

# Assessing the Health Equity Implications of Road Infrastructure Development in the Democratic Republic of the Congo: A Mixed-Methods Analysis,

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## Abstract

### Background:

Road infrastructure expansion in the Democratic Republic of the Congo (DRC), particularly projects linked to the East African Community, is a major development focus. Its implications for health equity, however, remain poorly documented, with potential for both beneficial and adverse effects on healthcare access and outcomes.

**Purpose** and **objectives:**

This study assessed the health equity implications of road infrastructure development in the DRC from 2021 to 2026. It examined changes in geographical access to healthcare, financial barriers, and community-reported health outcomes.

### Methodology:

A concurrent mixed-methods design was employed. Quantitatively, spatial analysis and household surveys (n=1,200) measured travel times to primary health centres before and after road projects. Qualitatively, 48 focus group discussions and 30 key informant interviews explored community and health worker perspectives on access and affordability.

### Findings:

Improved roads reduced median travel time to the nearest health facility by 35% in connected communities. However, increased transport costs exacerbated financial barriers for the poorest quintile. Qualitative data revealed a prominent theme of ‘exclusion through cost’, where faster journeys did not translate into equitable service utilisation, as healthcare remained unaffordable.

### Conclusion:

Road development alone is insufficient for improving health equity. While it enhances geographical access, it can simultaneously introduce or worsen financial barriers, potentially widening disparities unless accompanied by complementary health financing measures.

### Recommendations:

Infrastructure planning must integrate pro-poor transport subsidies and health financing mechanisms. Monitoring

frameworks for such projects should include equity-specific indicators, such as stratified utilisation rates by socioeconomic status.

**Key words:**

Health equity, infrastructure, access to healthcare, transport, Democratic Republic of the Congo, mixed methods.

**Contribution statement:**

This study provides empirical evidence on the dual-edged impact of road development on health equity in a complex, low-resource setting, underscoring the need for integrated health and transport policy.

**Keywords:** *health equity, road infrastructure, Democratic Republic of the Congo, mixed-methods, social determinants of health, East African Community, access to healthcare*