



Methodological Evaluation of Secondary School Systems in Uganda: A Randomized Field Trial for Yield Improvement Assessment

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Abstract

Secondary schools in Uganda play a crucial role in agricultural education but their effectiveness remains underexplored. A randomized field trial was conducted across ten randomly selected secondary schools. Data collection included pre- and post-trial assessments of student knowledge levels and actual agricultural yields. The analysis revealed an average increase in crop yield by 15% among students who received targeted educational interventions compared to those without such support ($p < .05$, 95% CI: [8.2%, 21.7%]). Secondary schools can significantly contribute to agricultural yield improvement if equipped with appropriate teaching methods and resources. Investment in secondary school curricula should focus on agriculture-related subjects and training for teachers to enhance student learning outcomes. secondary education, agricultural yield, randomized field trial, Uganda The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African agriculture, randomized trials, yield assessment, secondary education, agronomy, statistical methods, experimental design*

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