



# Methodological Evaluation of Field Research Stations in Nigeria: A Randomized Trial for Risk Reduction Measurement

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## Abstract

Field research stations in Nigeria are crucial for agricultural development but face challenges related to data collection and analysis. A randomized controlled trial was conducted with 100 randomly selected farmers participating across three different regions. Data collection methods included pre- and post-trial surveys to measure changes in agricultural productivity and risk levels. Statistical analysis used a logistic regression model (OR = 2.5 ± 0.8 SE). The findings indicate that the randomized trial design significantly reduced reported risks by 30% compared to traditional methods, with a confidence interval of [15%, 45%]. This study provides evidence for the effectiveness of randomized field trials in improving data collection and risk assessment methodologies within Nigerian agricultural research stations. The findings suggest that a standardised approach to data collection should be implemented across all regions to ensure consistent results and reliability. Future research could explore the scalability and cost-effectiveness of these methods. Agriculture, Field Research Stations, Randomized Trial, Risk Reduction

**Keywords:** *African savanna, randomized controlled trial, methodology, precision agriculture, agroecology, statistical analysis, spatial data management*

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