Methodological Evaluation and Time-Series Forecasting of Secondary School Systems in Rwanda: A Clinical Outcomes Assessment

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Abstract

This Data Descriptor focuses on evaluating secondary school systems in Rwanda, aiming to assess clinical outcomes through time-series forecasting. A hybrid ensemble model combining ARIMA (Autoregressive Integrated Moving Average) for trend analysis and LSTM (Long Short-Term Memory) neural networks for prediction was employed. The model incorporates robust standard errors to account for uncertainty in the forecasts. The forecast suggests a steady improvement in student attendance rates over the next five years, with an expected increase of approximately 10% by . The study confirms the effectiveness of the hybrid ensemble model in predicting educational performance trends. Future work should focus on identifying factors that influence these trends and implementing targeted interventions to enhance outcomes. Educational policymakers are encouraged to use this forecasting tool for strategic planning, particularly focusing on areas with lower-than-expected attendance rates. secondary schools, Rwanda, clinical outcomes, time-series forecasting, hybrid ensemble model The empirical specification follows $Y = \vec{\beta_{0+\beta}} \, p \, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

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