



Methodological Assessment of Regional Monitoring Networks in Rwanda: Quasi-Experimental Approach to Adoption Rates Measurement

Ingabiriro Nshimirimana^{1,2}, Kasamwa Gasana³

¹ Department of Interdisciplinary Studies, African Leadership University (ALU), Kigali

² Rwanda Environment Management Authority (REMA)

³ African Leadership University (ALU), Kigali

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Correspondence: inshimirimana@hotmail.com

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Author notes

Ingabiriro Nshimirimana is affiliated with Department of Interdisciplinary Studies, African Leadership University (ALU), Kigali and focuses on Energy research in Africa.

Kasamwa Gasana is affiliated with African Leadership University (ALU), Kigali and focuses on Energy research in Africa.

Abstract

Rwanda has implemented regional monitoring networks to enhance energy sector management and adoption rates of renewable technologies. A mixed-methods approach was employed including surveys ($n=500$), interviews ($n=20$), and network analysis. Data were analysed using logistic regression to estimate the probability of adoption based on regional monitoring network access. Solar technology adoption rates varied significantly by region, with an estimated 75% higher in areas within 10km proximity to a monitored site compared to those more than 20km away (95% CI: 68-83%). The quasi-experimental design successfully identified the impact of regional monitoring networks on solar technology adoption rates, providing evidence for their effectiveness in Rwanda's energy sector. Further studies should explore the long-term effects and scalability of these monitoring networks to ensure sustainable deployment across different regions. Monitoring Networks, Adoption Rates, Renewable Energy, Quasi-Experimental Design, Solar Technology

Keywords: *Sub-Saharan, geospatial, econometric, participatory, triangulation, sustainability, diffusion*

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