



Methodological Evaluation of Municipal Infrastructure Assets Systems in Rwanda mediante Pruebas Aleatorias para Medir la Mejora de las Productividades

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Abstract

Municipal infrastructure assets systems in Rwanda are critical for urban resilience but lack comprehensive data and evaluation frameworks. A randomized field trial was conducted to assess the impact of infrastructure investments on productivity. Data collection included pre- and post-intervention surveys, with statistical modelling using linear regression for analysis. Random assignment resulted in an average 20% increase in reported productivity among municipalities that received investment compared to those without, though this varied by district (e.g., urban vs rural). The randomized field trial demonstrated the effectiveness of targeted investments in improving municipal infrastructure asset yields. Investment strategies should be tailored to specific local conditions and monitored for sustained yield improvements. The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \epsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: Rwanda, Infrastructure Management, Randomized Field Trials, Asset Valuation, Econometrics, Performance Measurement, Quantitative Analysis

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