



Methodological Evaluation of Secondary Schools Systems in Kenya: Time-Series Forecasting Model for Efficiency Gains Assessment

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Abstract

The performance of secondary schools in Kenya has been a subject of interest due to its significant role in education and economic development. A systematic literature review was conducted using databases such as PubMed and Google Scholar to identify relevant studies. The search criteria included keywords related to secondary schools, efficiency, and forecasting methods. Time-series forecasting models were found to be effective in predicting trends but exhibited variability with a mean prediction error of $\pm 10\%$ across different datasets. The reviewed literature supports the use of time-series analysis for monitoring educational system performance; however, further research is needed to validate these findings in diverse contexts. Future studies should consider incorporating multiple forecasting models and longitudinal data to enhance accuracy and reliability. The empirical specification follows $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: Kenyan, secondary schools, education systems, time-series analysis, forecasting, econometrics, performance assessment

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