



Cost-Effectiveness Analysis of District Hospital Systems in Tanzania Using Multilevel Regression Models

Chewa Chituwo¹, Kasimbi Muhindo^{2,3}, Simba Magamba⁴, Simeon Masanja⁵

¹ National Institute for Medical Research (NIMR)

² Department of Surgery, Ardhi University, Dar es Salaam

³ Department of Epidemiology, Mkwawa University College of Education

⁴ Department of Public Health, National Institute for Medical Research (NIMR)

⁵ Mkwawa University College of Education

Published: 22 April 2006 | **Received:** 12 December 2005 | **Accepted:** 05 March 2006

Correspondence: cchituwo@outlook.com

DOI: [10.5281/zenodo.18821779](https://doi.org/10.5281/zenodo.18821779)

Author notes

Chewa Chituwo is affiliated with National Institute for Medical Research (NIMR) and focuses on Medicine research in Africa.

Kasimbi Muhindo is affiliated with Department of Surgery, Ardhi University, Dar es Salaam and focuses on Medicine research in Africa.

Simba Magamba is affiliated with Department of Public Health, National Institute for Medical Research (NIMR) and focuses on Medicine research in Africa.

Simeon Masanja is affiliated with Mkwawa University College of Education and focuses on Medicine research in Africa.

Abstract

District hospitals in Tanzania are critical for delivering primary healthcare services to rural communities. A multilevel regression model was employed to analyse data from Tanzanian district hospitals, accounting for both individual patient-level characteristics and hospital-level factors. The analysis revealed that increasing investment in infrastructure at the hospital level significantly reduced treatment costs without compromising quality of care ($Slope = -0.75$, $SE = 0.12$, $p < 0.01$). Multilevel regression models provide a robust framework for evaluating cost-effectiveness in healthcare systems. District hospitals should prioritise investment in infrastructure to optimise resource allocation and improve patient outcomes.

Keywords: *Tanzania, District Health Systems, Multilevel Models, Cost-Effectiveness Analysis, Regression, Hierarchical Data, Epidemiology*

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