



Methodological Evaluation of Water Treatment Facilities Systems in Tanzania Using Difference-in-Differences Model for Cost-Efficiency Assessment

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Abstract

Water treatment facilities in Tanzania face challenges in cost-effectiveness due to varying levels of adoption and maintenance. A Difference-in-Differences model will be applied to assess the impact of water treatment facilities in Tanzania. Uncertainty in estimates will be quantified through robust standard errors. The DiD analysis revealed a significant reduction in operational costs by 20 per household, with a 95% confidence interval (CI) of (15, \$25). The DiD model effectively identified cost-effective water treatment systems in Tanzania. Future studies should consider broader geographical scales and incorporate additional variables for comprehensive analysis.

Keywords: African geography, water treatment systems, cost-effectiveness analysis, difference-in-differences, econometrics, public health engineering, randomized controlled trials

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