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Understanding Road Safety Risks Among Non-Motorised Vehicles in Nairobi CBD, Kenya

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Source: Author, 2026

What do we think of the operators?



Introduction

- About half of all daily trips in Nairobi are made on foot or by other non-motorised transport (NMT) modes.
- NMVs - locally called *mkokoteni* and *trolleys* are part of these NMT modes, used mainly for urban freight, street vending, water supply and waste collection.
- An estimated 2,000 *mkokotenis* and 5,000 *trolleys* operate in Nairobi's CBD (Kenyans.co.ke, 2020).

Over 7,000 NMVs operating in Nairobi's CBD alone




Trolley



Mkokoteni

Source: Author, 2026

A street scene in a developing area, possibly in India, with various signs and a person walking. The image is overlaid with a dark teal filter. On the left, there are utility poles and a sign for a sofa store. In the center, a person is walking. On the right, there is a sign for a village market. The overall scene is busy and somewhat cluttered.

THE PROBLEM

NMVs share fast-moving traffic - yet remain invisible in road-safety data and planning.

Rationale & Aim



Assess vulnerability & behaviour

Evaluate the level of vulnerability and road behaviour of non-motorised vehicles operating in the Nairobi CBD.



Rationale & Aim



Explore safe road design to accommodate NMVs

Identify road-design features that meet pedestrian-pushed/pulled vehicle needs to enable safe travel and reduce crash impact.



Research Method

A qualitative study triangulating four data sources, analysed through thematic coding.



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Questionnaires

NMV operators surveyed



3

Focus Groups

Discussions with operators



11

Key Informant Interviews

Planners, authorities, researchers



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Street Audits

CBD infrastructure assessed



Analysis: Thematic coding across the focus areas of the Safe System Approach.

Study area - Nairobi CBD



Findings

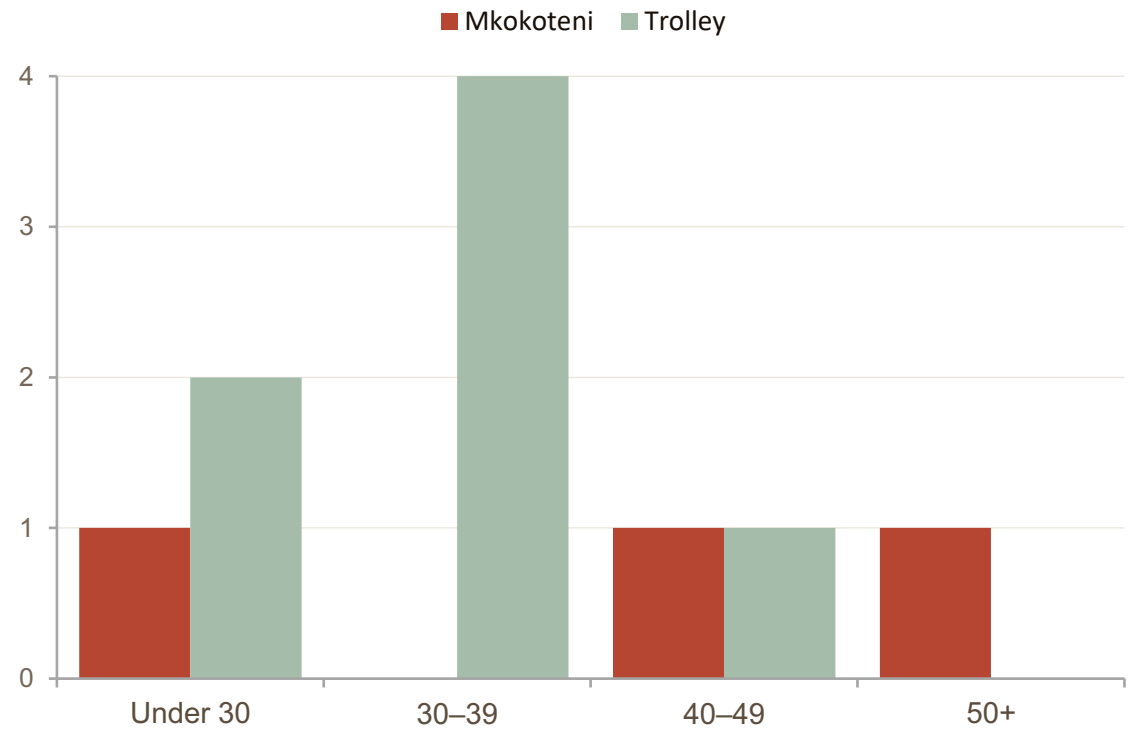
Two themes: high vulnerability to road-safety risks, and the road behaviour of NMV operators.

Who Operates Nairobi's Non-Motorised Vehicles?

Years operating an NMV



Operator age band



Counts are number of operators (n = 14). Age unavailable for 4 respondents; experience unavailable for 2. Source: Questionnaire Road Safety Dataset.

High Vulnerability to Road-Safety Risks



No dedicated infrastructure

No NMV lanes or signage in the CBD.



High-speed traffic exposure

Forced to share lanes with motor vehicles.



Footpaths prohibited

Banned from pavements to protect structural integrity and avoid pedestrian conflict.



No braking systems

Vehicle design can cause fatal injury on slopes with heavy loads.



