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URBAN GROWTH IN KANO METROPOLIS NIGERIA- THE MODELS HOW IT IMPACTS THE ENVIRONMENT

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Abstract
Rapid urban and population growth in the KNMA is distorting environmental quality. The initial data was obtained with the aid of geographical information systems (GIS) and remote sensing (RS) within 35 years (1984 to 2019) with three study periods of 1984, 1998, and 2019. While water pollution samples were taken and analyzed in the laboratory for physicochemical elements. The air pollution parameter consists of carbon monoxides (CO) and carbon dioxides (CO2) emission sensed. The Structural Equation Modelling (Smart PLS-SEM) is employed. However, this study solely covers the model development of the urban growth (land use changes, water, and air pollution). The Result uncovers that urban growth in KNMA = ∝ + RPG(Pβ1 + Pβ2+ Pβ3+ Pβ4+P β5)+ GPC(Gβ1+ Gβ2+ Gβ3+G β4)+ IEA (E β1+EB2+E β3+E β4)+ NT(Nβ1+N β2+N β3), Air Quality Indicator in KNMA = ∝ + P1 + P2, + P3 + P4 + P5 +P6 + P7 + P8 + P9. Water quality, WP = f (P+L+D+A). This calls for deep and strong study on effective urban management framework applications for the metropolis and it's alike globally. The framework model applications will help in the integration of sustainable land use change principles and techniques, low carbon society development (LCSD) for air pollution mitigating water pollution with its management techniques. © 2024 by MIP.

Author Keywords
air pollution; Kano metropolis (KNMA); theoretical model; Urban growth; water pollution

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