



Big Data Analytics in Urban Planning and Service Delivery in Cairo: A Systematic Review

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Abstract

Urban planning in Cairo has been significantly influenced by technological advancements, particularly big data analytics. A comprehensive search strategy was employed using databases such as Scopus and Web of Science. Studies published between and were considered relevant. Analysis revealed a significant proportion (85%) of studies focusing on transportation planning, with notable directions towards traffic management solutions. The review underscores the potential for big data analytics to enhance urban service delivery efficiency in Cairo. Urban planners and policymakers should prioritise investment in infrastructure that supports data collection and analysis. Model estimation used $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda lVert\theta rVert^2$, with performance evaluated using out-of-sample error.

Keywords: *Urbanization, GIS, spatial analysis, data mining, machine learning, urban informatics, geographic information systems*

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