Integrating Smart Sanitation Systems in Dakar Slums: A Methodological Framework for Waste Management and Hygiene Education Enhancement

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Abstract

In Dakar slums, inadequate waste management systems lead to environmental degradation and public health issues. The methodology involves the design of a mixed-methods approach, combining quantitative data collection (using IoT sensors) with qualitative interviews to assess system performance and user satisfaction. Smart sanitation systems showed an average reduction of 30% in waste accumulation within the first six months. The framework demonstrates significant potential for improving waste management practices and hygiene education in Dakar slums, providing a model for other urban settings. Implementing this methodological approach should include community engagement to ensure widespread adoption of smart sanitation systems. The maintenance outcome was modelled as $Y\{\} = beta\,0 + beta\,1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Geographic, Sub-Saharan, Slum, Smart, Infrastructure, Evaluation, Participatory*

ABSTRACT-ONLY PUBLICATION

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