MOTORCYCLISTS in Latin America

Second Edition

Current situation, lessons learned and recommended best practices for the protection of its users

Source: Authors

IDB

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Current situation, lessons learned and recommended best practices for the protection of its users

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Source: Authors

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ACRONYMS

ABS	Anti-lock Braking System
ACEM	Association des Constructeurs Européens de Motocycles (European Association of Motorcycle Manufacturers)
AHO	Automatic Headlight On
AIP	AIP Foundation (Asia Injury Prevention Foundation)
AMA	Área Metropolitana de Asunción (Asunción Metropolitan Area)
AMFIM	Asociación Mexicana de Fabricantes e Importadores de Motocicletas (Mexican Association of Motorcycle Manufacturers and Importers)
AMSS	Área Metropolitana de San Salvador (San Salvador Metropolitan Area)
ANDI	Asociación Nacional de Empresarios de Colombia (National Association of Colombian Entrepreneurs)
ANSV	Agencia Nacional de Seguridad Vial (National Road Safety Agency)
ANT	Agencia Nacional de Tránsito - Ecuador (National Transit Agency)
BASt	Bundesanstalt für Straßenwesen (German Federal Highway Research Institute)
CAF	Development Bank of Latin America and the Caribbean (Banco de Desarrollo de América Latina)
CBS	Combined Braking System
CONASET	Comisión Nacional de Seguridad de Tránsito - Chile (National Traffic Safety Commission)
COSEVI	Consejo de Seguridad Vial - Costa Rica (Road Safety Council)
COVID-19	Coronavirus Disease 2019
DEKRA	Deutscher Kraftfahrzeug-Überwachungs-Verein (German testing and certification organization)
DGT	Dirección General de Tráfico - España (General Directorate for Traffic)
ECLAC/ CEPAL	Economic Commission for Latin America and the Caribbean (Comisión Económica para América Latina y el Caribe)
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
ERF	European Union Road Federation
FAMI	Federation of Asian Motorcycle Industries
FEMA	Federation of European Motorcyclists' Associations
FICVI	Federación Iberoamericana de Asociaciones de Víctimas Contra la Violencia Vial (Ibero-American Federation of Victim Associations Against Road Violence)
FIM	Fédération Internationale de Motocyclisme (International Motorcycling Federation)
FMAM	Fondo para el Medio Ambiente Mundial (Global Environment Facility)
FONAT	Fondo de Atención a Víctimas de Accidentes de Tránsito - El Salvador (Fund for the Care of Traffic Accident Victims)
GCHS1	Global Child Helmet Standard 1
GDL	Graduated Driver Licensing
GRSP	Global Road Safety Partnership
H2020	Horizon 2020 (EU Framework Programme for Research and Innovation)
HICs	High-Income Countries

IDB/BID	Inter-American Development Bank (Banco Interamericano de Desarrollo, BID)
INE	Instituto Nacional de Estadística - Paraguay and Chile (National Statistics Institute)
INEGI	Instituto Nacional de Estadística y Geografía - México (National Institute of Statistics and Geography)
INTRANT	Instituto Nacional de Tránsito y Transporte Terrestre - República Dominicana (National Institute of Traffic and Land Transportation)
iRAP	International Road Assessment Programme
ITDP	Institute for Transportation and Development Policy
ITF	International Transport Forum
LAC	Latin America and the Caribbean
LMICs	Low- and middle-income countries
MAPFRE	Fundación MAPFRE (MAPFRE Foundation)
MOPC	Ministerio de Obras Públicas y Comunicaciones (Ministry of Public Works and Communications)
NGO	Non-Governmental Organization
NHTSA	National Highway Traffic Safety Administration (United States)
OECD	Organisation for Economic Co-operation and Development
OISEVI	Observatorio Iberoamericano de Seguridad Vial (Ibero-American Road Safety Observatory)
ONSV	Observatorio Nacional de Seguridad Vial - Colombia (National Road Safety Observatory)
PAHO/ OPS	Pan American Health Organization (Organización Panamericana de la Salud)
PPE / EPP	Personal Protective Elements (Elementos de Protección Personal)
PTI / VTV	Periodic Technical Inspection (Verificación Técnica Vehicular)
PTWs	Powered Two- and Three-Wheelers
RACE	Real Automóvil Club de España (Royal Automobile Club of Spain)
RUNT	Registro Único Nacional de Tránsito - Colombia (National Single Registry of Traffic)
SINESP	Sistema Nacional de Informações de Segurança Pública - Brazil (National Public Security Information System)
SOAT	Seguro Obligatorio de Accidentes de Tránsito (Compulsory Traffic Accident Insurance)
TBI	Traumatic Brain Injuries
UN	United Nations
UNAL	Universidad Nacional de Colombia (National University of Colombia)
UN-Habitat	United Nations Human Settlements Programme
UNECE	United Nations Economics Commission for Europe
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
US DOT	United States Department of Transportation
VIAS	VIAS Institute (Belgian Road Safety Institute)
VMT	Viceministerio de Transporte - El Salvador (Vice Ministry of Transport)
WHO	World Health Organization
WRI	World Resources Institute

Fuente: Authors

1

Introduction

Motorcyclists represent the primary challenge for public policy in road safety in Latin America and the Caribbean region (LAC). It is estimated that, while overall road traffic fatalities have remained at similar levels from 2010 to 2024, fatalities among motorcyclists have nearly doubled.

Despite a slight global decrease in road traffic fatalities, the situation for motorcyclists in LAC remains critical. While overall traffic deaths have declined over the past decade, fatalities among motorcyclists have risen significantly, underscoring their heightened vulnerability on the roads. Motorcycles have become a central mode of transportation in the region, particularly for work-related purposes, due to their affordability and efficiency. However, this growing dependence has also amplified risks, making motorcyclist safety an urgent priority for policymakers, the private sector, and civil society.

In 2022, the Inter-American Development Bank (IDB) published *Motorcycles in Latin America: Current and Recommended Best Practices for the Protection of Its Users*, which provided valuable insights into the challenges and strategies for improving motorcycle safety. This updated version builds on that foundation, shifting the focus toward motorcyclists as vulnerable road users and emphasizing their specific needs. The new edition incorporates additional best practices from governments, NGOs, and the private sector, while offering a more comprehensive analysis of the current landscape, including updated data on Powered Two and Three Wheelers (PTWs), fatality rates, and the regulatory framework across the region.

Through its work in LAC, the IDB promotes safer, more sustainable, and inclusive mobility systems by supporting countries and cities strengthen transport policies, advance resilient and accessible connectivity, and build robust institutional capacities. In alignment with these goals, the IDB has strengthened its safe mobility strategy—in place since 2010—by adopting a framework structured around three complementary components: (1) stronger governance and institutional frameworks to improve safe mobility management; (2) safer and more inclusive infrastructure and urban spaces, with a focus on vulnerable road users; and (3) enhanced knowledge and research to support evidence-based, sustainable mobility policies. Within this framework, this publication contributes specifically to the Knowledge and Research component by providing updated evidence, regional analysis, and practical guidance to support safer motorcycling policies across the region.

This second edition is structured into four sections to provide a holistic understanding of the issue and

practical recommendations. The first section analyzes current trends in road traffic fatalities, presenting updated insights on motorcyclist safety by subregion and country, as well as key statistics to frame the discussion. The second section examines the risk factors contributing to motorcycle-related fatalities. The third section updates the regulatory framework, focusing on road safety regulations relevant to motorcyclists and highlighting best practices from governments, NGOs, and the private sector, showcasing successful interventions that have delivered measurable safety improvements. Finally, the document concludes with actionable recommendations to help stakeholders in implementing evidence-based policies and strategies tailored to the region's unique challenges.

One of the key updates in this edition is the integration of data from the *Global Status Report on Road Safety 2023* by the WHO, along with research conducted by the IDB. These insights provide a clearer picture of motorcyclist safety in LAC, identifying trends such as the rising number of fatalities among young men and the increasing use of motorcycles for work-related activities. By presenting both challenges and progress, the document equips stakeholders with the knowledge needed to address this growing issue effectively.

Aligned with the goals of the Decade of Action for Road Safety 2021-2030, this publication underscores the importance of multilateral collaboration and shared responsibility. Achieving the ambitious target of halving road traffic deaths by 2030, as outlined in the United Nations Sustainable Development Goals, will require coordinated efforts and commitment to best practices. In this context, the Marrakech Declaration (2025) emphasizes the need for accelerating safe mobility initiatives, strengthen regulations, and secure adequate funding to address the vulnerabilities of road users, particularly motorcyclists. The declaration also urges governments and stakeholders to integrate road safety into national policies, enforce evidence-based interventions, and enhance post-crash care, which are crucial components for reducing motorcycle-related fatalities (Road Safety Morocco, 2025). By focusing on motorcyclists and fostering a deeper understanding of their vulnerabilities, this document aims to contribute to a safer and more sustainable future for road users in LAC.

Source: FONAT - VMT (El Salvador)

2

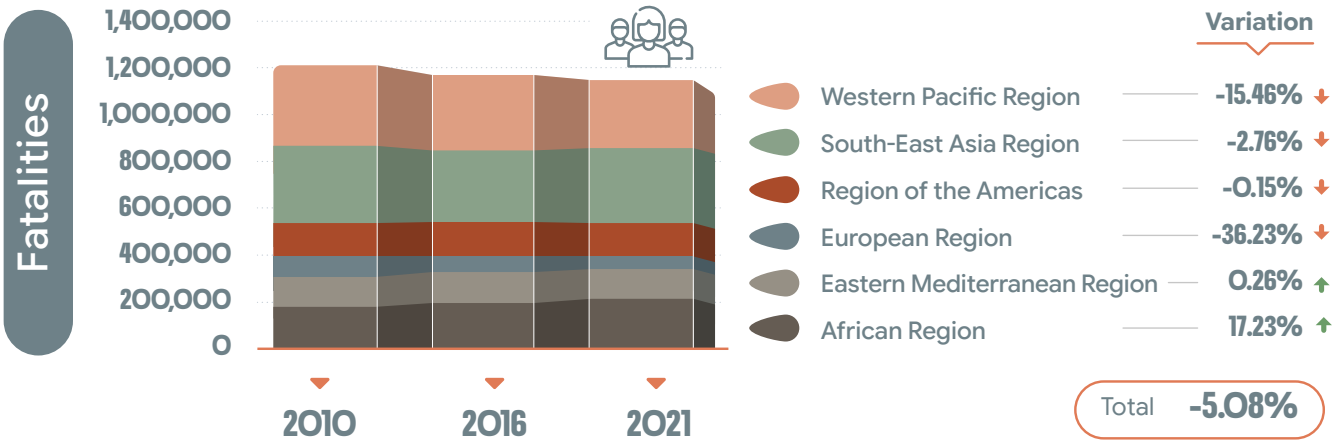
Context

› Global Review

The World Health Organization's Global Status Report on Road Safety 2023 (World Health Organization [WHO], 2023) estimates 1.19 million fatalities from road crashes in 2021, representing a 5% decrease when compared to the 1.25 million deaths recorded in 2010.

Regional data reveal that the European Region (-36%), the Western Pacific Region (-15%), and the South-East Asian Region (-3%) contributed to this decline. In contrast, Africa experienced 17% increase during this period, whereas the Americas and the Eastern Mediterranean Region reported stability, despite an upward trend in motorization.

Figure 1. Global Road traffic Deaths by Region, 2010 - 2021



Source: Authors' elaboration based on WHO Global Status Report on Road Safety 2023, 2018 and 2013.

According to the WHO (2023):

> Road Traffic crashes disproportionately claim more lives in LMICs. These countries, **which represent 84% of the global population** and **72% of the world's vehicle fleet**, account for an **estimated 92% of all road traffic fatalities.**

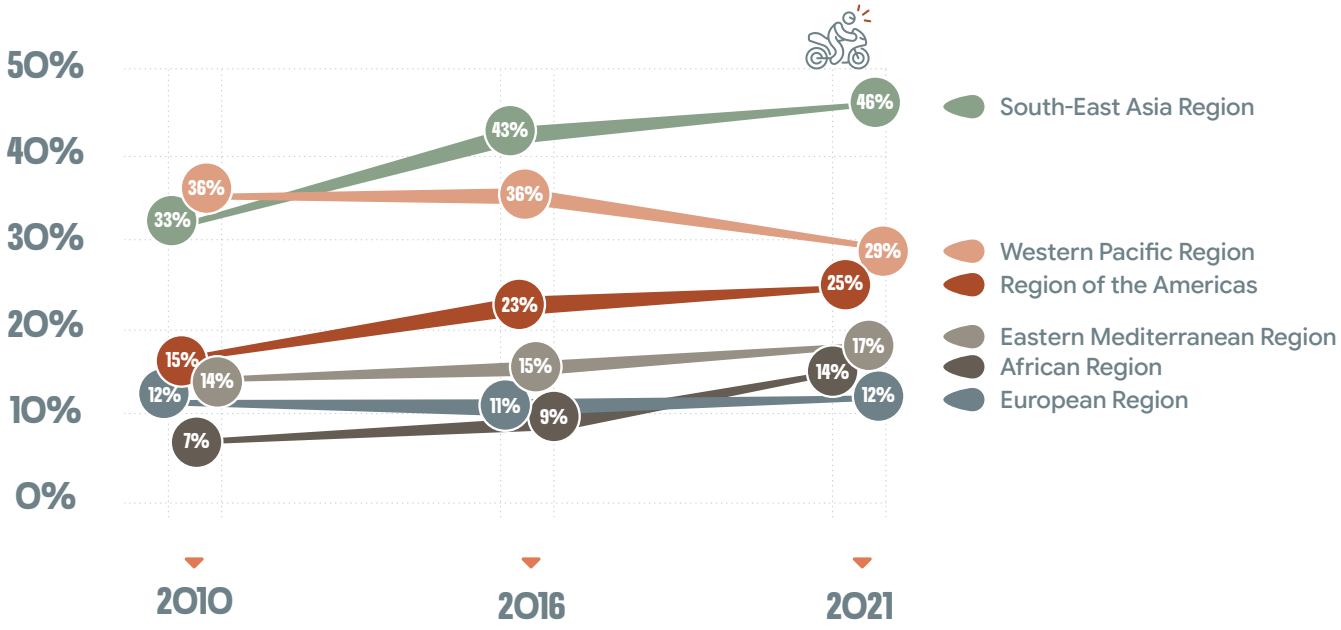
> This data shows that a country's motorization rate doesn't directly correlate with its mortality rate. For instance, **high-income countries with 28% of the world's circulating powered vehicles**, represent only **8% of global road traffic fatalities.**

> However, the relationship between vehicle numbers and mortality becomes more pronounced when examining PTWs situation, where only **11% of such vehicles are registered in high-income countries**, and just 4% of PTW user fatalities occur in these countries.

Involvement of PTWs Users in Road Traffic Fatalities

PTWs contribute significantly to road traffic fatalities. According to the *Global Status Report on Road Safety 2023*, motorcyclists and other PTWs users represent 30% of global road traffic deaths. Their global share of fatalities has declined by 2% since 2010 (WHO, 2023). However, this percentage fluctuates across different regions worldwide.

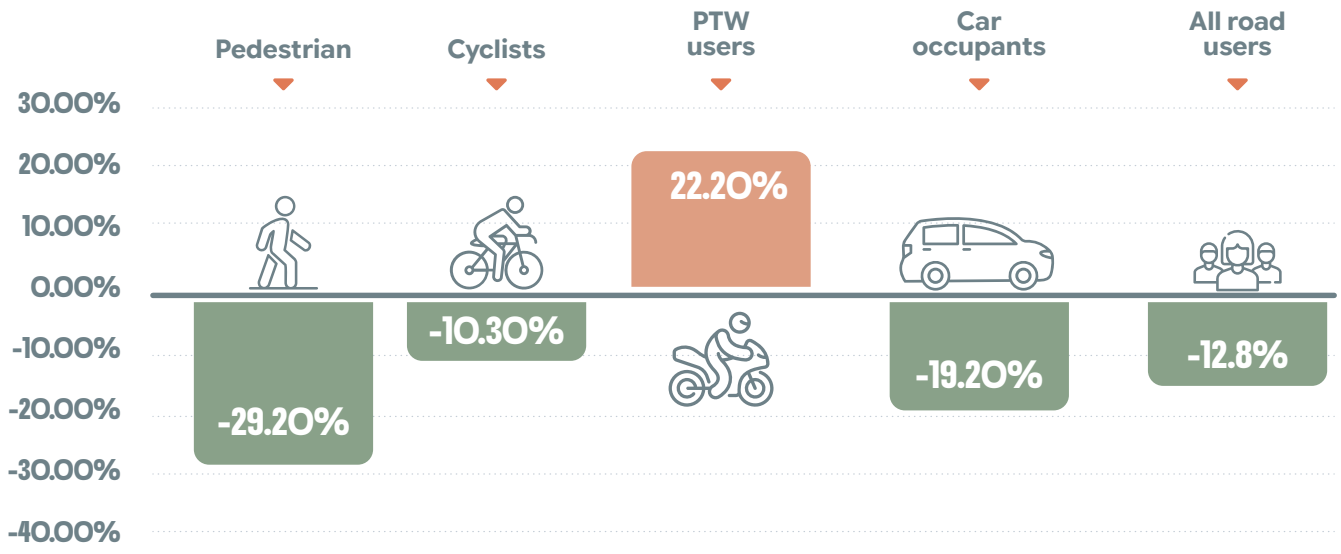
Figure 2. Share of PTWs Users in Total Road Traffic Fatalities by Region (%)



Source: Authors' elaboration based on World Health Organization. Global Status Report on Road Safety 2023, 2018 and 2013.

In 2023, **road deaths decreased by 12.8% across 29 IRTAD countries** with validated data compared to 2013. **However, PTW users were the only group that showed an increase during this period, with fatalities rising by 22.2%** (International Transport Forum [ITF], 2025).

Figure 3. Evolution in Road Deaths by User Category, 2023 Compared to 2013

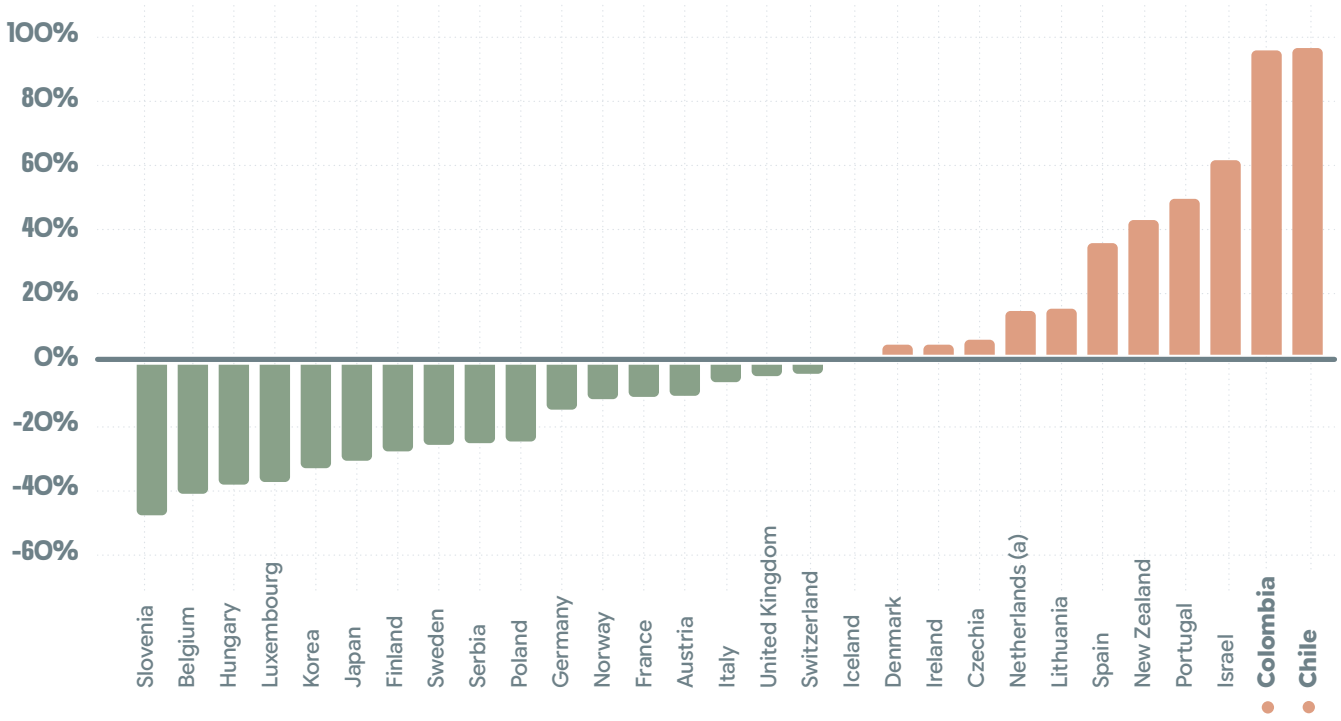


Source: Adapted from Road Safety Annual Report 2024 ITF (2025). Data include Austria, Belgium, Chile, Colombia, Czechia, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Lithuania, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Serbia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

In addition, several countries have successfully reduced PTWs user fatalities between 2013 and 2023, such as Slovenia, Belgium, Hungary, Luxembourg, Korea, Japan, Finland, Sweden, Serbia, Poland, Germany, Norway, France, Austria, Italy, the United Kingdom, and Switzerland.

Nevertheless, it is concerning that among the countries where fatalities have increased, the two with the largest increases are in Latin America: Chile and Colombia.

Figure 4. Percentage Change in the Number of PTW Users Killed, 2023 compared to 2013



Source: ITF (2025).

Although these data refer to IRTAD countries, it can be inferred that in regions such as LAC, where both the share of motorcycle users and the growth of the motorcycle fleet have been significantly higher, the increase in PTW fatalities is likely to be much more pronounced.

Children and Adolescents' Fatalities in Motorcycles

According to UNICEF, **16.7% of road fatalities among children and adolescents** (aged 19 or younger) worldwide were motorcycle users. In LAC, **this share rises to 27.3%**, making it the second highest globally, after East Asia and the Pacific (27.8%) (United Nations Children's Fund [UNICEF], 2025).

Marrakech Declaration for Global Road Safety and PTWs

> The Marrakech Declaration (2025) highlights the need to strengthen regulatory frameworks, including certified helmets; integrate multimodal mobility with safe system principles into national policies; and prioritizing evidence-based interventions adapted to specific needs in context where particularly there are rises on PTW motorization. Ensuring compliance remains a challenge; but improving infrastructure, along with better enforcement mechanisms, is essential to reducing risks for PTW users. The importance of managing speed limits and applying the concepts of self-explaining and forgiving roads is also emphasized as part of broader road safety strategies.

> Technology and Private Sector Responsibility. Advancing safety technologies and reinforcing private sector accountability are crucial to reducing PTW-related fatalities. The Marrakech Declaration underscores the importance of monitoring and researching the impact of evolving technologies, integrating crash prevention technologies, and promoting investment in safer vehicles. Encouraging the private sector and institutions to prioritize rider safety through safety management systems and corporate responsibility initiatives is key to achieving long-term improvements in PTW safety.

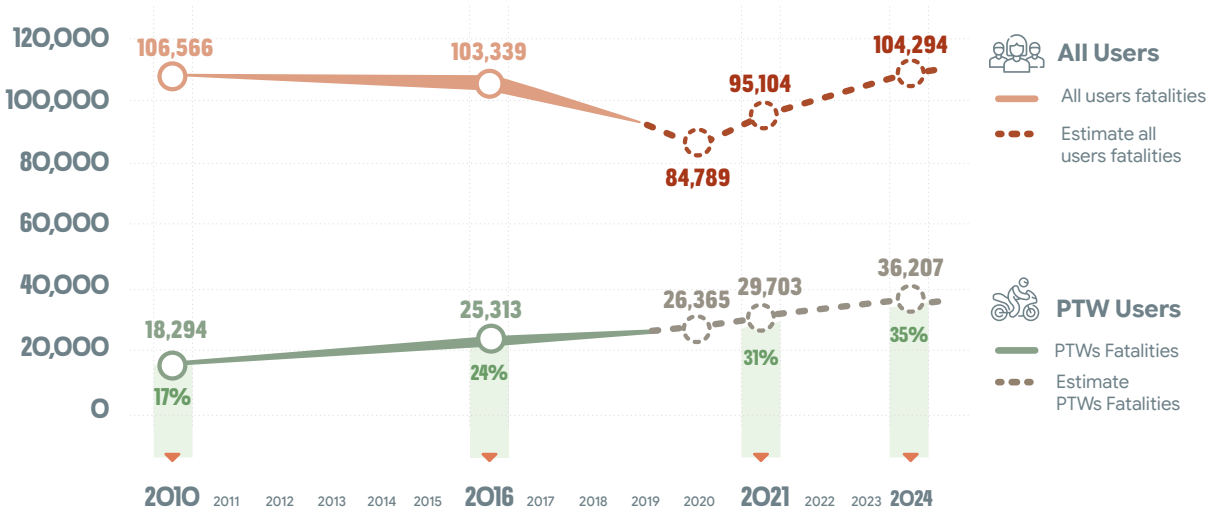
Source: Authors' elaboration based on Leaders make new road safety commitments, endorse new declaration to reduce road deaths (WHO, 2025).

STATUS IN LATIN AMERICAN AND CARIBBEAN (LAC)

> Road Traffic Fatalities Involving PTWs in LAC (2010 -2024)

To analyze the behavior of road fatalities in LAC, both among PTW users and all road users, data from 2010, 2016, and 2021 were used as reference years, in accordance with WHO road safety status reports (2013, 2018 and 2023). Additionally, based on data collected from several sources detailed in Annex A, an estimation[1] was produced for the years 2019, 2020, 2022, 2023 and 2024, enabling an analysis of recent trends.

Figure 5. Estimated Road Traffic Fatalities in LAC (2010 - 2024)



Source: Authors' elaboration based on WHO Global Status Report on Road Safety 2023, 2018, 2013, and sources listed in Annex A.

In LAC, while overall road traffic fatalities **decreased by 11% between 2010 and 2021**, fatalities among motorcyclists **increased by 62%.** This trend has remained a significant concern in recent years. **Between 2021 and 2024**, overall road traffic fatalities in LAC countries are estimated to have increased **by 10%**, while motorcycle-related **fatalities rose by 20%. Overall, between 2010 and 2024, total road traffic fatalities are estimated to have remained relatively stable, whereas fatalities among PTW users have nearly doubled[2].**

1 The estimate is based on road traffic fatality data available from several countries, according to the sources listed in Annex A. With this data, the variation factors were calculated for the periods 2019-2020, 2020-2021, 2021-2022, 2022-2023, and 2023-2024, using the estimated fatalities for 2021 reported by WHO as the baseline (WHO, 2023).

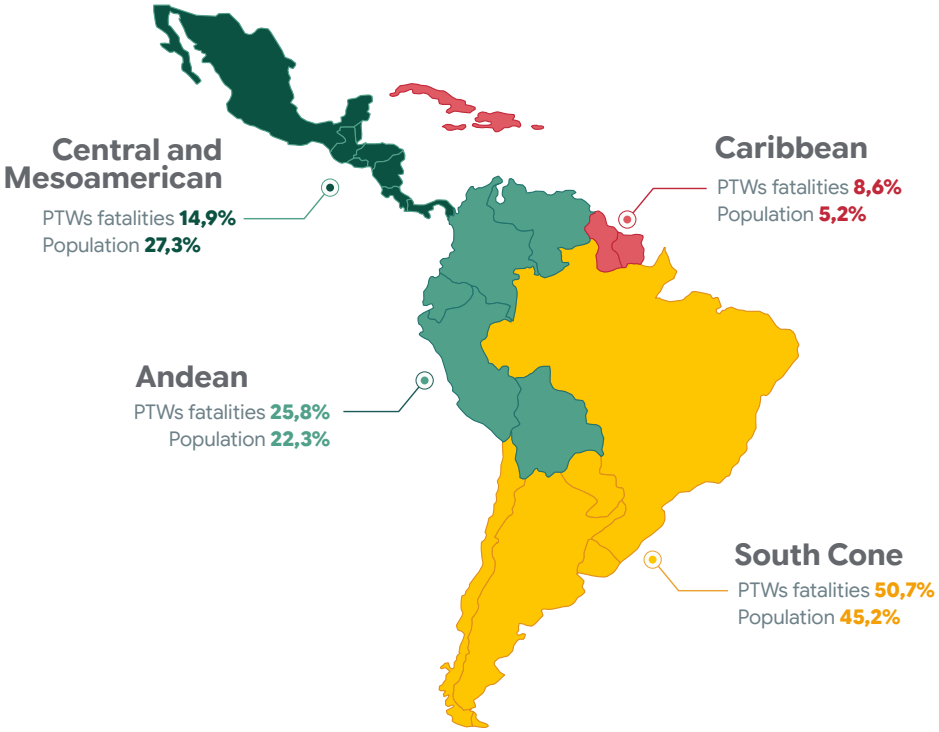
2 According to the Authors´ estimations, from 2010 to 2024, overall traffic fatalities in LAC countries decreased by 2%, while motorcycle-related fatalities rose by 98%.

