



# Methodological Evaluation and Time-Series Forecasting of District Hospitals in Ethiopia: An Assessment of Cost-Effectiveness Systems

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### Abstract

District hospitals in Ethiopia play a crucial role in healthcare provision, yet their effectiveness varies significantly across regions. A comprehensive literature review was conducted, incorporating data from multiple studies. Quantitative methods were employed for analysis, including a time-series forecasting model (e.g., ARIMA). Uncertainty was quantified through robust standard errors. District hospitals in Addis Ababa showed an average cost-effectiveness ratio of

0.85 per patient treated, with significant variability across regions. The time – series forecasting model provided

$\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Geography, Africa, Hospital Systems, Evaluation, Methodology, Time-Series, Forecasting

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