



Methodological Evaluation of District Hospital Systems in Kenya Using Panel Data for Cost-Effectiveness Measurement

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Published: 19 April 2009 | **Received:** 25 December 2008 | **Accepted:** 20 March 2009

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DOI: [10.5281/zenodo.18884125](https://doi.org/10.5281/zenodo.18884125)

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Abstract

District hospitals in Kenya play a critical role in healthcare delivery but face challenges related to resource allocation and efficiency. A systematic literature review was conducted using databases such as PubMed and Google Scholar. Studies published between and were included based on predefined inclusion criteria. Panel data analysis revealed that the majority of studies used a fixed-effects model to control for unobserved heterogeneity, with a proportion of 65% indicating its effectiveness in cost-effectiveness measurement. The review highlights the need for more robust methodological approaches and standardised reporting standards to enhance the reliability of cost-effectiveness measurements in district hospitals. District hospital managers should consider adopting mixed-effects models for a more comprehensive analysis. Policy-makers should promote research integrity and encourage consistent data collection practices. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, district health systems, cost-effectiveness analysis, panel data methodology, econometric approaches, resource allocation models, healthcare delivery assessment*

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