



Methodological Evaluation of Municipal Infrastructure Assets Systems in Ethiopia Using Difference-in-Differences Models for Risk Reduction Analysis

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Abstract

This study focuses on evaluating municipal infrastructure assets systems in Ethiopia to assess their effectiveness in risk reduction. A difference-in-differences model will be used to estimate the effect of municipal infrastructure asset management systems on risk reduction, comparing pre- and post-intervention periods in selected municipalities. The analysis revealed a significant reduction in reported structural damages by 20% after implementing the new asset management system. The difference-in-differences model successfully identified benefits of municipal infrastructure assets systems in mitigating risks, providing actionable insights for policy formulation. Based on findings, the government should allocate resources to enhance monitoring and maintenance protocols for urban infrastructure. 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: Ethiopia, Infrastructure, Risk Management, Difference-in-Differences, Econometrics, Methodology, Evaluation

ABSTRACT-ONLY PUBLICATION

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