



Methodological Evaluation of Municipal Infrastructure Assets Systems in Rwanda: Randomized Field Trial for Yield Improvement Assessment

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Abstract

Municipal infrastructure assets systems play a crucial role in urban development and service delivery in Rwanda. A randomized controlled trial (RCT) was conducted to assess the impact of different municipal infrastructure asset systems on service delivery efficiency and community satisfaction. Random assignment ensured balanced treatment groups for comparison. In one specific sector, there was a 15% increase in reported service reliability after implementing improved asset management practices compared to baseline conditions. The randomized field trial demonstrated the potential of enhanced municipal infrastructure asset systems to improve service delivery efficiency and community satisfaction indices. Communities should be actively involved in monitoring and maintenance activities for sustainable yield improvement outcomes. Municipal Infrastructure, Asset Management Systems, Randomized Field Trial, Yield Improvement The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \varepsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Urbanization, Infrastructure, Randomized Control Trial, Methodology, Evaluation, Asset Management, Development Economics*

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