



Methodological Evaluation of Regional Monitoring Networks in Ghana: Quasi-Experimental Design for Adoption Rate Measurement

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Abstract

Recent technological advancements in education have highlighted the importance of monitoring networks to ensure effective adoption and integration of ICT tools. A mixed-method approach including surveys and observational data collection was employed. Statistical analysis utilised regression models to assess the effects of network features on adoption rates. The regional monitoring networks showed an adoption rate of approximately 35% across all monitored areas, with higher uptake in urban centers compared to rural regions. The quasi-experimental design provided robust insights into factors influencing ICT adoption, offering a comprehensive understanding of current challenges and potential solutions. Further research should focus on developing tailored strategies for different educational contexts within Ghana based on the findings. Model estimation used $\hat{\theta} = \operatorname{argmin}_{\theta} \sum_i \ell(y_i, f_{\theta}(\xi)) + \lambda \|\theta\|_2^2$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, GIS, triangulation, sampling, qualitative, quantitative, intervention*

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