



# Replication Study on Big Data Analytics for Urban Planning and Service Delivery in Cairo, Egypt

Ahmed El-Gamal<sup>1,2</sup>, Ali Hassan<sup>1,3</sup>, Nabil Fahmy<sup>4,5</sup>, Fatma Said<sup>1</sup>

<sup>1</sup> Environmental Research Institute (ERI)

<sup>2</sup> American University in Cairo (AUC)

<sup>3</sup> Department of Cybersecurity, Assiut University

<sup>4</sup> Department of Cybersecurity, Agricultural Research Center (ARC), Giza

<sup>5</sup> Department of Artificial Intelligence, Assiut University

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**Correspondence:** [aelgamal@aol.com](mailto:aelgamal@aol.com)

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## Author notes

*Ahmed El-Gamal is affiliated with Environmental Research Institute (ERI) and focuses on Computer Science research in Africa.*

*Ali Hassan is affiliated with Department of Cybersecurity, Assiut University and focuses on Computer Science research in Africa.*

*Nabil Fahmy is affiliated with Department of Cybersecurity, Agricultural Research Center (ARC), Giza and focuses on Computer Science research in Africa.*

*Fatma Said is affiliated with Environmental Research Institute (ERI) and focuses on Computer Science research in Africa.*

## Abstract

This replication study revisits a previous investigation into the application of big data analytics for urban planning and service delivery in Cairo, Egypt, to ensure robustness and reliability. A detailed replication process was employed, including rigorous examination of original datasets, application of similar analytical tools and models as used in the initial study, and adherence to the same ethical guidelines. The analysis revealed a significant positive correlation ( $r = 0.85$ ) between big data analytics and urban planning outcomes, with nearly half of all projects achieving efficiency gains exceeding 10%. The replication confirmed the efficacy of big data in facilitating more efficient urban development strategies and service delivery improvements in Cairo. Further research should focus on scalability and integration of these analytics into broader governance frameworks to ensure sustainable benefits for all sectors.

**Keywords:** *Cairo, Urban Informatics, Data Mining, Geographic Information Systems (GIS), Spatial Analysis, Geospatial Technology, Remote Sensing*

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