African Plant Pathology (Agri/Plant Science)

Forecasting Yield Improvement in Ugandan District Hospitals Using Time-Series Models: A Methodological Evaluation

Semedi Muyanja[1,2], **Orikiibi Kizza**[2], **Kabanda Namugit**[2,3]

[1] Mbarara University of Science and Technology

[2] Busitema University

[3] Department of Internal Medicine, Gulu University

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Correspondence: smuyanja@yahoo.com

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Author notes

Semedi Muyanja is affiliated with Mbarara University of Science and Technology and focuses on Medicine research in Africa.

Orikiibi Kizza is affiliated with Busitema University and focuses on Medicine research in Africa.

Kabanda Namugit is affiliated with Busitema University and focuses on Medicine research in Africa.

Abstract

Ugandan district hospitals play a crucial role in healthcare delivery, but their performance metrics such as patient yield improvement are often poorly documented and forecasted. Time-series analysis was employed to model yield improvements over time. The Box-Jenkins methodology was used with an ARIMA (AutoRegressive Integrated Moving Average) model for forecasting. The ARIMA(2,1,0) model provided a forecast direction of increase in patient yield improvement by approximately 5% within the next year. Time-series models effectively predict yield improvements at Ugandan district hospitals, offering a robust methodological evaluation. Further research should explore integrating these models into hospital management systems for better resource allocation and planning. Uganda, District Hospitals, Time-Series Forecasting, Yield Improvement, ARIMA Model Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African healthcare, Time-series analysis, Forecasting, Quantitative methods, District hospital systems, Yield improvement, Epidemiological modelling*

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