



The Potential of 5G Technology in Digital Transformation Across Burundi's African Cities

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Abstract

This study addresses a current research gap in Computer Science concerning The Potential of 5G Technology for Digital Transformation in African Cities in Burundi. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A structured review of relevant literature was conducted, with thematic synthesis of key findings. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. The Potential of 5G Technology for Digital Transformation in African Cities, Burundi, Africa, Computer Science, scoping review This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Model estimation used $\hat{\theta} = \operatorname{argmin} \{ \theta \} \operatorname{sumiell} (y_i, f\theta (\xi)) + \lambda l \operatorname{Vert} \theta r \operatorname{Vert} 2^2$, with performance evaluated using out-of-sample error.

Keywords: African urbanization, Digital transformation, Future networks, 5th generation (5G), Wireless communications

ABSTRACT-ONLY PUBLICATION

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