

Building blocks for smart cities adoption and associated implementation drawbacks in sub-Saharan Africa

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Abstract

The existing literature on smart cities largely focuses on experiences from developed countries, with limited research addressing the specific challenges and opportunities in sub-Saharan Africa. The drive to adopt smart cities as a solution to urban challenges in sub-Saharan Africa is increasing exponentially, but their adoption is associated with significant challenges and prospects which current literature does not fully explore. Therefore, to close this existing literature gap, this paper has three objectives. First, the paper critically appraises the progress made in implementing smart cities in selected sub-Saharan African countries to appreciate the strides made in embracing smart city initiatives in the region. Second, it analyses the contextual drawbacks faced in the implementation of smart cities in sub-Saharan Africa. Third, the paper proposes the building blocks for successful smart city implementation in the region. In this study, we used a systematic literature review to extract data from databases such as Google Scholar, Scopus, and Web of Science to achieve these objectives. We analysed the extracted data through the reflexive thematic analysis method which enabled us to develop three themes centred on smart city implementation strides, drawbacks and building blocks. We then integrated these three themes into an overarching theme which guided the presentation and discussion of our results. Our results show that a number of sub-Saharan African countries have made notable efforts towards implementing smart cities but they face human and organizational challenges such as underdeveloped ICT infrastructure, digital illiteracy and budgetary constraints. We recommend that these challenges can be mitigated through building blocks such as investing in technological infrastructure development, formulating specific smart city policies, enhancing citizen awareness and collaborating with local and international stakeholders to mobilize required resources.

Keywords: Smart cities, urban governance, sub-Saharan Africa, smart city implementation, smart city adoption