



Methodological Evaluation of Industrial Machinery Fleets in Ethiopia Using Difference-in-Differences for Adoption Rate Measurement

Mekonnen Abraha¹

¹ Addis Ababa University

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Correspondence: mabraha@gmail.com

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Author notes

Mekonnen Abraha is affiliated with Addis Ababa University and focuses on Engineering research in Africa.

Abstract

This study examines industrial machinery fleets in Ethiopia, focusing on adoption rates of new technologies. A Difference-in-Differences (DID) model was employed, with pre- and post-policy intervention data from a sample of industrial machinery fleets across Ethiopia's manufacturing sectors as the basis for analysis. The DID model revealed an adoption rate of new machinery increased by approximately 25% in the post-intervention period compared to the control group. The DID model was found effective in measuring adoption rates, with significant improvements observed post-policy intervention. Further research should explore DID's robustness across different sectors and interventions. Difference-in-Differences, Adoption Rate, Industrial Machinery, Ethiopia The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \varepsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: Ethiopia, Industrial Machinery, Methodology, Adoption Rate, Difference-in-Differences, Econometrics, Technology Transfer

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