



Status Summary 2023: Road Safety Risk Factors

Bloomberg Philanthropies Initiative for Global Road Safety

M O M B A S A , K E N Y A



JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

**International
Injury Research Unit**

Beginning in 2022, the Johns Hopkins International Injury Research Unit, through the Bloomberg Philanthropies Initiative for Global Road Safety, has been conducting observations in Mombasa County to reduce road injuries and fatalities.

The following report highlights results from an ongoing study that captured observations of three risk factors: speed, helmet use, and seat-belt and child restraint use. The results are based on data collected between December 2022 and October 2023.

Speeding was high among all observed vehicles



Correct helmet use was very low among all motorcyclists



Seat-belt use among all vehicle occupants ≥ 12 years old was very low

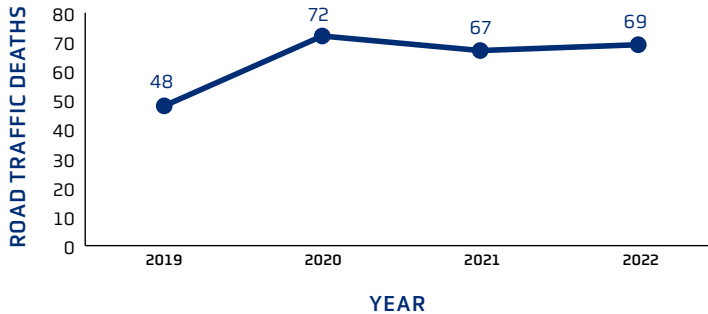


Child restraint use among children < 12 years old was almost non-existent

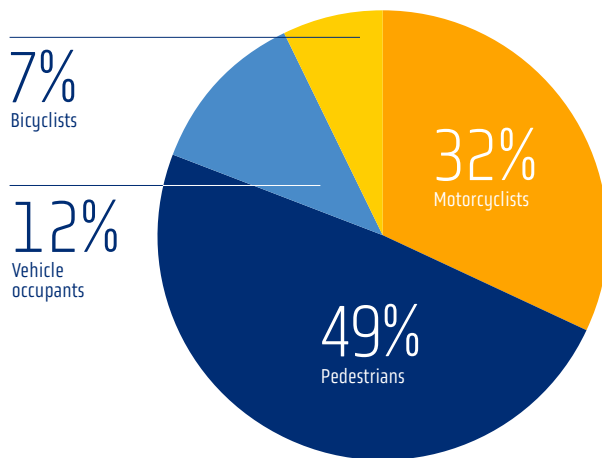


Road Traffic Fatalities in Mombasa

Road traffic deaths have remained stable since 2021



Deaths by road user, 2022



Vulnerable road users (motorcyclists, pedestrians, and bicyclists) accounted for 88% of reported road traffic fatalities in 2022.

Note: Data from existing sources was used for the outcome data indicators. Police crash data systems are prone to underreporting.

Recommendations

Police and Law Enforcement Agencies

- Enhance enforcement of:
 - Speed limits across the city, throughout the week, focusing on:
 - SUVs.
 - Sedans/saloons.
 - Pickup/light trucks.
 - Motorcycles.
- Correct helmet use, including among motorcycle passengers.
- Seat-belt use, particularly among male drivers and rear-seat passengers.
- Make enforcement operations regular, visible, and widespread.

National Transport and Safety Authority (NTSA)
Department of Transport and Infrastructure (DTI)
Department of Lands Housing and Urban Planning (DLUP)
County Government of Mombasa (CGM)
Kenya National Highway Authority (KeNHA)
Kenya Urban Roads Authority (KURA)
Kenya Rural Roads Authority (KeRRA)

- Implement a maximum speed limit of 30 km/h on roadways in designated areas where motorized traffic mixes with pedestrians and cyclists, and 50 km/h in urban areas.
- Implement speed-calming measures, such as bumps, rumble strips, safe speed signage, and designation of low-speed areas.
- Implement mass-media campaigns in coordination with enforcement efforts, focusing on:
 - Speed reduction.
 - Correct helmet use.
 - Seat-belt use.
- Advocate to enact a national child restraint law in line with global best practices.

