



# Methodological Evaluation of Field Research Stations in Ghana: Quasi-Experimental Design for Measuring Adoption Rates

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## Abstract

Field research stations in Ghana are crucial for agricultural development but their effectiveness varies. A mixed-methods approach combining survey data with observational studies was employed. Statistical models were used to analyse the impact of variables on adoption rates. The observed adoption rate for precision agriculture technology stood at 35% in selected regions, highlighting the need for targeted interventions. Quasi-experimental designs provided robust insights into factors affecting technology adoption, offering a new framework for future research and policy development. Investment should be directed towards enhancing farmer education programmes and infrastructure to boost adoption rates of agricultural innovations. Precision Agriculture, Field Research Stations, Adoption Rates, Quasi-Experimental Design The empirical specification follows  $Y = \beta_{0+\beta} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *African geography, adoption rates, mixed methods, quasi-experimental design, statistical analysis, survey methodology, field trials*

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