African Poultry Veterinary Science

Methodological Evaluation of Secondary School Systems in Nigeria Using Time-Series Forecasting Models for Efficiency Assessment

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Abstract

Secondary schools in Nigeria face challenges related to resource allocation and operational efficiency. A systematic review of literature was conducted, examining methodologies used in previous studies to assess the efficiency of secondary schools. The analysis included a critical examination of existing models and their application in Nigerian contexts. Time-series forecasting models showed significant potential for measuring efficiency gains within secondary school systems, particularly when incorporating robust statistical techniques such as ARIMA (AutoRegressive Integrated Moving Average) model with confidence intervals to account for prediction uncertainties. The review identified the ARIMA model as a promising methodological approach for evaluating Nigerian secondary schools' operational efficiencies in the agricultural sector. The findings suggest that these models can be used to inform policy and resource allocation decisions. Further research should explore the practical implementation of time-series forecasting models in various Nigerian secondary school settings, with particular focus on enhancing model accuracy through data refinement and validation processes. Secondary schools, Nigeria, Efficiency assessment, Time-series forecasting, ARIMA The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African agriculture, agricultural economics, econometrics, time series analysis, secondary education systems*

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