



Status Summary 2022: Road Safety Risk Factors

Bloomberg Philanthropies Initiative for Global Road Safety



**BOGOTÁ,
COLOMBIA**



JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

**International
Injury Research Unit**

Beginning in 2015, the Johns Hopkins International Injury Research Unit, through the Bloomberg Philanthropies Initiative for Global Road Safety, has been conducting observations in Bogotá 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 November 2015 and October 2022.

*This study did not observe drink driving due to COVID-19 risks.

More than one-third of all vehicles were observed speeding



More than half of all motorcycles were observed speeding



Seat-belt use among adult rear-seat passengers was very low at



Correct helmet use was high among motorcyclists at



Road Traffic Fatalities in Bogotá

2019–2022*

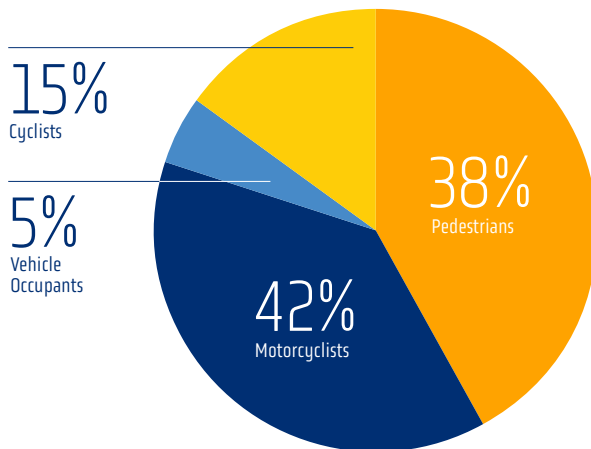
506
2019

377
2020

469
2021

558
2022

Deaths by road user, 2022



Vulnerable road users (motorcyclists, pedestrians, and cyclists) **accounted for 95% of road traffic fatalities.**

Since 2020, motorcyclist deaths have been higher than pedestrian deaths, not including cases without an identified vehicle.

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

*Trend: fatalities have increased after years of decline.

Recommendations

Transit Police and Transit Agents

- Strengthen the enforcement of speed limits by motorcycles by using mobile speed cameras.
- Advocate to strengthen the legal framework for the enforcement of speed limits by using fixed cameras.
- Enhance enforcement of seat-belt use, particularly among passengers in taxis and rear-seat passengers.

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- Strengthen speed limit enforcement in the city through the use of speed cameras on the roadways with the most fatalities and serious injuries.
- Increase the enforcement of speed limits for arterial roads (50 km/h) and local roads (30 km/h) in line with global best practices, and implement enforcement through new traffic agents.
- Advocate for a national child restraint law in line with global best practices.
- Implement forceful mass-media campaigns to encourage slower driving in coordination with enforcement efforts. Perform evaluations to assess effectiveness of media campaigns.

Speed in Bogotá

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.



More than one-third of all vehicles were observed speeding (39%).



Speeding was highest among motorcyclists (57%), who accounted for the highest percentage of fatalities and were the main cause of pedestrian deaths on Bogotá's roads.



Vehicles driving over 50 km/h increased from 19% in November 2020 to 30% in October 2022.*



Applying the global recommendation of 30 km/h for local and collector roads and 50 km/h for arterial roads, 44% of the observed vehicles were traveling at unsafe speeds in October 2022.

* Since 2018, Bogotá has been progressively reducing speed limits to align with the global recommendation of 50 km/h for 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.

