

Methodological Evaluation and Adoption Rate Analysis of Municipal Infrastructure Asset Systems in Senegal

A Difference-in-Differences Approach

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ABSTRACT

Background: Municipalities in many developing nations face significant challenges in managing infrastructure assets effectively. The adoption of formal asset management systems (AMS) is posited as a critical solution, yet rigorous quantitative evidence on their uptake and impact remains scarce.

Purpose and objectives: This study aims to methodologically evaluate the implementation of municipal infrastructure AMS and to quantify their adoption rates across Senegalese municipalities. The objective is to provide empirical evidence on the causal effect of a national capacity-building programme on AMS uptake.

Keywords: *Municipal infrastructure, Asset management systems, Sub-Saharan Africa, Difference-in-differences, Adoption rate, Developing countries, Public works*

Article Highlights

- Quasi-experimental design isolates the causal effect of a national technical support programme.
- Average treatment effect shows an 18-point increase in full system adoption likelihood.
- Impact was more pronounced in urban communes compared to rural counterparts.
- Demonstrates the efficacy of targeted support for municipal engineering governance.

Methodological Note

The analysis employs a difference-in-differences model with cluster-robust standard errors, providing robust causal inference on programme impact.

This study offers empirical evidence for policy design targeting municipal infrastructure governance.

ABSTRACT-ONLY PUBLICATION

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