Time-Series Forecasting Model Evaluation for Secondary School Systems Efficiency in Nigeria

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Abstract

The Nigerian secondary school system has faced challenges in resource allocation and efficiency over time. A time-series analysis was conducted using an autoregressive integrated moving average (ARIMA) model to forecast system performance and identify improvements over time. The ARIMA model showed a significant trend towards improved efficiency in agricultural education from , with forecasts indicating potential for further gains if current trends continue. The study underscores the importance of forecasting models in enhancing educational resource management within secondary schools systems. Investment in infrastructure and human resources is recommended to sustain observed efficiency improvements. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African education, ARIMA models, time-series analysis, school efficiency, econometrics, forecasting, African development*

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