



Methodological Evaluation of Municipal Infrastructure Assets Systems in Nigeria Using Difference-in-Differences Approach

Chinedu Okere¹

¹ Department of Electrical Engineering, Nnamdi Azikiwe University, Awka

Published: 11 October 2010 | Received: 29 June 2010 | Accepted: 05 September 2010

Correspondence: cokere@gmail.com

DOI: [10.5281/zenodo.18908190](https://doi.org/10.5281/zenodo.18908190)

Author notes

Chinedu Okere is affiliated with Department of Electrical Engineering, Nnamdi Azikiwe University, Awka and focuses on Engineering research in Africa.

Abstract

Municipal infrastructure assets systems in Nigeria face significant challenges related to maintenance, efficiency, and resource allocation. The research employs a Difference-in-Differences (DiD) approach, utilising pre- and post-intervention data on municipal infrastructure assets performance metrics to assess changes in efficiency. A preliminary analysis suggests that the DiD model can effectively capture changes in asset system efficiency over time, with an estimated improvement of 15% in maintenance costs per annum after the intervention period. The Difference-in-Differences (DiD) approach demonstrates promise for evaluating municipal infrastructure asset systems in Nigeria, providing a robust framework to measure efficiency gains and inform future interventions. Further research should explore the DiD model's applicability across different types of municipal infrastructure assets and its potential impact on broader economic outcomes. The maintenance outcome was modelled as $Y_{it} = \beta_0 + \beta_1 X_{it} + u_i + v_t + \epsilon_{it}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: Geographical, Infrastructure, Asset Management, Efficiency Gains, Difference-in-Differences, Econometrics, Spatial Analysis

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ **REQUEST FULL PAPER**

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa



Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge