Time-Series Forecasting Model Evaluation in District Hospitals Systems of Uganda,: A Methodological Assessment

Chewep Masagazi[1]

[1] Kampala International University (KIU)

Author notes

Chewep Masagazi is affiliated with Kampala International University (KIU) and focuses on Medicine research in Africa.

Abstract

Ugandan district hospitals face challenges in forecasting patient volumes effectively, impacting resource allocation and service delivery. The study employed an ARIMA (AutoRegressive Integrated Moving Average) model to forecast future patient volumes, incorporating historical data from a sample of district hospitals. Uncertainty was quantified using robust standard errors. Robust standard errors indicated variability in forecasting accuracy across different districts, with some forecasts deviating by up to 20% from actual volumes. The ARIMA model provided insights into the variability of patient volume predictions but did not achieve consistent yield improvement over tested periods. Further research should explore additional factors influencing hospital load and refine forecasting models with district-specific data. Uganda, District Hospitals, Time-Series Forecasting, ARIMA Model, Robust Standard Errors Treatment effect was estimated with $text\{logit\}(\pi)=beta\,0+\beta^{\,\tilde{}}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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