

Smart Transport Optimization for SDG 11

Author: STEPHEN ODHIAMBO

Context: Nairobi, Kenya

This one-page summary describes an unsupervised learning approach (K-Means clustering) to group city regions by transport demand and infrastructure characteristics. The output informs bus stop placement, route planning, and interventions to reduce congestion and improve accessibility.

SDG Target	SDG 11 — Sustainable Cities and Communities
ML Approach	Unsupervised Learning — K-Means Clustering
Key Features	Population density, traffic volume, distance to CBD, number of bus stops
Results	Identified 3 clusters. High-demand cluster → candidate for increased bus frequency.
Ethical Considerations	Ensure equitable access for low-income areas; address data bias and privacy.

This solution offers city planners a low-cost data-driven tool to improve public transport allocation, reduce emissions, and expand equitable mobility options. Next steps: integrate geospatial mapping and real-time feeds and test on larger datasets.