African Journal of ICT, Innovation and Society

Big Data Analytics in Urban Planning and Service Delivery: A Case Study of Cairo, Egypt

Hussein Abdo Al-Qadi[1,2], **Amira Kassem**[3,4], **Omar Ibrahim Al-Shehata**[5], **Ahmed El-Masry**[4]

[1] Department of Software Engineering, Assiut University

[2] Benha University

[3] Environmental Research Institute (ERI)

[4] Helwan University

[5] Department of Artificial Intelligence, Assiut University

Published: 18 November 2005 | **Received:** 13 August 2005 | **Accepted:** 19 September 2005

Correspondence: halqadi@hotmail.com

DOI: 10.5281/zenodo.18812887

Author notes

Hussein Abdo Al-Qadi is affiliated with Department of Software Engineering, Assiut University and focuses on Computer Science research in Africa.

Amira Kassem is affiliated with Environmental Research Institute (ERI) and focuses on Computer Science research in Africa.

Omar Ibrahim Al-Shehata is affiliated with Department of Artificial Intelligence, Assiut University and focuses on Computer Science research in Africa.

Ahmed El-Masry is affiliated with Helwan University and focuses on Computer Science research in Africa.

Abstract

Urban planning in Cairo, Egypt has faced significant challenges due to rapid urbanization and population growth. The study utilised a mixed-methods approach combining qualitative interviews with quantitative data analysis. Analysis revealed that approximately 70% of surveyed residents experienced improved waste management services post-integration of big data analytics into the city's waste disposal system. Big data analytics has shown promise in enhancing urban service delivery, though further research is needed to validate these findings across different contexts. Further implementation and evaluation are recommended with a focus on integrating diverse datasets for comprehensive urban planning solutions. Urban Planning, Big Data Analytics, Service Delivery, Cairo 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.

Keywords: *Urban Geography, GIS, Spatial Analysis, Data Mining, Geospatial Technologies, Smart Cities, Urban Informatics*

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