CARE-RESPONSIVE MOBILITY

Integrating Safe System principles into market-centre access in emerging cities

A road-safety and accessibility study of caregivers and public-transport operators at Mwariro Market, Nairobi

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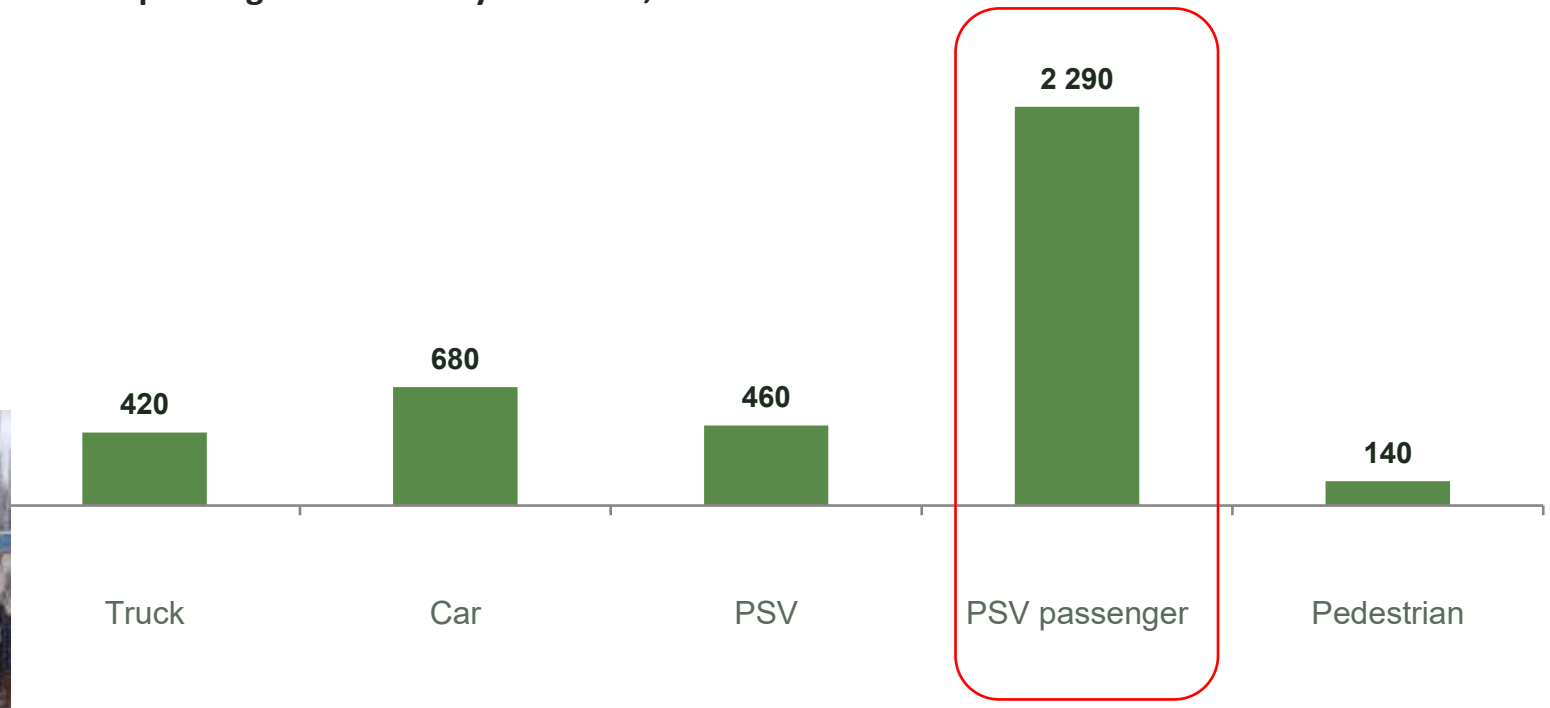
In Kenya, the people most exposed are those outside the car

76.1%

of Kenyan road deaths are pedestrians, pedal cyclists, pillion passengers and motorcyclists (NTSA, 2025)

Estimated passengers affected by accidents, Nairobi



PSV passengers are by far the most-affected group :Source : Ma3Routes Kenya (2016)

Sources: NTSA fatality data (2024–25); Nairobi Accident Map (nairobiaccidentmap.com).

