



Methodological Evaluation of Secondary Schools Systems in Ethiopia Using Time-Series Forecasting Models for Efficiency Analysis

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Abstract

The secondary school education system in Ethiopia is a critical component of agricultural development, yet its effectiveness remains under-researched and poorly understood. Time-series forecasting models will be employed to analyse historical data on enrollment rates, student performance metrics, and agricultural productivity outcomes. A preliminary analysis indicates a moderate increase in student performance over the past decade, suggesting potential improvements in education quality. The application of time-series forecasting models has revealed promising trends that can inform policy adjustments aimed at enhancing educational outputs for agriculture. Enhanced teacher training programmes and improved infrastructure should be prioritised to capitalize on observed efficiency gains. The empirical specification follows $Y = \beta_{0+\beta}^{\vec{}} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African education systems, Time series analysis, Efficiency measurement, Educational reform, Econometric models, School performance indicators, Data envelopment analysis*

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