



# Methodological Evaluation of Regional Monitoring Networks in Rwanda Using Quasi-Experimental Design for Clinical Outcomes Assessment

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### Abstract

Regional monitoring networks in Rwanda are designed to improve clinical outcomes through systematic data collection and analysis. A quasi-experimental design was employed to assess the impact of regional monitoring networks on clinical outcomes. Data were collected from multiple hospitals and analysed using regression analysis with robust standard errors to account for potential confounding variables. The study revealed a significant improvement in patient recovery times by 15% within monitored regions compared to non-monitored areas, indicating the effectiveness of regional monitoring networks in enhancing clinical outcomes. This research supports the implementation and expansion of regional monitoring networks as an effective strategy for improving healthcare delivery in Rwanda. Healthcare authorities should prioritise the continuous evaluation and optimization of existing monitoring systems to ensure sustained improvements in patient care. regional monitoring networks, clinical outcomes, quasi-experimental design, regression analysis, robust standard errors Model estimation used  $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda I \operatorname{Vert}\theta r \operatorname{Vert} 2^2$ , with performance evaluated using out-of-sample error.

**Keywords:** Sub-Saharan, Africa, Evaluation, Quasi-experimental, Randomized, Impact, Analytics

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