WHY MOBILITY OF CARE

Transport systems are designed for the commute - not for care

“Mobility of care” describes the daily travel done to sustain households and dependents escorting children, carrying goods, accompanying the elderly.

80%

of vendors in Nairobi markets are women the population doing most care travel

5,000+

children served by market-based childcare at Gikomba & Mwariro over 4 years

79%

of caregivers access childcare within a 5–10 minute walk access is on foot

Sources: WOW MOM caregiver survey (2025); Nairobi City County market vendor data.

Nairobi State of Care Report

The planning gap

When the network ignores care trips, the lost time, and higher exposure to road risk while travelling with children.

Sources: WOW MOM caregiver survey (2025); Nairobi City County market vendor data.

STUDY SITE · ACTIVITY & RISK MAP

Kariokor–Mwariro precinct, Nairobi

Where activities and road risks concentrate around the market environment.

1. **Vendor stalls**

   Dense trading lines Racecourse & Quarry Rd, squeezing the walkway.

2. **Hand-cart (mkokoteni) activity**

   Carts load near the market frontage, occupying NMT space.

3. **Pedestrian crossing & route**

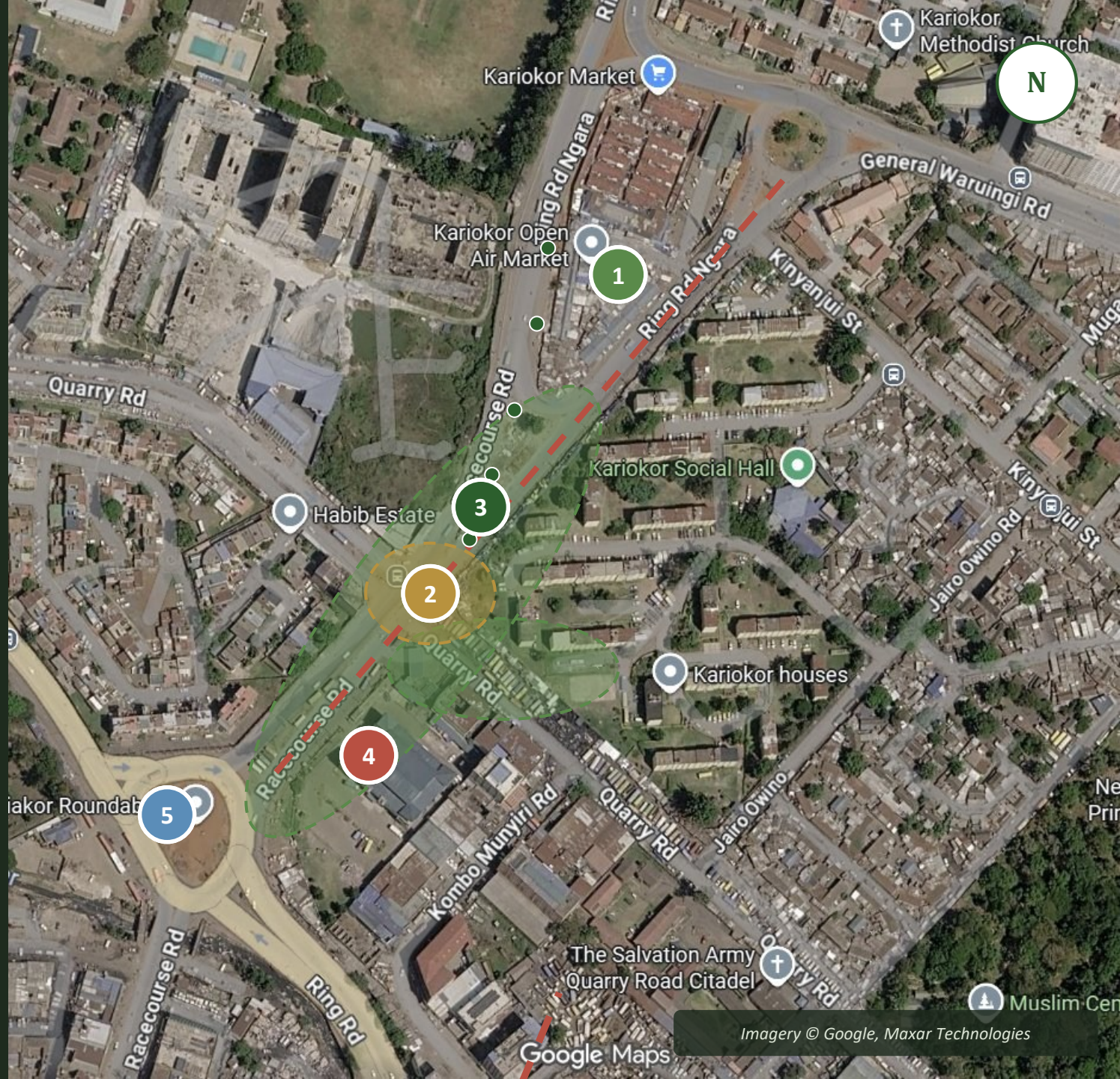
   Caregiver desire line crosses Racecourse Rd toward the markets.

4. **Speeding stretch**

   Smoother through-roads (Racecourse / Ring Rd Ngara) invite higher speeds.

5. **Roundabout conflict**

   Kariokor roundabout mixes PSVs, carts and pedestrians.



STUDY SITE · ACTIVITY MAP

Where activities and risks concentrate around Mwariro Market

1 Vendor stalls

Trading spills along Quarry Rd, narrowing the walkway.

2 Hand-cart (mkokoteni) activity

Carts load/unload at the frontage, taking NMT space.

3 Pedestrian crossing & route

Caregivers cross Ring Rd Ngara on a desire line to the gate.

4 Speeding stretch

The smoother Ring Rd Ngara invites higher speeds.

Schematic — not to scale. Layout mirrors satellite view; activity zones reflect field observation and operator FGD.

Walking beside the carriageway to Mwariro Market. Source: Author, 2026

ACCESS AND SAFETY ARE THE SAME PROBLEM

To reach the market, caregivers must survive the road

No continuous footpaths

Pedestrians share the carriageway with matatus, boda bodas and hand-carts.

Unmanaged crossings

No safe crossing points where caregivers and children must cross to the market.

Drop-offs away from the gate

Designated stops sit far from the market entrance, extending the walk in traffic.

Flooding & drainage

Wet-weather flooding blocks routes and forces detours into the roadway.

METHODS

A mixed-methods, care-responsive mobility assessment

1

Caregiver & vendor survey

40 respondents (31 women, 9 men), ages 25–44, at Mwariro Market. Travel patterns, perceived safety, and the experience of moving with children.

2

Operator focus group

FGD with PSV drivers & conductors, held on-site inside a matatu — the supply-side view of stops, speeds and enforcement.

3

Site & accessibility audit

On-site walkability and child-safety observation: footpaths, crossings, lighting, drainage, and the drop-off-to-gate walk.

Two voices on one road: caregivers and operators

Caregiver & vendor survey

40 respondents

Operator focus-group discussion

PSV drivers & conductors

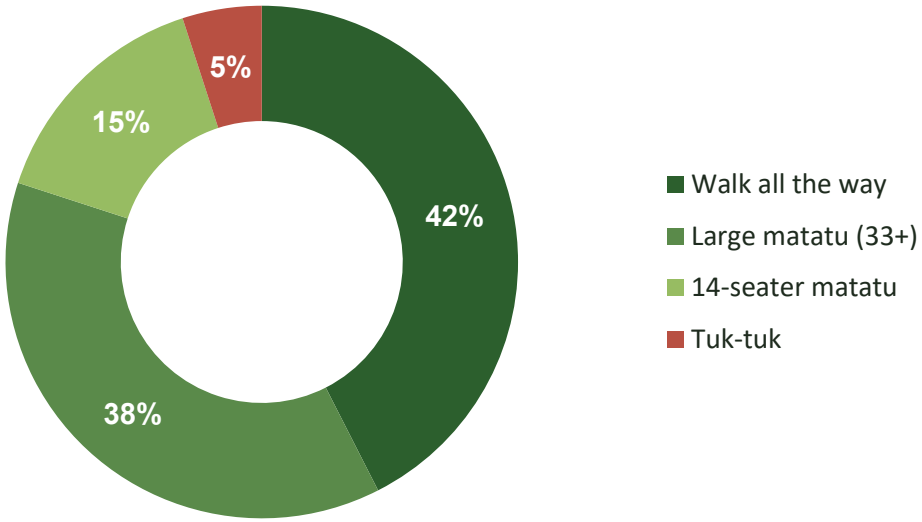
Operator FGD in the field. Source: Author, 2026

perception data

Participatory Mapping creates a crash records caregivers as a road-user group at this site.

