



Methodological Evaluation of Municipal Water Systems in Ethiopia Using Difference-in-Differences Models for Cost-Effectiveness Analysis

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Abstract

This study evaluates municipal water systems in Ethiopia to determine their cost-effectiveness. A systematic review and meta-analysis approach will be employed to synthesize findings from existing studies. Difference-in-differences models with robust standard errors will be used to estimate cost-effectiveness ratios. The preliminary results indicate a significant reduction in waterborne diseases following the implementation of municipal water systems, suggesting substantial health benefits at a manageable cost. This study provides valuable insights into the economic and public health impacts of municipal water infrastructure in Ethiopia. Policy recommendations include prioritising investments in sustainable municipal water systems to enhance both healthcare outcomes and financial sustainability. Meta-analysis, difference-in-differences, cost-effectiveness, municipal water systems, Ethiopia The empirical specification follows $Y = \beta_{0+\beta} X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, African, SpatialStatistics, Difference-In-Differences, PoolingAnalysis, Meta-Regression, ClusterRandomizedTrial*

ABSTRACT-ONLY PUBLICATION

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