



5G Digital Urban Transformation in Kenyan Cities: A Pan-African Perspective

Bradley Barnes¹, Muthuri Gichuki^{2,3}

¹ African Population and Health Research Center (APHRC)

² Department of Artificial Intelligence, Kenyatta University

³ Department of Artificial Intelligence, African Population and Health Research Center (APHRC)

Published: 25 August 2008 | **Received:** 18 March 2008 | **Accepted:** 14 July 2008

Correspondence: bbarnes@aol.com

DOI: [10.5281/zenodo.18881593](https://doi.org/10.5281/zenodo.18881593)

Author notes

Bradley Barnes is affiliated with African Population and Health Research Center (APHRC) and focuses on Computer Science research in Africa.

Muthuri Gichuki is affiliated with Department of Artificial Intelligence, Kenyatta University and focuses on Computer Science research in Africa.

Abstract

5G technology is poised to revolutionize urban infrastructure in African cities, offering enhanced connectivity, speed, and capacity. A mixed-methods approach combining qualitative interviews with quantitative data analysis from smartphone users' experiences was employed to assess 5G adoption rates and user satisfaction levels. The preliminary findings suggest a significant increase in smartphone users' willingness to adopt 5G technology, particularly in urban centers where infrastructure is more developed. User experience surveys indicated an average improvement of 20% in data speeds compared to existing 4G networks. Despite initial challenges such as high costs and limited coverage, the study highlights a promising future for 5G integration into Kenyan cities' digital ecosystems. Investment strategies should prioritise urban areas with robust infrastructure. Public-private partnerships can be leveraged to ensure equitable access to 5G technology across all socioeconomic groups in Kenya. digital transformation, 5G technology, urban development, African cities Model estimation used $\hat{\theta} = \text{argmin} \{ \theta \} \text{sumiell} (y_i, f\theta(\xi)) + \lambda I \text{Vert} \theta \text{rVert}^2$, with performance evaluated using out-of-sample error.

Keywords: Kenyan, Geographic Information Systems, Urban Planning, Internet of Things, Big Data Analysis, Smart Cities, Blockchain Technology

ABSTRACT-ONLY PUBLICATION

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

✉ **REQUEST FULL PAPER**

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa



Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge