

The Relationship Between Transport Infrastructure and Business Economic Impact in Uganda

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Publication Date: 2026/04/15

Abstract:

➤ *Background:*

Transport infrastructure plays a fundamental role in shaping economic performance and business growth in developing countries through enhanced mobility, improved access to markets and reduced transaction costs. In Uganda, persistent challenges such as road congestion, poor infrastructure quality and limited connectivity significantly affect business operations and economic outcomes. These challenges increase transportation costs, delay deliveries, and reduce overall business productivity.

➤ *Method:*

This study adopted a mixed-methods review approach, synthesising evidence from Uganda's National Transport Master Plan, Uganda Bureau of Statistics (UBOS), Kampala Capital City Authority (KCCA) datasets, and empirical literature. Quantitative indicators such as travel time, congestion levels, and logistics costs were analysed alongside qualitative insights from business operators.

➤ *Results:*

Findings reveal a strong positive relationship between transport infrastructure and business economic impact ($r = 0.65$, $p < 0.01$). Poor infrastructure was associated with increased operational costs, reduced profit margins, and limited business expansion. Businesses operating in well-developed transport corridors reported improved revenue performance, reduced logistics costs and enhanced productivity.

➤ *Conclusions:*

Transport infrastructure significantly influences business economic outcomes in Uganda. Improving road quality, reducing congestion and investing in integrated transport systems are essential for enhancing business profitability and national economic growth.

Keywords: *Transport Infrastructure; Economic Impact; Business Performance; Uganda; Logistics; Infrastructure Development*

How to Cite: Kariisa John Bosco Koy (2026) The Relationship Between Transport Infrastructure and Business Economic Impact in Uganda. *International Journal of Innovative Science and Research Technology*, 11(3), 3945-3947. <https://doi.org/10.38124/ijisrt/26mar2040>

I. INTRODUCTION

Transport infrastructure forms the backbone of economic activity by facilitating the movement of goods, services and people [1]. In developing economies such as Uganda, efficient transport systems are essential for improving business productivity, reducing transaction costs, and enhancing economic competitiveness [2]. Research by [3] shows that investments in roads and railroads reduce transportation costs, enhance market integration, and increase total economic production.

According to [4], improvements in port productivity in Spain, attained through capacity development, lower

transportation costs, improve access to international markets, and boost local business productivity.

Research findings reveal that improvements in transport infrastructure facilitate specialized economic practices while contributing to employment generation. According to World Bank (2023) in 2019 it was revealed that 35% of Sub-Saharan Africa's population experienced extreme poverty[5]. [6] in that regard identified roads, transportation systems, electricity supply and information communications technology (ICT) as reliable high-quality infrastructure components that drive industrial development which generates employment and economic growth thereby improving living standards. Transport infrastructure enhancements in Peru led to

substantial growth in both exports and job opportunities which in turn contributes to business economic growth [8].

The Kampala Metropolitan Area (KMA), which accounts for a significant proportion of Uganda’s commercial activity, faces persistent transport challenges including severe congestion, poor road conditions, and inadequate infrastructure integration [9]. These challenges have direct implications on business economic performance, as they increase operational costs and reduce efficiency.

Transport infrastructure influences business economic outcomes by reducing travel time, lowering logistics costs, and improving access to markets and production inputs [10]. According to [11], inadequate infrastructure leads to delays, increased fuel consumption, and reduced profitability.

Despite significant government investments in road networks and urban transport projects, infrastructure gaps remain prevalent, particularly in urban and peri-urban areas in Uganda. These gaps continue to constrain business growth and limit economic opportunities. This study therefore examines the relationship between transport infrastructure and business economic impact in Uganda.

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

Table 1: Key Transport Infrastructure Indicators

Indicator	Observed Level	Data Source	Economic Implication
Average Travel Time	High	KCCA Surveys	Increased logistics costs
Congestion Intensity	Severe	NTMP / KCCA	Reduced productivity
Transport Costs	High	UBOS	Lower profit margins
Accessibility Index	Moderate	UBOS	Uneven business growth

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, sc, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

Table 2: Relationship Between Transport Infrastructure and Economic Impact

Relationship	Correlation (r)	Significance	Interpretation
Infrastructure vs Business Revenue	0.65	p < 0.01	Strong positive
Infrastructure vs Cost Reduction	0.60	p < 0.01	Strong positive
Infrastructure vs Profitability	0.58	p < 0.05	Moderate positive

The findings indicate a statistically significant positive relationship between transport infrastructure and business economic impact. High congestion levels and prolonged travel times were consistently associated with increased operational costs, reduced profit margins and inefficiencies in business operations.

Businesses operating in areas with poor transport infrastructure reported higher transportation expenses, delays in delivery of goods and services and reduced overall productivity. These constraints negatively affected revenue generation and limited opportunities for business expansion.

Conversely, improved transport infrastructure was associated with enhanced cost efficiency, increased revenue performance and improved profitability. Businesses located along well-developed transport corridors experienced faster

market access, reduced logistics costs and improved operational effectiveness.

The results further confirm that transport infrastructure is a critical determinant of economic performance among businesses in Uganda. Evidence from national transport datasets aligns with the experiences of business operators, demonstrating that infrastructure deficiencies directly constrain business growth and financial performance.

IV. CONCLUSION OF THE STUDY

This study concludes that transport infrastructure plays a central role in shaping business economic impact in Uganda. Inefficiencies in road networks, congestion, and uneven accessibility increase operational costs, reduce profitability, and limit overall business growth.

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

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