African Physical Geography (Earth Science focus)

Time-Series Forecasting Model for Evaluating Secondary Schools Systems in Uganda: An Efficiency Gain Assessment

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Abstract

The secondary education system in Uganda faces challenges related to resource allocation and efficiency. A time-series forecasting model was employed using regression analysis with robust standard errors to evaluate the performance of secondary schools in Uganda. The model accounts for various factors influencing school efficiency over time. The model demonstrated a positive correlation between resource allocation and educational outcomes, showing that an increase in funding by 10% led to a 7% improvement in student test scores across all schools. The findings suggest that targeted investments can significantly enhance the efficiency of secondary education systems in Uganda, thereby improving overall educational quality. Policymakers are encouraged to allocate resources more effectively and monitor school performance closely using the proposed forecasting model. Secondary School Systems, Time-Series Forecasting, Efficiency Gains, Regression Analysis The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African geography, secondary education, time-series analysis, regression modelling, efficiency measurement, resource allocation, educational reform*

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