The rising share of fatalities among PTWs users in the LAC Region underscores a significant trend. Between 2010 and 2021, this proportion increased from 17% to 31%, and is estimated to reach 35% by 2024.

Road Traffic Fatalities Involving PTWs in LAC Subregions - Global Status Report on Road Safety 2023 and 2013.

When examining the distribution of motorcyclist fatalities across LAC subregions, it is evident that the Southern Cone accounts for the largest share, at nearly 51% of the deaths, followed by the Andean region at approximately 26%.

Figure 6. Estimated LAC Road Traffic Fatalities Involving PTWs and Population Distribution by Subregions (2021) (PTWs fatalities % - Population %)



Source: Authors' elaboration based on WHO Global Status Report on Road Safety 2023.

> From 2010 to 2021, the Caribbean was the only subregion where overall fatalities among all road users increased, with a 32% rise.

> However, when focusing on PTWs users, all subregions experienced growth, with the Central and Mesoamerican subregion recording the highest increase at 162%, followed by the Andean subregion at 152%.

The Victims in PTW Crashes are not Only Motorcyclists

> In Colombia, PTWs were involved in 43% of pedestrian fatalities and 27% of cyclist fatalities in 2024[3].

> In Peru, according to available data from 2021 to 2023, PTWs were involved in 10% of pedestrian fatalities[4].

> In Uruguay, according to available data from 2019, PTWs were involved in 16% of pedestrian fatalities[5].

There is a clear relationship between age, gender and sociodemographic vulnerability, including low income.

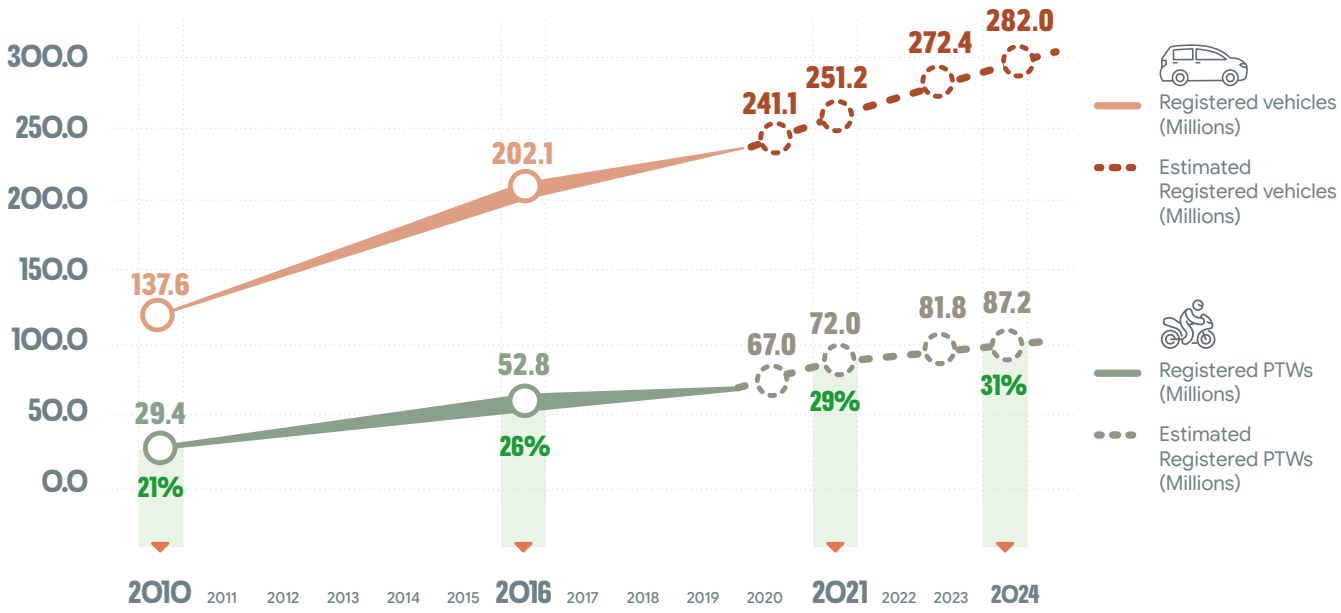
- In Costa Rica, the epidemiological profile of motorcyclists who die in roads crashes shows that most are men of working age, employed in agricultural or industrial sectors, with low-income levels and residing in rural areas. Between 2017 and 2021, **more than 80% were employed.** These data underscore the link between social vulnerability and the heightened risk faced by motorcyclists, highlighting the urgent need for targeted road safety measures (Road Safety Council [COSEVI], 2023).
- In Argentina, the most common victim profile consists of male motorcyclists aged between 15 and 34 years (National Road Safety Agency [ANSV], 2024).
- In Ecuador, 85% of fatal victims are men, most of whom are between 20 and 29 years old (Vital Strategies; Bloomberg Philanthropies; National Transit Agency, 2024).

3 ANSV (Colombia). https://ansv.gov.co/observatorio/estad%C3%ADsticas
4 National Observatory of Road Safety – ONSV (Peru). https://www.onsv.gob.pe/estaticos/excel/BBDD%20ONSV%20-%20PERSONAS%202021-2023.xlsx
5 National Traffic Safety Data Catalog (UNASEV, Uruguay). https://catalogodatos.gub.uy/dataset/unasev-fallecidos_siniestros_transito/resource/28d92964-8df9-42cb-9a68-ab4865f97969

> Registered Vehicles and PTWs

Based on an analysis of WHO data, complemented by other sources, it is possible to estimate the number of registered vehicles and PTWs in 2010, 2016 and 2021. Additionally, using a methodology similar to that employed for projecting fatalities and incorporating data collected, an estimation for 2022, 2023 and 2024 could be established.[6]

Figure 7. Registered PTWs and Vehicles in LAC (2010 – 2024)



Source: Authors' elaboration based on WHO Global Status Report on Road Safety 2023, 2018, 2013 and sources listed in Annex B.

In LAC, the number of registered wheeled vehicles is estimated to have increased by 105% between 2010 and 2024. In the case of PTWs, the increase is estimated at approximately 197%.

When analyzing these data, it is evident that **the share of motorcycles within the registered vehicle fleet increased from 21% in 2010 to 31% in 2024.**

6 The estimate is based on data on registered vehicles and PTWs available from several countries, according to the different sources mentioned in Annex B. Using this data, the variation factors were calculated for the periods 2020–2021, 2019–2020, 2021–2022, 2022–2023, and 2023–2024, using the estimated fatalities for 2021 reported by WHO (2023) as the baseline.

Registered Vehicles and PTWs in LAC Subregions - Global Status Report on Road Safety 2023 and 2013

> Significant increases were observed in the Southern Cone subregions, which added **65 million registered vehicles between 2010 and 2021**, followed by the Central and Mesoamerican subregion, which added around 29 million, and the Andean subregion, which added 17 million during the same period. Overall, the region experienced 83% increase in registered vehicles during this period.

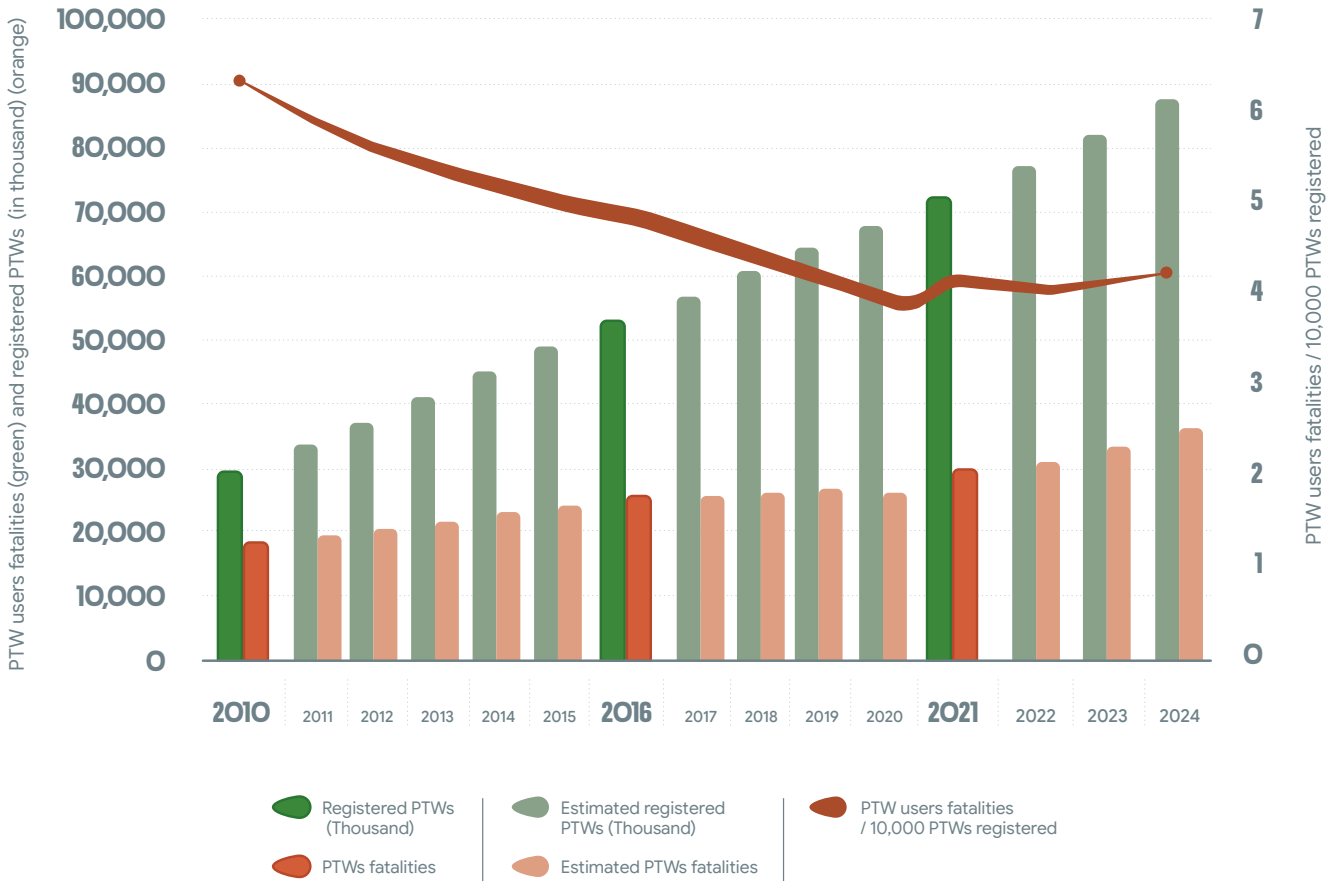
> In the case of registered PTWs, significant increases were also observed in the subregion of the Southern Cone, which added 22 million in the same period, followed by the Andean subregion with 11 million, and Central and Mesoamerican subregion with around 8 million.

> In terms of variation in registered PTWs between 2010 and 2021, the Central American region increased by 355%, followed by the Andean region with a 216% increase and the Southern Cone with a 107% growth. This variation is higher than the variation of total vehicles in all subregions.

Correlation Between PTWs Road Traffic Fatalities and Registered Vehicles

When analyzing the correlation between the regional vehicle fleet and fatalities caused by road traffic crashes, it is evident that, despite an increase in fatalities among PTWs users, these fatalities are not rising at the same pace as the growth of the regional vehicle fleet. Except in 2021, the first year following the COVID-19 pandemic, when the fatality rate among PTW users increased for the first time. However, since 2021 the indicator has remained stable, breaking the downward trend observed until 2020. In fact, in 2024 it increased compared to 2023, reaching 4.1.

Figure 8. Fatality Rate of PTW Users (2010-2024)



Source: Authors' elaboration based on Global Status Report on Road Safety 2023, 2018 and 2013 and sources listed in Annex A and B.

In the document *Salvar vidas promoviendo un enfoque de sistemas de tránsito seguros en las Américas* (Saving lives by promoting a safe systems approach to road safety in the Americas) (Pan American Health Organization [PAHO], 2024), an analysis is also conducted based on information presented in the *Global Status Report on Road Safety 2023*. It summarizes trends in road traffic fatalities by road user type for the years 2009, 2013, 2015, 2018, and 2023 in the Latin America and Caribbean region through graphical representations.

Regarding this evolution, the report shows a consistent increase in the participation of PTW users in each subregion of the Americas, highlighting that Latin Caribbean, the Andean Zone, and the Southern Cone are the three subregions with the highest involvement of this vehicle in traffic crashes, with shares in 2023 of 64%, 46%, and 36%, respectively.

Involvement of PTW Users in Overall Road Traffic Fatalities

Observations show a significant increase in the use of PTWs due to their advantages, such as low acquisition and maintenance costs, minimal parking space requirements, and the recent opportunity for individuals to enter the job market. This situation presents a significant challenge for countries in terms of implementing policies and measures aimed at reducing the risks associated with these vehicles.

The immediate implementation of these measures is necessary, as the greater the number of motorcycles users, the more difficult it becomes to implement measures that modify circulation conditions. To illustrate this evolution, the registered PTWs per 100 Inhabitants is constructed. A high value of this rate indicates societies where motorcycles are increasingly being used as a mode of transportation, highlighting potential policy challenges.

Figure 9. Registered PTW per 100 Inhabitants 2010, 2016, 2021 and 2024 (Estimated)

Source: Authors' elaboration based on Global Status Report on Road Safety 2023, 2018 and 2013 and sources listed in Annex B. Population data for 2024 was obtained from World Bank Website.[7]

These data reveal a notable shift in mobility patterns. Population growth in these countries over the same period (2010 to 2024), averaging just 13% is significantly lower than the increase in motorcycle numbers (179%)[8]. This disparity suggests that many individuals may have reconsidered their transportation options, due to the advantages motorcycles offer, and the changes in some mobility patterns during COVID-19 pandemic that may further boosted their use.

7 World Bank. Total population. https://datos.bancomundial.org/indicador/SP.POP.TOTL?contextual=population-and-labor&locations=ZJ

8 Own estimate based on registered PTWs data available for 2024 in Argentina, Bolivia, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Mexico, Paraguay, Dominican Republic, Peru, Brazil and Uruguay, compiled in Annex B.

SARS-CoV-2 and the Increase in Motorcycle Users

> Measures implemented during the pandemic to limit society's mobility led to an increase in motorcycle crashes. There was a significant rise in crashes, particularly involving individual motorcycle use and motorcycle courier services (Demir et al., 2024).

> According to estimates by AMFIM[9], 7 out of 10 motorcycles sold in Mexico in 2023 are used as work vehicles, particularly in delivery services, an activity that experienced rapid growth during the pandemic.

> Cities such as Lima, Bogota, Mexico City, Buenos Aires, and Santiago, reduced public transport demand in 80% or more, during the initial days of the pandemic. According to this, there was considerable evidence after the first lockdown lifted and mobility resumed those large numbers of people shifted toward private vehicles. (United Nations Human Settlements Programme [UN-Habitat], 2021).

> In the context of the pandemic, the use and purchase of motorcycles grew significantly in cities such as Buenos Aires, Bogota, Mexico City, São Paulo, and Santiago. This increase is attributed to several factors: the need for economic alternatives to public transportation affected by health restrictions; the rise of delivery applications that boosted the demand for motorcycles as work tools; and the economic crisis caused by the pandemic, which led many people to seek employment in activities such as home delivery services. In Bogota, in addition to delivery services, there has been a growing use of motorcycle taxis ("mototaxis") as an informal mode of public transportation, facilitated by digital platforms. Despite existing legal restrictions, this practice continues to account for thousands of daily trips. (Economic Commission for LAC [ECLAC], 2023).

> In cities such as Bogota and São Paulo, where motorcycling was already common, the pandemic accelerated its mass adoption. In Santiago, the increase was linked to delivery services and driven by migrants. In Buenos Aires, motorcycle use replaced public transportation in suburban areas, while in the central zone, its primary use was for delivery services. This phenomenon, was primarily associated with factors such as work schedules, safety risks, and accessibility to licenses (ECLAC, 2023).

> Motorcycles are perceived as an attractive mode of transportation. According to the organization *Bogotá Cómo Vamos*[10], motorcycles rank highest in user satisfaction, with an indicator of 88%.

9 Asociación Mexicana de Fabricantes e Importadores de Motocicletas (AMFIM).
10 Bogotá Cómo Vamos. https://www.Bogotácomovamos.org

OVERVIEW OF REGISTERED PTWs BY COUNTRY

> Variation in Registered PTWs by country

Below is a list of LAC countries with the highest percentage increase in PTWs.

Table 1. Registered PTWs in LAC, 2010 - 2024 (In Thousands)

Country	2010	2016	2019	2020	2021	2022	2023	2024	Variation 2010 - 2021	Variation 2010 - 2024
Bolivia	58	391	537	592	658	727	801	873	1,037%	1,409%
El Salvador	69	209	337	372	432	490	553	619	524%	794%
Honduras	183	603	ND	ND	1.062	ND	ND	ND	480%	-
Jamaica	4	14	ND	ND	22	ND	ND	ND	447%	-
Costa Rica	141	ND	ND	ND	756	ND	ND	887	435%	527%
Nicaragua	116	ND	ND	ND	581	ND	ND	ND	403%	-
Mexico	1,201	2,609	4,790	5,284	5,939	6,812	7,784	8,953	395%	645%
Paraguay	237	624	860	918	972	1,025	1,091	1,171	310%	394%
Ecuador	182	431	548	630	722	816	872	914	297%	403%
Peru	1,306	2,943	2,363	2,557	4,502	3,100	3,328	3,508	245%	169%
Guatemala	602	1,228	1,524	1,729	1,962	2,191	2,463	ND	226%	-
Argentina	2,833	7,040	8,337	8,807	9,182	9,587	10,018	10,367	224%	266%
Colombia	3,559	7,512	9,003	9,521	10,231	11,050	11,729	12,418	187%	249%
Chile	102	175	195	187	234	249	265	292	129%	185%
Uruguay	613	1252	ND	ND	1342	ND	ND	ND	119%	-
Dominican Republic	1,353	2,096	2,573	2,695	2,875	3,064	3,281	3,532	113%	161%
Brazil	16,509	25,311	27,738	28,543	30,252	31,119	32,668	34,504	83%	109%
Cuba	208	217	ND	ND	256	ND	ND	ND	23%	-
Suriname	44	43	ND	ND	37	ND	ND	ND	-16%	-
Panama	55	63	ND	ND	31	ND	ND	ND	-43%	-

Source: Authors' elaboration based on WHO Global Status Report on Road Safety 2023, 2018 and 2013, and Annex B. ND=No Data found.

Bolivia is the country that has experienced the highest increase in its registered motorcycle fleet. Additionally, countries such as El Salvador, Honduras, Jamaica, Costa Rica, Nicaragua, Mexico, and Paraguay have recorded increases of over 300% between 2010 and 2021.

When analyzing the data by subregion, Bolivia, Paraguay, El Salvador, and Jamaica are the countries leading the percentage increase in the Andean, Southern Cone, Central American, and Caribbean subregions, respectively.

Source: Authors

> Registered PTWs per 100 Inhabitants

This rate measures the relationship between the number of registered motorcycles or PTWs and a country's population, based on the availability of data across the region.

High-rate values reflect the high prevalence of motorcycles in society. In such cases, policies targeting motorcyclists —whether safety regulations, incentives, or restrictions— have the potential to affect a large share of the population, making these measures particularly sensitive. For instance, countries such as the Dominican Republic, Argentina, Colombia, Costa Rica, Paraguay, Brazil, Peru, and El Salvador have rates close to 10 or higher. This indicates that at least approximately 10% of the population in each of these countries may be PTW users.

On the other hand, **Low-rate values** suggest that motorcycles are a less dominant mode of transportation. In these circumstances, policies may have a more limited scope and affect a smaller proportion of the population.

Table 2. Registered PTWs per 100 Inhabitants in some LAC Countries

Country	2010	2016	2021	2023	2024
Dominican Republic	13.6	19.7	25.9	29.0	30.9
Argentina	7.0	16.1	20.3	22.0	22.7
Colombia	7.7	15.4	19.9	22.4	23.5
Costa Rica	3.0	ND	14.7	ND	17.3
Paraguay	3.7	9.3	14.5	15.9	16.9
Brazil	8.5	12.2	14.1	15.5	16.3
Peru	4.5	9.3	13.4	9.8	10.3
Guatemala	4.2	7.4	11.1	13.6	ND
Honduras	2.4	6.6	10.3	ND	ND
Nicaragua	2.0	ND	8.5	ND	ND
El Salvador	1.1	3.3	6.8	8.8	9.8
Suriname	8.4	7.7	6.1	ND	ND
Bolivia (Plurinational State of)	0.6	3.6	5.4	6.5	7.0
Mexico	1.1	2.0	4.7	6.0	6.8
Ecuador	1.3	2.6	4.1	4.9	5.0
Cuba	1.8	1.9	2.3	ND	ND
Chile	0.6	1.0	1.2	1.3	1.5
Antigua and Barbuda	ND	0.2	0.9	ND	ND
Jamaica	0.1	0.5	0.8	ND	ND
Panama	1.6	1.6	ND	ND	ND
Barbados	0.9	0.8	ND	ND	ND
Dominica	2.4	3.7	ND	ND	ND
Guyana	0.3	0.5	ND	ND	ND
Saint Lucia	0.5	0.1	ND	ND	ND

Source: Authors' elaboration based on Global Status Report on Road Safety 2023, 2018, 2013, and sources mentioned in Annex B. ND=No Data found.

Observed trends indicate a general increase in this rate over time, reflecting greater motorcycle adoption in the countries analyzed. This highlights the need for early intervention measures, as higher motorcycle density presents significant challenges in terms of road safety, regulation, and sustainability.

In countries with high-rate values, such measures can have a greater impact due to the critical role motorcycles play in daily mobility. However, they may also face higher resistance from the public, especially if not supported by awareness campaigns that explain their benefits.

The consistent increase in this indicator underscores the urgency of action. Public policies must anticipate the challenges associated with the growing prevalence of motorcycles, ensuring a balance between effective regulation and social acceptance. Higher indicator values necessitate inclusive strategies to mitigate risks and enhance safety for the population.

WOMEN, GENDER AND MOTORCYCLISTS/PTWS IN LAC

Source: Ciudad Humana Foundation - Colombia

The number of women using motorcycles is increasing in LAC. This trend is evident when analyzing the number of PTW driving licenses issued annually to women. Countries such as El Salvador have increased this number by 23 times between 2013 and 2023. Other countries, such as Colombia, have seen an increase of 137% from 2013 to 2022, and Chile experienced a 57% increase between 2016 and 2023.

Figure 10. PTW Driving Licenses Issued to Women Annually

Source: Authors' elaboration based on ONSV Colombia (2021), ONSV Colombia (2024), National Institute of Statistics of Chile - INE[11], and IDB (2024).

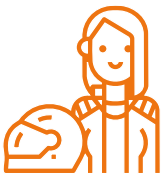
11 Instituto Nacional de Estadísticas (INE), Chile.https://www.ine.gob.cl/estadisticas/economia/transporte-y-comunicaciones/licencias-de-conducir

> In Asunción, motorcycles are the second most common mode of transportation (17.9%) for men, after cars (46.8%). For women, they rank third (6.7%), after cars (42.2%) and walking short distances (26.8%) (INE/MOPC/PNUD/FMAM, 2023).

> In Argentina, driving remains a male activity. However, in recent years, female participation has shown an increasing trend. Between 2019 and 2022, the issuance of driver's licenses to women increased from 28% to 31%. If only original driver's licenses are considered, the share rises to 40%. Regarding motorcycles, nearly three out of ten Class A1 (motorcycle) licenses belong to women, a proportion similar to women's participation in Class B (car) licenses (35%). Despite the continued dominance of men in motorcycle driving, there is a growing encouragement for women to use this mode of transportation (National Road Safety Agency [ANSV], 2023).

> In Colombia, according to the report Motorcycles in Colombia: Allies of the country's development, developed by the National Business Association (ANDI, 2024), where motorcycle buyers information was analyzed, women represent an important segment of new motorcycles buyers. **In 2011, 16% of new motorcycle buyers were women, this figure rose to 38% in 2023.**

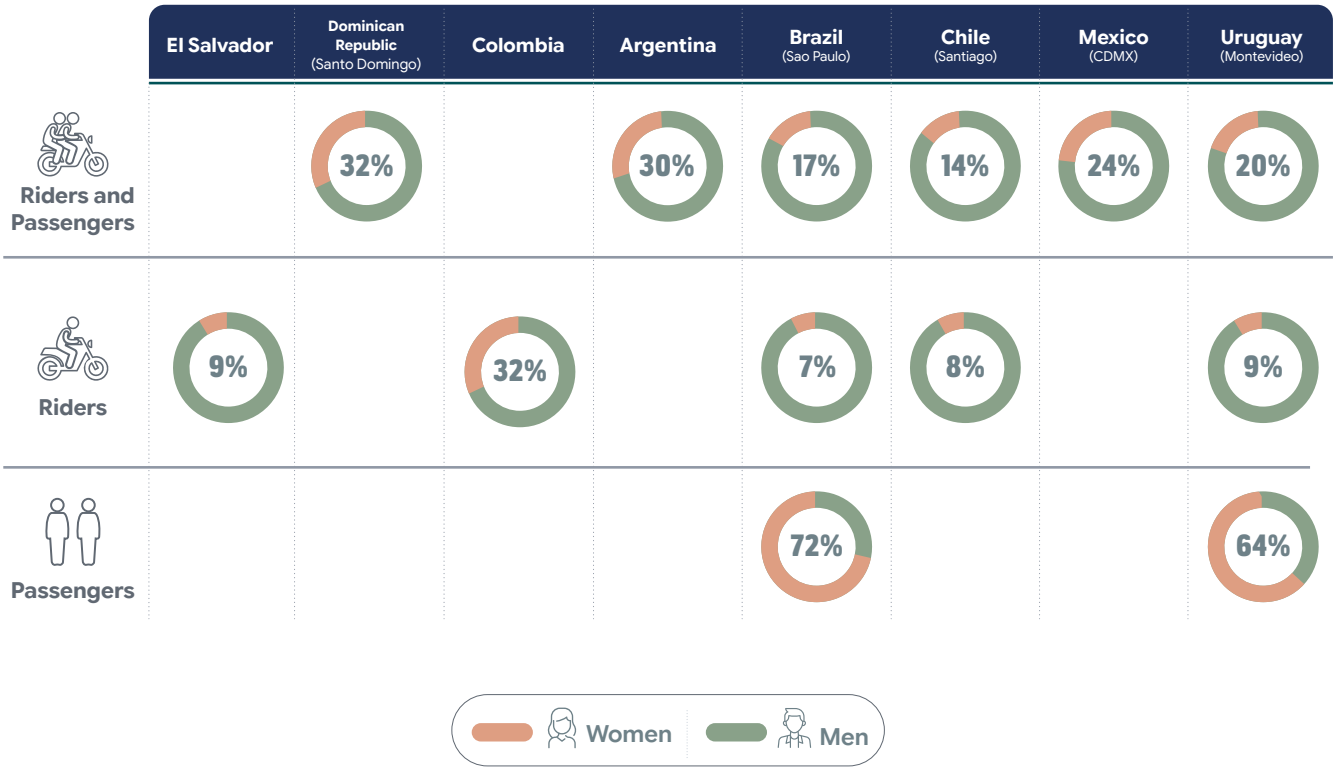
Based on the driving licenses issued to women, as well as data collected from mobility surveys in major cities across some countries, it is possible to estimate the share of motorcycle use by gender.



In LAC, women are estimated to account for **22% of PTW users overall**. However, their participation differs markedly by role: **while women represent 68% of passengers**, they account **for only 16% of riders.**

It is important to highlight that most motorcycle passengers are women. As passengers, they have no control over the vehicle or over factors such as speed and maneuvers, as these depend entirely on the driver. This makes them vulnerable and fully reliant on the person operating the motorcycle.

Figure 11. Proportion of Motorcycle Users by Gender



Source: Authors' elaboration based on INTRANT (2023), ONSV Colombia (2024), ANSV Argentina (2023), the FONAT website (El Salvador), and mobility surveys conducted in São Paulo (2017), Santiago (2012), Mexico City (2017), and Montevideo (2016).

