

Urban Transport Demand Management Multi-Criteria Decision Using AHP and SERVQUAL Models: Case Study of Nigerian Cities

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Abstract : Urbanization has continued to widen the gap between demand and resources available to provide resilient and sustainable transport services in many fast-growing developing countries' cities. Transport demand management is a decision-based optimization concept for both benchmarking and ensuring efficient use of transport resources. This study assesses the service quality of infrastructure and mobility services in the Nigerian cities of Kano and Lagos through five dimensions of quality (i.e., Tangibility, Reliability, Responsibility, Safety Assurance and Empathy). The methodology adopts a hybrid AHP-SERVQUAL model applied on questionnaire surveys to gauge the quality of satisfaction and the views of experts in the field. The AHP results prioritize tangibility, which defines the state of transportation infrastructure and services in terms of satisfaction qualities and intervention decision weights in the two cities. The results recorded 'unsatisfactory' indices of quality of performance and satisfaction rating values of 48% and 49% for Kano and Lagos, respectively. The satisfaction indices are identified as indicators of low performances of transportation demand management (TDM) measures and the necessity to re-order priorities and take proactive steps towards infrastructure. The findings pilot a framework for comparative assessment of recognizable standards in transport services, best ethics of management and a necessity of quality infrastructure to guarantee both resilient and sustainable urban mobility.

Keywords : transportation demand management, multi-criteria decision support, transport infrastructure, service quality, sustainable transport

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