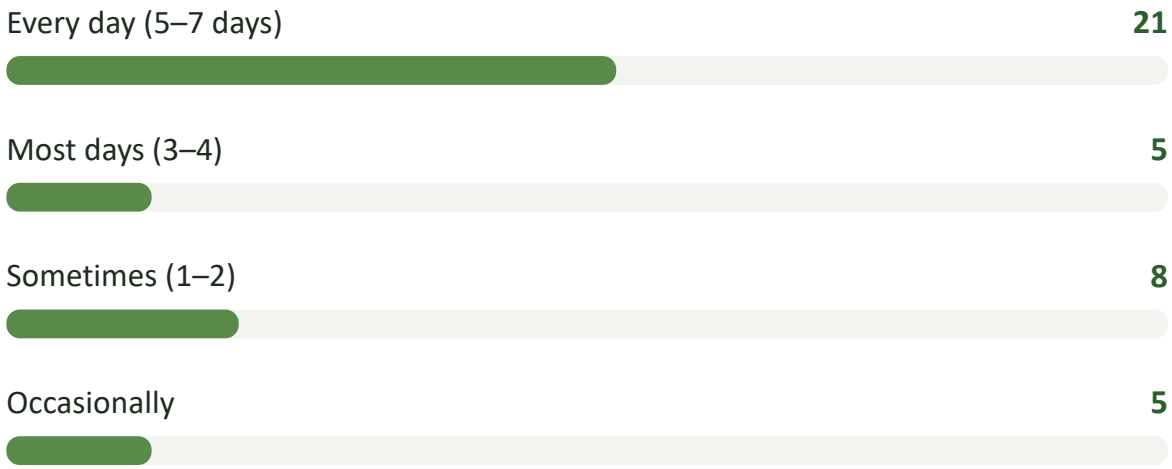
How caregivers reach the market — mostly on foot or by Matatu

Main mode of travel to the market



43% walk the whole way; 53% depend on a matatu there is essentially no private-car option.

How often they travel WITH children



88% travel in darkness at least part of the day lighting is a daily condition of the commute, not an edge case.

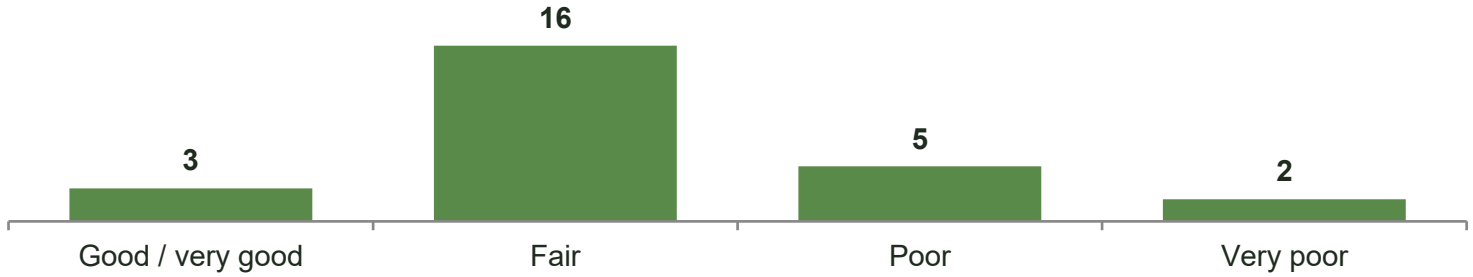
The PSV offers caregivers no place to be safe with a child

