Methodological Evaluation of Secondary Schools Systems in Uganda Using Multilevel Regression Analysis to Measure Yield Improvement

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Abstract

The secondary education system in Uganda is underutilized, characterized by low student performance and dropout rates. A multilevel regression model will be employed at both the school (level-1) and district (level-2) levels, incorporating student performance metrics as the dependent variable. Robust standard errors will account for potential heterogeneity. Secondary schools in selected districts show a significant improvement in yield, with an estimated increase of 15% in average test scores after implementing targeted interventions. The multilevel regression analysis revealed that specific school-level and district-level factors contribute to educational outcomes, offering insights for policy development. Introduce standardised curricula, enhance teacher training programmes, and allocate more resources to underperforming schools. The empirical specification follows $Y = \vec{\beta}_{0+\beta} \, p \, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African contexts, dropout rates, multilevel models, regression analysis, school systems, yield improvement, educational policy*

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