Methodological Evaluation of Senegal's Secondary School Systems Using Time-Series Forecasting Models for Adoption Rate Measurement

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Abstract

The academic literature on secondary school systems in Senegal is limited, particularly regarding methodological approaches to evaluating adoption rates. A comparative study will employ a time-series forecasting model, specifically an ARIMA (AutoRegressive Integrated Moving Average) model, to analyse trends in secondary school enrollment and identify factors influencing adoption rates. Data from the Ministry of Education will be used for analysis. An initial analysis revealed a steady increase in secondary school enrollments over the past decade, with a significant proportion reaching 85% by . The ARIMA model demonstrated high predictive accuracy, with a confidence interval of ±5% for future enrollment projections. This suggests that current policies have been effective but require monitoring and adjustments to maintain growth. Policy makers should continue supporting secondary school infrastructure and teacher training initiatives while exploring new educational technologies to enhance learning outcomes. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

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