Only ONE respondent reported priority seats that are available and respected

for caregivers with children, pregnant women, or the elderly

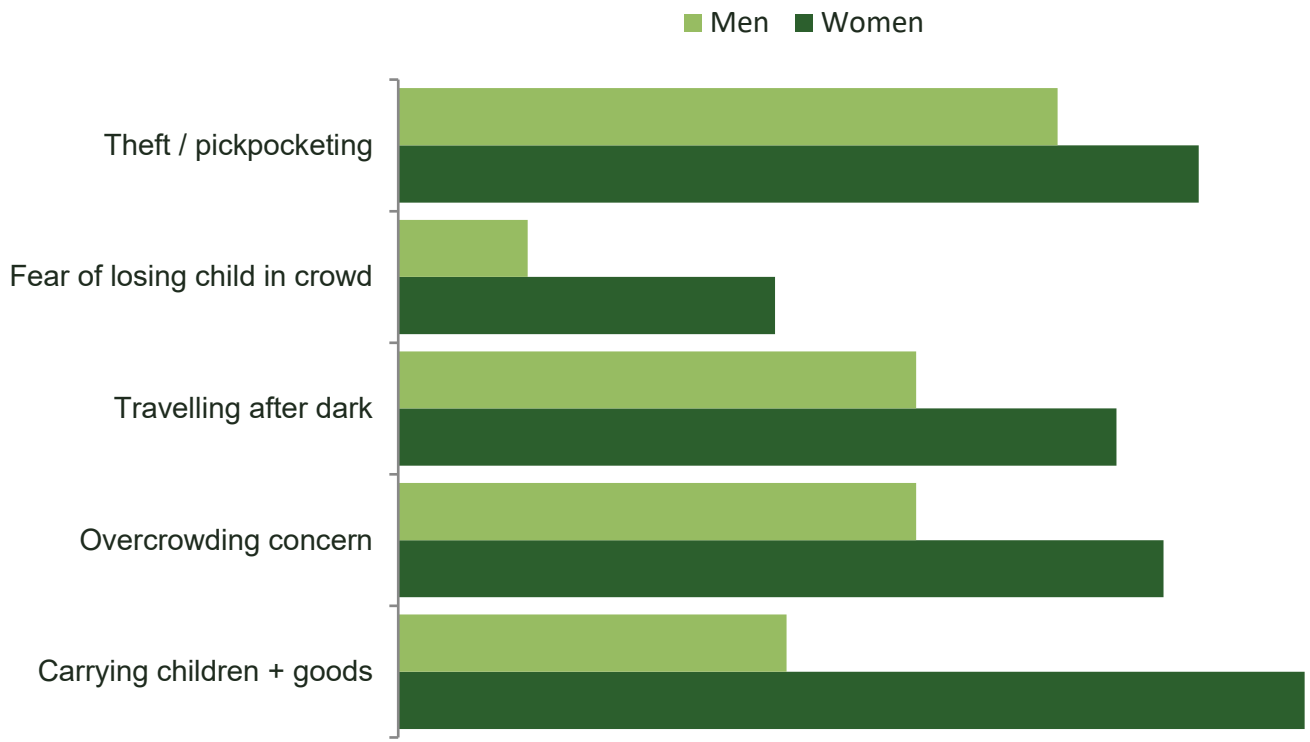
Priority seating on the transport used

How caregivers rate the vehicles they use



Women carry a larger risk, and are more exposed than men

Share reporting each concern or challenge (% within gender)



77% vs 33%

The care load is gendered

Women are more than twice as likely to struggle carrying children and goods together.

61% vs 44%

Women feel less safe after dark

And no woman who travels in daylight only — every man who avoids darkness does.

