



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

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## Abstract

District hospitals in Tanzania play a crucial role in healthcare delivery but face challenges related to cost-effectiveness. A multilevel regression analysis was conducted using data from Tanzanian district hospitals, incorporating both macro-level (district) and micro-level (patient) factors to measure cost-effectiveness. District hospitals in the southern region showed a significant improvement in patient recovery rates compared to those in the northern region, with a  $p$ -value of  $<0.01$  for the multilevel regression model. The multilevel regression analysis indicated that district hospital systems need targeted interventions to optimise cost-effectiveness and improve patient outcomes across regions. Investment in training healthcare workers, improving infrastructure, and implementing evidence-based health policies are recommended to enhance the performance of district hospitals.

**Keywords:** *African geography, district hospitals, cost-effectiveness, multilevel analysis, regression models, econometric methods, health economics*

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