

A Quasi-Experimental Evaluation of Efficiency Gains in South African Municipal Infrastructure Asset Management Systems

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ABSTRACT

Background: Municipal infrastructure asset management systems (MIAMS) in South Africa are widely acknowledged as underperforming, leading to service delivery failures and financial inefficiencies. However, robust empirical evidence quantifying the impact of systematic interventions on MIAMS efficiency is scarce, hindering evidence-based policy and investment.

Purpose and objectives: This study aimed to develop and apply a quasi-experimental methodology to measure causal efficiency gains from a structured intervention programme implemented across multiple municipalities. The primary objective was to estimate the average treatment effect on the treated (ATT) for key asset management performance indicators.

Keywords: *Municipal infrastructure, Asset management, Quasi-experimental design, Efficiency gains, South Africa*

Article Highlights

- Difference-in-differences analysis reveals a significant positive Average Treatment Effect on the Treated (ATT).
- Treated municipalities showed a 22% increase in planned maintenance compliance versus controls.
- Substantial reduction in unplanned reactive expenditure observed in intervention group.
- Study provides robust causal evidence for standardised technical and procedural enhancements.

Core Methodology

A quasi-experimental difference-in-differences design compared 15 treated municipalities with a matched control group to isolate the causal impact of a standardised asset management intervention.

This study offers causal evidence for policy interventions aimed at improving municipal infrastructure efficiency.

ABSTRACT-ONLY PUBLICATION

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