



Methodological Assessment and Panel Data Estimation of Secondary School Systems' Efficiency in Nigeria: An Econometric Exploration

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Abstract

This study focuses on the secondary school systems in Nigeria, evaluating their efficiency through an econometric approach. A two-stage least squares (2SLS) regression model was employed to assess the efficiency of secondary schools, accounting for endogenous variables. Robust standard errors were used to account for potential heteroscedasticity in the data. Secondary school systems exhibit mixed levels of efficiency, with some showing significant gains in output per unit input. The model provides insights into areas where secondary schools can improve their operational efficiency, contributing to better educational outcomes and resource utilization. Policy recommendations include targeted interventions aimed at enhancing the management practices of underperforming schools and promoting best practices across the system. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: African education, secondary schools, econometrics, panel data analysis, efficiency measurement, productivity gains, stochastic frontier analysis

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