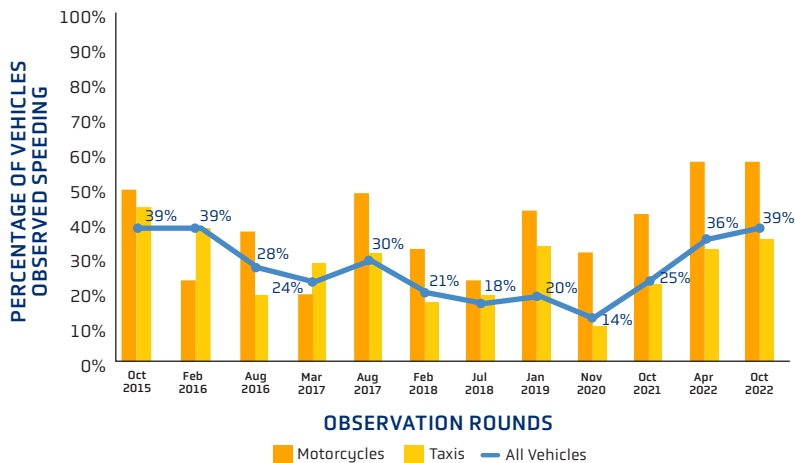
Local road: These roads provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas.

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.

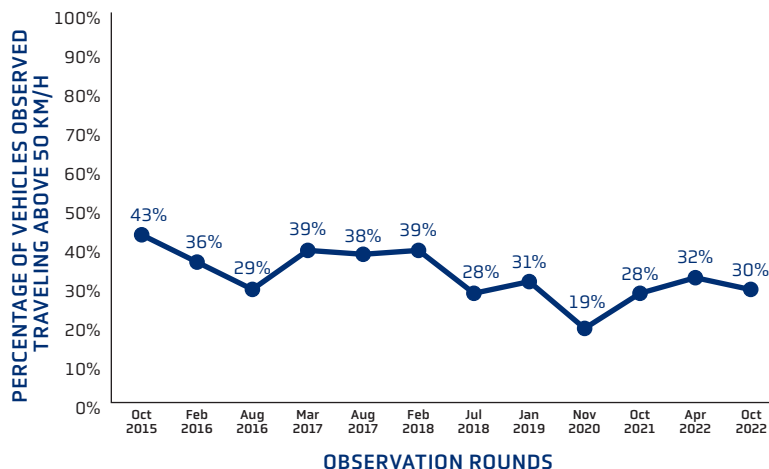
These roads provide less mobility than arterials at lower speeds and for shorter distances.

Key Findings on Speed in Bogotá

Motorcycles were observed speeding more frequently than other vehicles



Vehicles exceeding 50 km/h had declined since 2015, but started increasing again in 2020



Recommendations

Transit Police and Transit Agents

- Enhance enforcement of speed limits, focusing on motorcycles.
- Strengthen speed limit enforcement, focusing on both arterial and collector roads, particularly around urban areas and where traffic and people mix.

Secretary of Mobility

- Implement mass-media campaigns that emphasize the dangers of driving at unsafe speeds (exceeding 50 km/h), in coordination with enforcement efforts.
- Focus electronic enforcement on arterial roads where higher rates of fatalities and serious road traffic injuries were observed.
- Expand speed-calming measures, such as bumps, rumble strips, safe speed signage, and designation of low-speed areas.

Helmet Use* in Bogotá

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 (98%) and correct helmet use (94%) were high among motorcyclists.



Correct helmet use increased from 75% in September 2017 to 94% in November 2020.



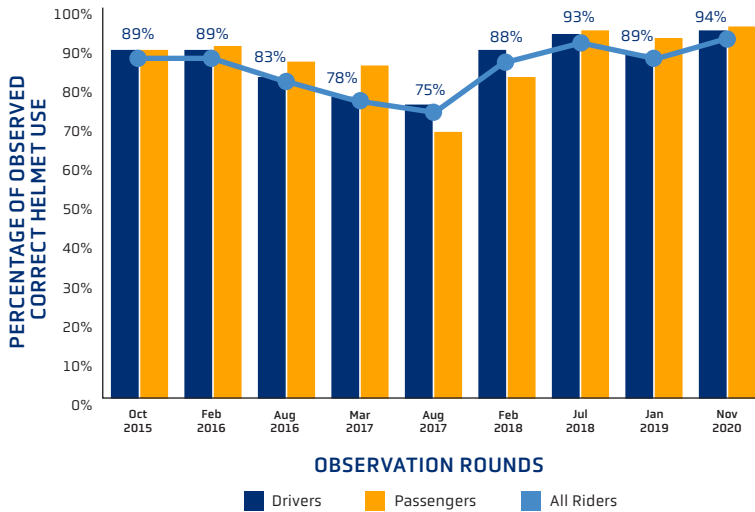
Commercial motorcycles had lower correct helmet use (92%) than private motorcycles (94%).



