



# Telemedicine Adoption Rates in Ghana: A Replication Study

Kwasi Acheampong<sup>1,2</sup>, Edwin Mensah<sup>2</sup>

<sup>1</sup> Ghana Institute of Management and Public Administration (GIMPA)

<sup>2</sup> Water Research Institute (WRI)

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**Correspondence:** [kacheampong@hotmail.com](mailto:kacheampong@hotmail.com)

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## Author notes

*Kwasi Acheampong is affiliated with Ghana Institute of Management and Public Administration (GIMPA) and focuses on Computer Science research in Africa.*

*Edwin Mensah is affiliated with Water Research Institute (WRI) and focuses on Computer Science research in Africa.*

## Abstract

Telemedicine has emerged as a critical tool in healthcare delivery, especially in resource-limited settings like Ghana where access to medical facilities and specialists is often constrained. Data were sourced from a pre-existing dataset covering 100 randomly selected public hospitals. Statistical models including logistic regression with robust standard errors were employed to analyse data. Telemedicine adoption rates varied significantly across regions: urban areas showed higher adoption (75%) compared to rural settings (40%). This replication study reaffirms the potential of telemedicine in improving healthcare access and quality in Ghana, particularly in urban centers. Investment should be prioritised in strengthening telecommunication infrastructure and training for remote healthcare services. Model estimation used  $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \sum_{i=1}^n \ell(y_i, f_{\theta}(\xi)) + \lambda \|\theta\|_2^2 \}$ , with performance evaluated using out-of-sample error.

**Keywords:** *Telemedicine, Sub-Saharan Africa, Geographic Information Systems, Health Informatics, Cost-Benefit Analysis, User Satisfaction, E-health Services*

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