Speed in Mombasa

Higher speeds lead to a greater risk of a crash and a higher probability of serious injury. An increase of 1 km/h in average vehicle speed results in an increase of 3% in the incidence of crashes resulting in injury and an increase of 4%–5% in the incidence of fatal crashes.*

*Save LIVES: A road safety technical package. Geneva: World Health Organization; 2017.



Speeding was high among all observed vehicles (26%).



Speeding was more frequently observed among SUVs (36%), pickup/light trucks (32%), sedans/saloons (31%), and motorcycles (31%) compared with other vehicle types.



Speeding was similar during the weekends (27%) and weekdays (26%).



Applying the global recommendation of 30 km/h for local and collector roads and 50 km/h for arterial roads, 92% of the observed vehicles were traveling at unsafe speeds on local and collector roads and 30% on arterial roads.

Functional classification of roads

Arterial road: These are roadways with high traffic volume; they provide a high degree of mobility and carry a high proportion of travel for long distance trips. These roadways carry the major portion of trips entering and leaving an activity center, as well as the majority of movements that either go directly through or bypass the area.

Local road: These roads provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas.

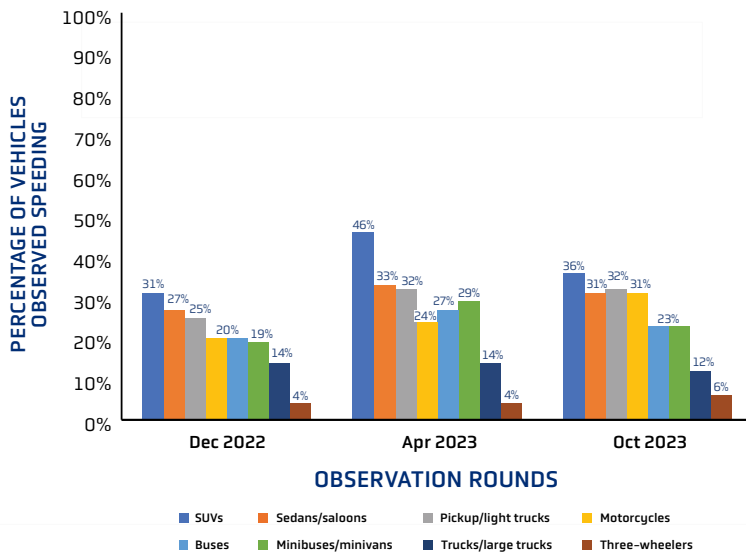
Collector road: These roads collect traffic from local roads and connect to arterial roadways. They penetrate neighborhoods and communities, collecting and distributing traffic between neighborhoods and arterial roads. Collector roads are shorter than arterial but longer than local roads.

These roads provide less mobility than arterials at lower speeds and for shorter distances.

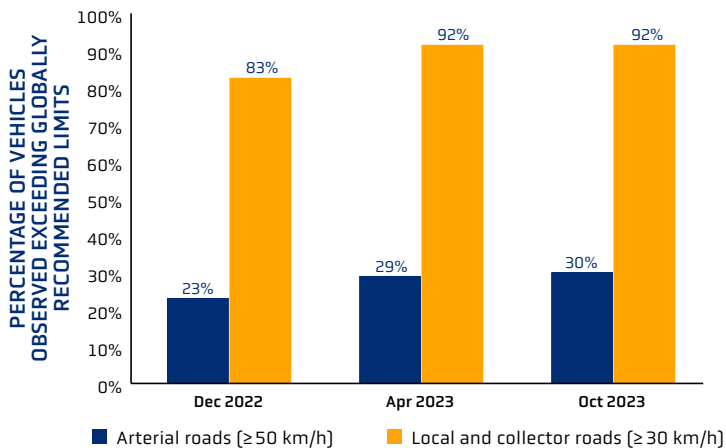
Note: These are not terms used in legislation in Kenya but are descriptions based on international typologies.