Matatu-bound

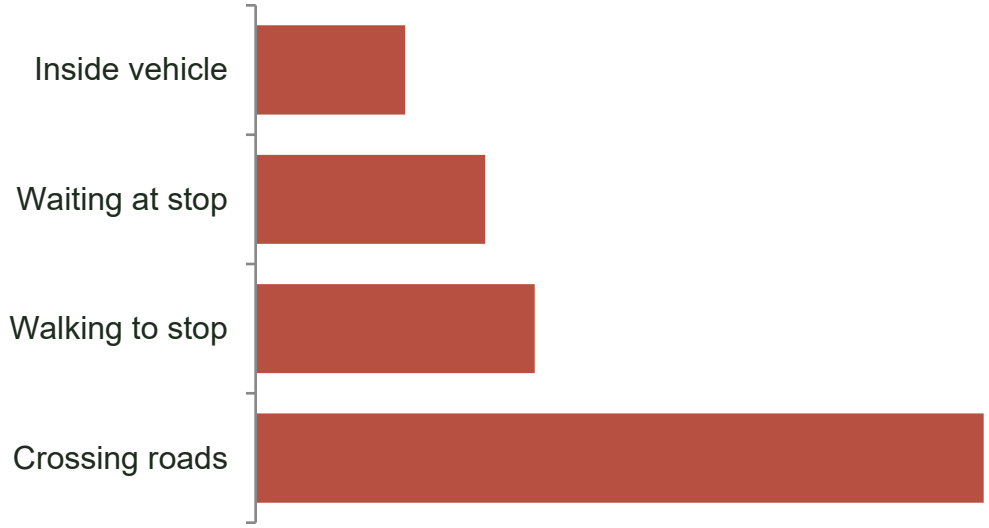
Women depend on the PSV

6 of 9 men walk the whole way; most women rely on matatus, raising their in-vehicle exposure.

Perception data, n=40 (31 women, 9 men). The male subsample is small — gender differences are indicative, not statistically conclusive.

Crossing the road is the most-feared moment of the trip

Rated unsafe or very unsafe, by journey stage



Top reasons the market area feels unsafe

Speeding vehicles near the market	**68%**
No safe pedestrian crossing	**38%**
No proper footpaths	**35%**
Crime in & around the market	**30%**
Crowding — hard to track children	**22%**

Operators are pushed into the unsafe choice

1

Caregivers ask to alight at the gate

Designated stops don't match where users need to be they want to be dropped at the market.

→

2

Operators comply, stop in undesignated spots

Serving the customer means stopping where stopping isn't allowed.

→

3

Fear of police → hurried drop-offs

To avoid arrest, operators drop fast and pull off the rush is when crashes happen.

More perspective

- Motorbike overtaking makes kerbside drop-offs dangerous
- Hand-carts take up all the NMT space and risk being hit
- The smoother road near the market invites speeding; potholes opposite slow traffic
- Conduct is policed by the SACCO/union fear of being reported curbs mishandling

THE CONFLICT AT THE LAST MILE

Four actors, one strip of road, competing goals

Caregivers

"Drop me at the gate safe, short walk with my child and luggage"

PT Operators

"Serve the customer, but don't get arrested"

THE MARKET

contested last-mile space

Other users

"Boda bodas, hand-carts & pedestrians need the same space"

Enforcement

"Keep vehicles to designated stops & flow"

Where the Safe System must adapt for market designs in cities

Care travel is the norm, not the exception

Women, children and goods move together on every trip the “standard commuter” model doesn’t fit.

Informal PSV is the system

Matatus carry most caregivers. Safety must work with Associations and operators, not around them with priority seating.

Markets design to follow safe systems

Trading, walking and through-traffic overlap on the same unmanaged road space.

Enforcement can cause risk

Penalty without responsive stop design pushes operators into the hurried, unsafe drop-off.

Better road ≠ safer road

Smoother surfaces near markets raise speeds where the most vulnerable users gather.

Climate shocks hit access

Flooding and poor drainage routinely sever the walking routes caregivers depend on.

COCLUSIONS ON THE SAFE SYSTEMS APPROACH

A care-responsive Safe System for market access

Safe road users

Co-design with caregivers, SACCOs & traders; priority boarding for those travelling with children.

Safe vehicles

Work with the SACCO accountability the PT operators already respect to improve PSV condition.

Safe speeds

Traffic calming on the smoother road near the market where speeds and vulnerability collide.

Safe roads

Continuous footpaths, safe crossings at the gate, lighting, drainage, and a stop where users need it.

Post-crash care

Reliable access for emergency response through the congested market last-mile.

The pilot: low-cost, co-designed interventions at Mwariro, with before/after measurement of perceived safety, travel time, and childcare uptake testing whether care-responsive design moves the Safe System conversation.

Thank you

Questions & discussion welcome

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