaluate the performance of district hospitals in Ethiopia by assessing yield improvement. A Bayesian hierarchical model will be utilised to analyse data from Ethiopian district hospitals. The model incorporates hierarchical structure and uncertainty quantification through credible intervals. The model reveals that yield improvement varied significantly among different districts with a mean increase of 15% in diagnostic accuracy, indicating potential for targeted interventions. The Bayesian hierarchical model demonstrates the utility in accurately measuring district hospital performance and identifying areas needing improvement. District health authorities should prioritise resource allocation towards high-performing hospitals to enhance overall system efficiency. Treatment effect was estimated with $text\{logit\}(\pi)=beta\,0+\vec{\beta}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, Bayesian statistics, Hierarchical modelling, Yield analysis, District health systems, Methodological evaluation, Quantitative research*

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