Key Findings on Speed in Mombasa

Speeding was more common among SUVs, sedans/saloons, pickup/light trucks, and motorcycles, highlighting the need for focused enforcement efforts



Speeding above the globally recommended speed limit was higher on local and collector roads*



*While speeding above the globally recommended speed limit was higher on local and collector roads, observed speeding was present in nearly one-third of the vehicles on arterial roads, highlighting the need for enhanced speed enforcement on both road types.

Recommendations

Police and Law Enforcement Agencies

- Enhance enforcement of speed limits throughout the week, focusing on:
 - SUVs, sedans/saloons, pickup/light trucks, and motorcycles.
 - Private and government owned vehicles.
- Make enforcement operations regular, visible, and widespread.

National Transport and Safety Authority (NTSA)
Department of Transport and Infrastructure (DTI)
Department of Lands Housing and Urban Planning (DLUP)
County Government of Mombasa (CGM)
Kenya National Highway Authority (KeNHA)
Kenya Urban Roads Authority (KURA)
Kenya Rural Roads Authority (KeRRA)

- Implement a maximum speed limit of 30 km/h on roadways in designated areas where motorized traffic mixes with pedestrians and cyclists, and 50 km/h in urban areas.
- Implement speed-calming measures, such as bumps, rumble strips, safe speed signage, and designation of low-speed areas, to protect vulnerable road users (pedestrians, bicyclists, and motorcyclists).

National Transport and Safety Authority and Communication Department,
County Government of Mombasa

- Enhance enforcement efforts in coordination with existing mass-media campaigns on the dangers of speeding.

Helmet Use* in Mombasa

Using a motorcycle helmet correctly** can reduce the risk of fatality by 42% and the risk of serious head injury by 69% in the case of a crash.

*Overall helmet use was defined as strapped or unstrapped use of a helmet of any type.

**Correct helmet use was defined as the use of a standard helmet that was worn correctly and with the chin strap fastened.



Overall helmet use among motorcyclists was very low (25%). **Correct helmet use was even lower (19%).**



Correct helmet use was very low among motorcycle drivers (26%) and almost non-existent among motorcycle passengers (2%).



Correct helmet use was very low on both arterial roads (19%) and local and collector roads (19%).



Correct helmet use among ride-share vehicles (2%) and taxis (14%) was very low compared with commercial motorcycles (28%).

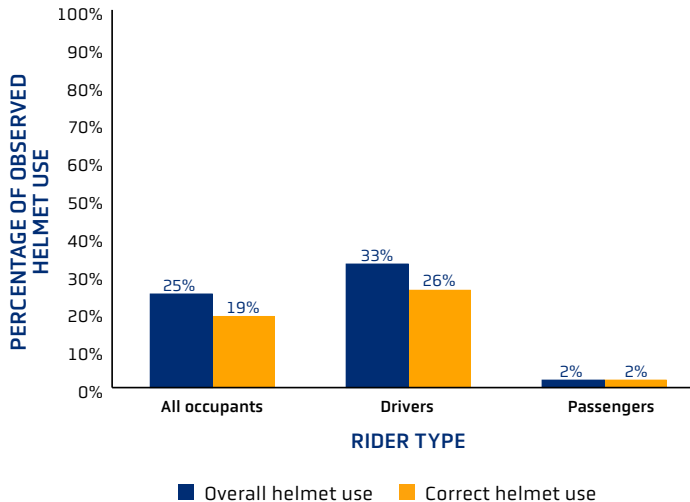
Commercial motorcycles: These include all motorcycles with company logos including those used for delivery.

Taxi: These include all motorcycles without ride-share logos (logos usually on helmets or reflector of riders). In Mombasa, these motorcycle taxis are called boda boda.

