5G Technological Replication in African Cities: A Focus on Djibouti's Digital Transformation Context

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Abstract

This study builds upon previous research on the potential of fifth-generation (5G) technology for enhancing digital transformation in African cities, specifically focusing on Djibouti. A mixed-method approach was employed, including quantitative surveys and qualitative interviews with key informants and city planners. Data were analysed using descriptive statistics and thematic analysis. Findings suggest that 5G coverage has led to a 20% increase in internet speed across Djibouti's urban centers, facilitating more efficient data transmission for critical infrastructure projects such as smart city initiatives. The replication study confirms the pilot's initial findings and highlights areas where further investment is needed to ensure equitable digital access throughout the country. Recommendations include prioritising rural areas in future 5G deployment plans and exploring innovative financing models for sustainable infrastructure development. 5G technology, Digital transformation, Djibouti, Urban connectivity, Smart city initiatives Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} \, sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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