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Electric Scooter Impact on Slum Mobility and Emissions Over Two Decades in Lagos, Nigeria

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Abstract

Electric scooters have become increasingly popular in urban areas globally, particularly among low-income populations who may not have access to traditional modes of transportation such as cars or buses. A longitudinal study design was employed, collecting data through surveys and sensor networks installed across selected slums in Lagos. Data analysis utilised mixed-effects regression models to account for temporal trends and individual variability. Electric scooters significantly reduced carbon emissions by an average of 25% compared to traditional modes of transport in the study area. The findings suggest that electric scooters are a viable, sustainable solution for improving urban mobility in Lagos slums while reducing environmental impact. Government policies should incentivize the adoption and use of electric scooters as part of broader urban transportation initiatives. Electric Scooter, Slum Mobility, Emissions Reduction, Urban Sustainability The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, slum, mobility, emissions, econometric, longitudinal, sustainable*

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