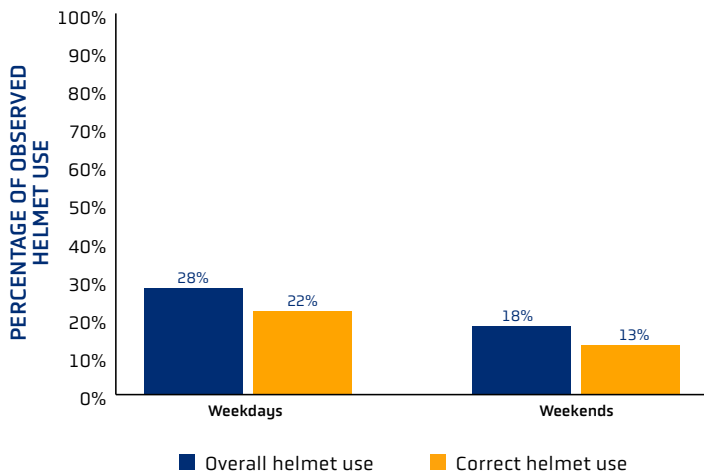
Private and government motorcycles: These include motorcycles whose riders are considered to be non-boda boda riders according to the observers' discretion (riders wearing suits, uniforms of the armed forces like the Uganda police, etc.) and motorcycles with registration plates that belong to government agencies.

Key Findings on Helmet Use in Mombasa

Correct helmet use was very low, especially among motorcycle passengers



Correct helmet use was low throughout the week and even lower on weekends



Recommendations

Police and Law Enforcement Agencies

- Enhance enforcement of speed limits throughout the week, focusing on:
 - Passengers.
 - Both arterial and local and collector roads.
- Make enforcement operations regular, visible, and widespread.

National Transport and Safety Authority

- Implement mass-media campaigns on the importance of wearing helmets at all times, and strapping a helmet, in coordination with enforcement efforts.
- Advocate for enforcement of disposable helmet liner, a standard developed by the Kenya Bureau of Standards for motorcyclists [Ref: KS 2944:2021 Kenya Standard - Disposable Helmet liner -Specification.]

Seat-Belt and Child Restraint Use in Mombasa

Seat-belts and child restraints play a significant role in reducing the severity of injuries in the event of a crash; they reduce mortality by 50% in crashes in which motorists, passengers (including rear-seat passengers), and children would otherwise die. Children in front seats have a 40% higher road traffic injury risk than children in rear seats.



Seat-belt use among all vehicle occupants ≥ 12 years old was very low (24%).



Seat-belt use was lowest among occupants of three-wheelers (1%) and minibuses/minivans (15%).



Seat-belt use was lowest among occupants of taxis (4%) and commercial vehicles (16%).



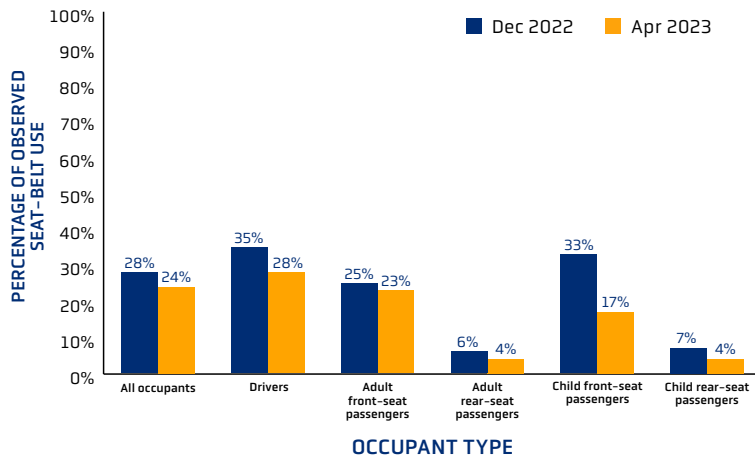
Seat-belt use was 30% lower on weekends.



Seat-belt use was very low on both arterial (22%) and local and collector (30%) roads.

