African Security Studies (Interdisciplinary - Social/Political focus)

Renewable Energy Stabilization and School Attendance among Adolescent Girls in Southern Ethiopia: A Longitudinal Perspective

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Abstract

Renewable energy projects in developing countries often aim to improve access to electricity, which can have indirect effects on various aspects of daily life. A longitudinal data analysis was conducted using survey responses from 200 adolescent girls, collected annually for three years. Data were analysed using a linear regression model with robust standard errors to account for potential confounding variables. The study found that the renewable energy stabilization programme led to an increase in school attendance by 15% among adolescent girls after two years of implementation (95% confidence interval: +12.3, +17.8). The findings suggest that renewable energy can positively influence educational outcomes for vulnerable groups such as adolescent girls. Further research should explore the mechanisms behind the observed effects and evaluate scalability of the programme in different contexts. Renewable Energy, School Attendance, Adolescent Girls, Ethiopia, Longitudinal Study Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^{2}$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, Africa, Latent-Class-Model, Socio-Ecological, Systems-Biology, Qualitative-Methods, Longitudinal-Study*

ABSTRACT-ONLY PUBLICATION

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