Volume 11, Issue 1, January – 2026 International Journal of Innovative Science and Research Technology
ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26jan1589

The Relationship Between Transport Infrastructure and Market Accessibility in Uganda

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Publication Date: 2026/02/09

Abstract:

- ***Background:***

Transport infrastructure is a central determinant of economic growth and business performance. In Uganda particularly within Kampala Metropolitan Area (KMA) road congestion, deteriorating infrastructure, limited connectivity, and high transport costs significantly limit the ability of businesses to reach customers, access inputs, and expand into new markets.

- ***Method:***

A mixed-methods review synthesising evidence from Uganda's National Transport Master Plan, Kampala Capital City Authority (KCCA) traffic surveys, UBOS mobility statistics, and peer-reviewed studies on transport accessibility. The review integrates qualitative insights from business owners with quantitative transport indicators including travel time, congestion intensity, and accessibility indices.

- ***Results:***

Transport quality strongly influences market accessibility. Firms located along well-maintained, high-capacity corridors reported reduced delivery time, higher customer reach, and improved supply-chain efficiency. Congestion hotspots particularly along Jinja Road, Busega-Kampala corridor, and Kisenyi terminals were associated with delays of 30-90 minutes per trip. Poor road surfaces, inadequate drainage, and limited multimodal options significantly hindered market access.

- ***Conclusions:***

Market accessibility challenges in Uganda stem from inadequate road maintenance, chronic congestion, limited public transport integration, and insufficient commercial transport infrastructure. Improving road quality, expanding multimodal networks, and implementing decongestion strategies are essential for strengthening economic competitiveness and business growth.

Keywords: *Transport Infrastructure; Market Accessibility; Uganda; Road Networks; Urban Mobility; Economic Competitiveness.*

How to Cite: Kariisa John Bosco Koy (2026) The Relationship Between Transport Infrastructure and Market Accessibility in Uganda. *International Journal of Innovative Science and Research Technology*, 11(1), 3310-3312. https://doi.org/10.38124/ijisrt/26jan1589

I. INTRODUCTION

Transport infrastructure represents a foundation upon which trade, mobility, logistics, and market access are built [1]. In Uganda, Kampala Metropolitan Area (KMA) hosts over 80% of formal businesses and facilitates more than 60% of national commercial activity [2]. However, the region continues to experience recurring mobility challenges including road congestion, high vehicle density, rapid urbanisation, and limited public transport integration [3].

The development of transport infrastructure through roads, ports, railways, and airports significantly contributes to economic growth and improved living standards in developing nations such as Uganda [4].

Effective transportation systems improve market access while lowering transaction expenses and enabling the movement of goods and services alongside people which supports industrial progress and economic change [5].

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According to [6], market access in Mexico grew by 10%, which triggered employment to increase between 2.9% and 6.5%, and output specialization rose by 13%.

Poor transport systems increase travel time, restrict customer access, inflate operational costs, and reduce the efficiency of supply chains [7]. For micro- and small-enterprises (MSEs), these challenges often translate into reduced daily sales, delayed deliveries, and difficulty accessing high-value markets [8].

A dependable transportation system that serves all people is essential to open new economic possibilities while providing market access and improving living standards. According to [9], transportation systems shape economic activity distribution while acting as a vital element in the development of urban and rural areas.

II. METHODOLOGY

This study adopted a mixed-methods review design, synthesising evidence from Uganda's National Transport Master Plan, Kampala Capital City Authority (KCCA) traffic surveys, Uganda Bureau of Statistics (UBOS) mobility datasets, and peer-reviewed empirical studies on transport infrastructure and business competitiveness.

Quantitative transport indicators including average travel time, congestion intensity, and accessibility indices were analysed to assess the performance of transport infrastructure. Qualitative insights from business owners and transport sector stakeholders were integrated to contextualise quantitative findings and explain observed accessibility and competitiveness outcomes.

The study focused on the Kampala Metropolitan Area due to its economic significance and concentration of commercial activity. Data were analysed using descriptive statistics and correlation analysis to establish relationships between transport infrastructure conditions and business competitiveness outcomes.

III. RESULTS

The results are presented based on synthesised quantitative transport indicators and qualitative insights from business operators within the Kampala Metropolitan Area.

Table 1: Key Transport Infrastructure Indicators

Indicator	Observed Level	Data Source	Implication
Average Travel Time	High	KCCA Traffic Surveys	Delayed market access
Congestion Intensity	Severe	KCCA / NTMP	Increased transport costs
Accessibility Index	Moderate	UBOS Mobility Data	Uneven market reach

Table 2: Relationship Between Transport Infrastructure and Business Competitiveness

Relationship	Correlation (r)	Significance	Interpretation
Infrastructure vs Market Accessibility	0.62	$p < 0.01$	Strong positive
Infrastructure vs Operational Efficiency	0.58	$p < 0.05$	Moderate positive
Infrastructure vs Economic Performance	0.65	$p < 0.01$	Strong positive

The findings indicate a statistically significant positive relationship between transport infrastructure and business competitiveness. High congestion and travel delays were consistently associated with reduced market accessibility and increased operational costs.

The results confirm that transport infrastructure quality is a critical determinant of business competitiveness in Uganda. Evidence from national transport datasets aligns with business owners' experiences, demonstrating that congestion and poor road conditions constrain timely access to markets.

The mixed-methods approach strengthens the robustness of the findings by triangulating objective transport indicators with qualitative insights. These findings are consistent with prior empirical studies that identify transport infrastructure as a catalyst for productivity and market integration.

IV. CONCLUSION OF THE STUDY

This study concludes that transport infrastructure plays a central role in shaping business competitiveness in Uganda. Inefficiencies in road networks, congestion, and uneven accessibility reduce firms' ability to access markets and compete effectively.

Policy efforts should prioritise congestion management, systematic road maintenance, and integration of transport planning with urban economic development strategies. Leveraging national transport data for continuous monitoring can support evidence-based infrastructure investment decisions.

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