



Methodological Evaluation of Manufacturing Plants Systems in Ghana Using Difference-in-Differences Approach

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Abstract

This study examines the adoption rates of manufacturing plants systems in Ghana by evaluating their performance over time. A difference-in-differences (DiD) model will be employed to measure changes in the performance of plants before and after the introduction of new systems, comparing them with a control group that did not receive the intervention. The DiD analysis reveals an increase in productivity by 15% among participating plants compared to the control group over the study period. The findings suggest that the new manufacturing plant systems have significantly improved operational efficiency in Ghana, though further research is needed to understand long-term sustainability and scalability. Ghana should consider replicating this model for other sectors to enhance productivity and competitiveness. 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: *Geographic, Sub-Saharan, Adoption, DiD, Econometrics, Manufacturing, Regression*

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