Motorcycles are a mode of transportation used primarily within the middle socioeconomic strata by both men and women. In this regard:

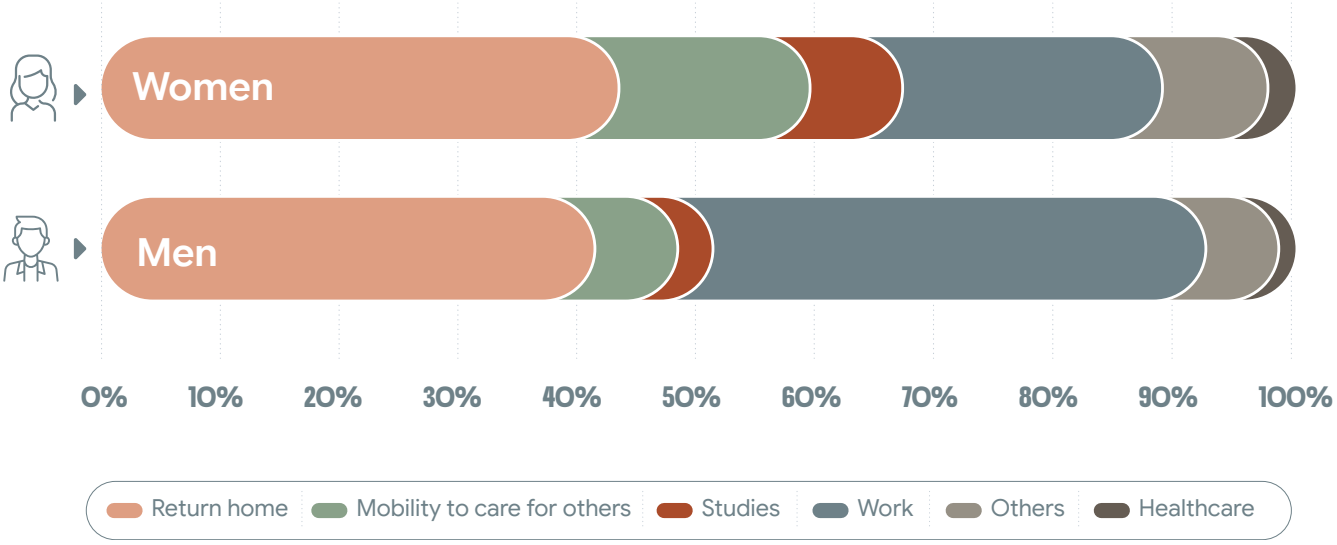
> Women in the upper middle stratum represent the largest user group, with 40% of the sample, while men predominate in the lower-middle stratum, respectively.

> However, motorcycle use by socioeconomic stratum varies significantly across countries. Uruguay and Chile stand out with 45% and 39% of female users in the upper-middle stratum, respectively.

> Likewise, in the lower-middle stratum, Mexico and Colombia have a higher proportion of female users, with 69% and 52% of women travelling by motorcycle, respectively.

For both men and women, the primary reason for using a motorcycle is to return home[12], accounting for 46% and 44% of trips, respectively. Additionally, both use motorcycles frequently for commuting to work, although there are significant differences between genders. 35% of men's motorcycle trips are work-related, compared to 22% of women's trips. Moreover, women are twice as likely to use motorcycles for caregiving purposes[13], highlighting their role in family and community responsibilities.

Figure 12. Utilization Purposes by Gender



Source: Authors' elaboration based on mobility surveys conducted in Buenos Aires (2009 –2010), São Paulo (2017), Santiago (2012), Bogota (2019), Mexico City (2017), and Montevideo (2016), adapted from the first edition.

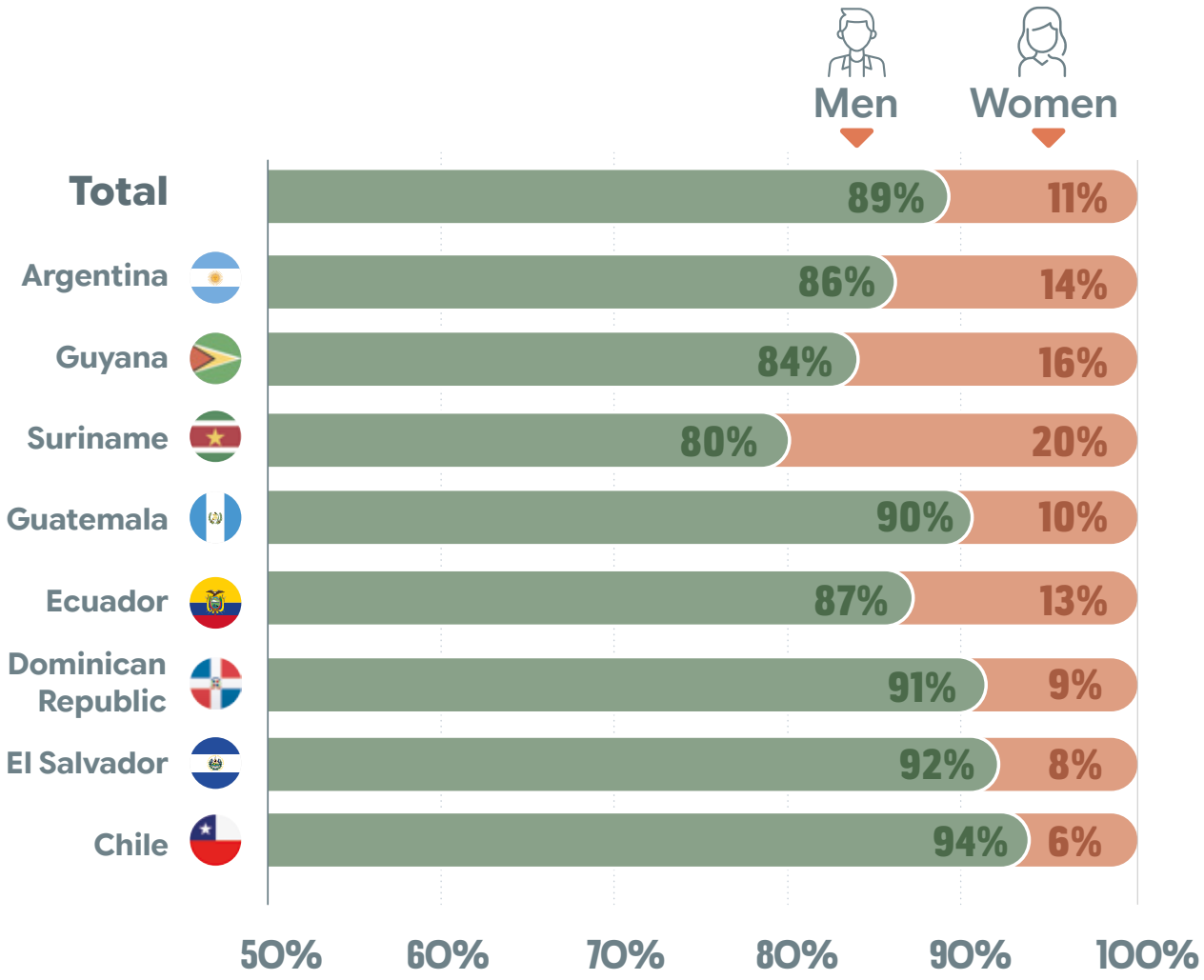
Fatalities

Regarding motorcyclist fatalities by gender, reports from some LAC countries for 2023 show that, on average, 10% of those who die are women and 90% are men.

12 A return home trip is a trip whose destination is the traveler's home, typically representing the return leg of a home-based trip chain

13 Following the definition proposed of Madariaga (2009), care mobility includes care activities related to the care of others, such as shopping, visiting relatives, moving, accompanying dependent household members (children, adolescents, elderly) and paying for services and formalities.

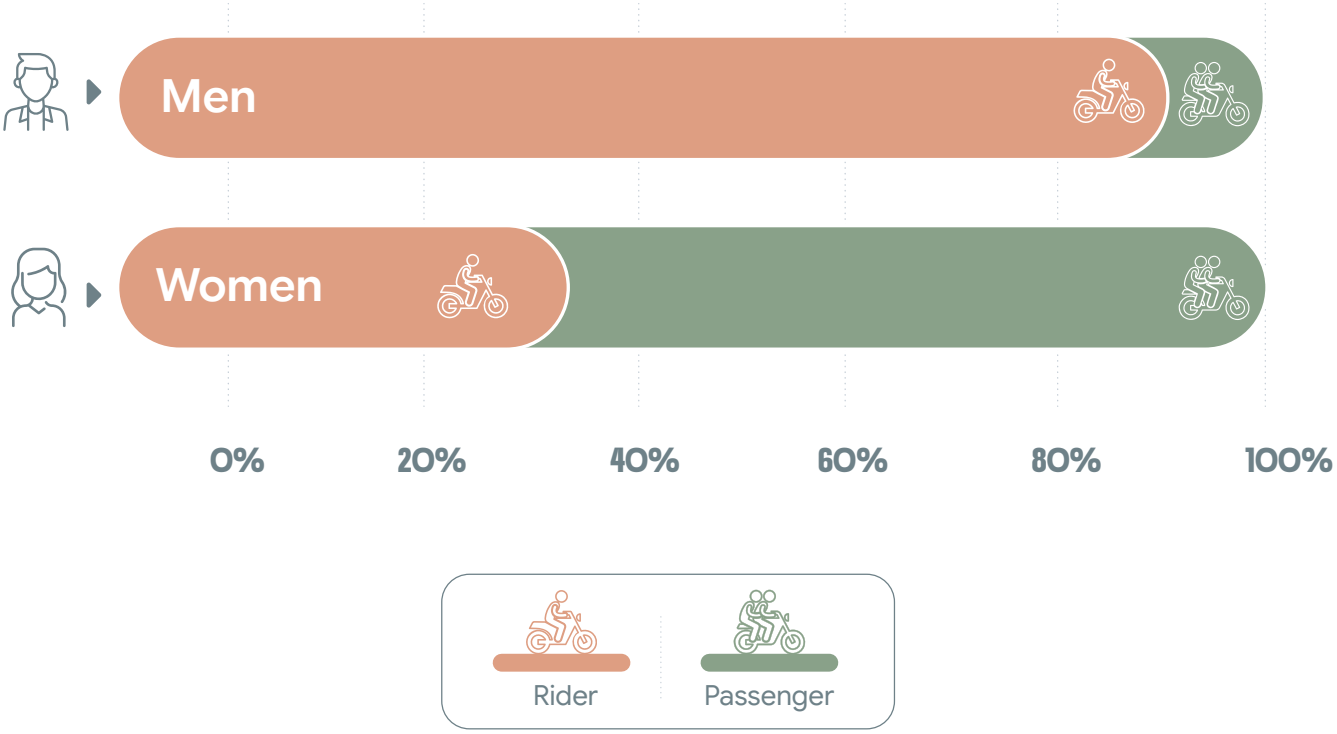
Figure 13. Motorcyclist Fatalities per Gender, 2023



Source: Authors' elaboration based on IDB Survey (2024).

When analyzing data on women who die as motorcyclists, a relationship can be observed between their distribution as riders and passengers and road traffic crashes. Data from 2024 indicated that approximately 67% of women who die in motorcycle crashes do so as passengers, compared to men, of whom only 9% die as passengers. This may reflect underlying gender dynamics and unequal power relations, that influence exposure to risk and decision-making in mobility contexts.

Figure 14. Proportion of Motorcycle Fatalities by Gender Divided into Riders and Passengers in Colombia



Source: Authors' elaboration based on the Gender Analysis of Data from ANSV (2024)

The data aligns with modal preferences by gender. In Buenos Aires, motorcyclists represent 1.5% of trips for women and 4.8% for men (Observatorio de Movilidad y Seguridad Vial de la Ciudad de Buenos Aires, 2022).

Women represent a significant portion of the PTW community, accounting for around 20% of riders and 70% of passengers.

However, they remain underrepresented in fatal crash statistics; only 10% of all motorcycle-related deaths involve women.

Gender Perspective in PTW Users Road Safety

The situation highlights the need to analyze road crash data through a gender perspective. This approach acknowledges human diversity and addresses the varying needs of individuals who navigate urban environments differently. Incorporating a gender perspective is essential to address specific vulnerabilities of women, both as riders and passengers. Only through a comprehensive approach that considers these dimensions will it be possible to reduce the alarming crash rates and promote a more equitable and safer road environment for all (Mangones, 2024).

Studies reviewed indicate a differentiated profile in how individuals perceive their roles and behaviors on the road. This profile is shaped by societal values and social constructs related to femininity and masculinity. One characteristic often observed in male road behavior is the emergence of a certain "road dominance," whereby men associate themselves with advanced driving skills, particularly in challenging roads or terrain conditions. This often results in a kind of "overconfidence" while driving, assuming that such skills are sufficient to manage risky situations.

This reflects certain stereotypes constructed within the mobility framework. Below are a few examples mentioned in the report *Women Drivers in Spain* by the Eduardo Barreiros Chair.

Figure 15. Gender Stereotypes in Driving

Men	Women
Vehicular Sexism: "Faster and more furious"	Road Sensitivity and Weakness: "They get scared over nothing"
Road Power: "Being a man means strength, excess, speed, and automotive ability"	Inattention on the Road: "They don't know, don't remember, don't renew"
Types of Roads and Cars: "Bigger is better and on the highway — you don't know"	Lower Technical Performance: "The basics, and if not, they drive something else"
Pedestrian Dismissal: "They're afraid of us, even when crossing"	Low Automotive Concern: "My husband drives that; I don't know"
N/A	No Road Planning: "Where I say and wherever I go, that's it"
• Cause twice as many crashes and die more frequently on highways • Drive faster • Drive under the influence of alcohol and drugs • More pedestrian crashes, rollovers, and head-on collisions • The risk of death is double when both drivers involved in a crash are men	• More rear-end and off-road crashes • More likely to be distracted while driving • Forget to complete Vehicle Technical Inspections (ITV) • Forget to renew their driver's license

Source: Based on Female Drivers in Spain (Catedra Eduardo Barreiros, 2017).

Lastly, it is important to highlight that these behaviors, linked to gender conceptions, become evident in road crash statistics during adolescence. According to data from Colombia's National Road Safety Observatory (ONSV), between the ages of 0 and 12, boys and girls die in traffic fatalities in nearly equal proportions. However, between the ages of 13 and 17, the proportion shifts to 78% boys and 22% girls. This is notable, as it aligns with international studies suggesting that early adolescence is a critical period for the consolidation of gender identities in relation to social contexts.

This disparity may also be influenced by the construction of masculine identities associated with risk-taking behaviors, such as driving vehicles at a younger age, speeding, or driving under the influence of alcohol. In this sense, this difference may be linked to gender norms present both among significant adults who contribute to their upbringing and among the adolescents themselves.

Although women represent a smaller proportion of fatal crash victims compared with men, they frequently assume the subsequent burden of caring for family members who sustain serious injuries and may also need to compensate for the loss of a deceased or incapacitated male income earner (Ibero-American Road Safety Observatory [OISEVI], 2023).

Source: Ciudad Humana Foundation - Colombia

In Buenos Aires, the average helmet use rate among male PTW users was **81.2%** between 2016 and 2018. For women, the rate was **91.7%** (Gobierno de la Ciudad de Buenos Aires. 2019).

In Colombia, in 2018, male motorcyclists had a victimization rate of 5.51 per 10,000 active driving licenses, compared to 3.34 for women. This suggests that men are nearly twice as likely as women to die or be injured in road crashes (ANSV, 2020).

MOTORCYCLIST FATALITIES AND REGISTERED PTWS: INSIGHTS FROM 2019 TO 2024

Registered PTWs

In 2024, a survey was conducted across LAC countries to assess the link between the growth of the vehicle fleet and motorcycle fatality rates between 2019 and 2023. This analysis incorporated a variety of related factors to provide a more comprehensive understanding. Although differences in data collection methods across countries make direct comparisons of fatality statistics challenging, the results offer valuable insights into regional patterns and reveal significant trends. For 2024, the dataset was supplemented with additional information from official government websites of each country, in accordance with the sources listed in Annex B.

In 2024, certain Latin American countries[14] experienced an estimated 4.4% increase in their total number of registered vehicles compared to the previous year. When contrasted with 2019, this growth rises to 22%. Particularly notable are the figures from El Salvador and Guatemala, where vehicle fleets expanded by 45.5% and 38.8%[15], respectively.

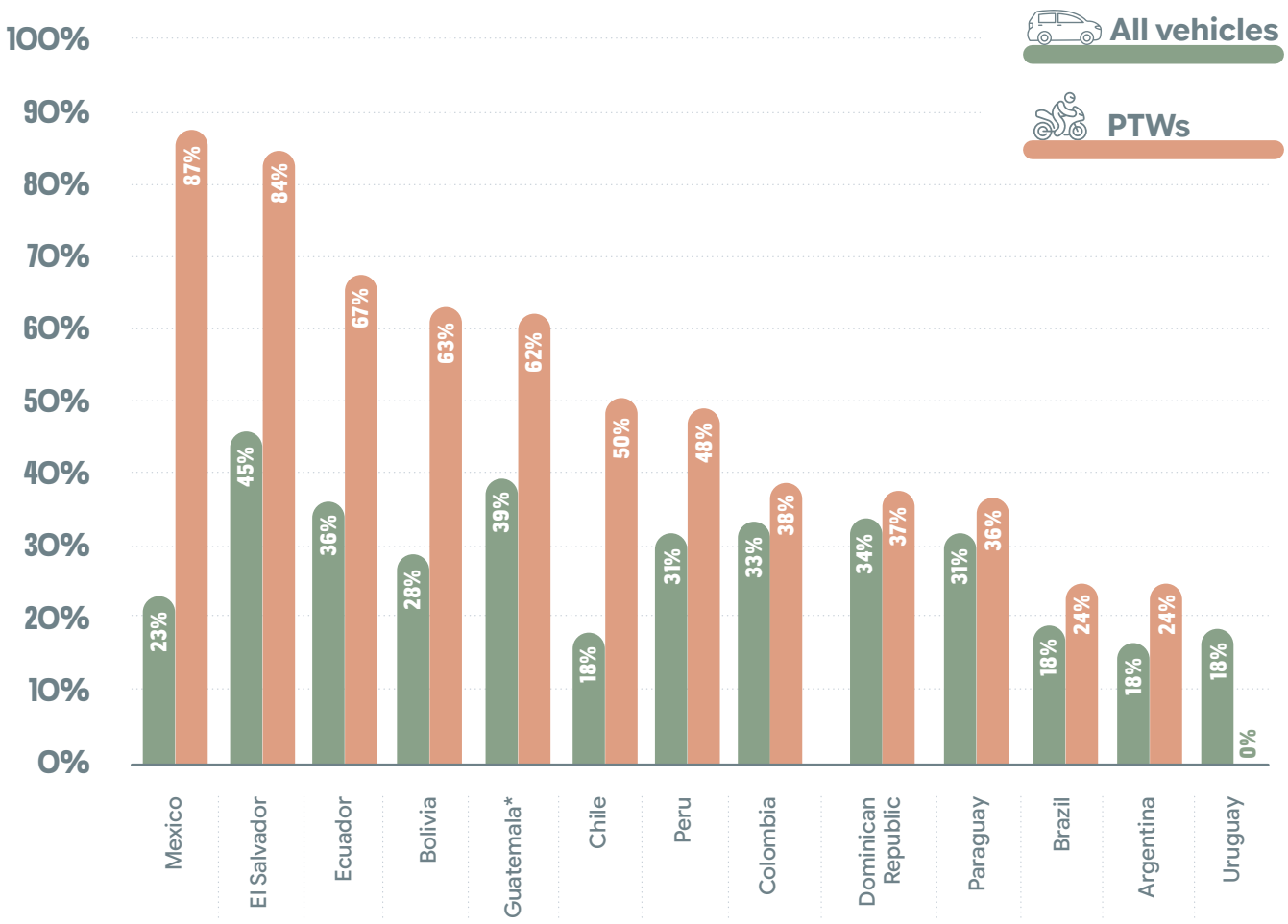
Regarding motorcycles[16], 2024 saw an estimated 6.6% increase in their total number compared to the previous year. Compared to 2019, this growth increases significantly to 34.4%. This trend is particularly notable in countries such as Mexico, El Salvador, and Ecuador, where growth rates reached 87%, 84%, and 67%, respectively. This indicates that, across the region, the number of motorcycles continues to grow at a faster pace than the overall vehicle fleet.

14 The vehicle fleet information was provided or estimated for Argentina, Bolivia, Colombia, Chile, Ecuador, El Salvador, Mexico, the Dominican Republic, Paraguay, Peru, Brazil, Uruguay and Panama. The total analysis is based on these countries.

15 The most recent year with registered vehicles available data in Guatemala is 2023.

16 The motorcycles fleet information was provided or estimated for Argentina, Bolivia, Colombia, Chile, Ecuador, El Salvador, Mexico, the Dominican Republic, Paraguay, Peru, Brazil and Uruguay. The total analysis is based on these countries.

Figure 16. Motorcycles Registration Growth Rates in Selected LAC (2019–2024)



Source: Authors' elaboration based on IDB Survey (2024).
** 2019 - 2023*

35%

Over the last six years, from **2019 to 2024**, the number of motorcycles has grown at twice the rate of total registered vehicles in LAC[17].

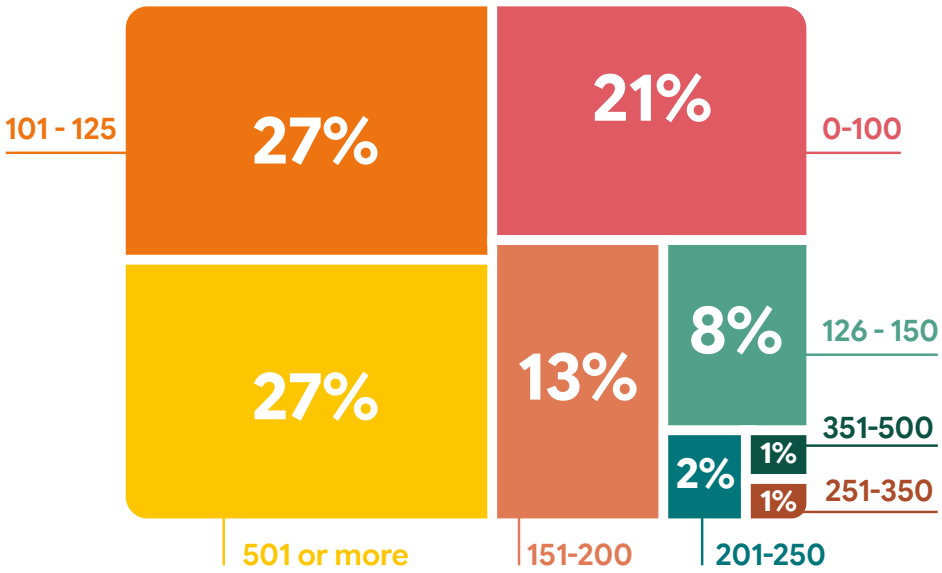
17 According to the development estimated in Section "Registered Vehicles and PTWs"

Motorcycles account for more than 50% of all registered vehicles in countries such as the Dominican Republic, Colombia and Peru. In Argentina, El Salvador, Guatemala, Bolivia, and Paraguay, they represent more than 30%. However, in Mexico and Chile, they account for only 15% and 4%, respectively.

Engine Displacement

Data on motorcycle engine displacement are available for the Dominican Republic, El Salvador, Colombia and Ecuador. Most motorcycles in the Dominican Republic have low-displacement engines. In contrast, El Salvador and Colombia exhibit a more diverse fleet structure, with most motorcycles ranging from 0 to 125 cubic centimeters (cc).

Figure 17. Percentage of Motorcycles by Engine – Cubic centimeters (CC)



Source: Elaborated based on IDB Survey (2024).

A similar informational segregation occurs regarding the type of propulsion, which is reported in only two of the five evaluated countries (Chile and El Salvador), where internal combustion motorcycles still account for more than 99% of the total.

Fatalities

It is estimated that total traffic fatalities grew by 13%[18] between 2019 and 2024. However, when analyzing motorcyclist fatalities specifically, a significant increase of 34% is observed[19].

This suggests that growth in the motorcycle fleet continues to have a direct impact on the number of traffic fatalities.

18 According to the development estimated in Section "Road Traffic Fatalities Involving PTWs in LAC (2010 -2024)"
19 According to the development estimated in Section "Road Traffic Fatalities Involving PTWs in LAC (2010 -2024)"

Table 3. Increase in Total Road User Fatalities Reported per Country

Country	2019	2020	2021	2022	2023	2024	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2019-2024
Argentina	4,898	3,513	4,483	4,712	4,403	4,027	-28%	28%	5%	-7%	-9%	-18%
Bolivia	1,201	1,022	1,325	1,467	1,515	1,748	-15%	30%	11%	3%	15%	46%
Chile	1,617	1,485	1,688	1,745	1,635	1,439	-8%	14%	3%	-6%	-12%	-11%
Colombia	6,826	5,641	7,434	8,469	8,546	8,433	-17%	32%	14%	1%	-1%	24%
Costa Rica	807	586	727	861	911	814	-27%	24%	18%	6%	-11%	1%
Ecuador	2,180	1,591	2,131	2,202	2,373	2,302	-27%	34%	3%	8%	-3%	6%
El Salvador	1,406	1,051	1,358	1,352	1,256	1,303	-25%	29%	0%	-7%	4%	-7%
Guatemala	1,757	1,549	2,150	2,176	2,275	ND	-12%	39%	1%	5%	ND	29%*
Guyana	123	139	99	99	174	ND	13%	-29%	0%	76%	ND	41%*
Mexico	14,673	13,630	14,715	15,986	16,662	16,911	-7%	8%	9%	4%	1%	15%
Paraguay	1,292	1,146	1,413	1,332	1,210	ND	-11%	23%	-6%	-9%	ND	-6%*
Dominican Republic	3,204	2,711	2,967	2,921	3,128	3,116	-15%	9%	-2%	7%	0%	-3%
Suriname	82	76	81	74	69	ND	-7%	7%	-9%	-7%	ND	-16%*
Peru	3,110	2,159	3,032	3,328	3,316	3,002	-31%	40%	10%	0%	-9%	-3%
Brazil	31,945	32,716	33,813	33,894	34,881	37,999	2%	3%	0%	3%	9%	19%
Uruguay	422	391	434	431	422	434	-7%	11%	-1%	-2%	3%	3%

Source: Authors' elaboration based on IDB Survey 2024 and other sources. ND=No Data found.

*Paraguay, Guatemala, Guyana and Suriname do not have available data for 2024.
Only countries with data available for five years are included to ensure complete comparisons.

Table 4. Increase in Motorcyclists (PTW) Fatalities by Country

Country	2019	2020	2021	2022	2023	2024	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2019-2024
Argentina	1,972	1,634	1,884	1,932	1,746	1,852	-17%	15%	3%	-10%	6%	-6%
Bolivia	127	171	218	205	250	265	35%	27%	-6%	22%	6%	109%
Chile	174	210	223	236	241	215	21%	6%	6%	2%	-11%	24%
Colombia	3,642	3,114	4,405	5,004	5,249	5,194	-14%	41%	14%	5%	-1%	43%
Costa Rica	359	225	326	346	419	411	-37%	45%	6%	21%	-2%	14%
Ecuador	614	515	704	750	839	768	-16%	37%	7%	12%	-8%	25%
El Salvador	444	363	515	439	491	517	-18%	42%	-15%	12%	5%	16%
Guyana	25	42	23	24	62	ND	68%	-45%	4%	158%	ND	148%*
Mexico	1,952	1,982	2,233	2,481	2,885	3,405	2%	13%	11%	16%	18%	74%
Paraguay	712	698	820	773	706	ND	-2%	17%	-6%	-9%	ND	-1%*
Dominican Republic	1,736	1,490	1,791	1,670	1,831	2,034	-14%	20%	-7%	10%	11%	17%
Peru	624	542	811	834	893	746	-13%	50%	3%	7%	-16%	20%
Brazil	11,214	11,999	11,942	12,058	13,477	15,391	7%	0%	1%	12%	14%	37%
Uruguay	175	199	224	206	198	213	14%	13%	-8%	-4%	8%	22%

Authors' elaboration based on IDB Survey (2024) and other sources. ND=No Data found.

