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# Intelligent Decision Support Systems: Transforming Smart Cities Management

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#### Abstract

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#### Abstract

Since urban cities are expanding due to technology, economy, and influx of more people the need for better management systems is paramount. This paper aims to examine the use of Intelligent Decision Support Systems (IDSS) in enhancing the urban infrastructure, safety and resources in smart cities. Hereby, we present a complex framework that involves Internet of Things (IoT) devices, Neural Networks, Artificial Intelligence (AI) to make decisions in traffic controlling, environmental issues and safety. When used with machines learning (ML) algorithms and predictive analytics, the framework increases the efficiency of urban management operations. A comparison of

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the energy used by promised by these algorithms including LSTM, SVM, KNN, and the OPTIMUS, a system is developed that enables smart cities to significantly save energy hence highlighting its efficiency. Furthermore, a performance comparison of Random Forest, LSTM, SVM, and KNN for traffic management shows KNN achieving the highest accuracy and precision. The paper discusses data collection, processing, and integration methodologies, and presents case studies demonstrating cost reductions and sustainability improvements. The present paper provides evidence to support the assumption that the development of IDSS can greatly enhance the progress of smart cities by underpinning the process by data, feedback and other forms of information. © 2024 IEEE.

## Author keywords

Decision-Making; Intelligent Systems; Management; Smart Cities; Transformation

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