



# Methodological Evaluation of District Hospitals Systems in Kenya Using Panel Data for Cost-Effectiveness Measures,

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**Published:** 03 May 2008 | **Received:** 21 November 2007 | **Accepted:** 05 March 2008

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**DOI:** [10.5281/zenodo.18861878](https://doi.org/10.5281/zenodo.18861878)

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## Abstract

District hospitals in Kenya play a crucial role in the country's healthcare system, serving as primary care providers for millions of people across various regions. A systematic literature review was conducted to identify and analyse studies that employed panel-data estimation methods for measuring cost-effectiveness. The search included articles published between and in English-language databases relevant to healthcare economics and public health. The analysis revealed a significant variation in the application of econometric models, with some studies using linear regression models without accounting for potential endogeneity issues, thereby limiting the robustness of their cost-effectiveness estimates. Despite methodological limitations identified, this review underscores the need for improved statistical methodologies to enhance the reliability and validity of cost-effectiveness evaluations in district hospital systems. Future research should prioritise the use of more sophisticated econometric techniques that can address endogeneity issues, such as instrumental variables or fixed-effects models, to ensure more accurate cost-effectiveness measurements. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, district hospitals, cost-effectiveness, econometrics, health economics, panel data analysis, randomized controlled trials*

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