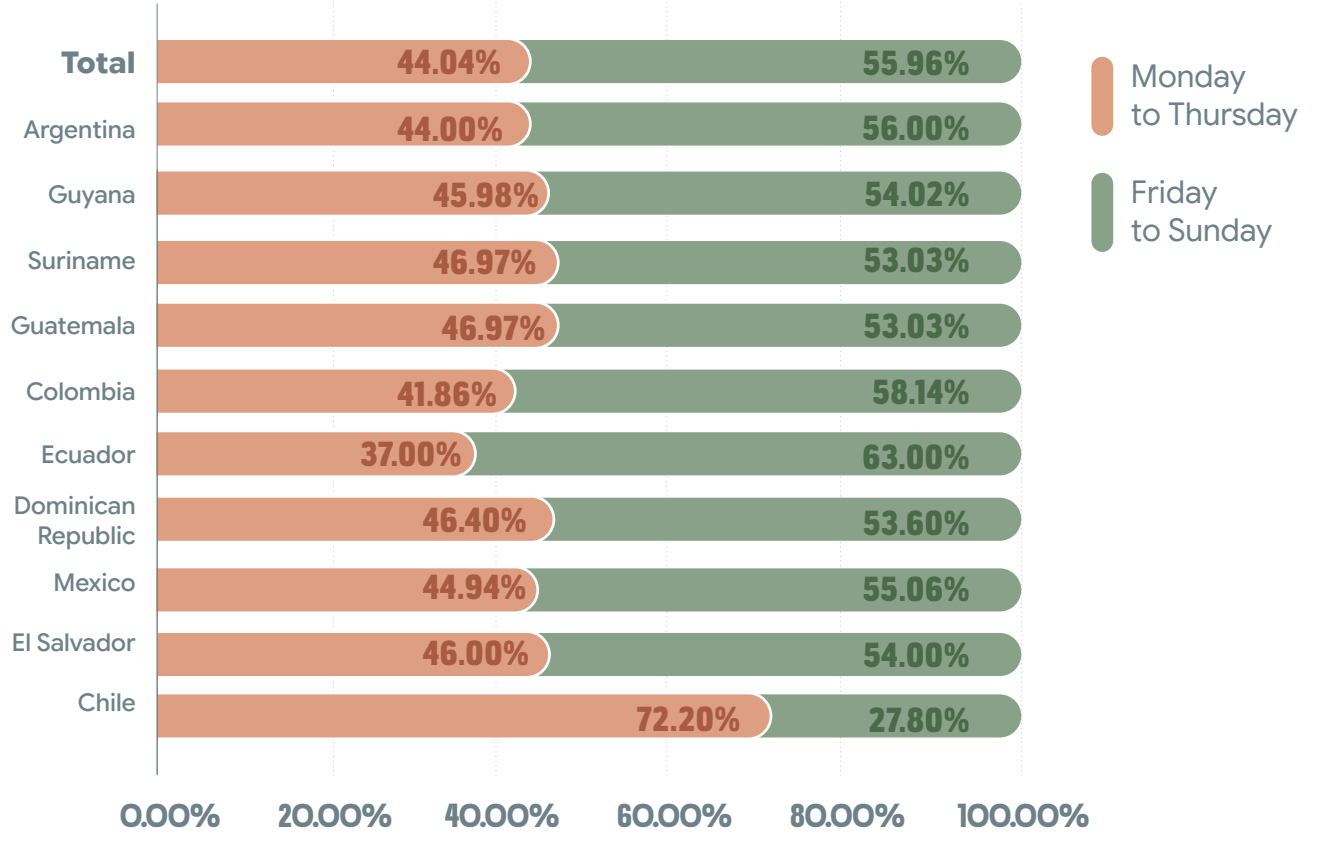
*Paraguay and Guyana don't have data available for 2024.
Only countries with data available for five years are included to ensure complete comparisons.

When contrasting the data from the previous tables, the following can be observed:

- The only countries that recorded an increase in overall road user deaths in 2020 (the year of the pandemic) were Guyana and Brazil. However, when **focusing exclusively on motorcyclists**, additional countries—such as Chile, Bolivia, Uruguay, and Mexico—are also experienced increases, with Brazil and Guyana recording increases in both categories.
- When analyzing the six-year trend, Chile, El Salvador, the Dominican Republic, Paraguay, Peru, and Argentina are the countries that recorded reductions in total deaths. However, when focusing solely on motorcyclist deaths, the only country that consistently maintained reductions is Argentina.

In terms of temporal relationships (by day of the week), it is observed that in most countries, the highest number of fatalities occurs between Friday and Sunday (55.96% of the reports include information on the day of occurrence), representing more than 50% of total incidents. The exception is Chile, where most fatalities occur between Monday and Thursday.

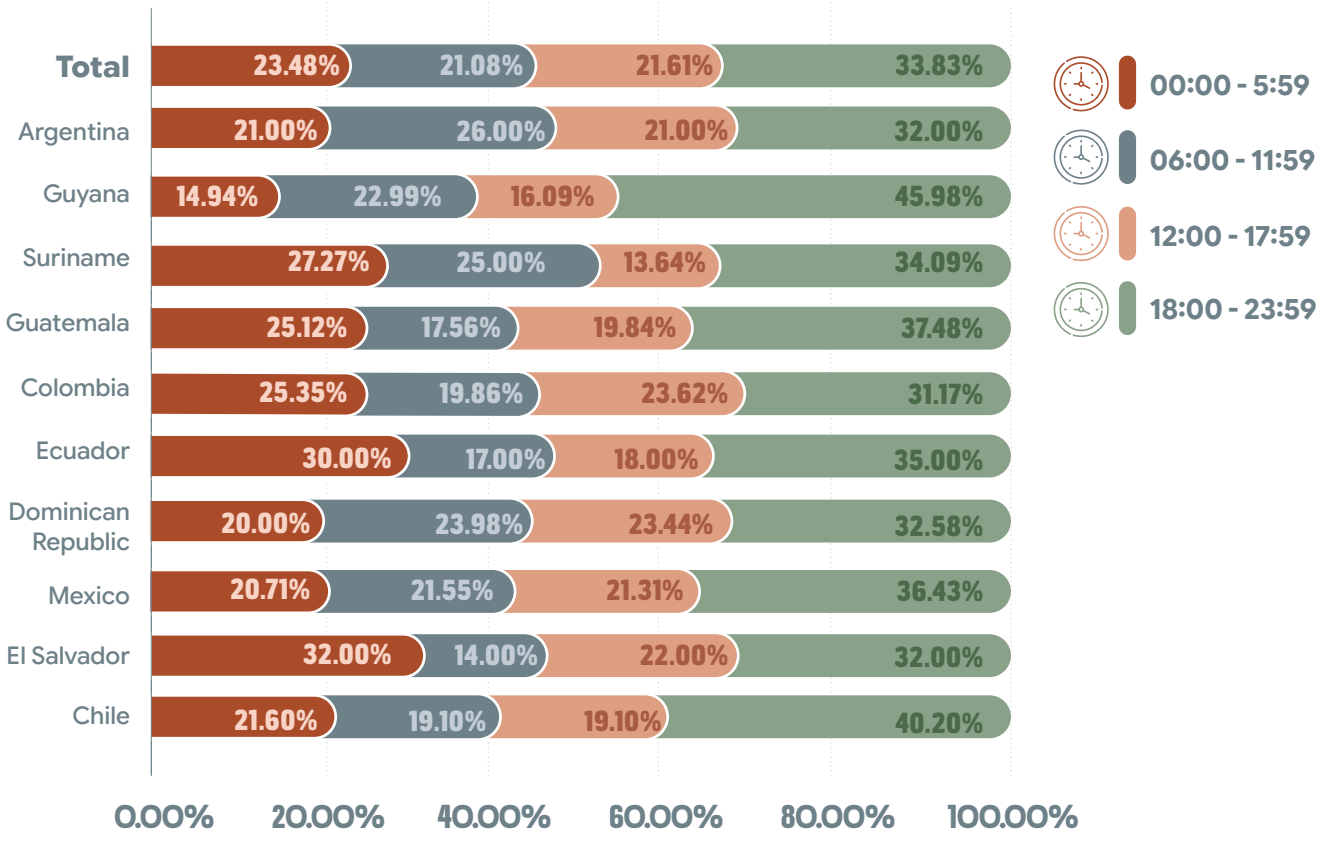
Figure 18. Motorcyclist Fatalities per Day of the Week (2023)



Source: Authors' elaboration based on IDB Survey (2024).

When focusing on time slots, it is observed that in all the analyzed countries, fatalities occur between 6:00 p.m. and 5:59 a.m. This is attributed to factors such as traffic congestion, vehicle flow, low visibility, and challenges related to night-time enforcement.

Figure 19. Motorcyclist Fatalities by Hour of the day (2023)



Source: Elaborated based on IDB Survey – 2024

The concentration of crashes on weekends, combined with the times at which these incidents occur, suggests that they are linked to risk factors such as speeding on low-traffic corridors, fatigue, and alcohol consumption. These factors are further compounded by the challenges of providing enforcement services during weekends and nighttime hours. Additionally, 57% of fatalities occur between 6 p.m. and 6 a.m., a period characterized by low-light conditions.

When analyzing monthly data, it is evident that fatalities in the region peak in December and July. This may be associated with factors such as end-of-year travel, an increase in social gatherings, and higher traffic volumes caused by holiday shopping and festivities.

Finally, regarding the location of crashes (urban or rural) in the countries analyzed across the region, 73% of fatalities occur in urban areas, while 27% take place in rural areas.

Key Cross-Country Trends (2019–2024)

> **Reductions in total road deaths** were recorded in **Argentina (-18%), Chile (-11%), El Salvador (-7%), the Dominican Republic (-3%), Paraguay (-6%*)**, Suriname **(-16%*)**, and **Peru (-3%)**.

> **Argentina (-6%)** is the **only country** that showed a sustained reduction in **motorcyclist deaths** between 2019 and 2024.

> **Increases in the total vehicle fleet** were observed in all countries, with notable growth in **El Salvador (+45.5%)** and **Guatemala (+38.8%)** between 2019 and 2024.

> **PTWs fleet increases** were even sharper, particularly in **El Salvador (+86.9%), Mexico (+83.9%)**, and **Ecuador (+66.9%)**, highlighting the faster expansion of PTWs across the region.

(*) Percentage refer to 2019-2023 due to missing 2024 data.

Source: Authors

Figure 20. Countries With the Highest Road Safety Indicators Related to PTWs Fatalities and Registered Vehicles in LAC (2024)[20]

	PTW Users' Reported fatalities 2024	Reported PTW Fatalities User Distribution 2024	Variation in Fatalities 2010- 2021	Variation in Fatalities 2019 - 2024	Estimated PTW Fatalities Rate per 100.000 Inhabitants
1	Brazil **15,391**	Dominican Republic **65%**	El Salvador **618%**	Guyana[21] **148%**	Dominican Republic **17.8**
2	Colombia **5,194**	Colombia **62%**	Ecuador **374%**	Bolivia **109%**	Paraguay[22] **10.2**
3	Mexico **3,405**	Paraguay[23] **58%**	Jamaica **308%**	Mexico **74%**	Colombia **9.8**
4	Dominican Republic **2,034**	Uruguay **52%**	Mexico **250%**	Colombia **43%**	El Salvador **8.2**
5	Argentina **1,852**	Argentina **46%**	Argentina **241%**	Brazil **37%**	Costa Rica **8.01**

	Registered PTWs	Percentage of PTWs in the Vehicle Fleet	Variation in Registered PTWs 2010 - 2021	Variation in Registered PTWs 2019-2024	Registered PTWs per 100 inhabitants
1	Brazil **34.5 M**	Colombia **62%**	El Salvador **524%**	Mexico **87%**	Dominican Republic **30.9**
2	Colombia **12.4 M**	Dominican Republic **57%**	Honduras **480%**	El Salvador **84%**	Colombia **23.5**
3	Argentina **10.4 M**	Peru **50%**	Jamaica **447%**	Ecuador **67%**	Argentina **22.7**
4	Mexico **5.9 M**	Guatemala[24] **47%**	Costa Rica **435%**	Bolivia **63%**	Costa Rica **17.3**
5	Peru **3.5 M**	Paraguay **37%**	Nicaragua **403%**	Guatemala[25] **62%**	Paraguay **16.9**

Source: Authors' elaboration based on data collected from sources listed in Annex A and Annex B, and Global Status Report on Road Safety 2023 and 2013.

20 According to the information collected, PTW fatality data were analyzed for Argentina, Bolivia, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guyana (2019 - 2023), Mexico, Paraguay (2019 - 2023), the Dominican Republic, Peru, Brazil, and Uruguay. Additionally, for registered motorcyclists, data from Guatemala (2023) were included. In the case of Costa Rica, only 2024 registered vehicle data were available; therefore, the country was not included in the variation indicators.

21 2019–2023 data

22 2023 data

23 2023 data

24 2023 data

25 2019–2023 data

Characteristics of PTW users fatalities (2023)

The largest share of fatalities

57%

occurs between

6 p.m.
6 a.m.

The most critical months tend to be

December > **10%**
July > **9%**

56%
of fatalities occur on **Fridays, Saturdays and Sundays** (weekends)

73%

deaths occur on **urban roads**

48%
of motorcycles have an engine capacity

125 cc or less

> PTWs represented 30% of global road fatalities in 2021.

> In the LAC region, the growing share of fatalities among PTW users highlights a significant and concerning trend. Between 2010 and 2021, this proportion rose sharply from 17% to 31%.

> In LAC, while overall road traffic fatalities decreased by 11% between 2010 and 2021, fatalities among motorcyclists increased by 62%. This trend has remained a significant concern in recent years, in the case of motorcyclists. Between 2021 and 2024, overall road traffic fatalities in LAC countries are estimated to have increased by 10%, while motorcycle-related fatalities rose by 20%. Overall, between 2010 and 2024, total road traffic fatalities are estimated to have remained at similar levels, whereas fatalities among PTW users have nearly doubled.

> In LAC, the number of registered wheeled vehicles is estimated to have increased by 105% between 2010 and 2024. In the case of PTWs, the increase is estimated at approximately 197%.

> The Andean and Central-Mesoamerican regions experienced the highest increases in registered PTWs and PTW user fatalities. From 2010 to 2021, the Andean region recorded a 216% increase in registered PTWs and a 152% rise in PTW user fatalities. Meanwhile, the Central-Mesoamerican region recorded a 355% growth in registered PTWs and a 162% increase in fatalities.

> PTWs are significant contributors to traffic fatalities in LAC, driven by factors such as inadequate infrastructure, socioeconomic conditions, and vehicle usage trends. Between 2010 and 2021, fatalities involving these vehicles increased by 162% in the Central-Mesoamerican region and by 152% in the Andean region.

> PTWs fatalities in the LAC region demonstrate a significant gender disparity, with men representing the majority of victims (9 out of 10). This is attributed to men's higher involvement in motorcycle-related occupations, such as delivery services, as well as their greater propensity for engaging in high-risk behaviors. However, there has been notable growth in the number of female motorcyclists, highlighting the need for gender-sensitive road safety policies. Addressing this disparity requires targeted education campaigns and enforcement strategies tailored to both genders to promote equitable safety improvements.

Source: Ciudad Humana Foundation, Colombia

3

Motorcyclist Vulnerability in the Road System

Motorcycle riders and their passengers are considered vulnerable road users because several factors linked to the motorcycle, the rider, and the road environment increase their risks of injury and death. (WHO, 2022).

Figure 21. Risk Factors

Risk Factors

Risk factor related to the road environment

- Lack of inclusive urban planning
- Mixed traffic
- Road infrastructure design
- Road surface conditions
- Roadside hazards
- Limited public transport infrastructure

Risk factors related to the vehicle

- PTW stability
- Lack of crash protection
- Type of motorcycle*
- Braking errors

Risk factors related to road user

- Non-use or improper use of Helmets
- Non-use or improper use of personal protective equipment - PPE*
- Speeding
- Alcohol impairment
- Rider's age and level of experience
- Failing to see PTWs
- Negative Incentives for Using Motorcycles as Work Tools*
- Post-crash response
- Fatigue*
- Distractions*

Source: Authors' elaboration based on (WHO, 2022).
(*) Additional risk factors beyond those mentioned by the WHO.

A study conducted in the United States determined that motorcyclists **were 24 times more likely to die in traffic crashes** than passenger car occupants (National Highway Traffic Safety Administration [NHTSA], 2023).

RISK FACTORS RELATED TO THE ROAD ENVIRONMENT

> Lack of Inclusive Urban Planning

According to the WHO (2022), the lack of inclusive urban planning has emerged as a risk factor for motorcyclists, as rapid urban growth has outpaced the development of infrastructure designed for PTWs. This led to increased PTW fatalities, while other modes such as walking and cycling, remain neglected. Inclusive transport planning that addresses the needs of all users and promotes diverse transportation options is crucial to ensuring safety, equitable access, and environmental benefits, particularly in LMICs.

> Mixed Traffic

Driving in mixed traffic significantly increases the likelihood of motorcycle collisions. The rise in traffic volume on major and minor roads, as well as at intersections, elevates motorcycles' exposure to other vehicles traveling at varying speeds. This variability in speed increases the risk of collisions. Additionally, in high-income countries (HICs), limited familiarity with PTWs among some car drivers, combined with difficulties in detecting motorcycles and accurately judging their speed, makes the mixed traffic environment particularly hazardous for PTW users.

Lane sharing, also known as lane splitting or filtering, is a frequent practice in many regions and is often promoted to reduce traffic congestion and improve travel times for PTW riders, offering economic and environmental benefits. However, safety concerns arise when other vehicles unexpectedly move into the path of PTWs, highlighting a key risk in mixed traffic conditions. Mulvihill CM (2013) suggests a potential association between lane sharing and 1-5% of motorcycle crashes, although the relative risk does not appear to have been the focus of the study. As urban traffic congestion continues to increase globally, the pressure for PTWs to engage in lane sharing is expected to grow, further underscoring the need for careful consideration of safety in mixed-traffic planning.

> Road Infrastructure Design

The design of road infrastructure can influence both the likelihood and severity of motorcycle fatalities. Motorcyclists are especially vulnerable in areas such as curves, bends, access roads, and roundabouts. These locations often involve changes in acceleration or challenges to vehicle stability. Intersections and roundabouts are frequent sites of motorcycle fatalities due to factors such as failure to yield the right-of-way, excessive approach speeds, and non-compliance with traffic signals.

For instance, a study undertaken in Florida, United States, revealed a 7.7% higher probability of severe injury for motorcyclists on sharp curves (radius < 460 m) compared with flat curves (radius ≥ 1220 m) (WHO, 2022).

> Road Surface Conditions

Pavement conditions directly affect the traction a motorcycle can maintain. Poor pavement conditions increase the likelihood of inadequate friction, leading to instability—this risk is particularly pronounced on wet surfaces, such as during rainy conditions. Pavement deterioration, potholes, unpaved curbs, manhole covers, drainage, spillages, poor road markings and debris are road surface factors that have been shown to increase the risk of PTW crashes.

> Roadside Hazards

Blunt objects along roadways pose significant risks to all users but are particularly dangerous for motorcyclists. Fixed roadside objects, such as trees, signposts, guardrails, utility poles, and drainage structures, as well as moving objects like parked cars, present some of the greatest hazards to PTW users. Crashes involving fixed roadside hazards are fourteen times more likely to result in fatalities compared to incidents without such impacts. The severity of these crashes depends on factors such as collision speed, impact angle, surface area, and the impact-absorption properties of the object (WHO, 2022).

Safety barriers, often designed with cars in mind, may exacerbate the risk for motorcyclists. Metal guardrails with rigid support, for instance, may protect car occupants but become lethal for motorcyclists who slide off the road and collide with these structures. This underscores the need for infrastructure tailored to PTWs, incorporating energy-absorbing designs that mitigate the risks posed by roadside hazards.

> Limit Public Transport Infrastructure

Inadequate public transportation infrastructure in urban areas of LMICs restrict commuting opportunities. The growing demand for and utilization of PTWs intensifies pressure on urban infrastructure by competing for urban space and increasing the risk of injury and fatality among riders.

Existing road infrastructure often fails to account for the specific needs of PTWs, as regions experiencing a surge in PTW use have not adapted their transport system designs to accommodate this shift in mobility patterns.

RISK FACTORS RELATED TO VEHICLES

> PTW Stability

As two-wheeled vehicles, motorcycles require constant balance, especially for heavier combustion engines, which are more sensitive to road imperfections. This inherent instability increases the risk of fatalities, particularly in adverse weather conditions or on uneven surfaces. Some variables that can exacerbate this risk include travel speed, road friction, rider skill and experience, road conditions, PTW design and maintenance, environmental factors, distraction, among others.

> Lack of Crash Protection

PTWs lack a protective enclosure, leaving riders and passengers exposed to significant risks in the event of a crash. Without a cabin structure, riders are subjected to greater deceleration forces, significantly increasing the likelihood of severe or fatal injuries. Furthermore, exposure to environment elements, including rain, sun, and pollution, can lead to rider fatigue and accelerate the deterioration of protective gear.

In addition to head injuries, the lower extremities (including the pelvic region) are the second most frequently injured body region among PTW users involved in crashes (WHO, 2022).

> Type of Motorcycle

Studies have shown that certain types of motorcycles are more prone to fatal crashes (Teoh, 2010). In some countries, a considerable proportion of fatalities involve motorcycles with engine capacities under 200 cc. These smaller motorcycles often lack essential safety features like disc brakes, ABS or CBS braking systems, and automatic headlight activation.

Additionally, the specific type of motorcycle is crucial for different riding contexts. Factors such as maneuverability, tire type, and lighting systems are often overlooked by riders, increasing the risk of crashes and fatalities.

> Braking Errors

The braking technique for motorcycles differs significantly from that of cars. PTWs feature independent braking systems for the front and rear wheels, each with distinct stopping capabilities. To maintain control of the vehicle, both brakes must be applied simultaneously. However, PTW users often underutilize the front brake, which negatively affects motorcycle stopping distance. Furthermore, inadequate braking techniques increase the risk of losing control and being involved in a traffic collision.

RISK FACTORS RELATED TO ROAD USERS

> Non-use or improper use of Helmets:

The non-use of helmets significantly increases the risk of head and neck injuries, which are leading causes of death and disability among PTW riders and passengers. Helmets are designed to reduce the impact forces during crashes, thereby minimizing serious brain injuries. However, the quality and type of helmet also play a crucial role—non-standard or poor-quality helmets increase the risk of fatality.

> Non-use or Improper Use of Personal Protective Equipment (PPE):

As mentioned earlier, motorcycles lack protective cabins to protect riders and passengers from collisions, leaving them vulnerable to direct impacts. For this reason, the use of PPE is critical in mitigating impact energy and minimizing injuries to various parts of the body.

In addition, wearing other PPE—such as gloves, jackets, and protective footwear—further reduces the likelihood of fatalities and, more importantly, lowers the risk of severe and permanent injuries (de Rome, 2011). These protective elements function by distributing the energy of an impact over a larger surface area, absorbing part of it through their structure, and acting as a physical barrier against objects involved in collisions or sliding.

> Speeding

Excessive and inappropriate speed is a leading cause of road trauma, particularly for PTW users, who are highly vulnerable to severe or fatal injuries in collisions due to their lack of structural protection. Speed contributes to a higher proportion of fatal motorcycle crashes compared to other road users. In the United States, for example, 34% of motorcyclists involved in fatal crashes were speeding, compared to lower percentages among car and truck drivers. Research also indicates that motorcyclists, especially those on sports motorcycles, are more likely to engage in speeding. Studies suggest the need to lower speed limits in areas with high motorcycle volumes and separate motorcyclists from heavy vehicles to reduce injury severity (WHO, 2022).

> Alcohol and Drug Consumption:

In the Latin America and Caribbean region, Cherpitel et al. (2021) suggest that the risk of sustaining an injury from a traffic crash was five times higher among individuals who reported having consumed alcohol within the six hours prior to the traffic incident, compared to those who did not consume alcohol during that time frame. Combining alcohol consumption with cannabis use further increases this risk.

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) has classified risk levels for severe injury or death due to traffic crashes, according to the same study:

- Slightly increased: cannabis or alcohol up to 0.05 mg%.
- Moderately increased: cocaine, opiates, benzodiazepines, or alcohol between 0.05 and 0.08 mg%.
- Highly increased: amphetamines, combination of drugs, or alcohol in a concentration higher than 0.08 mg%.

The ITF also states that, regarding the prevalence of diverse types of drugs used by injured drivers in OECD member countries, the proportion of drug-using drivers is higher among motorcycle riders than car drivers (ITF, 2015).

> Rider's Age and Level of Experience:

The risk of crashes is influenced by a rider's experience, age, and gender. Factors such as physical condition, motivation, riding style, and awareness of other road users may increase this risk. Meanwhile, research also shows that riders over sixty tend to experience a decline in riding ability and performance.

> Failing to See PTWs

PTW users are smaller than other vehicles. This condition increases their vulnerability by making them more difficult for other road users to detect. In the case of other motorized road users, the complexity increases due to blind spots around larger vehicles, where a motorcyclist may be hidden, making it difficult for drivers to detect them using conventional mirrors.

> Negative Incentives for Using Motorcycles as Work Tools

In recent years, especially in the post-COVID era, additional factors have influenced the decision to acquire and use motorcycles as work tools, particularly in the cargo or passenger transport sectors. Beyond traditional considerations—such as credit and financial accessibility, lower acquisition and maintenance costs, reduced parking space requirements, toll exemptions in some countries, perceived shorter travel times, and shortcomings or excessive costs in public transportation—these emerging factors have further incentivized motorcycle use.
Economic challenges across the region, which restrict access to formal employment, and the growth of digital platforms connecting supply and demand for transport services have been significant drivers of this trend. This phenomenon is especially pronounced in LMICs.

Extended hours and days of driving expose riders to increased risks when they use motorcycles as work tools. This heightened exposure may incentivize risky behaviors, such as speeding. For instance, some platforms or employers may prioritize metrics like delivery volume or shorter delivery times over safe driving practices. Similarly, they may focus on increasing the number of "allies" (drivers) to ensure vehicle suitability and verifying driver qualifications.

> Post-crash Response

Inadequate post-crash care increases the risk of injury and death for PTW users in the event of a crash. The distinctive pattern of injuries observed in motorcyclists indicates that crash victims require specialized care to manage the respiratory tract, circulation and spine. This is crucial and requires advanced professional training from medical personnel.

> Fatigue

A 2022 article from University of Manizales, Colombia, titled *Fatigue and its interference in the care and driving of motorcyclists in the National Police*, compiled various definitions of fatigue. Hervás et al. (2011), states that "fatigue is understood as a physical and mental process that deteriorates the ability to react promptly to stimuli requiring a specific response." Alternatively, fatigue can be described as a reduction in the efficiency of cognitive processes, which impacts the execution of both simple and complex actions. This reduction may be caused by a variety of physical or physiological factors, which may not always be time-dependent, and can be influenced by conditions that either enhance or mitigate its effects.

The General Directorate of Traffic in Spain[26] and the Mapfre Foundation[27] mention that fatigue contributes to 20-30% of traffic fatalities, citing factors such as sleep deprivation, excessive workload, medication use, stress, and work shifts changes. For motorcyclists, these risks are further amplified by exposure to weather conditions, wind force, uncomfortable riding postures in some motorcycle models, and the added weight of protective gear.

> Distractions

Distraction caused by mobile phone use constitutes a significant risk factor for motorcyclists, according to multiple studies and reports. PAHO (2019) indicates that driver distraction is one of the factors that most increases the likelihood of traffic crashes, particularly affecting vulnerable users such as motorcyclists.

Specific studies, such as *The Rise of the 'Technological Motorcyclist': Exploring the Predictors of Digital Distractions in Motorcycle Commuting. Iberoamerican Journal of Psychology and Health*, show that mobile phone use deteriorates attention, lengthens reaction time, and reduces maneuvering capacity—fundamental elements for motorcyclist safety. The study also shows that gender significantly influences technology-related distractions among motorcyclists, with men and women displaying different patterns linked to risk perception, sensation seeking, and commuting characteristics. Younger age, higher sensation-seeking tendencies, and engagement in other risky behaviors increase distraction levels, while stronger risk perception helps reduce them. Additionally, work conditions play a role: higher job strain is associated with greater distraction, whereas better work–life balance correlates with lower distraction (Useche, Lijarcio, & Montoro, 2025).

26 Dirección General de Tráfico (DGT), Spain. (2022). Other risk factors: Fatigue. https://www.dgt.es/muevete-con-seguridad/evita-conductas-de-riesgo/conducir-con-fatiga/
27 Fundación MAPFRE. (2017). Doctors for Road Safety. https://documentacion.fundacionmapfre.org/documentacion/publico/es/media/group/1093500.do

Distractions and Gender: Younger motorcyclists, those with higher sensation-seeking tendencies, and those involved in other non-technological risky behaviors report higher levels of distraction. Job strain was identified as a significant predictor of digital distractions, while work–life balance acted as a protective factor.

Regarding gender differences, sensation seeking and risk perception were significant predictors among men, whereas average trip duration was a stronger predictor of distractions among women (Useche, Lijarcio, & Montoro, 2025).

Ecuador: According to Ecuador's National Road Safety Yearbook, 23% of traffic crashes occurred because the driver was inattentive to traffic (Vital Strategies; Bloomberg Philanthropies; National Transit Agency, 2024).

El Salvador: In El Salvador, 36% of road traffic fatalities occurred due to driver distraction (Fondo para la Atención a Víctimas de Accidentes de Tránsito [FONAT], 2025).

Source: Authors

Source: Authors

4

Recommendations, Regional Regulation, and Lessons Learned

Having established the current condition of the motorcycle fleet and road fatalities, and having identified the main risk factors affecting motorcyclists, the next step is to develop a set of sections addressing the most relevant components of motorcycle road safety management. This transition marks a shift from diagnosis to action, providing a structured framework for understanding how each determinant influences crash likelihood and injury severity, and how these determinants can be effectively mitigated.

Although data has shown some reductions in the number of road traffic fatalities in LAC, the same cannot be said for motorcyclists. Over the past decade, fatalities among motorcyclists have increased, and this trend accelerated further following the pandemic. This presents a significant challenge for governments, businesses, civil society, and multilateral banks as they work toward the goals outlined in the Decade of Action for Road Safety. Numerous studies and reports have identified effective measures to address this challenge and make meaningful progress.

- The WHO has issued a series of recommendations on measures that have the greatest impact on improving motorcyclist road safety. This valuable tool outlines a set of actions with varying degrees of effectiveness, depending on the available evidence.

Figure 22. Key Measures and Specific Interventions to Improve PTW safety (Proven or Promising Effectiveness)

Source: Authors' elaboration based on WHO (2022).

- The iRAP Road Safety Toolkit[28] is organized into five categories of recommendations or countermeasures. In the Road Users category, particularly regarding motorcyclists, some measures can be extracted.

