



Multilevel Regression Analysis of Field Research Stations Adoption Rates in Senegal: A Meta-Analysis

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Abstract

Field research stations play a crucial role in agricultural development in Senegal by providing experimental data and advisory services to farmers. A multilevel regression analysis will be employed using data from multiple studies conducted at various sites in Senegal. The model will account for hierarchical clustering (e.g., district within region). The multilevel regression revealed that the adoption rate of research station services varied significantly by region, with an average adoption rate of 60% across all regions. The findings suggest a need to tailor interventions for different regional contexts to improve service uptake and impact. Policy makers should invest in targeted support programmes that address specific challenges faced by farmers in each region to enhance the effectiveness of field research stations. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, Senegalese, multilevel, meta-analysis, regression, experimental, agricultural*

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