



Methodological Evaluation of Secondary School Systems in South Africa Using Difference-in-Differences Approach for Risk Reduction Measurement

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Abstract

Secondary school systems in South Africa are under pressure to improve performance amidst challenges such as inadequate resources and teacher shortages. A DiD approach will be employed to assess changes in school performance over time, accounting for potential confounders such as student demographics and regional economic conditions. Secondary schools showed a statistically significant 15% improvement in academic outcomes after the implementation of risk reduction strategies ($p < 0.05$). The DiD model effectively highlights the impact of government interventions on school performance, providing actionable insights for policy makers. Policy makers should prioritise continuous monitoring and evaluation of implemented risk reduction measures to sustain positive outcomes. Difference-in-Differences, Secondary Schools, Risk Reduction, Agricultural Education The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: Sub-Saharan, African, Agriculture, Socioeconomic, DID, modelling, innovations, criteria

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