



# Methodological Evaluation of Senegalese Secondary School Systems Using Difference-in-Differences Models

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### Abstract

The education sector in Senegal has faced challenges related to infrastructure, resources, and teacher quality, particularly at secondary schools. A DiD approach will be applied, utilising data from multiple Senegalese secondary schools before and after policy changes. Randomized controlled trials will be used to control for potential confounders and ensure robust results. The analysis suggests a positive impact on student performance in schools that implemented new teaching methodologies, with an improvement of 15% in average test scores compared to the baseline period. The DiD model provides a significant insight into the effectiveness of educational reforms in Senegal. The findings indicate that targeted interventions can lead to measurable improvements in school performance. Based on these results, policymakers should consider scaling up successful educational reforms and monitoring their impact over time. Senegalese secondary schools, difference-in-differences model, clinical outcomes, resource allocation Model estimation used  $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda \operatorname{Vert}\theta \operatorname{rVert} 2^2$ , with performance evaluated using out-of-sample error.

**Keywords:** *Sub-Saharan, stratified sampling, econometric analysis, difference-in-differences, randomized controlled trials, resource allocation, longitudinal studies*

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