Figure 23. Key Measures and Specific Interventions for Improved PTW Safety Included in the iRAP Toolkit

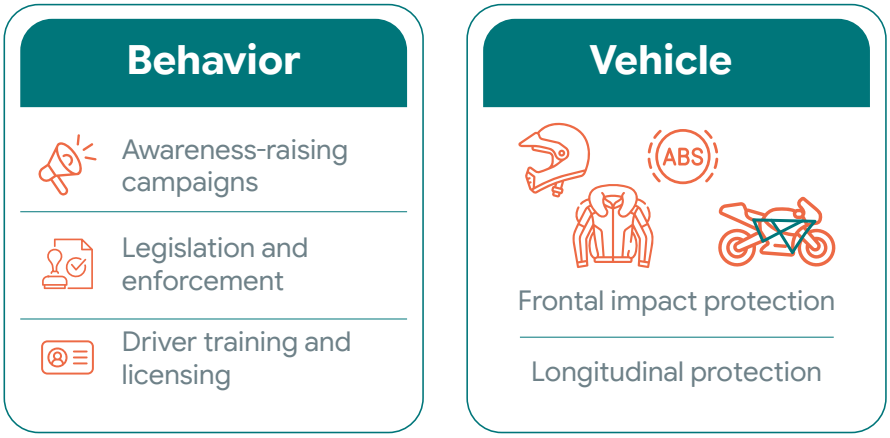
Road Design and Traffic Management	› Designing intersections that account for high motorcycle traffic volumes and turning movements › Improving road surfaces by addressing roughness, potholes, and debris › Reducing Road surface hazards such as water, oil, or excessive moisture › Minimizing excessive line marking and raised pavement markers › Enhancing Road alignment and addressing poor road geometry › Reducing roadside hazards through improved design and safer barriers › Implementing secondary rails for crash barriers, such as BikeGuard, BASYC, or Moto-Tub systems, to protect riders from vertical posts › Covering barrier support posts with impact attenuators to improve crash safety
Separation and Traffic Management	› Separating motorcycles from larger vehicles to reduce interaction risks
Protective Equipment and Rider Safety	› Strict enforcement of helmet-wearing laws › Promoting the use of protective clothing for riders
Technology and Intelligent Transport Systems (ITS)	› Implementing antilock braking systems (ABS) for better vehicle control › Using electronic stability control (ESC) to prevent loss of control › Adopting intelligent speed adaptation (ISA) systems for speed management
Motorcycle Specific Guidelines and Policies	› Developing road design and safety engineering guidelines tailored to motorcyclists' needs › Recognizing and addressing differences in risks between lower-powered motorcycles (commonly used in low and middle-income countries) and higher-powered motorcycles (more common in high-income countries and for leisure use)

Source: Authors' elaboration based on the iRAP toolkit.

28 According to iRAP Road Safety Toolkit (https://toolkit.irap.org), the Toolkit was originally the result of collaboration between the International Road Assessment Programme (iRAP), the Global Transport Knowledge Partnership (gTKP) and the Global Road Safety Facility (GRSF). Austroads and ARRB provided expert advice during the Toolkit's development. The Toolkit was further reviewed and updated in 2021 funded by Bloomberg Philanthropies and undertaken by GRSF with support from iRAP, GRSP, the Towards Zero Foundation, Global NCAP, Eastern Alliance for Safe and Sustainable Transport (EASST) and other technical advisors.

- Additionally, the Safety Cube DSS[29] for the PTWs road users define these measures with an evaluation of their effectiveness:

Figure 24. Key Measures Categories for improved PTW Safety included in Safety Cube DSS



Source: Authors' elaboration based on the Road Safety Decision Support System (SafetyCube DSS).

Source: Authors

29 According to the SafetyCube Decision Support System (https://www.roadsafety-dss.e), The Safety Cube DSS is the European Road Safety Decision Support System, which has been produced within the European research project Safety Cube, funded within the Horizons 2020 Programme of the European Commission, aiming to support evi dence-based policy making. The SafetyCube Decision Support System provides detailed interactive information on a large list of road accident risk factors and related road safety countermeasures. The Safety Cube DSS fact sheets are available for download on the website.

Table 5. Good Practices in Countries With the Highest Decrease in PTW Fatalities

Croatia **10% decrease in moped[30] user deaths**	To reduce crashes among moped and motorcycle users, the police enhance prevention efforts each riding season through joint educational activities with motorcycle associations, instructors, inspectors, and mechanics **(European Transport Safety Council [ETSC], 2023).**
Switzerland **High helmet-wearing rates**	Helmet use in Switzerland is nearly universal, reaching almost 100%. In a 2022 survey of 2,007 motorcyclists, only two were found without a helmet. Other protective gear is also widely used, with over 80% wearing gloves and jackets, and more than 60% wearing protective trousers **(ETSC, 2023)**. Furthermore, the areas of effort that were prioritized in the Increased safety on motorcycles and mopeds, Combined strategy version 3.0 for the years 2016-2020, are (The Swedish Transport Administration [Trafikverket], 2016): › Increasing the number of motorcycle users who comply with speed limit › Minimizing extreme behavior on motorcycles › Safer motorcycles › Safer roads and streets › Increasing focus on visibility and awareness
Spain **Civil guard equipped with protective equipment** **Expansion of speed cameras, follow-up on infractions**	Spain's DGT is promoting the use of airbag vests and jackets and announced in January 2023 that all 3,595 Civil Guard motorcyclists would receive this protective gear **(ETSC, 2023)**. Additionally, the number of speed tickets remained stable from 2010 to 2013 but increased in 2014 and significantly in 2015 due to the expansion of the safety camera network. Between 2010 and 2015, 104 new cameras were installed (59 mobile, 29 fixed, and 16 time-over-distance). By 2015, 91% of speed offences were detected automatically. The follow-up on speeding offences also improved, with 76% of offenders receiving a ticket in 2015, up from 64% in 2009 **(ETSC, 2016)**.
France **Modal shift among young people**	Moped user deaths declined by an average of 7% per year over the past decade, mainly due to a decrease in moped use among young people. In France, mopeds' share PTWs dropped from 25% to 19% between 2010 and 2019. For those aged 15-18, PTW use fell from 8.5% to 2% between 2008 and 2019, while public transport use rose from 29.5% to 34.5%, and car use increased from 29.7% to 33.8% **(ETSC, 2023)**.

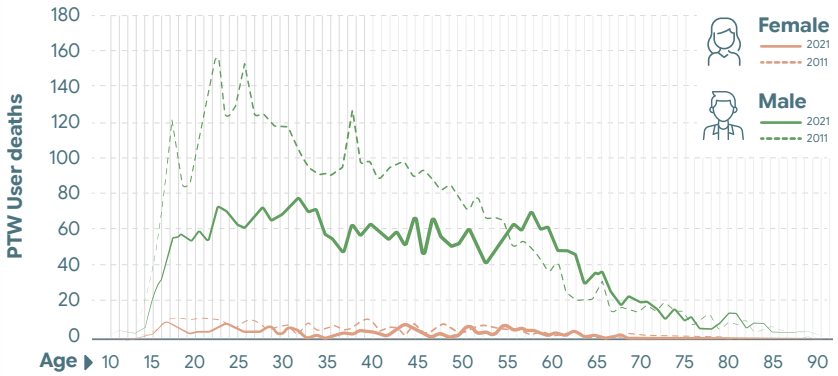
30 Two- or three-wheeled vehicles equipped with an internal combustion engine, with an engine capacity of less than 50 cc and maximum speed not exceeding 45 km/h (ETSC, 2023).

European union

Graduated driving license

The 3rd European Driving License Directive, implemented in 2013, introduced a graduated driver licensing system for PTW riders, requiring progression through stages before obtaining a full license for more powerful vehicles. Minimum age limits apply; however, riders over 24 may directly access higher-powered motorcycles. Between 2011 and 2021, PTW road deaths among 14-23-year-olds dropped significantly, likely influenced by these licensing changes **(ETSC, 2023)**.

Figure 25. Male and Female PTW Deaths by Age (10 to 90 Years) in 2021 and 2011 for Comparison



Source: ETSC (2023).

Estonia

The expansion of Estonia's safety camera network led to a 57% increase in speeding tickets (2010-2015) and contributed to a 14% reduction in road deaths (2014-2015), with plans to continued expansion **(ETSC, 2016)**.

Slovenia

Slovenia introduced legislative amendments addressing speeding, mobile phone use, and e-scooters, with a new road traffic law in force since August 2021. An interdepartmental action plan (2019-2020) is being implemented, and fatal crash investigations, started in 2016, aim to improve safety measures. A board monitors the National Road Safety Programme, and met in 2019. Regular road safety campaigns focus on key issues, with two new initiatives in 2019. Slovenia collaborates with Italy and Austria on motorcycle safety in the Alps, audits high-risk road sections, and updated traffic sign regulations in 2016 to align with EU standards **(ITF, 2021)**.

Belgium	Between 2013 and 2023, Belgium achieved a reduction in motorcyclist fatalities. This decline is attributed to improved road safety measures, including stricter traffic law enforcement, enhanced rider education programs, and infrastructure improvements. Additionally, the implementation of the Graduated Driver Licensing system in 2013 contributed to safer motorcycling practices (European Road Safety Observatory [ERSO], 2023).
Hungary	The Hungarian Police implemented a new speed enforcement strategy that includes the use of radars embedded in unmarked vehicles and the suppression of online information regarding the location of speed cameras **(ITF, 2021)**.
Korea	Korea gradually transferred road safety responsibilities from the National Police Agency to local governments, which now implement crash-reduction measures. Speed limits were lowered in urban areas (50 km/h) and residential or shopping areas (30 km/h) in 2021. Stricter Blood Alcohol Concentration (BAC) limits were introduced in 2019, with license suspensions starting at 0.3 g/L and driving bans at 0.8 g/L. Seat belt use became mandatory for all passengers in 2018, along with a bicycle helmet law. Infrastructure improvements include more roundabouts, Silver Zones for older adults, additional pedestrian crossings, and safety fences to prevent jaywalking **(ITF, 2023)**.
Japan	Between 2013 and 2023, Japan implemented measures such as promoting helmet use, enhancing road infrastructure, and conducting safety awareness campaigns, leading to a significant decrease in motorcycle-related fatalities. Additionally, the easing of regulations for electric scooters in July 2023, allowing their use without a driver's license, raised safety concerns due to an increase in related crashes. To address these challenges, Japan is exploring advanced technologies, including radar systems, to improve motorcycle safety **(ITF, 2023)**.

Source: Authors' elaboration.

The above shows that there is very strong evidence for the measures that should be implemented. However, in the context of LAC, a major challenge for decision-makers must include a focus on how to implement these measures, considering the various obstacles and constraints faced by each stakeholder involved.

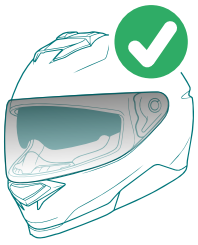
Therefore, this chapter presents key intervention axes, each built around three core elements: a review of the state of the art, a set of evidence-based recommendations, and selected good practices identified from international and regional experiences. Together, these components provide a comprehensive foundation for designing targeted, context-specific strategies aimed at strengthening PTW users' protection and improving overall road-safety performance.

SAFETY HELMETS

The use of helmets is crucial for the safety of motorcyclists, serving as the primary measure to prevent head injuries in the event of road crashes. As highlighted in Chapter 3 on Risk Factors, the proper and mandatory use of helmets significantly reduces the severity of injuries and the likelihood of fatalities, making it a key intervention in fatality prevention.

According to the WHO (2023a), the effectiveness of helmets in reducing head injuries and preventing death has been demonstrated by multiple studies. However, ensuring helmet use requires additional interventions. These include developing and enacting legislation mandating helmet use among PTW users, developing helmet standards suitable for all age groups and appropriate for the local weather conditions, enforcement of the law through police oversight, and implementing education programmes to increase awareness of the law and benefits from its compliance.

The use of safety helmets is therefore imperative



Quality helmets reduce the risk of death by over

SIX TIMES

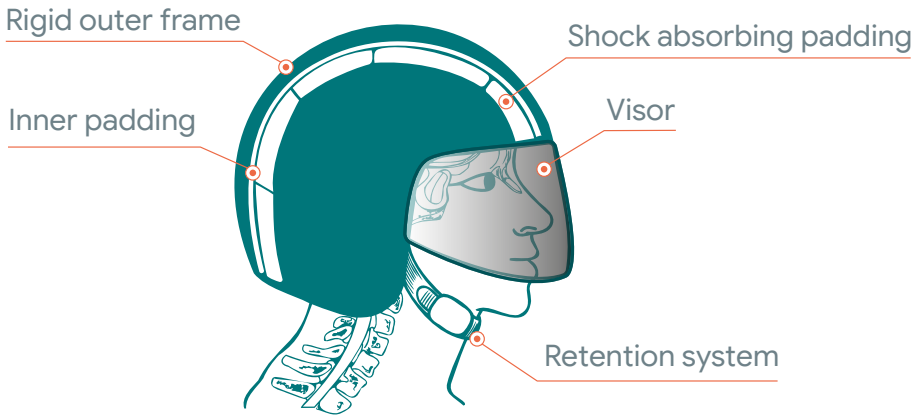
and reduce the risk of brain injury by up to **74%**

(WHO, 2023a).

> Operating Principles of Safety Helmets

According to data from PAHO (2008), the correct functioning of a safety helmet aims to:

- Reduce the deceleration of the skull —and therefore of the brain —through the action of its cushioning padding, in conjunction with the external rigid shell.
- Disperse impact forces by enlarging the contact surface, reducing localized stress.
- Physically separate the skull from the impacted objects.



Source: Authors' elaboration based on (Pan American Health Organization, 2008).

Rigid Outer Shell	It is the part of the helmet that gives it structural shape and acts as the first rigid barrier against the impacted object. It distributes the impact force by increasing the contact surface and provides protection against the penetration of sharp objects.
Cushioning Padding (Or Shock-Absorbing Padding)	Its purpose is to reduce head deceleration during impact, preventing the brain, due to inertia, from colliding with the inner structure of the skull. The cushioning filler is typically 3 to 4 centimeters thick. If it is thinner than the minimum established above, it may not provide adequate protection.
Comfort Padding (Or Inner Padding)	It is the part of the helmet that is in contact with the user's head. It is manufactured with materials that allow the user to feel comfortable. It also helps the helmet fit correctly to the head.
Retention System	This is the mechanism that keeps the helmet securely on the head during a collision, whereby the action of inertia the helmet tends to come out of place. It consists of straps, anchor points, and fastening mechanisms (buckles) specifically designed to withstand collision-related stresses.
Visor	In addition to be resistant to impact from objects, it must ensure the proper visibility for the helmet wearer. Both in terms of optical clarity and by not obstructing the field of vision.

Valuable Information for the Proper Operation of Safety Helmets

The helmet must always be worn fastened to the head. The retention system is responsible for preventing the helmet from coming off the user during a collision. Studies show that in cases where the helmet was not correctly fastened, the motorcyclist lost it during the crash in 96% of cases (Fundación MAPFRE, 2021).

The use of light-colored helmets increases visibility to other road users, thereby decreasing the risk of collision by approximately 24% (PAHO, 2008).

It is important to note that, in order to protect the head, a safety helmet undergoes permanent structural deformations during an impact. These permanent deformations (commonly referred to as “plastic deformations”) can occur both at the level of the shell and at the level of the shock-absorbing padding. As a result, these deformations are not always easily identified. Helmets should therefore not be reused after being involved in a crash.

Like any garment, helmets are manufactured in specific sizes. To determine the correct helmet size, the user’s head circumference must be known by checking it above the ears and eyebrows. The way you measure may allow some tolerance, try on the tightest size as well as the loosest. If you prefer a snugger fit, refer to the tighter size, otherwise to a loose size. If you are unsure, use a tighter size. The comfort padding will give way with use. Safety helmets are intended for personal use. Their inner padding is designed to conform to the shape of the wearer’s head to maximize protection.

Helmet materials, particularly plastics, have a limited service live beginning from the moment the helmet is first used. Due to aging and exposure to Ultraviolet (UV) radiation, helmet materials gradually lose their mechanical properties. It is difficult to determine an expiration date, but also considering the rapid development of this equipment to improve protection levels, it is advisable to replace the helmet after three or four years after it begins to be used.

> Types of Safety Helmets

In addition to safety helmets designed specifically for sports activities, a distinction can be made between five distinct types of helmets, with different levels of protection.

Full-Face Helmets (P/NP)

In addition to providing protection against impacts to the head, these helmets also protect the user's face. They consist of a bar that passes over the chin and jaw area, above which there is an opening that provides the rider (and/or passenger) the necessary visibility in compliance with technical standards.

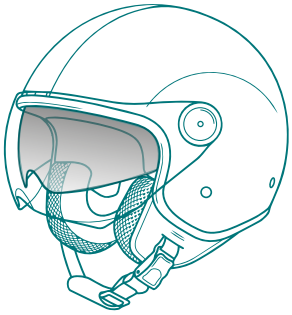
These helmets can be identified with the letters "P" or "NP" depending on the following characteristics:

P: Protective: The chin guard (or jaw cover) tested and approved as a full-face helmet.

NP: No protective: The chin guard (or jaw cover) has not been tested and/or approved as a full-face helmet.

Open Helmets (J: "Jet")

They provide protection against head impacts but offer limited protection to the jaw, chin, and face. They are available with and without a visor. In cases, they must be used with protective goggles to safeguard the rider's eyesight.



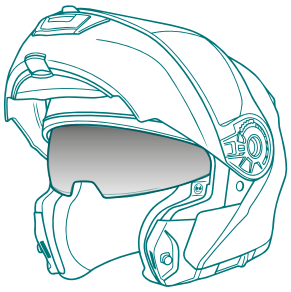
Off-road Helmets

These helmets are lightweight, well-ventilated, and feature a wide opening designed for goggles, but they leave the eyes and face more exposed to insects, weather conditions, and potential facial injuries in a crash.

Although they are legal for use on public roads in most countries, their lighter design may make them noisier and uncomfortable at higher speeds, particularly on highways.

Flip - up Helmets (P/J)

In this type of helmet, the visor and chin guard can be lifted to leave the face uncovered. While driving, the chin guard should be closed to provide greater protection and prevent wind from destabilizing the driver.



Tropical Helmets or Half Helmet

Designed specifically for use in South and Southeast Asian countries with extremely humid and hot climates. They feature ventilation openings that maximize air circulation to reduce heat. They are lightweight and are often made of PVC.

These helmets emerged, as initiative of the countries, because, due to climate conditions (among other factors), the population was reluctant to use conventional helmets.

However, they do not meet the minimum coverage requirements established in many motorcycle helmet standards.

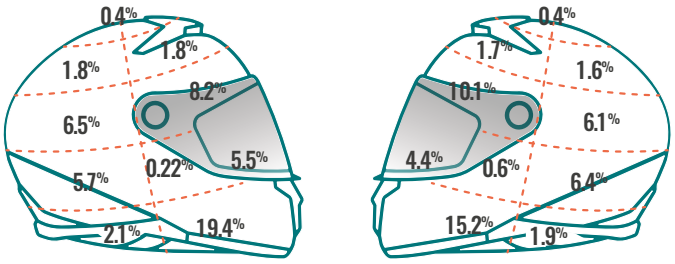
¿What Type of Helmet Provides the Best Protection?

According to Global Road Safety Partnership (GRSP, 2025), this is the protection scale among the different types of helmets:

Half Helmets | Open face or three-quarter Helmets | Off-road Helmets | Modular Helmets | Full-Face Helmets

– LOWEST TO HIGHEST PROTECTION +

Additionally, the percentage of impacts received by each area of the helmet was determined, as shown in the following image (Hugh, 1981):



The study indicates that an open-face helmet, because it does not cover the face, chin, and jaw of the user, fails to protect against 45% of the potential impacts that the motorcyclist may receive. For this reason, the full-face helmet is considered the safest option.

There are important features that every type of helmet should have to ensure adequate performance, as outlined below.

HELMET STANDARDS

All types of helmets sold should have quality certification according to international or national technical standards.

A technical standard is a document approved by a recognized body that sets out technical specifications that must be met by certain products, processes, or services. Certification under a technical standard is crucial, as this ensures that the helmet has been tested and meets the functions for which it was designed.

The most widely recognized technical standards globally are described below:

United Nations Regulation

The UNECE standards (United Nations Economic Commission for Europe) are international regulations and standards designed to ensure the safety, performance, and interoperability of various products, particularly in the automotive and transportation sectors. These standards are developed under the 1958 Agreement, managed by UNECE, and aim to establish common technical criteria among member countries. Recognized globally, UNECE standards reduce trade barriers and enhance safety in international markets.

UNECE Regulation No. 22 establishes the minimum technical requirements for protective helmets used by motorcyclists and their passengers. Its primary goal is to ensure that helmets meet high safety standards, providing adequate protection against impacts in crashes.

The regulation covers several critical aspects of helmets, including materials and design to ensure resistance and durability, as well as aerodynamics and ergonomics. Helmets undergo rigorous impact tests to evaluate their energy absorption capacity under various speeds, impact angles, and temperatures to simulate real-world conditions. The regulation mandates an effective retention system (straps or fasteners) to keep the helmet securely in place during a road crash. It also includes requirements for visors, ensuring impact resistance, optical clarity, scratch resistance, and adequate night visibility.

UNECE Regulation No. 22 specifies that helmets must carry a homologation label confirming compliance with the regulation, including details about the regulation number, certification country, and manufacturer.

The UNECE Regulation No. 22 Series 06 introduces significant updates to improve helmet safety and usability. These updates are based on advances in research aimed at enhancing head protection. The regulation has also been updated to address real market demands and incorporate technical innovations, such as modular helmets, sun visors, and various accessories. Additionally, a new Type Approval Marking System has been implemented to prevent counterfeiting and facilitate law enforcement efforts (UNECE, 2021).

Testing Updates

The new regulation expands testing parameters to include higher speeds, rotational acceleration, and a broader range of impact points and angles. For the first time, it examines the effects of oblique impacts and torsional forces on the brain. A high-speed particle test has been introduced to assess visor resistance under extreme temperatures, alongside a rotational acceleration test to enhance safety performance. Oblique impact testing methods have also been incorporated to evaluate rotational forces, and new energy limits for high- and low-energy impacts are now part of the testing criteria. Furthermore, a new procedure for production qualification testing ensures consistent safety standards.

Additional Impact Points

To further improve safety, the regulation now requires at least three additional impact tests on sample helmets. These tests target specific impact points, selected from a total of 12 predefined points, ensuring more comprehensive safety evaluations.

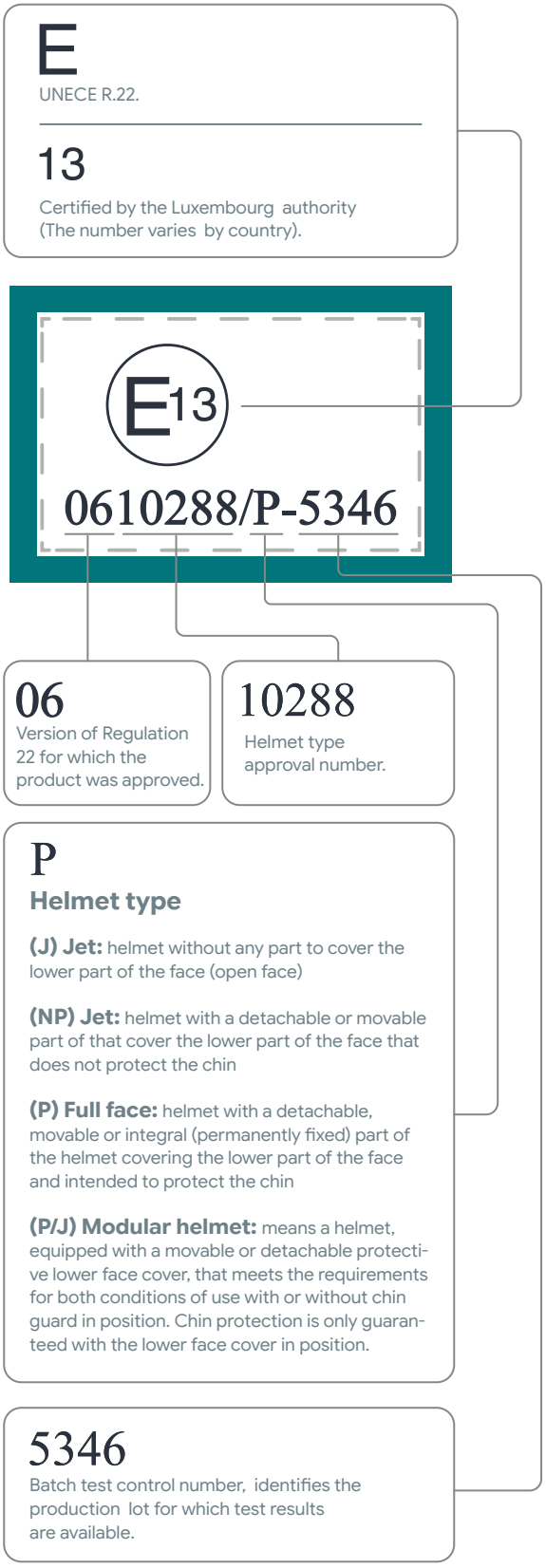
Requirement Updates

The regulation includes detailed requirements for modular helmets, defining and testing their P/J protection for legal compliance. Sun visors are now subject to tests for transmittance and impact resistance, and proper marking is required. Minimum luminous transmittance values for visors have been adapted to meet EN1938 standards. Additionally, helmets must be tested with and without accessories, such as Bluetooth devices, cameras, and Pinlock systems, ensuring only approved accessories maintain the validity of the helmet's homologation.

Marking Enhancements

The updated regulation improves helmet marking requirements for better clarity and enforcement. Sizes must now be indicated in both centimeters and letters, and markings on chin protection and "daytime use only" visors must meet minimum dimension standards. Labeling has shifted to progressive numbering rather than batch numbers, and visors now have separate approval numbers distinct from the helmet's approval number.

The new marking system was introduced to improve the traceability of certified products, prevent counterfeiting, and assist police in enforcing the use of certified equipment.



Source: UNECE

DOT FMVSS 218

This standard is a regulation established by the United States Department of Transportation (DOT), which establishes minimum requirements that helmets must meet to reduce injuries and fatalities among motorcyclists resulting from head injuries (NHTSA, nd).

This certification involves a different process than the United Nations standard because its approval is based on an "honor" system, in which the manufacturer directly certifies that its product complies with the requirements of the standard.

The authority in the United States may conduct random tests to verify that such helmets follow the safety standard. In the case of safety helmets that are marketed outside the United States, it is recommended that the receiving countries implement a testing scheme for these helmets to ensure that they are functioning properly before they are marketed.

The helmet must bear the DOT "Self-Certification" label, which is the manufacturer's certification of its product's compliance with applicable federal motor vehicle safety standards.

Other standards are available around the world. Recently, some Latin American countries, such as Peru and the Dominican Republic, have adopted additional ones. The following table, taken from the ***Technical Guide to Assist the Development and Implementation of a Motorcycle Helmet Standard in LMIC***, developed by GRSP, outlines the different standards used worldwide and the test procedures applied in each of them.

Source: Ciudad Humana Foundation - Colombia

Standard test description	Malaysia MS 1	India IS 4151	Thailand TIS 369-2557	Vietnam TCVN 5756	Kenya KS77	Japan JIS T8133	United King-dom BSI 6658	USA (DOT) FMVSS 218	ECE R22.05	ECE R22.06	Australia AS 1698
Extent of shell/ extent of coverage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shell stiffness test	✗	✓	✓	✗	✓	✗	✗	✗	✓	✓	✗
Internal projections evaluation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
External projections test	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Visor test	✗	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓
Peak deflection test	✗	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
Peripheral vision test	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Retention system effectiveness (rolloff)	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
Retention system strength	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Retention strap slippage	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Retention strap abrasion	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Retention system release by force	✗	✗	✗	✗	✗	✓	✓	✗	✓	✓	✗
Retention system release by inertia	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Retention system ease of release	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Durability of quick release retention system	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Impact test	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oblique impact test	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Specific rotational test	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
Chin guard test	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Penetration test	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
Sound attenuation test	✗	✓	✗	✗	✓	✗	✗	✗	✗	✗	✗
Flammability test	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗
Helmet marking requirements	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Information label requirements	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Source: GRSP (2025).

Size

It is important to raise awareness about how helmet sizes are measured and how to select the appropriate helmet.

Graphical representations showing how to measure head circumference and match it with the helmet size provided by manufacturers or sellers should be promoted.

This ensures that the helmet performs its protective function effectively.

Note: Helmet sizes should be verified according to each helmet manufacturer's specifications.

Correct Use

The proper use of helmets should be regulated to discourage motorcyclists from wearing them merely to comply with legal requirements. Below are some recommendations for correct helmet use:

1. It should be ensured that the head is fully inserted into the helmet and that it is properly fastened. In the region, poor practices such as wearing the helmet loosely are commonly observed. Regulations should ensure that chin straps are in good condition and securely fastened, ensuring the strap cannot slip over the chin.

