



# Multilevel Regression Analysis of Process-Control Systems in Rwanda: Measuring Yield Improvement

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## Abstract

This study examines process-control systems in Rwanda aimed at improving wood yield. A multilevel regression model was applied to assess the impact of process-control systems at different levels (e.g., individual farm vs. district). Initial findings suggest a 15% increase in wood yield with the implementation of these systems, indicating a significant improvement. Process-control systems have shown promise in enhancing wood yields across Rwanda's diverse agricultural landscapes. Further research should be conducted to validate these results and explore wider applications. The maintenance outcome was modelled as  $Y_i = \beta_0 + \beta_1 X_i + u_i + \epsilon_i$ , with robustness checked using heteroskedasticity-consistent errors.

**Keywords:** Rwandan, Multilevel, Regression, Process-Control, Evaluation, Analysis, Yield, Systems

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