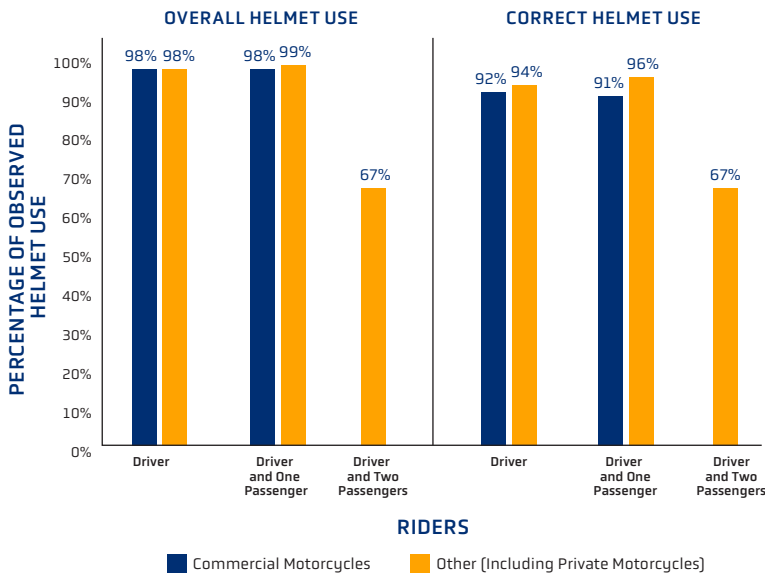
Overall helmet use (98%) and correct helmet use (94%) were the same among males and females.

Key Findings on Helmet Use in Bogotá

Correct helmet use increased among all riders



Correct helmet use was low among private motorcycles with three riders



Recommendations

Transit Police and Transit Agents

- Continue enforcement of correct helmet use, especially among private and government vehicles with more than one rider.
- Make enforcement operations regular, visible, and widespread.
- Coordinate enforcement operations with mass-media campaigns to increase the impact of both efforts.

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- Implement mass-media campaigns that are coordinated with and complement enhanced enforcement of correct helmet use, focusing on all riders.
- Advocate for the new traffic agents to enforce penalties and fines for driving without using a helmet correctly.

Seat-Belt and Child Restraint Use in Bogotá

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 occupants \geq 12 years old increased from 74% in November 2015 to 80% in November 2020.



13% of children 5-11 years old were observed using child restraints, which was lower than child restraint use among children $<$ 5 years old (31%).



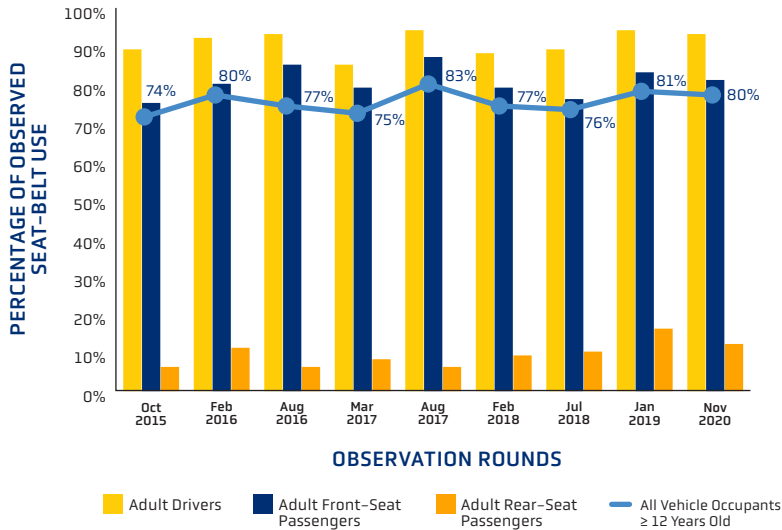
Seat-belt use was substantially lower among adult rear-seat passengers (12%) compared with drivers (80%).