   A study titled The Role of Helmet Fastening in Motorcycle Road Traffic crashes (Arif et al, 2019) concludes that proper fastening is so significant that it could reduce a considerable number of deaths, head injuries, and maxillofacial trauma.

2. It should be ensured that modular helmets are used in the closed position while driving.

3. Evaluate the possibility of requiring the use of visors or protective googles for off-road helmets.

Child Helmets

Source: Ciudad Humana Foundation - Colombia

Transporting a child as a passenger is a controversial issue. On the one hand, motorcycles are often the only available means of transport for families, especially in LMICs (WHO, 2023a). However, it should be considered that:

1. Children are more likely to suffer severe consequences from concussions.

2. Due to being in a developmental stage, a child's brain and skull are more vulnerable.

3. Compared to adults, a child's neck muscles are weaker, and their spine is still developing, which means it restricts movement less than in adults (due to more cartilage and fewer bones).

For these reasons, the recommended good practice is to avoid transporting children on motorcycles whenever possible.

It is crucial that, if the local law permits transporting children on motorcycles, all safety considerations are taken into account.

The functioning of a helmet for children, in terms of its protective performance, should be similar to that of an adult helmet. However, it is important to use helmets specifically designed and approved for children, as their heads are smaller than those of adults.

United Nations Regulation No. 22 allows testing of helmets designed for children. Similarly, helmets for children between 4 and 12 years old are homologated under FMVSS 218.

The Global Child Helmet Standard for 2-Wheel Motorized Vehicles (GCHS1:2025) is the first worldwide standard created specifically for helmets designed for children who ride on motorcycles, e-bikes, and e-scooters. It was developed to fill the gap left by existing adult helmet standards, which do not address the unique anatomical and safety needs of children, even though millions of them travel daily on motorcycles in LMICs, where motorbikes often serve as the "family car."

The standard introduces specific technical tests, including impact resistance, helmet stability on the head, retention system effectiveness, and energy absorption. It also recognizes two main helmet typologies for children: open-face helmets, which protect the skull and sides of the head, and full-face helmets, which additionally protect the jaw and face. Both types must comply with the standard testing protocols.

This initiative was developed by an international team of experts and is strongly supported by the AIP Foundation, a non-profit organization based in Vietnam dedicated to reducing road-traffic injuries and fatalities through education, policy support, and the promotion of high-quality, affordable helmets. By making this standard freely available to any country or standards body, the foundation aims to encourage the development and widespread use of child-appropriate helmets and significantly reduce the risk of traumatic brain injuries among children in regions where motorcycle-related crashes are a major cause of death (AIP Foundation, 2025).

> Legislative Update

In terms of safety helmets legislation, countries can be classified into the following groups.

Group C1: Countries with a Comprehensive Legislative Framework on Safety Helmets

The recommendation for this group of countries is to establish a continuous improvement process to ensure that legislation remains up to date, particularly regarding technical standards, which require regular monitoring. Furthermore, enforcement requires adequate oversight mechanisms. Indicators such as the percentage of proper helmet use and reductions in fatalities due to cranioencephalic trauma should be monitored to assess effectiveness.

Group C2: Countries with Existing Legislative Frameworks but Opportunities for Improvement in One Specific Area

The recommendation for this group of countries is to improve legislation by addressing the necessary elements to reach recommended good practice. Enforcement should ensure a high level of compliance, with the objective of achieving 100% proper helmet use.

Group C3: Countries Whose Legislative Frameworks Require Improvement in Two or More Specific Areas

These countries should strengthen their legislation by addressing the necessary points, to reach the recommended good practice. Essential enforcement must be implemented to achieve a satisfactory level of compliance with this road safety element (the goal of 100% usage should be established).

Group C4: Countries Without Safety Helmet Use Legislation

The use of helmets for Motorcycles should be regulated by following international best practices and successful examples from other countries.

The following table presents this classification for each country in the region and indicates whether each country complies with the specified requirements within its respective category.

Table 6. Legislation Regarding Safety Helmets for Motorcyclists

Group	Country	Exist	Driver and Passenger	All Road Types	All Engine Types	Fastened Helmet	Specific Standard
C1	Argentina	Yes	Yes	Yes	Yes	Yes	Yes
	Brazil	Yes	Yes	Yes	Yes	Yes	Yes
	Chile	Yes	Yes	Yes	Yes	Yes	Yes
	Colombia	Yes	Yes	Yes	Yes	Yes[31]	Yes
	Dominican Republic	Yes	Yes	Yes	Yes	Yes[32]	Yes[33]
	Ecuador	Yes	Yes	Yes	Yes	Yes	Yes
	Jamaica	Yes	Yes	Yes	Yes	Yes	Yes
	Paraguay	Yes	Yes	Yes	Yes	Yes	Yes
	Peru	Yes	Yes	Yes	Yes	Yes[34]	Yes[35]
	Uruguay	Yes	Yes	Yes	Yes	Yes[36]	Yes
	Costa Rica	Yes	Yes	Yes	Yes	Yes[37]	Yes
C2	Bahamas	Yes	Yes	Yes	Yes	No	Yes
	Cuba	Yes	Yes	Yes	Yes	Yes	No
	El Salvador	Yes	Yes	Yes	Yes	Yes	No
	Barbados	Yes	Yes	Yes	Yes	No	Yes
	Bolivia	Yes	Yes	Yes	Yes	No	Yes
	Mexico	Yes	Yes	Yes	Yes	No	Yes
	Saint Lucia	Yes	Yes	Yes	Yes	No	Yes
	Trinidad and Tobago	Yes	Yes	Yes	Yes	No	Yes
	Suriname	Yes	Yes	Yes	No	Yes	Yes
C3	Guatemala	Yes	Yes	Yes	Yes	No	No
	Guyana	Yes	Yes	Yes	Yes	No	No
	Haiti	Yes	Yes	Yes	Yes	No	No
	Honduras	Yes	Yes	Yes	Yes	No	No
	Nicaragua	Yes	Yes	Yes	Yes	No	No
	Panama	Yes	Yes	Yes	Yes	No	No
	Venezuela	Yes	Yes	Yes	Yes	No	No
	Belize	Yes	Yes	No	Yes	Yes	No
	British Virgin Islands	Yes	No	No	No	No	No
C4	Antigua and Barbuda	No	ND	No	No	No	No
	Dominica	No	ND	No	No	No	No

Source: Authors' elaboration based WHO 2023 and others. ND=No Data found.

31 Ministry of Transport. Resolution No. 23385 (2020). https://www.alcaldiabogota.gov.co/sisjur/normas/Norma1.jsp?i=102308
32 INTRANT. Resolution NT-001-2025 (October 29, 2025).
33 INTRANT. Resolution NT-001-2025 (October 29, 2025).
34 Ministry of Transport and Communications. Directoral Resolution No. 008-2025. https://www.gob.pe/institucion/mtc/normas-legales/6737332-008-2025-mtc-18
35 Ministry of Transport and Communications. Directoral Resolution No. 008-2025 (April 9, 2025). https://www.gob.pe/institucion/mtc/normas-legales/6737332-008-2025-mtc-18
36 Law 18191. Art 33. https://www.impo.com.uy/bases/leyes/18191-2007
37 Law 9078. Art 117 and 119. https://repositorio.mopt.go.cr/items/e15708fb-4670-4d20-adc1-ccae74991225

> Helmet Use in LAC

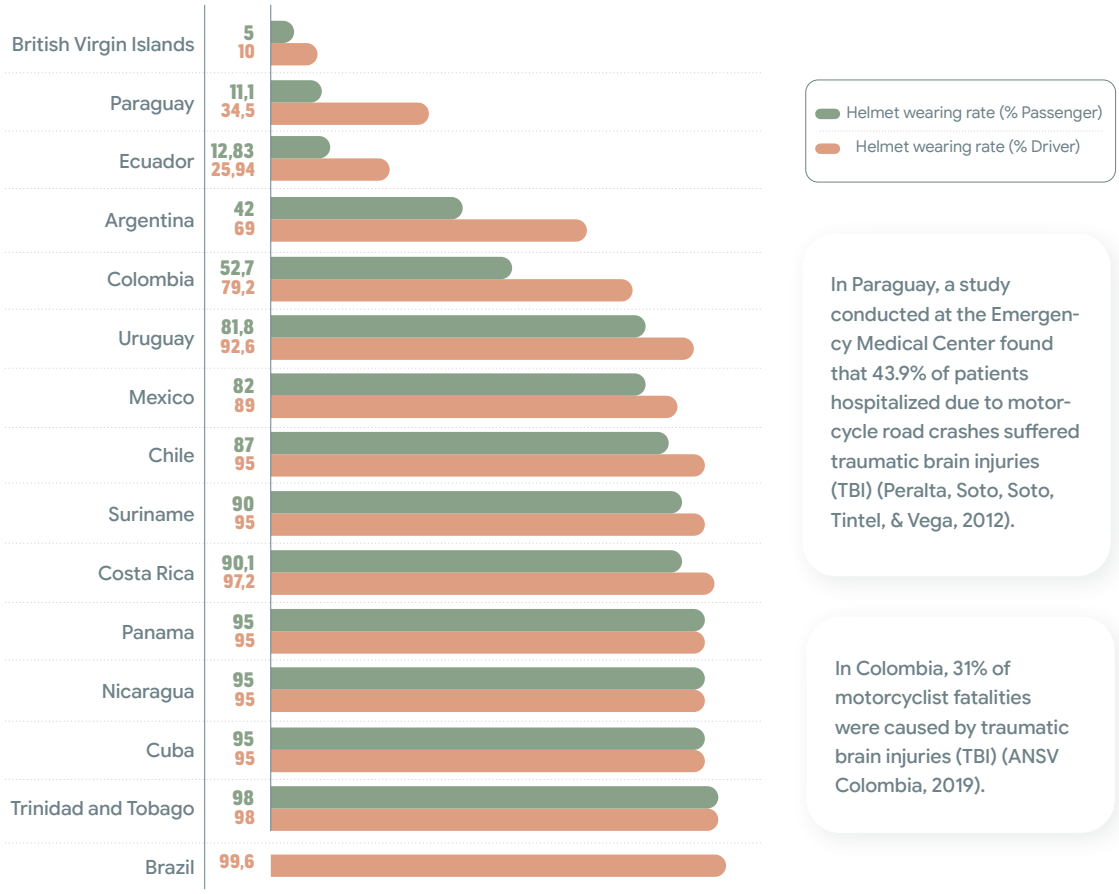
Ensuring the use of protective helmets across the LAC region remains a significant challenge. Although legislation exists, its effectiveness is constrained by practical barriers such as the high cost and limited availability of certified helmets, as well as insufficient enforcement by traffic authorities. These factors, combined with behavioral and informational gaps, create a disconnect between policy and actual safety outcomes, contributing to persistently high rates of motorcyclist injuries and fatalities across the region.

Table 7. Reasons for Non-Use of Helmets

Aspect	Description
Availability and cost of helmets	The lack of affordable, standard-compliant helmets limits accessibility and use.
Helmet fixation status	Improperly fastened helmets may eject during collisions, reducing their effectiveness. Laws should include fixation as a mandatory requirement.
Helmets for children	The lack of standard-compliant helmets for children limits their use. Laws should include penalties for adults responsible for children riding without helmets to encourage availability.
Hot weather	In hot weather, wearing full-face helmets could be inconvenient. Strict enforcement of helmet use is essential.
Misinformation about helmets	Myths, such as neck injuries in children due to helmets lack scientific evidence. Mass awareness campaigns and strict enforcement are needed.
Motorcycle taxis	Motorcycle taxis services present challenges due to driver fatigue, reluctance to wear helmets in hot weather, and passenger hesitancy to share helmets. Regulations are required to ensure helmet availability for passengers.
Riders wearing other headgear	Users wearing headgear for religious reasons (e.g., turbans) may be unable to use helmets, increasing their risk.
Inadequate enforcement of helmet laws	A lack of sustained enforcement reduces the effectiveness of helmet laws. Combining enforcement with awareness programs significantly improves compliance.

Source: Authors' elaboration based on Helmets: A Road Safety Manual for Decision-makers and Practitioners, second edition (WHO, 2023a).

Figure 26. Helmet Use in Some LAC Countries



In Paraguay, a study conducted at the Emergency Medical Center found that 43.9% of patients hospitalized due to motorcycle road crashes suffered traumatic brain injuries (TBI) (Peralta, Soto, Soto, Tintel, & Vega, 2012).

In Colombia, 31% of motorcyclist fatalities were caused by traumatic brain injuries (TBI) (ANSV Colombia, 2019).

Source: Authors' elaboration based on WHO (2023) and ITF (2025).

Source: VMT - FONAT (El Salvador)

Informational tool on the correct use of helmets

Regarding the information that should be shared with the public about the correct use of helmets, the tool developed by the ANSV Colombia, called *the Helmet Lifesaver Triad*, is highlighted. This tool succinctly explains three fundamental and easy-to-remember aspects for the effective use of a helmet.

Quality

The following recommendations are made regarding helmet quality:

- Verify that it meets applicable quality standards.
- Keep the interior and exterior of the helmet clean and disinfected.
- Avoid placing the helmet on the ground.
- Store it in a protective cover when not in use.
- Avoid exposing it to significant impacts, such as drops from the height of a motorcycle seat, as this may affect the helmet's performance.

Size

It is necessary to know the user's head circumference to select the correct size. Refer to the size chart provided by each manufacturer.

Correct Use

The motorcyclist's head should be fully enclosed within the helmet, and the retention system should be securely fastened below the chin, without broken straps or incomplete buckles.

Do not use communication systems or carry phones that interfere between the head and the helmet, unless they are used with accessories or auxiliary equipment that allow hands-free operation.

In the case of helmets with a movable lower face shield (flip-up), it should always be closed and secured while riding, providing adequate protection for the motorcyclist's face.

The proper use of the helmet's visor or specially designed goggles as a complement to the helmet help protect against dust, insects, or impacts from objects that could cause injury or loss of control of the motorcycle.

It is recommended that once the helmet is fastened, the retention straps should not extend more than two centimeters below the chin.

It is recommended to use helmets in light or bright colors to enhance visibility to other road users.

Source: National Road Safety Agency of Colombia.

FIA Helmets in Colombia and Paraguay
Homologated and Affordable Helmets for Latin America – FIA Foundation

The FIA Foundation has set the challenge of developing a safety helmet, homologated according to the UNECE R22 standard, with the following characteristics:

1. The helmet must be safe. It should be of high quality and guarantee safety in accordance with international certification standards, aiming to protect motorcyclists with internationally recognized homologation.

2. The helmet must be affordable. The goal is for the helmet to be accessible to all motorcyclists in LMICs, discouraging the use of non-certified helmets due to economic constraints.

3. The helmet must be comfortable and appealing in warm climate regions. It should meet the needs of territories with hot climates, providing adequate ventilation.

In response to this challenge, among other manufacturers, NZI designed a jet-type, ultra-ventilated, low-cost, and homologated helmet.

Colombia Case

The IDB, the Touring and Automobile Club of Colombia (Automóvil Club de Colombia), and the ANSV coordinated the distribution of around 900 of these helmets across 13 municipalities as part of an educational strategy. The objective was to raise awareness and demonstrate that certified, low-cost helmets suitable for the region's climate conditions are accessible.

Given the characteristics of the helmet, its use was considered effective in warm climate municipalities, identified based on the Climate Classification Map of Colombia.

Helmet distribution was accompanied by awareness-raising activities on various aspects of proper helmet use. To assess message adoption, pre- and post-intervention surveys were designed to evaluate the acceptance of improper use.

As a result of the analysis, a positive impact was observed regarding the participants' perception of helmet use, size identification, quality, and risk behaviors associated with helmet use.

Evaluated aspect	Percentage of acceptance for improper use- PRE	Percentage of acceptance for improper use- POST
Helmet usage	47%	17% ↓
Head fully covered	42%	19% ↓
Strapped	45%	30% ↓
Phone device	76%	24% ↓
Helmet color	51%	31% ↓
Certification	There was not statistically significant change observed regarding the priority and selection of certified helmets and safe speeds. This is not because the topic had no effect, but rather because participants, even during the pre-test, demonstrated awareness of the importance (88% and 96%, respectively) of these elements in ensuring road safety.	
Speed		

Source: https://www.iadb.org/es/blog/transporte/colombia-avanza-en-la-promocion-del-uso-adecuado-del-casco-para-salvar-las-vidas-de-los
https://www.iadb.org/es/blog/transporte/paraguay-usa-la-cabeza-promoviendo-la-seguridad-vial-traves-de-la-concienciacion-control-y-cascos

Paraguay Case

According to a study on the road behavior of the Paraguayan population, 74% of motorcyclists do not use helmets, making it vital to promote and regulate helmet use to reduce high rates of fatalities and injuries. The National Traffic Safety Agency (ANTSV), the Paraguayan Touring and Automobile Club, FIA, and the IDB spearheaded the "Safe and Affordable Helmets" project to address this situation, using funds from the FIA Road Safety Grants Program.

The primary goal of the project was to raise awareness about safety, with an emphasis on the correct use of helmets, through the distribution of 1,776 certified helmets, donated through the FIA, along with defensive driving training, traffic rules instruction, and first aid courses. The project also developed surveys to gather demographic and socioeconomic data on the beneficiaries and to analyze their road behavior. Additionally, the project collected old helmets from the beneficiaries for a study on the performance of helmets currently in circulation, supporting the regulation of homologated helmets in Paraguay.

Based on the motorcycle fatality rate and the availability of infrastructure in the municipalities to conduct training courses, the project selected beneficiaries from 18 districts across the country.

The project facilitated driver training and awareness-raising activities to promote safe behaviors and mitigate the risk and severity of road traffic crashes. Furthermore, it provided demographic and socioeconomic characterization of motorcyclists: riders are primarily young individuals who use motorcycles for work purposes, have low-income levels and a high probability (greater than 50%) of being involved in a road traffic crash.

One of the main challenges for governments is the effective implementation of standardized helmet regulation. To support this effort, GRSP launched the guide *A Technical Guide to Assist the Development and Implementation of a Motorcycle Helmet Standard in LMICs* during the Ministerial Conference in Marrakech in 2025. This document provides recommendations on the key stages involved in developing and implementing a motorcycle helmet standard.

Figure 27. Steps to Develop and Implement a Helmet Standard

Source: Authors' elaboration based on A Technical Guide to Assist the Development and Implementation of a Motorcycle Helmet Standard in LMICs (GRSP, 2025).

Despite regional challenges, several LAC countries have successfully implemented effective strategies to increase helmet usage and reduce injuries. The following section outlines selected practices related to the promotion and regulation of helmet use.

Helmet Coalition - CDMX

Country: Mexico
Entity: ITDP

In 2021, ITDP, with the support of the FIA Foundation, began promoting the creation of a "Helmet Coalition" in Mexico. This initiative builds on other successful efforts by the FIA Foundation in countries such as Vietnam, Kenya, Jamaica, and Rwanda. The Helmet Coalition in Mexico was formally established in May 2022 during an event that brought together representatives from various sectors. It currently includes approximately 55 members: 5 national entities, 8 subnational entities, one multi-state association, 7 private-sector companies, and 14 international organizations and civil society groups.

Source: ITDP

The Helmet Coalition is a multisectoral network of government, civil society, and private-sector actors aimed at developing long-term solutions to improve access to, and encourage the use of safe and affordable helmets in Mexico. The Coalition seeks to promote actions as part of a multisectoral strategy to drive structural changes that enhance road safety for motorcyclists and reduce the number of deaths and injuries resulting from traffic crashes nationwide. The objective is for a variety of stakeholders to leverage their resources and influence to ensure the widespread use of certified helmets in Mexico.

Lesson Learned or Recommendations

- Bringing together different sectors of society strengthens collective efforts to reduce motorcycle-related road traffic crashes.
- It is advisable to coordinate with the industry when implementing reforms related to the technological advancements of PPE for motorcyclists.
- Supporting the Coalition's work with guidance from international technical entities is essential. In this case, the IDB, Bloomberg, NZI, and Steelbird have provided valuable assistance.

Source: https://Mexico.itdp.org/wp-content/uploads/2023/10/Reporte-CoalicionCasco.pdf

The Global Alliance of NGOs for Road Safety, through *Making Safe Helmets a Reality for All: White Paper*, recommends a coordinated approach involving governments, NGOs, UN agencies, the private sector, and funders to enhance helmet safety worldwide (Global Alliance of NGO for Road Safety [The Alliance], 2025). The key measures include:

> **Strengthening Legislation and Enforcement:**
Enacting and enforcing laws that require the production, importation, and sale of helmets that comply with recognized safety standards.

> **Enhancing Consumer Awareness:**
Educating riders on the importance of using certified helmets and on how to distinguish genuine safety certifications from counterfeit ones.

> **Improving Market Surveillance:**
Establishing robust monitoring and regulatory mechanisms to eliminate non-compliant helmets from the market and ensure adherence to safety standards.

Source: Ciudad Humana Foundation - Colombia

Campaign: "We Share the Road"

Location: Guadalajara, Mexico
Entity: Vital Strategies

"Don't Take Risks, Slow Down. We Share the Road" is a campaign led by the Government of Guadalajara in coordination with the State Government, the Bloomberg Initiative for Global Road Safety, and Vital Strategies. Launched in 2023, the campaign aims to raise awareness among motorcycle users about the risks of speeding and other unsafe road practices.

The campaign has the following objectives:

- Generate behavioral changes on the roads.
- Reduce the risk of injury or death in the event of a road traffic crash.
- Promote the correct use of helmets, which reduces the risk of death by 40% and severe injuries by 69%.

The campaign primarily targets men aged 18 to 40. Actions implemented as part of this campaign include:

Source: Vital Strategies

- Training motorcyclists applying for new driver's licenses.
- Enforcing speed limits and helmet use through traffic police operations.
- Conducting awareness initiatives led by the Traffic Police and the Guadalajara Department of Mobility and Transportation.

Impact studies indicate that it is more effective to focus on a single risk factor.

Lesson Learned or Recommendations

- Campaigns focusing on a single risk behavior achieve better clarity and impact, leading to more effective results.
- Combining communication efforts with roadside enforcement operations and integrating the targeted risk factor into driver training courses strengthens the overall approach.
- It is recommended to analyze the most widely consumed media among the target population. Additionally, campaigns should remain on air from 3 to 6 weeks to ensure message recall.

Source: Vital Strategies. Interview. https://www.youtube.com/watch?v=PxM-PRAqG5U
Guadalajara City Government. Baja la velocidad. https://guadalajara.gob.mx/gdlWeb/#/detalle/2035/baja-la-velocidad
Guadalajara City Government. No te arriesgues, baja la velocidad: Compartimos camino. https://guadalajara.gob.mx/gdlWeb/#/detalle/2040/Lanzan-la-cam-paa-No-te-arriesgues-baja-la-velocidad-Compartimos-camino-dirigida-a-personas-mo

Public Policy: Federal Helmet Distribution Plan

Location: Argentina
Entity: ANSV

The government of Argentina, through the ANSV, has developed a public policy to provide helmets to motorcyclists, understanding vulnerability as a social condition that limits access to certified, quality helmets.

Helmet distribution is targeted at motorcycle users with a valid driver's license who undergo theoretical and practical training in safe motorcycle riding. Activities are mainly focused on motorcycle workers, delivery personnel, and couriers, whose helmets require more frequent replacement due to greater exposure in traffic compared to those used for non-occupational purposes.

In Argentina, only 64.2% of motorcycles circulate with all occupants wearing helmets. According to ANSV (2017), the majority of motorcyclists are aware of the risks of not wearing a helmet; however, a significant proportion of them do not use one (especially in NEA, NOA, and Pampas region). Therefore, deeply ingrained beliefs and practices, rather than a lack of information,

Source: ANSV Argentina

appear to be the main reasons for not wearing a helmet.

With this information, the ANSV developed a public policy document in 2021 evaluating the impact of helmet distribution programs, highlighting advantages and key considerations for future implementations.

Lesson Learned or Recommendations

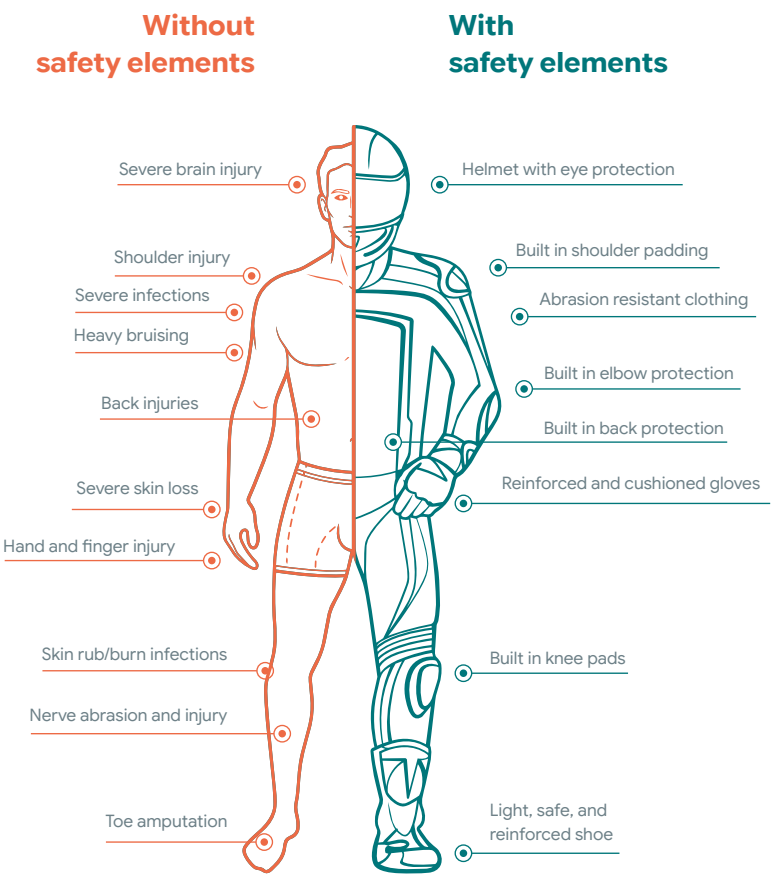
- It is not advisable to distribute helmets on a large scale bearing government insignia without considering specific selection criteria such as color, design, and size. The choice of a helmet, similar to clothing, is influenced by factors such as design and color. When helmets are excessively institutionalized, they may generate resistance to use. Programs should consider the availability of different sizes and colors, and avoid government insignias, to promote their use.
- It is recommended that these programs should prioritize vulnerable populations and distribute helmets in areas where enforcement capacity exists to ensure compliance with helmet-use regulations.
- Helmet distribution should be adapted to the specific contexts of each region, recognizing factors such as distinction, style, color, individuality, and the aspirational value associated with motorcycle use.

Source: ANSV Argentina. https://www.argentina.gob.ar/sites/default/files/2021/02/ansv_entrega_de_cascos_a_motociclistas.pdf

PROTECTIVE GEAR FOR MOTORCYCLISTS

In addition to head protection, which was addressed earlier, it is also important for motorcyclists to wear protective gear to safeguard other areas of the body.

Figure 28. Protective Gear by Body Area



Source: Authors' elaboration based on ITF (2015).

The publication *Roadmap for Improving Road Safety for Motorcycle and Moped Users* (Fundación Mapfre, 2021), indicates that, when examining statistical data on the body areas affected in motorcycle rider and passenger road traffic crashes, 24% of serious injuries occur in the torso, while 20% and 31% occur in the upper and lower limbs, respectively.

The use of protective clothing is considered an intervention with promising effectiveness, as it reduces the risk of injury from friction against the ground and impact with other objects during a collision (ITF, 2015).

In Argentina, diagnoses for traffic-related trauma (ANSV, 2024) included:

- Head and neck trauma: 24.0%
- Trauma to chest, abdomen, and pelvis: 4.7%
- Trauma to multiple body regions: 32.5%
- Trauma to the upper limbs: 10.7%
- Trauma to the lower limbs: 19.4%
- Hip and thigh trauma: 4.4%
- Spinal cord trauma: 0.2%

Protective gear, in addition to the safety helmet, consists of clothing items (boots, jackets, gloves, and pants), designed to protect motorcyclists in case of a road traffic crash.

The following section highlights the importance of protective gear for motorcyclists.

