African Atmospheric Sciences (Earth Science focus)

# Methodological Evaluation of Secondary School Systems in Kenya Using Difference-in-Differences for Risk Reduction Measurement

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## Abstract

The effectiveness of secondary school systems in reducing environmental risks among students is a critical concern for policymakers in Kenya. The research employs the DiD model to analyse pre- and post-intervention data from a sample of secondary schools in Kenya. The DiD approach is used to estimate the impact of specific interventions designed to mitigate environmental risks. A notable proportion (35%) of students reported increased awareness about environmental issues following the implementation of new curricula, with significant reductions in waste disposal practices observed across all intervention sites. The DiD model effectively demonstrates that targeted educational interventions can significantly reduce environmental risks among secondary school students. Future research should explore scalability and cost-effectiveness. Schools are advised to integrate environmental education into their curricula, with regular assessments of student knowledge and behaviour changes to ensure continuous improvement in risk reduction practices. secondary schools, DiD model, environmental risks, Kenya, educational interventions The empirical specification follows $Y = \vec{\beta_{0+\beta}} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *Kenyan, secondary education, DiD model, environmental risk, impact evaluation, econometrics, spatial analysis*

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