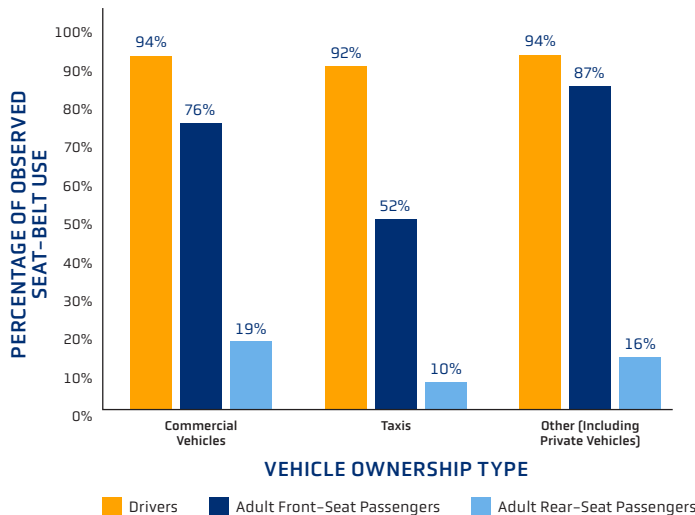
Among taxis, only half of adult front-seat passengers were observed using seat-belts (52%). **Seat-belt use was even lower among adult rear-seat passengers in taxis (10%).**

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

Seat-belt use was high among drivers but low among rear-seat passengers



Seat-belt use was lowest among rear-seat occupants of taxis



Recommendations

Transit Police and Transit Agents

- Enhance enforcement efforts of seat-belt use, particularly among passengers in taxis and rear-seat passengers.
- Increase enforcement of age-appropriate child restraints.
- Strengthen enforcement of monetary penalties for not using seat-belts.
- Make enforcement operations regular, visible, and widespread.

Secretary of Mobility

- Implement mass-media campaigns in coordination with enforcement efforts, emphasizing the importance of seat-belt use for rear-seat passengers and age-appropriate child restraints.
- Advocate for a national child restraint law in line with global best practices.



Police officer conducting speed limit enforcement in Bogotá, Colombia.

METHODS

Since 2015, the Johns Hopkins International Injury Research Unit has partnered with the Universidad de los Andes to conduct roadside observations. The methods for these findings were developed by the Johns Hopkins International Injury Research Unit and implemented in collaboration with the Universidad de los Andes. 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—at baseline, followed by additional speed observations to show changes over time. In the last round of observations, for speed, there were 142,713 observations; for helmet use, there were 51,961 observations; and for seat-belt and child restraint use, there were 89,210 observations.

Observation sites were randomly selected, conditional on the safety of observers. Fifteen sites were randomly selected to capture the prevalence of risk factors that could be attributed to either implementation of targeted interventions or secular trends. For each risk factor, a standardized protocol for data collection was implemented. All risk factors were observed by selecting vehicles in a systematic quasi-random fixed sequence during

a period of three weeks in 15 observation sites of the city. The selection of the observation sites was done proportionally to traffic flow, weighted by the density of traffic lights by socioeconomic strata. Observations were performed between 7:00 a.m. and 7:00 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 data management team at Johns Hopkins International Injury Research Unit reviewed and cleaned the data to produce the analyses available in this report.

ACKNOWLEDGMENTS

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