Mkokoteni, Down town Nairobi

Road Behaviour of NMV Operators



No protective gear

Operators lack reflective and protective equipment, raising fatal-injury risk - especially after dark.



Low entry requirements

No driving licence or basic road-safety training is needed before joining the sector and operating a vehicle.



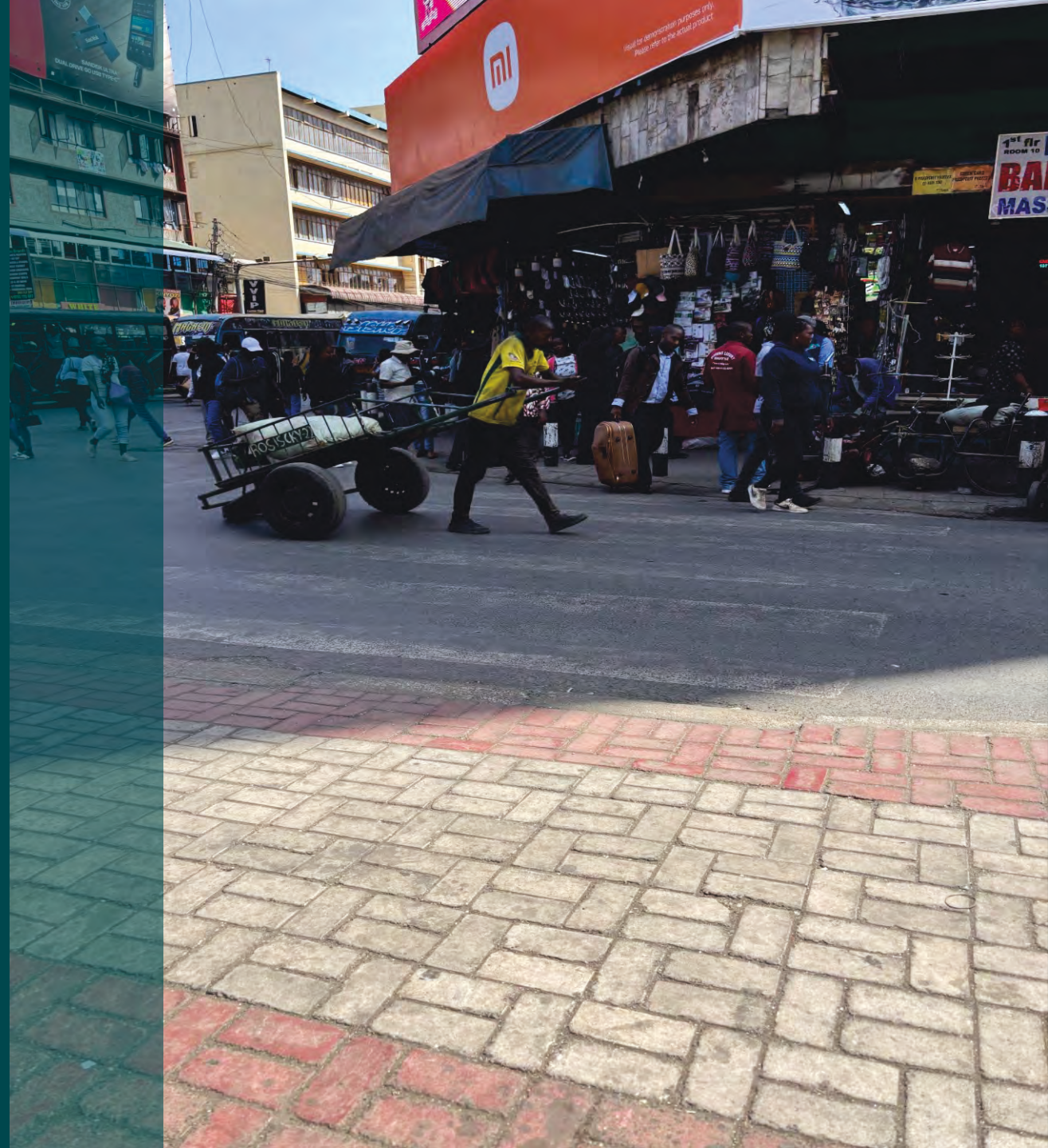
Little or no insurance

Most operators lack adequate cover, exposing them to medical costs that can force them out of the sector.



Conclusions & Recommendations

Recognising NMV operators as an integral part of the urban transport fabric - including in road-fatality reporting - is a vital first step toward meaningful inclusion in infrastructure planning and targeted safety interventions.



Immediate Actions-Quick wins

Broader infrastructure and technological reforms are needed in the medium-to-long term. Immediate, feasible actions include:



01

Safety training

Basic road-safety training for operators using Safe System Approach principles.



02

Protective standards

Reflective and protective gear to improve operator visibility on the road.



03

Insurance cover

Basic insurance for post-crash medical expenses, supporting multimodal planning.



04

Sector recognition

Organisation opportunities that increase recognition of NMVs' economic role.



05

Policy & design

Policy change on infrastructure and signage design to cut NMV crash exposure.



06

Network integration

Integrate NMVs into Nairobi's multimodal network via safer streets and clearer rules.

THANK YOU

Questions & discussion welcome.

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