

## Abstract

This paper has discussed the role of the geospatial/real time data integration on the county level governance reforms in Africa with reference to Kenya devolved governments. The study was inspired due to the radical problems that have existed since time immemorial of lack of transparency, broken data systems, and ineffective institutional coordination that place a premium on evidence-based decision-making in decentralized governance. Although there is a rise in the use of GIS, IoT, and satellite technologies, limited empirical research has been conducted to assess how these technologies influence the results of the reform on the county level. The study, which was based on the Socio-Technical Systems (STS) Theory, assumed that the performance of governance is based on the interplay between technological infrastructure (technical subsystem) and institutional preparedness, leadership and human capacity (social subsystem). These aimed to: (1) assess the application of GIS, satellite, and IoT technologies in assessing county governance; (2) evaluate the influence of real-time data integration on transparency and accountability; and (3) assess the challenges and opportunities of institutionalizing the said tools within African counties. The research design used was a mixed-methods descriptive design, where 75 respondents were studied in Nairobi, Kiambu and Laikipia Counties. The SPSS was used to analyze quantitative data in terms of descriptive statistics, correlations, and regression, and thematic analysis was applied to qualitative data. Findings revealed that geospatial adoption, institutional preparedness and human capacity caused a combined variance of 68.2 in governance performance ( $R^2 = 0.682$ ). The most important predictor of transparency and efficiency in service delivery was to be found in geospatial adoption ( $b = 0.412$ ,  $p < .01$ ).