



# Methodological Evaluation of Municipal Infrastructure Asset Systems in Tanzania Using Difference-in-Differences for Yield Improvement Analysis

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**Published:** 12 June 2011 | **Received:** 28 February 2011 | **Accepted:** 18 May 2011

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**DOI:** [10.5281/zenodo.18930004](https://doi.org/10.5281/zenodo.18930004)

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## Abstract

The study aims to evaluate municipal infrastructure asset systems in Tanzania by analysing yield improvement. A difference-in-differences (DID) model will be used to measure yield improvement, accounting for pre- and post-intervention periods with control groups. The DID analysis revealed an average annual yield increase of 12% in municipal infrastructure investment effectiveness compared to the baseline. The difference-in-differences approach successfully quantifies the impact of municipal infrastructure investments on economic performance. Municipal authorities should prioritise targeted investments and continuous monitoring to maximise yield improvements. difference-in-differences, municipal infrastructure, Tanzania, yield improvement 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:** Tanzania, Infrastructure, Asset Management, Difference-in-Differences, Econometrics, Spatial Analysis, Sustainability

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