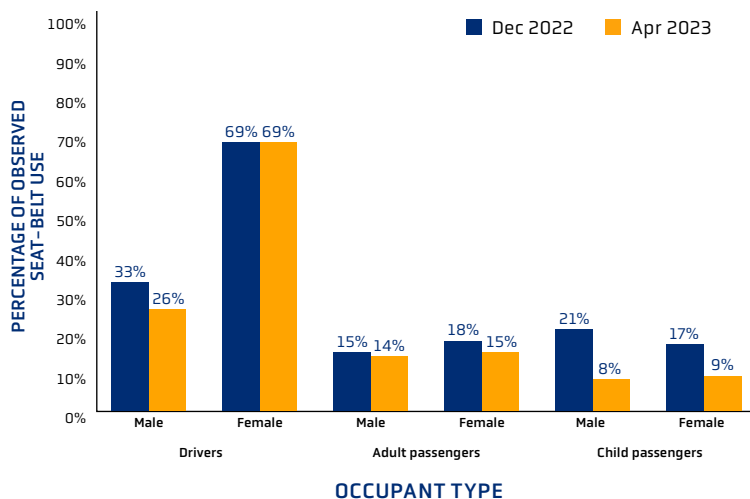
Key Findings on Seat-Belt and Child Restraint Use in Mombasa

Seat-belt use remains low among all occupants, especially among rear-seat passengers



Note: "Child" indicates those in the ≥ 12 and < 18 years age group.

Seat-belt use was lowest among male drivers, and both male and female passengers



Note: "Child" indicates those in the ≥ 12 and < 18 years age group.

Recommendations

Police and Law Enforcement Agencies

- Enhance enforcement campaigns targeting seat-belt use among all occupants with a focus on:
 - Male drivers.
 - Child passengers.
 - Rear-seat passengers.
 - Occupants of minibuses/minivans, taxis, and commercial vehicles.
- Make enforcement operations regular, visible, and widespread, particularly on weekends.

National Transport and Safety Authority

- Implement mass-media campaigns in coordination with enforcement efforts, focusing on the risks associated with having child passengers in the front seat.
- Advocate to enact a national child restraint law in line with global best practices.
- Advocate to enforce seat-belt use legislation based on globally recommended seat-belt standards.



Conducting speed observations in Mombasa, Kenya.

METHODS

Since 2022, the Johns Hopkins International Injury Research Unit has partnered with Innologic Solutions to conduct roadside observations. The methods for these findings were developed by the Johns Hopkins International Injury Research Unit and implemented in collaboration with Innologic Solutions. This report provides results from observational surveys that represent the population-level (citywide) prevalence of important road safety risk factors—speed, helmet use, and seat-belt and child restraint use. For speed, there were 191,960 observations (December 2022, April 2023, and October 2023); for helmet use, there were 30,529 observations (December 2022); and for seat-belt and child restraint use, there were 117,370 observations (December 2022 and April 2023).

Since Mombasa is a small city with a population size of approximately 1.3 million, convenience sampling methods were applied, and 12 observation sites were selected per risk factor to capture the prevalence of risk factors. For each risk factor, a standardized protocol for data collection was implemented. Observations were performed between 8:00 a.m. and 6:00 p.m. on both weekdays

and weekend days. The methods were designed to estimate citywide prevalence and cannot provide insights into interventions conducted in specific locations in the city. The regional team and the data management team at Johns Hopkins International Injury Research Unit reviewed and cleaned the data to perform the analyses available in this report.

ACKNOWLEDGMENTS

Technical support was provided by officials in Mombasa, Kenya; a consortium of international initiative partners; and local collaborators from Innologic Solutions.

CONTACT: jhsph.iiru@jhu.edu

CITATION:

Status Summary Report 2023: Road Safety Risk Factors in Mombasa, Kenya. Baltimore: Johns Hopkins International Injury Research Unit; 2023.



REPORT PREPARED BY:



**Bloomberg
Philanthropies**

**Initiative for Global
Road Safety**



your trusted research & development partner