Methodological Evaluation of Regional Monitoring Networks in Senegal: Estimating Yield Improvements Using Panel Data Analysis

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Abstract

This study evaluates regional monitoring networks in Senegal to assess their effectiveness in measuring yield improvements in agriculture. Regional monitoring networks were assessed through a panel-data estimation approach. The study utilised econometric techniques to analyse agricultural yield data from Senegal over multiple years. Panel data analysis indicated that the regional monitoring networks accurately estimated yield improvements with an R^2 value of 0.85, suggesting strong explanatory power. The findings confirm the reliability and effectiveness of the monitored regions in capturing agricultural yield trends. Future studies should consider expanding network coverage to ensure comprehensive data collection across various geographical areas in Senegal. The empirical specification follows $Y = \vec{\beta}_{0+\beta} \, p \, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

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