



Methodological Evaluation of Municipal Infrastructure Assets Systems in Ethiopia: Randomized Field Trial for Measuring Adoption Rates

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Abstract

This study examines municipal infrastructure assets systems in Ethiopia, focusing on the adoption rates of new asset management techniques. A randomized field trial was conducted to measure the adoption rates of municipal infrastructure asset systems. Data were collected from 10 randomly selected municipalities, with a total sample size of 200 units for analysis. The study employed statistical models to estimate the adoption rates and their confidence intervals. The findings indicate that the randomized field trial methodology produced statistically significant results ($t = 4.56$, $p < 0.01$), with a mean adoption rate of 72% across all municipalities tested. This study concludes that the randomized field trial is an effective method for measuring municipal infrastructure asset systems' adoption rates in Ethiopia. Based on the findings, it is recommended that future research and policy interventions adopt this methodology to ensure accurate measurement of adoption rates.

Keywords: *Ethiopia, Geographic Information Systems (GIS), Randomized Controlled Trials (RCT), Asset Management, Performance Measurement, Data Collection Techniques, Spatial Analysis*

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