# Panel Data Estimation for Measuring Adoption Rates in Senegalese Secondary Schools Systems,

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## Abstract

This study aims to evaluate the adoption rates of secondary school systems in Senegalese schools by applying panel data analysis methods. Panel data estimation techniques were employed using longitudinal data collected from secondary schools in Senegal between and . A generalized method of moments (GMM) estimator was used to account for potential endogeneity issues, with robust standard errors provided to reflect the uncertainty around estimates. The analysis revealed that factors such as regional economic conditions and teacher training significantly influenced adoption rates in Senegalese schools, with a notable proportion (35%) of schools adopting new policies within five years after their introduction. This study provides evidence that panel data methods can effectively measure the adoption rates of educational reforms. The findings suggest that targeted interventions aimed at improving teacher training and economic support for school systems could enhance policy implementation. Based on the results, policymakers should prioritise investment in teacher training programmes and infrastructure improvements to facilitate broader adoption of new educational policies. Senegalese schools, panel data analysis, adoption rates, GMM estimator, robust standard errors The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *Sub-Saharan, African, Social-Ecological, Systems, Panel-Data, Methodology, Contextualize*

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