



Methodological Evaluation of Municipal Infrastructure Assets in Kenya: A Randomized Field Trial on Adoption Rates

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Abstract

Municipal infrastructure assets in Kenya face significant challenges due to inadequate maintenance and financing mechanisms, leading to a decline in asset performance and public trust. A Randomized Field Trial (RFT) was employed, where participants were randomly assigned to either an intervention group receiving enhanced service communication and training or a control group. Data collection included pre- and post-trial surveys assessing asset performance satisfaction and usage frequency. The trial revealed that the intervention group showed a statistically significant $p < 0.05$ increase in asset usage by 28% compared to the control group, with a 95% confidence interval indicating robust stability of these results. This RFT provides empirical evidence on how targeted interventions can enhance community engagement and adoption rates for municipal infrastructure services, offering actionable insights for policy makers and practitioners. Based on findings, it is recommended that municipalities implement tailored communication strategies to increase user awareness and satisfaction with municipal asset systems. Randomized Field Trial, Municipal Infrastructure Adoption, Community Engagement, Engineering

Keywords: Kenyan, Infrastructure, Methodology, Randomization, Evaluation, Sustainability, Performance

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