

Morphological Investigation of Sprawling Along Emerging Peri-Urban Transit Corridor of Mowe-Ibafo Axis of the Lagos Megacity Region

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Abstract : The city as a complex system exhibiting chaotic behaviour is in a state of constant change, in response to prevailing social, economic, environmental and technological factors. Without adequate investigation and control mechanisms to tame the sporadic nature of growth in most urban areas of cities in developing regions, organic sprawling visibly manifests with its attendant problems, most especially at peri-urban areas. The Lagos Megacity region in southwest Nigeria, as one of the largest megacities in the world contends with the challenges of sprawling at the peri-urban areas especially along emerging transit corridors. Due to the seemingly unpredictable nature of this growth, this paper attempts a morphological investigation into the growth of peri-urban settlements along the Mowe-Ibafo transit corridor of the Megacity region over a temporal space of three decades (1984-2014). This study adopts the application of the Fractal Analysis and Regression Analysis methods through the correlation of population density and fractal dimension values to establish the pattern and nature of growth, due to the inadequacies of conventional methods of urban analysis which cannot deal with the unpredictability of such complex urban forms as the peri-urban areas. It was deduced that the dynamic urban expansion in the last three decades resulted in about 74.2% urban change rate between 1984 and 2000 and 63.4% urban change rate between 2000 and 2014. With the R2 value between the fractal dimension and population density been 1, the regression model indicates a positive correlation between Fractal Dimension (D) and Population Density (pop/km²), where the increase in the population density from 5740 pop/km² to 8060 pop/km² and later decrease to 7580 pop/km² leads to an increase in the fractal dimension of urban growth from 1.451 in 1984 to 1.853 in 2014. This, therefore, justifies the ability to predict and determine the nature and direction of growth of complex entities and is sufficient to substantially suggest the need for adequate policy framework towards sustainable urban planning and infrastructural provision in the Peri-urban areas.

Keywords : fractal analysis, Lagos Megacity, peri-urban, sprawling, urban morphology

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