



# Methodological Evaluation of District Hospitals Systems in Ethiopia Using Panel Data for Cost-Effectiveness Assessment

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## Abstract

The healthcare landscape in Ethiopia is characterized by a significant reliance on district hospitals for essential medical services. However, there remains substantial variability and inefficiency within these systems. The study employs a fixed effects model for analysing panel data from multiple districts across Ethiopia. Robust standard errors are incorporated to account for potential heterogeneity and correlation within and between districts. Our analysis reveals that district hospitals in rural areas often incur higher costs per patient visit compared to urban settings, highlighting the need for targeted interventions to improve efficiency. The findings suggest that district hospital systems in Ethiopia require focused reforms to enhance cost-effectiveness without compromising service quality. Policy recommendations include investing in infrastructure improvements and training programmes to reduce operational costs while ensuring patient outcomes remain optimal. Treatment effect was estimated with  $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Geographic, Africa, Healthcare, Systems, Evaluation, Panel, Data, Analysis*

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