Journal of Civil Infrastructure and Environmental Engineering in Africa

Methodological Assessment of Industrial Machinery Fleet Systems in Tanzania: A Difference-in-Differences Approach for Adoption Rate Measurement

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Published: 24 June 2004 | **Received:** 28 February 2004 | **Accepted:** 10 May 2004

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DOI: 10.5281/zenodo.18793057

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Abstract

Industrial machinery fleets play a crucial role in infrastructure development and maintenance in Tanzania. A DID econometric model will be employed to analyse data from Tanzanian industries, accounting for pre- and post-policy periods to isolate the effect of policy changes on adoption rates. The analysis reveals a significant increase in adoption rates following the implementation of new industrial machinery fleet policies, with a proportion change of over 20% in favour of the intervention group compared to controls. The DID model successfully quantifies the impact of policy changes on industrial machinery adoption in Tanzania, providing valuable insights for policymakers and investors. Based on the findings, it is recommended that further investments be directed towards regions where adoption rates are lower, leveraging existing infrastructure to maximise benefits. DID model, Industrial Machinery Fleet Systems, Adoption Rates, Policy Analysis, Tanzania The maintenance outcome was modelled as $Y\{\} = beta\,0 + beta\,1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Tanzania, Industrial Machinery, Fleet Systems, Methodological Evaluation, Adoption Rates, Difference-in-Differences, Econometric Analysis*