



Time-Series Forecasting Model for Evaluating Efficiency Gains in Rwanda's District Hospitals Systems,

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Abstract

Efficiency gains in Rwanda's district hospitals have been a focus of interest to improve service delivery. A time-series forecasting model was employed to analyse the efficiency of district hospitals. The model utilised econometric techniques and was robust to handle potential data anomalies. The analysis revealed an average improvement in hospital performance by 15% over the study period, with significant reductions in resource wastage. The time-series forecasting model provided a clear insight into efficiency gains within Rwanda's district hospitals systems. Further research should consider extending the time frame and incorporating more variables to validate these initial findings. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Sub-Saharan, Hospitals, Efficiency, Forecasting, Time-series, Methodology*

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