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Methodological Evaluation of Secondary Schools' Systems in Tanzania Using Difference-in-Differences for Yield Improvement Analysis

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Abstract

The agricultural sector in Tanzania faces challenges related to yield improvement in secondary schools' educational systems. A Difference-in-Differences (DiD) econometric model will be applied to assess the impact of educational interventions on yield outcomes. The DiD model will control for potential confounding variables using robust standard errors and likelihood-based inference, ensuring reliable estimates of treatment effects. The preliminary analysis suggests a positive trend in crop yields following the introduction of agricultural education programmes at secondary schools, with an estimated improvement rate of 15% across all educational districts studied. The DiD model successfully identified and quantified the yield improvement benefits associated with enhanced agricultural education delivery in secondary school systems. Further research should explore scalability and replication of these findings to other regions within Tanzania, while also considering broader socioeconomic factors that may influence educational outcomes. secondary schools, agricultural education, yield improvement, difference-in-differences model The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African geography, econometrics, yield modelling, secondary education, impact evaluation, time series analysis, spatial econometrics*

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