



# Methodological Evaluation of Manufacturing Systems Yield Improvement in Ethiopian Plants Using Difference-in-Differences Analysis

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## Abstract

This study examines the implementation of manufacturing systems in Ethiopian plants to improve yield outcomes. A difference-in-differences approach was used, employing regression analysis with robust standard errors to account for potential confounding factors. The DiD model revealed that implementing the new manufacturing systems led to a 15% increase in yield across all evaluated Ethiopian plants, though this effect varied slightly between different types of industries. The difference-in-differences analysis supported the hypothesis that the introduced manufacturing systems significantly enhanced yield outcomes in Ethiopian industrial settings. Further research should explore the scalability and cost-effectiveness of these systems across various sectors to maximise their impact on Ethiopia's economic development. Manufacturing Systems, Yield Improvement, Difference-in-Differences (DiD), Regression Analysis 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:** Ethiopia, Manufacturing Systems, Yield Improvement, Difference-in-Differences, Regression Analysis, Methodology, Production Efficiency

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