Table 8. Personal Protective Equipment Characteristics

Personal Protective Equipment	Characteristics
 **Motorcycle Protective Clothing (Jackets and Pants with Protection)**	These garments must protect users from abrasion in the event of a fall. Additionally, they should include protective elements for joints and the back to mitigate the consequences of an impact. It is estimated that wearing jackets and gloves reduces the likelihood of injuries in covered areas by 33% (Elvick et al., 2009). To improve the visibility of motorcyclists and passengers at night, these garments should be light-colored and include retroreflective bands. **Technical Standards:** Impact protection for limbs: EN 1621-1 Impact protection for the back: EN 1621-2 Protective clothing: EN 17092
 **Clothing with airbags**	Airbag Jackets represent a technology designed to provide passive safety for motorcyclists. Due to their effectiveness, their use is mandatory in some competitive motorcycling disciplines. They reduce the risk of severe injuries. Regarding chest injuries, airbag jackets decrease the likelihood of severe AIS3-level injuries by 14%. For broader use, companies in Colombia have reported a 90% reduction in disability days resulting from motorcyclist crashes among fleet users (Centro de Innovación para Motociclistas, 2019). **Technical Standards:** prEN 1621 – 4 prEN 1621 – 5
 **Boots**	This footwear must protect the user from burns caused by accidental contact with high-temperature components, such as, the motorcycle's exhaust pipe. It should also include the necessary reinforcements to protect the foot's integrity during impacts. Additionally, it must be abrasion-resistant, protecting the user from burns caused by friction against the ground in the event of a fall. **Technical Standard: EN 13634**
 **Gloves**	Gloves are intended to protect against injuries caused by abrasion. They should include special protection for knuckles and wrists to safeguard joint areas. **Technical Standard: EN 13594**
 **Reflective clothing**	Wearing light-colored and retroreflective clothing allows other road users to more easily identify motorcyclists in the traffic. Additionally, (European Association of Motorcycle Manufacturers [ACEM], 2009) concluded that in 13% of the crashes studied, the use of dark clothing hindered visibility. **Technical Standard: EN 471**

Source: Authors' elaboration.

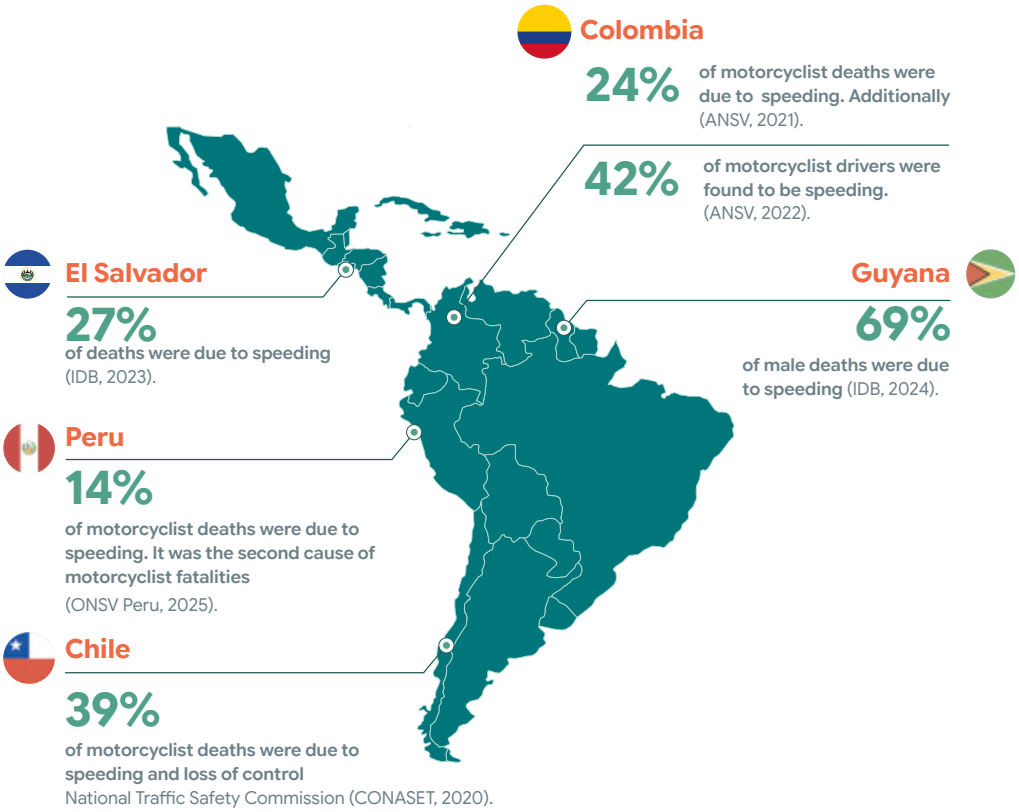
SPEED MANAGEMENT AND ENFORCEMENT

Research from other countries provides significant evidence regarding human errors that contribute to motorcycle-related road traffic crashes. The National Transportation Safety Board (NTSB) in the United States published a report in 2018 highlighting several key risk factors associated with motorcycle crashes. The report found that, in many cases, drivers of other vehicles failed to detect the motorcyclist or did not recognize the presence of a hazardous situation. On the other hand, motorcyclists often failed to react promptly or appropriately to avoid a crash, or, although they recognized the danger, did not fully understand its severity.

These findings suggest two key issues: first, the motorcyclist may not have enough time or distance to react, often due to travel speed; and second, there may be a lack of proper training in motorcycle handling and risk assessment.

The role of speed in road traffic crashes is critical, as it directly affects reaction time when trying to dodge or brake for an obstacle. Speed also influences the rider's ability to regain control of the vehicle, especially in higher-risk environments such as curves or intersections (WHO, 2023b).

Figure 29. Fatalities due to Speeding in Some LAC Countries



Source: Authors' elaboration.

Furthermore, according to *Speed Management: A Road Safety Manual for Decision-Makers and Practitioners, Second Edition*, as speed increases, the driver's field of vision decreases, which limits the ability to remain aware of their surroundings and react to unexpected events **(WHO, 2023b)**.

In addition to these factors, speed is a key determinant of injury severity in the event of a crash **(WHO, 2023b)**. In physical terms, a collision between vehicles or with a fixed object, pedestrian, or cyclist can be understood as an interaction of forces in which severity impact is directly proportional to the product of mass and speed. Consequently, the higher the speed, the more severe the collision (ANSV Colombia, 2024).

Figure 30. Impact Energy at a Given Speed

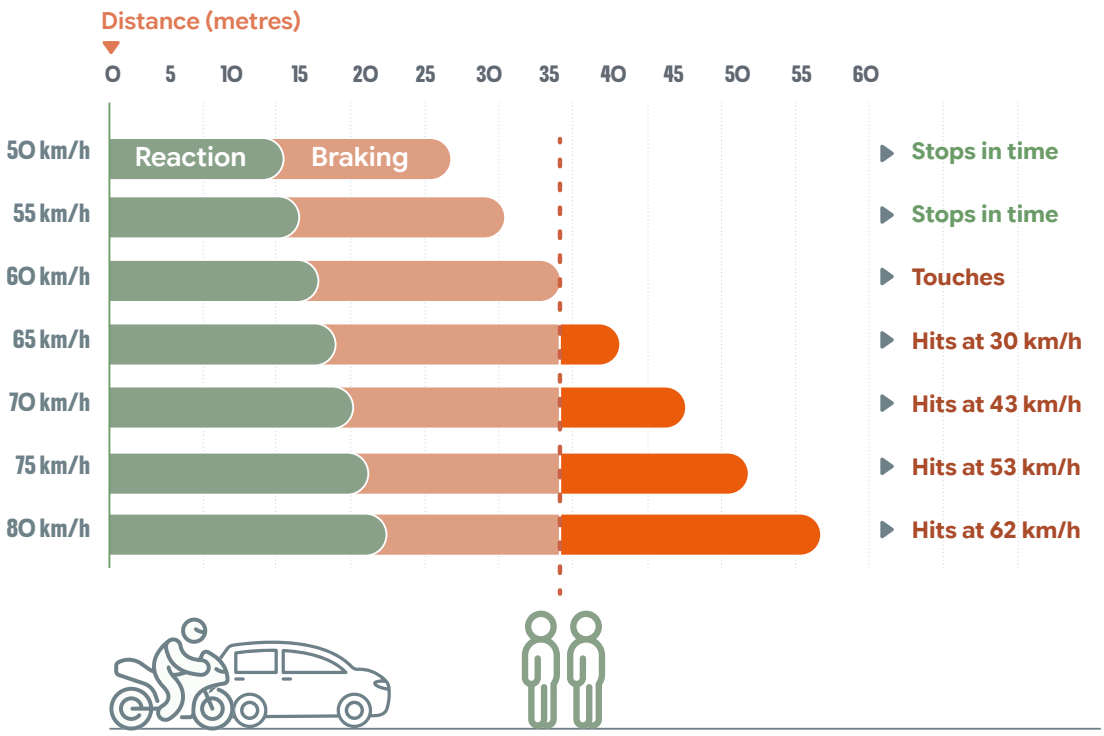
Source: Adapted from CONASET (2018).

When evaluating the relationship between speed and the risk of death in a crash, studies show that a change in speed can be the deciding factor between life and death. For example, the likelihood of a pedestrian surviving a crash involving a vehicle traveling at 50 km/h is approximately 50-80%, while at 30 km/h the survival rate increases to about 90% (WHO, 2023b). In summary, driving at excessive or inappropriate speeds is a major risk factor for collisions, fatalities, and injuries. This factor accounts for one in three traffic-related deaths globally.[38]

Another significant effect of speed is the reduction in the driver's field of vision, which complicates the identification of road users or obstacles as speed increases. Additionally, higher speeds contribute to longer braking distances, further limiting the ability to stop in emergency situations.

38 https://www.who.int/news/item/05-05-2017-speed-management-key-to-saving-lives-making-cities-more-liveable

Figure 31. Detection Distance at Different Speeds (One-Second Reaction Time)



Source: Speed Management – A road safety manual for decision – makers and practitioners, Second Edition (WHO, 2023b).

Source: Ciudad Humana Foundation - Colombia

Table 9. Speed Enforcement Techniques Focused on Motorcyclists

Technique	Description
Manual Speed Enforcement	For motorcyclists, manual enforcement poses unique challenges, such as difficulty in stopping motorcycles safely and ensuring identification. This method involves police officers using radar or laser devices to detect speeding motorcycles. Given that motorcycles display license plates only on the rear, officers must position themselves to capture plate details clearly. Checkpoints are crucial to ensuring safe and effective stops for motorcyclists.
Automated Speed Enforcement	Automated systems use cameras to detect speeding vehicles without requiring police presence. For motorcycles, these cameras must focus on the rear license plates. High-resolution cameras and properly calibrated systems are critical to ensure accuracy, especially in areas with heavy motorcycle traffic.
Point-to-Point Enforcement ("Section Control")	This approach calculates a vehicle's average speed over a specific stretch of road by capturing entry and exit times. For motorcycles, cameras at both points must focus on the rear license plate to ensure accurate identification. This system discourages temporary compliance and promotes sustained adherence to speed limits.

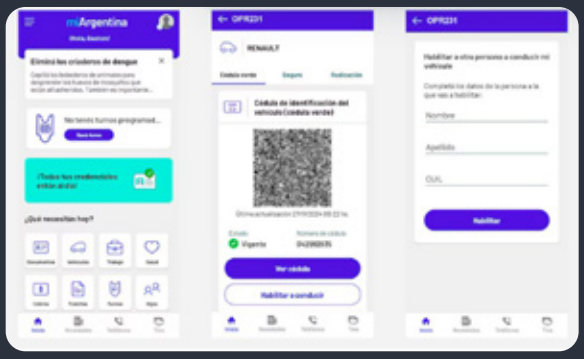
Source: Authors' elaboration based on WHO (2017), Save Lives: A Road Safety Technical Package. Geneva: WHO; European Transport Safety Council (2016). Automated Enforcement: Reducing Speeding on Europe's Roads. Brussels: ETSC; And ITF (2018). Speed and Crash Risk. Paris: OECD Publishing.

Several LAC countries have implemented specific experiences in speed management and traffic enforcement. Below are concrete examples that demonstrate how the infrastructure, surveillance, the use of technology, and the alignment of campaigns and speed controls contribute to achieving these objectives.

Mandatory Registration of Drivers for Each Vehicle

Country: Argentina
Entity: ANSV

In the process of monitoring behaviors that compromise road safety, a significant barrier exists. Depending on national legislation, this barrier prevents the completion of the sanctioning cycle: the inability of current technology to fully identify the driver committing violations. This challenge is even more pronounced in the case of motorcyclists, as the use of helmets often obscures their identity, making enforcement more complex.



In Argentina, this issue has been addressed through the implementation of the "Blue Card." This system requires vehicle owners to provide authorities with information on individuals authorized to operate the vehicle. As a result, when a traffic violation occurs, the penalty is assigned to one of the registered drivers. If the driver responsible for the infraction is not listed among the registered individuals, the violation is attributed to the vehicle owner for failing to comply with the registration requirement.
To further simplify procedures, the process was streamlined through the introduction of a driver registration system accessible via the website www.miargentina.gob.ar.

Lesson Learned or Recommendations

- Although this system does not directly address motorcyclist road safety, it serves as a valuable tool for strengthening the enforcement process.
- It is essential for the State to identify the individuals responsible for each vehicle and effectively monitor their behavior.
- Countries should conduct a comprehensive legal analysis to assess the feasibility of this approach to strengthening the sanctions system.
- To minimize the administrative burden on citizens, straightforward simple registration mechanisms should be prioritized, without generating additional costs.

Source: Government of Argentina. https://www.argentina.gob.ar/servicio/tramitar-una-cedula-para-autorizado-conducir

Monitoring Risk Behaviors Among Workplace Personnel

Country: Colombia
Entity: FIA - ACC

The FIA and the Automobile Club of Colombia (ACC) collaborated on a monitoring project aimed at demonstrating that a coordinated effort between corporate policies, awareness programs for motorcyclists and their families, and behavior control positively influences driving habits among motorcyclists. This, in turn, leads to a reduction in road crash rates.
The study was conducted in three cities (Bogota, Barranquilla, and Cali) across three companies over a four-week period, with 15 motorcyclists per company.

The program involved continuous monitoring of risk behaviors in two groups of motorcyclists (an awareness group and a control group without awareness intervention), using GPS technology to track speed, acceleration, harsh braking, and erratic lane changes with the following considerations:

- Speed exceeding 50 km/h in urban areas
- Speed exceeding 70 km/h on highways
- Sudden acceleration: speed increases greater than 10 km/h in 2 seconds
- Sudden braking: speed reduction greater than 10 km/h in 2 seconds
- Erratic Lane changes: deviation equivalent to 0.26% of the severity index

As a result, a 36.5% reduction in risky behaviors per 10 kilometers was observed, due to constant feedback and monitoring.

It was identified that the main instances of inappropriate road behaviors occurred immediately before the start of the workday and upon its completion. Additionally, the main days for risky behaviors among the monitored motorcyclists were Sundays and Wednesdays. These findings are consistent with national crash statistics.

Moreover, family involvement plays a key role in behavior change. When families were included in awareness activities, it leads to greater reflection and change on the part of the rider.

Lesson Learned or Recommendations

- The study demonstrates that a change in mobility behavior in a work environment is possible and requires a permanent awareness program in conjunction with a follow-up, monitoring, and control mechanisms.
- Monitoring systems may be installed directly in the vehicle or implemented through mobile-based applications.
- It is essential, in these exercises, to generate a robust procedure and methodology for processing the data collected.

Source: Automóvil Club de Colombia (ACC).

Speeding Campaign: "It Didn't Have to Happen"

Location: Colombia
Entity: Vital Strategies

In August 2023, Colombia's ANSV, along with the Mobility Secretariats of Bogota and Cali, launched a mass media campaign coordinated with on-road law enforcement operations to curb speeding. The campaign, titled *It Didn't Have to Happen*, is the fourth speeding-prevention initiative led by the ANSV in collaboration with the Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS), the twelfth in Bogota, and the third in Cali.

This campaign shares the testimonies of six families who provide impactful testimonies about losing loved ones to speeding-related crashes. Through these narratives, families appeal to motorcyclists to respect speed limits and drive responsibly. Evaluation results demonstrated that the campaign successfully achieved its goal of shifting perceptions and attitudes toward speeding. It positively influenced social norms related to driving and led to behavioral changes among drivers.

An important achievement of the campaign was the joint support from three public entities (one national and two municipal), which committed to funding its dissemination. This is not common among public entities, as they often seek to implement independent campaigns and programs.

The primary target audience for the campaign was male two-wheel vehicle drivers aged 18–45, belonging to low- and middle-income socioeconomic groups.

Source: Vital Strategies

The campaign was evaluated through face-to-face intercept interviews with 1,017 randomly selected drivers at six high-traffic locations in Bogota D.C., Medellin, Cali, Barranquilla, Pereira, and Ibague, conducted between November 14 and December 3, 2023.

The results showed that:

- 98% of respondents who recalled the campaign found it easy to understand
- 97% considered it credible
- 96% perceived the advertisement as relevant
- 90% agreed that it made them "stop and think"
- 83% said that it "taught them something new"
- 9 out of 10 respondents who viewed the campaign rated it as an effective anti-speeding initiative

The campaign resonated particularly with two-wheel vehicle drivers, effectively delivering its message to the intended audience.

Lesson Learned or Recommendations

- When multiple stakeholders (national, local, and private) target the same audience with Road Safety messages, there is a risk of message saturation and confusion. Therefore, a recommendation is to encourage collaboration among these entities to create a unified campaign, which amplifies dissemination efforts, ensures consistent communication, and increases the effectiveness of the strategy without overloading or confusing the target population.
- In this case, it turned out that focusing on messages highlighting the impact of road crashes on victims' families generated stronger emotional connections among Latin American audiences. Emotional and victim-centered messages significantly influence behavior and attitudes in Latin America. Additionally, including traffic crash victim communities in campaigns foster authenticity and engagement. However, it is always essential to deeply understand the audience, knowing what type of messages and elements can effectively drive behavior change.
- Disseminate information through television and social media platforms, aligned with the target audience's consumption habits.
- Collaboration with public entities, national governments, and enforcement agencies (Police and Transit Agents) to ensure campaigns are well-supported and reinforce behavioral change.
- Tailored strategies that reflect the cultural and social dynamics of individual cities increase overall campaign effectiveness.

Source:
Vital Strategies. Interview.
Agencia Nacional de Seguridad Vial (Colombia). https://www.ansv.gov.co/es/prensa-comunicados/10134
Agencia Nacional de Seguridad Vial (Colombia). https://ansv.gov.co/es/prensa-campana/10133
Bogotá City Government. "No tenía que pasar" road safety campaign. https://bogota.gov.co/mi-ciudad/movilidad/no-tenia-que-pasar-campana-sobre-el-cuidado-de-la-vida-en-las-vias
Campaign Beacon. "It Shouldn't Have to Happen" anti-speeding campaign. https://campaignbeacon.org/campaigns/it-shouldnt-have-to-happen-anti-speeding-campaign/

Vietnam

Vietnam has achieved a significant reduction in traffic-related fatalities[39], with a decrease of more than 40% between 2010 and 2021. However, experts emphasize that motorcyclists should remain the primary focus of traffic safety programs, as they account for 9 out of 10 vehicles on the road and more than 70% of traffic crashes. Despite progress, critical challenges remain.

Key measures implemented and recommendations include:

1. **Mandatory Helmet Use:** While helmet use is compulsory for motorcyclists; however, gaps remain in standards for helmets designed for children under six years of age, as well as a lack of penalties for violations involving young passengers.

2. **Education and Training for Young Riders:** Adolescents aged 16 to 18 are legally permitted to operate scooters under 50cc but often lack adequate knowledge and driving skills. Expanding driver education programs for this group is crucial.

3. **Awareness Campaigns:** Public campaigns have been launched to raise awareness of traffic safety and encourage safer driving practices among motorcyclists.

4. **Urban-Focused Measures:** Given the dominance of motorcycles in urban mobility, infrastructure improvements and enacting stricter regulations tailored to motorcycle use is essential.

5. **Alcohol Control Measures:** Efforts to reduce driving under the influence have been strengthened, though alcohol impairment remains a persistent issue in many areas.

6. **Operational Control of Motorcyclists:** Authorities conduct regular traffic enforcement operations, including random roadside inspections, monitoring for compliance with helmet laws, licensing compliance, and alcohol consumption limits. This helps ensure accountability and adherence to traffic regulations.

Addressing these areas, particularly the regulatory gaps such as helmet standards for children and proper training for young drivers, will be critical for further reducing traffic-related injuries and fatalities.

39 Vietnam News. Motorcycles should be the focus of traffic safety programmes: Experts. https://vietnamnews.vn/society/1666290/motorcycles-should-be-the-focus-of-traficsafety-programmes-experts.html

Building on the importance of speed management as a core pillar of road-safety enforcement, it is essential to consider other high-risk behaviors that contribute significantly to crash severity. **Alcohol impairment** remains a major global factor in road traffic injuries and fatalities. According to the *Global Status Report on Road Safety* (WHO, 2023) findings from studies conducted in LMICs indicate that between 33% and 69% of drivers involved in fatalities and between 8% and 29% of those without fatalities had consumed alcohol prior to the crash.

In Argentina, **23.1%** of alcohol tests administered to motorcyclists returned positive results[40]. Among these, the most frequent value (mode) **was five times the legal limit.** (ANSV Argentina, 2019)

Antidoping Strategy in El Salvador

In El Salvador, the **Ministry of Public Works and Transport (MOPT)** and the **Vice Ministry of Transport (VMT)** conduct roadside alcohol and drug testing operations as part of their national road-safety enforcement strategy. These checkpoints are placed in high-traffic areas—major highways, bus terminals, and key access routes—and cover public transport, freight transport, motorcycles, and private vehicles. The system operates under a preventive framework supported by the **Zero-Alcohol Tolerance Law**, the **Land Transport, Transit and Road Safety Act**, and its regulations. The purpose is to detect alcohol or drug consumption among drivers, verify compliance with essential safety conditions, and reduce risk factors that contribute to road crashes.

Effectiveness is demonstrated through year-to-year comparisons. Between **1 January and 14 February 2025**, MOPT and VMT conducted **9,497 alcohol and drug tests**, identifying **67 positive results (0.70%)**. During the same period in **2024**, they carried out **9,308 tests**, with **462 positive results (4.96%)**[41]. This significant reduction in the proportion of impaired drivers suggests a deterrent effect associated with continuous enforcement and the strict application of the zero-tolerance regime. Such systematic monitoring represents a technically replicable practice for other countries seeking to decrease substance-related road crashes and fatalities.

40 This analysis is based on 48,780 drivers tested between 2016 and July 2018. The controls were conducted by 38 municipalities and six provincial police forces across 16 provinces in Argentina. Data were collected from both dedicated alcohol testing operations and comprehensive vehicle inspections that included blood alcohol concentration (BAC) tests.
A key finding is that most tests were conducted at night (between 7:01 p.m. and 7:00 a.m.), with limited enforcement during daytime hours (7:01 a.m. to 7:00 p.m.). Three out of four drivers were tested at night.

41 ElSalvador.com. Multas de tráfico y conducción peligrosa bajo la Ley de Transporte Terrestre, Tránsito y Seguridad Vial. https://www.elsalvador.com/h-noticias/h-nacional/multas-de-trafico-transporte-viceministerio-viceministro-ley-terrestre-transito-y-seguridad-vial-conduccion-peligrosa-/1200925/2025/

MOTORCYCLE DRIVER LICENSING

This is related to behavioral patterns identified in this population group, such as a higher propensity for risk-taking and traffic violations. Novice riders, particularly those with less than two years of experience, are at a significantly higher risk of crashes.

Studies have shown that the probability of a traffic crash is influenced by factors such as years of riding experience, gender, and age.

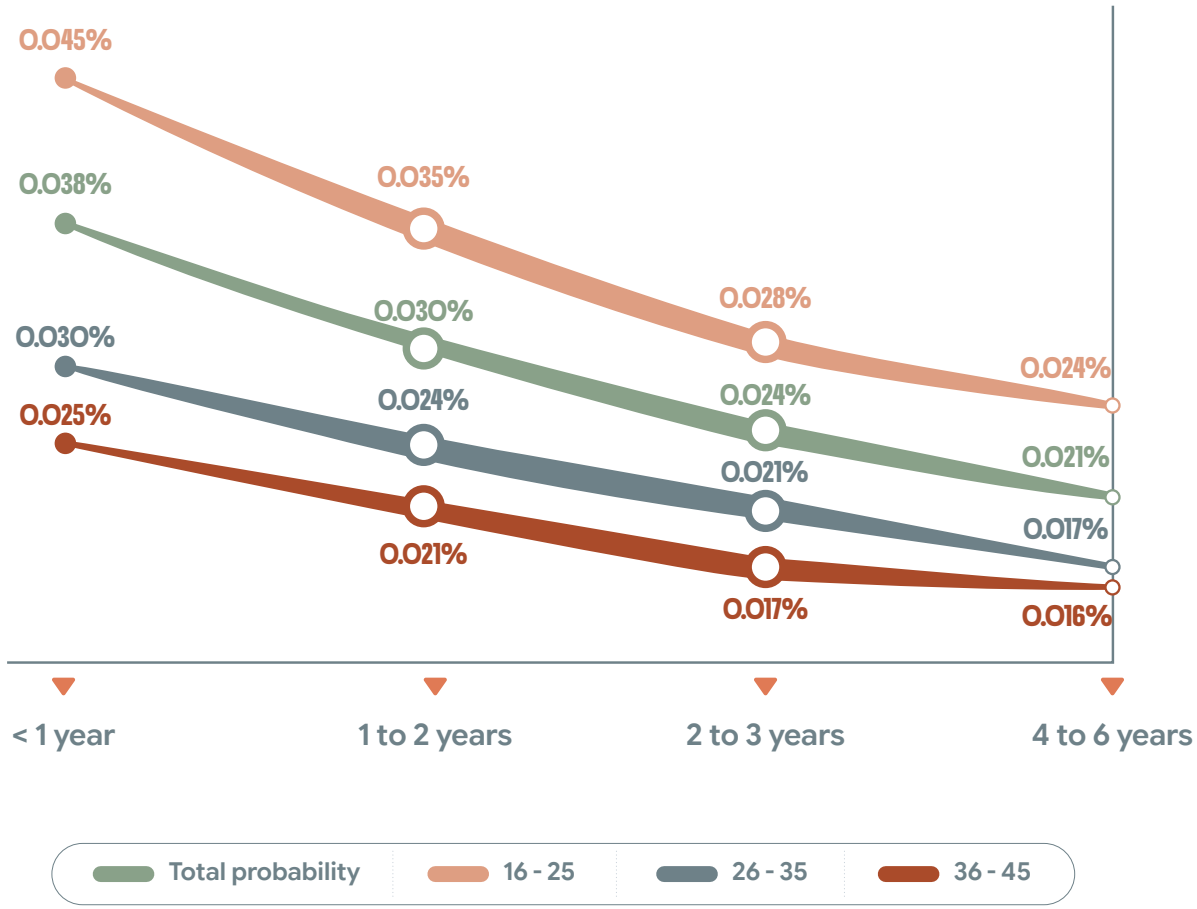
Available evidence from several LAC countries indicates that the motorcycle use by minors and unlicensed adolescents occurs in contexts characterized by limited enforcement or sociocultural normalization of early motorcycle use. In Costa Rica, a university study reported that 53% of motorcyclists stated they did not hold a valid license (Universidad de Costa Rica, 2017). In Colombia, the report *Minors and Motorcycles: Invisible Victims* documented that between 2009 and 2023, 3,153 minors involved in motorcycle crashes died; among them, 479 were between 9 and 15 years old—ages at which obtaining a motorcycle license is legally prohibited (Fundación Ciudad Humana, 2024).

At the regional level, a study conducted by the Development Bank of Latin America (CAF) & Fundación Gonzalo Rodríguez (2018) across six countries found that children and adolescents frequently use motorcycles for daily travel, reflecting culturally normalized patterns of early riding. Additionally, international organizations such as PAHO (2019) and UNICEF identify lack of experience and youth operation of motorized vehicles as established road-safety risk factors.

In Colombia, drivers with 4 – 6 years of riding experience have a 36.8% lower probability of dying in a traffic crash compared to those with less than one year of experience. Similarly, the probability of being involved in a fatal crash decrease by 40% among more experienced riders (Agencia Nacional de Seguridad Vial, Colombia [ANSV Colombia], 2022).

Younger novice drivers, aged 16-25, are at a higher risk of traffic crashes, fatalities, and traffic violations compared to older drivers.

Figure 32. Probability of Death Based on License Issuance Time, Age, and Gender: Colombian ONSV Study of Novice Drivers



Source: Colombian National Observatory - ANSV Colombia (2022).

Licensing Requirements

Licensing information by country is presented below, outlining the different requirements for the issuance of motorcycle licenses across Latin American countries. Some of the data have been updated since the original study was conducted and have been adapted to reflect the current regulatory framework (OECD & ITF, 2017).

