



# Methodological Evaluation of District Hospitals Systems in Tanzania Using Panel Data for Cost-Effectiveness Analysis

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## Abstract

This study aims to evaluate the operational efficiency of district hospitals in Tanzania, focusing on their ability to provide effective healthcare services while managing costs. Panel data from six district hospitals in Tanzania were analysed over three years, employing econometric techniques such as fixed effects models to estimate the impact of various factors on costs and outcomes. The analysis revealed an average cost-effectiveness ratio (CER) of 100 per patient consultation, with significant variations among districts due to differences in infrastructure and staffing. The logit model is defined as  $\text{logit}(\pi) = \beta_0 + \beta_1 X_1 + \dots + \beta_k X_k$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Tanzania, Sub-Saharan, Panel Data, Cost-Effectiveness, Econometric Analysis, Health Services, Geographic Information Systems, Stochastic Frontier Analysis

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