



# Impact of Water Supply Improvements on Infant Mortality Rates in Kenyan Villages: A Longitudinal Study from the Rift Valley Region,

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## Abstract

Water supply improvements have been identified as a critical factor in reducing infant mortality rates globally. A longitudinal study approach was employed to collect data from 20 Kenyan villages. Water quality and quantity were monitored alongside infant mortality records. During the study period, there was a statistically significant reduction in infant mortality rates by 15% (95% CI: -8%, -24%) in villages with improved water supply compared to those without improvements. Water supply improvements significantly correlated with decreased infant mortality rates, indicating a need for continued support and monitoring of these interventions. Government agencies should prioritise funding for sustainable water supply infrastructure projects in rural areas to further reduce infant mortality. Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_1$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Geographic, Longitudinal Study, Water Supply, Infant Mortality, Epidemiology, Community Health, Rural Development*

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