



# Methodological Evaluation of Municipal Infrastructure Asset Systems in Uganda: A Randomized Field Trial for Adoption Rate Measurement

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## Abstract

Ugandan municipal infrastructure asset systems are critical for urban development but face challenges in adoption by local governments and communities. A randomized field trial was conducted to assess the effectiveness of municipal infrastructure asset systems among Ugandan municipalities. The study employed a logistic regression model to estimate the probability of adoption based on various factors including socio-economic conditions and technological readiness levels. In the evaluated sample, there was an observed proportion (95% CI) of 0.63 (0.47-0.80) for municipalities adopting municipal infrastructure asset systems, highlighting a significant level of interest despite existing challenges. The randomized field trial provided insights into the factors influencing adoption rates and validated the use of logistic regression as an effective methodological tool in this context. Further research should explore interventions to enhance adoption rates among municipalities with lower probabilities of adoption identified through this study. Municipal Infrastructure, Adoption Rates, Randomized Field Trial, Logistic Regression The maintenance outcome was modelled as  $Y \{ \} = \beta_0 + \beta_1 X \{ \} + u_i + \text{varepsilon} \{ \}$ , with robustness checked using heteroskedasticity-consistent errors.

**Keywords:** *Geographic, Infrastructure, Randomization, Adoption, Evaluation, Sampling, Quantitative*

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