Table 10. Requirements for Obtaining a Motorcycle License in Different Latin American Countries

Country	Minimum Age to Drive a Moped/ Scooter	Minimum Age to Ride a Motorcycle (Years)	Mandatory Pre-training	Theo-retical Exam	Prac-tical Exam	Comments
Argentina[42]	16 years old	Up to 150 cc: 17; 150 cc to 300 cc: 20 (2 years of experience in up to 150 cc) or 21 (No prior experience required); Over 300 cc: 22 (2 years of experience)	Yes: 5 hours of theo-retical training	Yes	Yes	For mopeds, prior consent of an adult is required, who will be responsible for any damage caused by the minor driver. To operate motorcycles with an engine capacity of less than 150 cc between the ages of 17 and 18, parental authorization is required
Brazil[43]	18 years old	18 years old	Moped: 20 hours of theory and 10 hours of practice; Motor-cycle: 45 hours of theory and 25 hours of practice	Yes	Yes	
Chile[44]	18 years old	18 years old	No	Yes	Yes	It is not mandatory to com-plete a training course; how-ever, courses of 8 pedagogical hours of theoretical instruc-tion and 10 pedagogical of practical instruction are recommended
Colombia[45]	16 years old	16 years old	A1: Up to 125 cc; 25 hours of theory and 11 hours of practice A2: Motorcycles, motorbikes, and tricycles with more than 125 cc engine capacity; 25 hours of theory and 18 hours of practice	No	No	The theoretical and practical exams are established by law (Colombian Traffic Code, Article 19 - Requirements). However, they are not yet regulated.
Costa Rica[46]	No minimum	Up to 125 cc: 16; Over 125 cc: 18	No	Yes	Yes	

42 Updated with data available from the ANSV (Argentina) and other official government sources: https://www.argentina.gob.ar/justicia/derechofacil/leysimple/licencia-de-conducir https://www.argentina.gob.ar/seguridadvial/licencianacional/clasesysubclases

43 Updated with data available from DETRAN Paraná (Brazil): https://www.detraneduca.pr.gov.br/Pagina/Informacoes-sobre-1a-habilitacao

44 Updated with data available from the National Traffic Safety Commission (CONASET), Chile: https://mejoresconductores.conaset.cl/#/LicenciaClaseC

45 Updated with data available from the Ministry of Transport (Resolution 2022-N0009425), Colombia: https://www.runt.gov.co/sites/default/files/normas/MinTransporte-Resolucion-2022-N0009425_20220224.pdf

46 Updated with data available from official licensing information (Costa Rica): https://licenciascr.com/conducir/tipo-a-motos/

Country	Minimum Age to Drive a Moped/ Scooter	Minimum Age to Ride a Motorcycle (Years)	Mandatory Pre-training	Theo-retical Exam	Prac-tical Exam	Comments
Ecuador[47]	18 years old	18 years old	15 hours of theory, 15 hours of practice, 1 hour of mechanical training	Yes	Yes	
Mexico	No minimum	18 years old	No	No	No	Due to the federal structure of the country, there is no nationwide requirement; however, some states have implemented their own regulations. Mexico City serves as an example in this case.
Mexico City[48]	No minimum		No: Optional and free of charge, offered by the Mobility Department	Yes	Yes	
Paraguay[49]	18 years old	18 years old	No	No	No	
Uruguay	16 years old	Up to 200 cc: 18; Over 200 cc: 21	No	Yes	Yes	

Source: Authors' elaboration based on ITF (2017), Benchmarking Road Safety in Latin America, International Transport Forum Policy Papers, No. 43, OECD Publishing, Paris, and others.

47 Updated with data available from the National Transit Agency (ANT), Ecuador: https://www.gob.ec/ant/tramites/emision-licencia-conducir-primera-vez-profesional-tipo-a1-c-c1-d-g

48 Updated with data available from the Secretariat of Mobility (SEMOVI), Mexico City: https://semovi.cdmx.gob.mx/tramites-y-servicios/vehiculos-particulares/motocicleta/licencia/expedicion-de-licencia-tipo-a1

49 Updated with data available from official licensing information https://antsv.gov.py/uplmoo9eib8eefou3ooze4y/2025/06/Manual_del_Motociclista_web20220915.pdf

> Graduated Licensing Schemes

In the LAC region, driving has increasingly become a crucial logistical necessity for families, often perceived as a valuable personal "asset" that can influence social relationship dynamics. This situation contributes to the early initiation of basic vehicle handling, following simple operational instructions, provided by a family member or a close acquaintance. This informal learning, combined with weaknesses related to enforcement capacity, socioeconomic constraints that force prioritization of investments, and the psychological characteristics inherent risk-taking tendencies of adolescents and young people, results in an elevated risk of crashes among novice drivers.

For the above-mentioned reasons, the region must progress towards a gradual licensing scheme that protects novice drivers by enabling them to progressively acquire skills and experience before obtaining a full license. Each stage tests the driver's knowledge and gradually lifts restrictions related to age, vehicle displacement, passenger transport authorization, and night driving, among others.

This strategy mitigates risk for the motorcyclist by limiting engine displacement, thereby restricting acceleration and inappropriate speed. In addition, it reduces vulnerability by establishing the requirement of adult supervision at critical moments, such as night driving.

Countries such as Colombia have studied the risk of novice drivers (ANSV Colombia, 2022), identifying the probability of a traffic crash or death based on years of licensing, gender, and age. The study reached the following conclusion:

"(...)

1. Novice drivers, especially young people (16 to 25 years old), are at higher risk when driving a motor vehicle. Compared to more experienced drivers, individuals with up to one year of experience from the issuance of their first license have a higher probability of dying, being involved in traffic crashes with victims, and receiving a ticket.

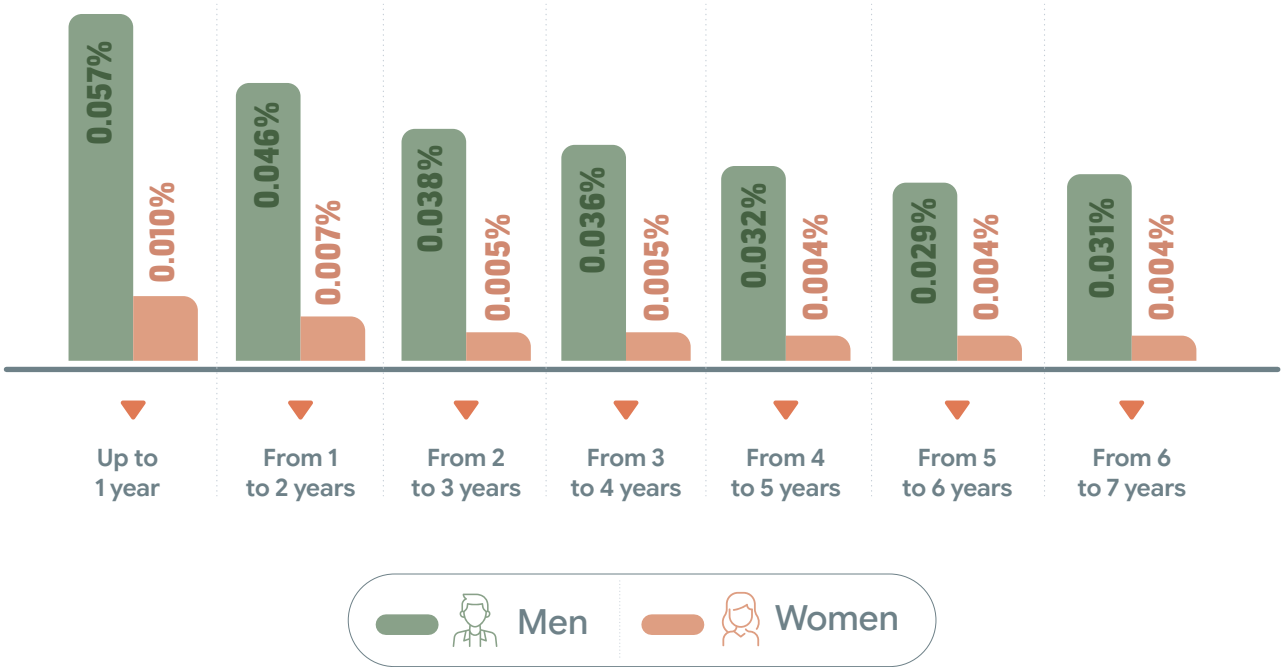
2. According to the probability of dying in a traffic crash based on experience, the probability decreases by 36.8% for drivers between 4 and 6 years of experience compared to those with up to one year of experience. Similarly, the probability of being involved in a traffic crash with casualties decreases by 40% for more experienced individuals (4 –6 years of experience).

3. This probability decreases not only with driving experience, but also with increasing age of novice drivers. Younger novice drivers aged 16–25 at the time of obtaining their first license, are more likely to be involved in traffic crashes with victims, to die in a traffic crash, or to receive traffic tickets than drivers over 25.

(...)"

The following graph illustrates the study's findings, highlighting the probability of fatality in a traffic crash.

Figure 33. Probability of Fatality in a Traffic Crash, by Years Since Licensing and Gender



Source: National Observatory of Road Safety – Colombia.

The Colombian research showed that mandatory road education during the learning stage can be beneficial, reducing the relative risk of death among 18-year-old drivers by 34.5%.

In this sense, it is pertinent for public policy to promote measures and actions that adequately prepare novice drivers before they begin operating vehicles independently. As demonstrated in other countries, as New Zealand[50], one option is to obtain a provisional license or driving permit before obtaining a definitive driving license. The transition from a provisional to a full license should depend not only on having met a set time requirement (for example, one or two years), but also on an evaluation period that reflects experience gained and the overcoming of aspects related to road safety, which are considered guarantees of excellent behavior and reliability when receiving the full driving license.

Graduated Driver Licensing (GDL) system introduces inexperienced drivers to driving while protecting them during the learning process. There are three different licensing stages: beginner, intermediate, and final. The beginner stage requires a mandatory learner's permit period, during which driving is permitted only under the supervision of an experienced adult driver. An intermediate period follows, allowing unsupervised driving and limiting exposure to high-risk conditions through restrictions on passenger numbers and nighttime driving. The final licensing stage allows unrestricted driving, finally exposing beginners to the full range of driving risks.

50 [8] Lewis-Evans, B. Crash involvement during the different phases of the New Zealand Graduated Driver Licensing System (GDLS). Available at: https://www.sciencedirect.com/science/article/abs/pii/S0022437510000654

In conclusion, the defining characteristic of GDL systems is staged progression, in which exposure to risk gradually increases until driving without supervision is permitted in all conditions.

Research indicates that GDL policies are associated with a 22% reduction in crash rates among 16-year-old drivers but only a 6% reduction among 17-year-old drivers[51].

This evidence demonstrates that adolescent drivers need to gain experience in both vehicle control skills and in judgment and decision-making on the road under minimal risk conditions. Extended learners' permit periods, nighttime restrictions, and passenger restrictions are among the most effective GDL components. Similarly, the system mentions the use of mobile phones and other portable electronic devices, as well as the requirements for supervised driving.

General GDL system also emphasizes the importance of parents guiding and managing their adolescent and children's driving and underscore the importance of road-safety education in teaching safe driving skills.

Source: Ciudad Humana Foundation - Colombia

51 Porchia et al. (2014).

Three Points-Based Licensing in LAC

Country: Brazil

Law No. 9503 of September 23, 1997 (Brazilian National Traffic Code) implements the points-based licensing system.[52]

Country: Ecuador

In Ecuador, Supplement No. 415 to the Official Register, dated March 29, 2011, introduced the points-based driver's licensing system. Under this system, drivers are assigned a total of 30 points along with their license, which are gradually deducted for violations and infractions that compromise road safety.

A 2022 study titled *Points-Based Driver's Licenses and Traffic Violations in Santo Domingo, Ecuador* (2000–2019), conducted as part of a consulting initiative in the Santo Domingo canton, found that traffic violations decreased by 18.85% during the 2011–2019 period compared to 2000–2010. This reduction was attributed to the implementation of the points-based licensing system.[53]

Country: Peru

The Points-Based Driver Licensing System (PBDLS) in Peru was implemented in 2009 by the Ministry of Transportation and Communications (MTC). The system aims to improve driving habits and reduce traffic crash rates.

This platform, administrated by the MTC, records the accumulation of points in a driver's record for each violation committed. Violations are categorized as follows:

- Minor violations: incur between 5 to 20 penalty points.
- Serious violations: 20 to 50 penalty points.
- Very serious violations: 50 to 100 penalty points.

All points are recorded in the driver's history.

- If a driver accumulates 100 penalty points for the first time, the license is suspended for six months.
- If 100 points are accumulated a second time, the license suspension is extended to one year.
- Upon accumulating 100 points for a third time, the license is permanently revoked, and the driver is disqualified permanently.

Penalty points resulting from a confirmed infraction remain valid for two years. After this period, the points are automatically removed.

If a driver does not commit any infractions within a 24-month period, a bonus of 20 points is granted, which are valid for two years but are non-cumulative.[54]

52 Government of Brazil, Ministry of Justice (1997).
53 Constitutional Court of Ecuador (2011).
54 Government of Peru (n.d.).

> Point-Based Licensing Scheme

The Points-Based Licensing System is a regulatory tool for penalizing traffic violations committed by drivers, and it offers significant benefits, particularly in addressing repeat offenders. One of the main features is that it applies equally to all road users, with the same penalizing effect for everyone. This contrasts with other punitive measures, such as monetary fines, whose effectiveness may vary depending on the socioeconomic level of the sanctioned driver.

The Aleatica Foundation for Road Safety, established in Mexico in 2022, conducted the *study Points based licensing system*[55] which compiled conclusions from around 11 countries where the points-based licensing system has been implemented, specifically focusing examining its effectiveness in mitigating road crashes.

The study outlines that these systems operate through the following dimensions:

1. Punitive	Sanctions risky behaviors that lead to violations.
2. Preventive	Generates a deterrent effect.
3. Reinforcer	Rewards drivers for maintaining all assigned points.
4. Re-educational	Recovers points via awareness courses and attitude change.
5. Rehabilitative	Identifies repeat offenders with potential medical or psychological conditions.
6. Conditional	Imposes specific conditions for at-risk driver categories.

The study's conclusions regarding points-based licensing systems are as follows:

1. They reduce traffic crashes by an average of 12%.

2. They reduce crashes with fatalities and injuries by an average of 17%.

55 Aleatica Foundation. (2022). Points-based licensing system.

Table 11. Summary of the Application of the Points-Based License System in Selected Countries

Id	Country	Points-based License System	Scope of Application	Point Gain or Loss Classification	Number of Points Until License Withdrawal	Difference Based on the User Type	Existence of Re-Education Course Voluntary or Mandatory	Evaluation of Psychophysical and Medical Tests
1	**Mexico**[56]	Yes	State	Gain	12	No	No	No
2	**Chile**	No	.	-	-	-	-	-
3	**Colombia**	Proposed	National	Loss	20	Novice	Yes	No
4	**Peru**	Yes	National	Gain	100	No	Yes	No
5	**Uruguay**	Proposed	National	Loss	12	Novice	Yes	No
6	**Costa Rica**	Yes	National	Gain	12	It depends on the type of license	No	No
7	**Spain**	Yes	National	Loss	15	Novice	Yes	No
8	**Italy**	Yes	National	Loss	30	Novice	Yes	No
9	**United Kingdom**	Yes	National	Gain	12	Novice	No	No
10	**France**	Yes	National	Loss	12	Novice	Yes	Yes
11	**Germany**	Yes	National	Gain	18	Novice	No[57]	No
12	**Austria**	Yes	National	Gain	3	No	Yes	No
13	**Bulgaria**	Yes	National	Loss	39	Novice	Yes	No
14	**Australia**	Yes	National[58]	Gain	14	It depends on the type of license	No	No
15	**United States**[59]	Yes	State	Gain	Variable[60]	No	Yes	No
16	**Dominican Republic**	Yes	National	Loss	20	Novice	Yes	Yes
17	**China**	Yes	National	Gain	12	No	Yes	No
18	**Japan**	Yes	National	Gain	Variable[61]	No	-	No
19	**Cyprus**	Yes	National	Gain	12	No	No	No
20	**Czech Republic**	Yes	National	Gain	12	No	Yes	No
21	**Denmark**	Yes	National	Gain	3	Novice	No	No
22	**Finland**	Yes	National	Gain	4	Novice	No	No
23	**Greece**	Yes	National	Gain	25	No	Yes	No
24	**Hungary**	Yes	National	Gain	18	No	Yes	No
25	**Ireland**	Yes	National	Gain	12	No	No	No
26	**Luxembourg**	Yes	National	Loss	12	No	Yes	No

56 Information only applies to Mexico City.
57 There is a mandatory awareness course; however, it does not eliminate the accumulated points.
58 National framework with regional variations in criminal regulations.
59 Information only applies to California.
60 The number of points depends on the length of time.
61 The number of points depends on previous violations.

Id	Country	Points-based License System	Scope of Application	Point Gain or Loss Classification	Number of Points Until License Withdrawal	Difference Based on the User Type	Existence of Re-Education Course Voluntary or Mandatory	Evaluation of Psychophysicaland Medical Tests
27	**Malta**	Yes	National	Gain	12	No	-	No
28	**Netherlands**	Yes	National	Gain	12	No	No	No
29	**Poland**	Yes	National	Gain	24	Novice	No	No
30	**Slovenia**	Yes	National	Gain	18	No	-	No
31	**Romania**	Yes	National	Gain	15	No	Yes	No

Source: Aleatica Foundation (2022). Points-Based Licensing System.

Regarding the reduction in crash rates, the following were reported in the countries listed (Aleatica foundation, 2022); (Lobo, 2011):

- **Spain:** After the first three months, the fatality rate decreased by 16.6%.
- **France:** After one year, the fatality rate decreased by 11.6%.
- **United Kingdom:** After one year, the fatality rate decreased by 8.2%.
- **Italy:** After one year, the fatality rate decreased by 7.3%.
- **Japan:** After five years, the number of fatalities decreased by 29.7%.

> Point-Based Licensing Scheme in the Andean Community

The IDB conducted a study characterizing key variables related to road safety indicators in member countries of the Andean Community. The study identified the status of licensing systems, including the existence of point-based schemes.

Table 12. Licenses Systems in Andean Region

Country	Bolivia	Colombia	Ecuador	Peru
Vehicle Licensing Systems				
Is there a vehicle licensing system?	**Yes**	**Yes**	**Yes**	**Yes**
Is the vehicle licensing system point-based?	**No**	**No**	**Yes**	**Yes**

Source: IDB (2024).

Impact evaluations of these systems need to be developed, leveraging their implementation across the region.

Finally, in the literature reviewed, some recommendations for the implementation of the points-based licensing system were identified:

1. Strengthening enforcement through both manual and automated methods.
2. Improving road infrastructure and communication campaigns.
3. Strengthening the re-education framework to ensure its impact on recidivism.
4. Implementing the system at the national level.

> Obtaining the license

There are three approaches to providing initial training within the licensing system: mandatory, voluntary, and a combination of both.

In Canada and the United States, for instance, training is mostly voluntary. At the end of the course, participants undergo an assessment to evaluate what they have learned. In Europe, prior training includes both theoretical and practical training courses, and candidates must pass the knowledge test to obtain the license (ITF, 2015).

An example of a system with mandatory training is Argentina, where applicants must complete a minimum number of training hours to be eligible to take a theoretical and practical exam require to obtain a license.

Depending on the country, applicants must meet certain requirements at the national, provincial, or municipal level to obtain a license. These include minimum age, a qualifying medical examination, theoretical knowledge, and demonstrated practical skills. Although evaluation methods may vary worldwide, it is essential that this instance exists to ensure compliance with all minimum requirements. After meeting the age and medical requirements, applicants must take a theoretical examination on the relevant traffic rules and legislation. Next, they need to successfully complete the practical portion of the exam, which evaluates their technical driving skills. To evaluate these competencies, the examiner must have knowledge and experience in the subject.

Source: Ciudad Humana Foundation - Colombia

> The training of Instructors and Examiners

This aspect is of critical importance, as the competence and experience of instructors and examiners play a crucial role in the training of candidates and in the proper issuance of driving licenses.

The ITF states that, at a minimum, instructors should have a thorough understanding of the training they provide, as well as knowledge of driving and pedagogical principles. In this context, it is essential to implement structured training-of-trainers programs in a manner that enables them to deliver accurate information to candidates, aligning with the specific objectives of each training plan. The competence and attitude of the instructor toward road safety are fundamental.

There should be minimum competency requirements for instructors, based on the training they provide. The requirements may relate to the instructors' personal driving skills and their pedagogical abilities, such as their proficiency in delivering training (ITF, 2015).

Source: Authors

Argentina – Driving Clinics (Training Program)

Location: Argentina
Entity: ANSV

Source: ANSV Argentina

These clinics consist of theoretical and practical training sessions designed for motorcyclists with a valid license. Participants attend with their own motorcycles to perform the exercises. Each session lasts three hours. At the end of the session, helmets are either replaced or exchanged if they are damaged or expired.

Theoretical Training:

- Motorcycle riding techniques
- Protective equipment
- Seeing and being seen
- Carrying passengers and cargo
- Preventive maintenance

Practical Exercises:

- Acceleration control
- Emergency braking
- Maneuvering techniques
- Obstacle navigation, slalom, and turns
- Free practice sessions

Lesson Learned or Recommendations

- Considering the need to address road safety from a holistic approach, safe driving clinics should be complemented by enforcement measures to ensure compliance with safety standards and enhance the overall impact of these initiatives.
- Educational programs should aim to influence public policy by providing actionable insights and evidence to improve road safety planning, regulatory frameworks, and interventions.
- Safe driving clinics should include tailored content for driving instructors, covering areas such as driving techniques, safety measures, traffic regulations, protective equipment, and vehicle maintenance, thereby ensuring high-quality training delivery.
- These clinics are essential for municipalities that lack the capacity or infrastructure to independently implement motorcyclists training programs, providing a scalable and collaborative solution.

Source: ANSV Argentina (n.d.).

Although, the literature on the effectiveness of point-based licensing schemes is conclusive about their impact on mitigating crashes rates, it is necessary to conduct a real evaluation of the advantages these schemes have brought to LAC countries that have adopted them. In order to generate continuous improvement processes aimed at maintaining their effectiveness over time.

Behavior Programs

Understanding and influencing human behavior is critical to improving road safety, particularly for motorcyclists, who face heightened risks due to their vulnerability on the road. This chapter examines best practices for addressing human behavior to enhance safety, with a particular focus on behavior change campaigns.

Conventional approaches to behavior programs in many countries tend to emphasize educational initiatives and public campaigns. These efforts often involve significant investments; however, they frequently lack robust evaluation mechanisms. While campaigns are a key component of behavior change, the scope of interventions must extend beyond them to include measurable strategies aimed at reducing risky behaviors. Developing such strategies ensures that resources are used effectively and that initiatives have a tangible impact on road safety outcomes.

A notable innovation in this field is the application of behavioral economics to address critical knowledge gaps in motorcycle safety. This approach considers broader socioeconomic trends, such as the growing reliance on motorcycles driven by increased accessibility and financial pressures. Practical measures may include controlling engine displacement to limit acceleration capacity, promoting the use of certified helmets, enforcing speed limits, and ensuring that motorcyclists ride with licensed companions during high-risk nighttime conditions. These strategies illustrate how behavioral insights can promote safer practices.

Moreover, such initiatives align with global road safety efforts and complement plans such as the Motorcycle Road Safety Plan. Embedding incentive structures that directly address specific behavioral challenges enhances the overall effectiveness of these campaigns.

Effective behavior change campaigns must integrate key components to ensure meaningful impacts on motorcycle safety and road-user behavior. According to the World Bank's *Guide for Road Safety Interventions: Evidence of What Works and What Does not*, successful road safety campaigns combine comprehensive public education with enforcement and sanctioning measures, ensuring alignment in both content and timing.

These initiatives fall within the human behavior pillar of the Safe System approach, which seeks to eliminate fatal crashes and reduce serious injuries by designing transportation systems that account for human error and human vulnerability. This involves coordinated actions across infrastructure, vehicles, speed, and user behavior while fostering collaboration among all social actors to implement effective risk-mitigation measures.

Behavioral theories describe human actions as influenced by three regulatory systems: formal norms, moral norms, and social norms. The challenge lies in harmonizing these systems to discourage risky behaviors:

- **Formal norms** derive from legal regulations, with compliance motivated by respect for the law or fear of sanctions.
- **Moral norms** are guided by self-regulation, rooted in personal values and the avoidance of guilt.
- **Social norms** rely on collective regulation, incentivizing practices through recognition, reputation, or fear of social disapproval.

VEHICLES

On August 31, 2020, the UN General Assembly adopted Resolution 74/299, formally proclaiming 2021–2030 as the Second Decade of Action for Road Safety, with the objective of reducing road traffic deaths and injuries by at least 50%. However, as discussed in previous sections, countries in the region are not achieving these targets, and only a few have begun to show a downward trend in fatalities.

To achieve this goal in a sustainable manner, the Resolution encourages Member States to implement a range of policies, emphasizing the adoption of United Nations vehicle safety regulations or equivalent national standards.

The Third Global Ministerial Conference on Road Safety issued a series of recommendations to policymakers. Recommendation 6 emphasized the importance of enhancing vehicle safety worldwide.

> “ Recommendation 6:
>
> To achieve higher and more equitable levels of road safety worldwide, vehicle manufacturers, governments, and fleet buyers should ensure that all vehicles produced for each market meet safety levels. Furthermore, incentives should be provided to promote the use of vehicles with higher safety performance whenever possible and require the highest safety levels in vehicles used in both private and public fleets. ”

Below is a list of United Nations regulations specifically addressing motorcycles and mopeds (categories *L3* and *L1* respectively). Mopeds are defined as vehicles with engine displacements not exceeding 50 cc and maximum speeds not exceeding 50 kilometers per hour.

Table 13. United Nations Regulations for Motorcycles – 1958 Agreement

Regulation	Subject	Category
UN-R40	Pollutant emissions	L_3
UN-R41	Noise emissions	L_3
UN-R47	Pollutant emissions	L_1
UN-R50	Front and rear position lights, brake lights, and direction indicators for mopeds and motorcycles	L_1,L_3
UN-R53	Installation of the lighting system	L_3
UN-R56, UN-R76, UN-R82	Headlamps for mopeds	L_1
UN-R57, UN-R72	Headlamps for motorcycles	L_3
UN-R60	Driver-operated controls, tell-tales, and indicators	L_1,L_3
UN-R62	Anti-theft devices	L_1,L_3
UN-R63	Noise emissions	L_1
UN-R74	Installation of the lighting system	L_1
UN-R75	Tires	L_1,L_3
UN-R78	Brakes	L_1,L_3
UN-R81	Rearview mirrors	L_1,L_3
UN-R87	Daytime running lamps	L_1,L_3

Note: While additional regulations apply to L-category vehicles, this table highlights the most relevant ones. Readers are encouraged to review all applicable UNECE regulations that apply to L-category vehicles.

Source: Authors' elaboration based on the United Nations list.

Source: https://www.motor.com.co/seccion/industria/abs-y-cbs-en-motos-como-funcionan-y-cual-es-su-importancia_20708

Table 14. United Nations Regulations for Motorcycles – 1998 Agreement

Regulation	Subject	Category
UN- GTR 2	Measurement procedure for pollutant emissions and fuel consumption in motorcycles	L_3
UN-GTR 3	Motorcycle braking systems	L_1,L_3
UN-GTR 12	Identification, control, operation, and location of controls, tell-tales, and indicators	L_1,L_3
UN-GTR 17	Crankcase and evaporative emissions	L_1,L_3
UN-GTR 18	On-board diagnostic (OBD) systems	L_1,L_3

Source: Authors' elaboration based on the United Nations list.

The Federal Motor Vehicle Safety Standards (FMVSS) that applicable to motorcycles include the following:

Table 15. FMVSS Regulations for motorcycles

Regulation	Subject	Category
FMVSS 108	Lamps, reflective devices, and associated equipment	L_1,L_3
FMVSS 111	Rearview mirrors	L_1,L_3
FMVSS 119	Tires	L_1,L_3
FMVSS 120	Tire and rim selection	L_1,L_3
FMVSS 122	Brakes	L_1,L_3
FMVSS 123	Controls and indicators	L_1,L_3

Note: While additional regulations apply to Class L vehicles, this list highlights the most relevant ones. Readers are encouraged to review all applicable FMVSS regulations to "L" vehicles.

Source: Authors' elaboration based on data from the National Highway Traffic Safety Administration (NHTSA, 2021).

Those related to motorcyclist safety equipment are described above.

In addition, following a brief technical overview, this chapter will explore good practices related to the implementation of technical brake regulations in Argentina and Colombia, as well as a good practice related to truck systems designed to protect motorcyclists.

> Brake Systems

The implementation of appropriate motorcycle brake systems is crucial, as they contribute to enhanced performance under key operational conditions. Specifically, these systems can:

1. Reduce braking distances.
2. Improve overall stability.

To evaluate braking performance, it is essential to first determine whether the system is disc-based or drum-based, as each configuration presents distinct advantages and limitations.

Table 16. Disc-Based and Drum-Based Brakes

Disc Brake	Drum Brake
Better cooling system	**Components are heavier**
Easier maintenance	**Prone to overheating**
Greater braking power	**Louder braking noise**

Source: Authors' elaboration based on the ANSV of Colombia.

The type of braking assistance should also be considered, including technologies such as ABS (Anti-lock Braking System) and CBS (Combined Braking System).

ABS (Anti-lock Braking System)

It consists of a sensor that constantly monitors wheel rotation. If, pressing the brake, the wheel locks, the sensor immediately detects it, operating on the brake device, to decrease the brake and allow the wheel to continue rotating, allowing the locking situation not to occur. In addition to the contribution to improving stability, the use of ABS brakes allows the motorcycle to require less distance to stop (ITF, 2015).

The study by the ITF (2015) estimates that 25% of the crashes analyzed could have been avoided using ABS.

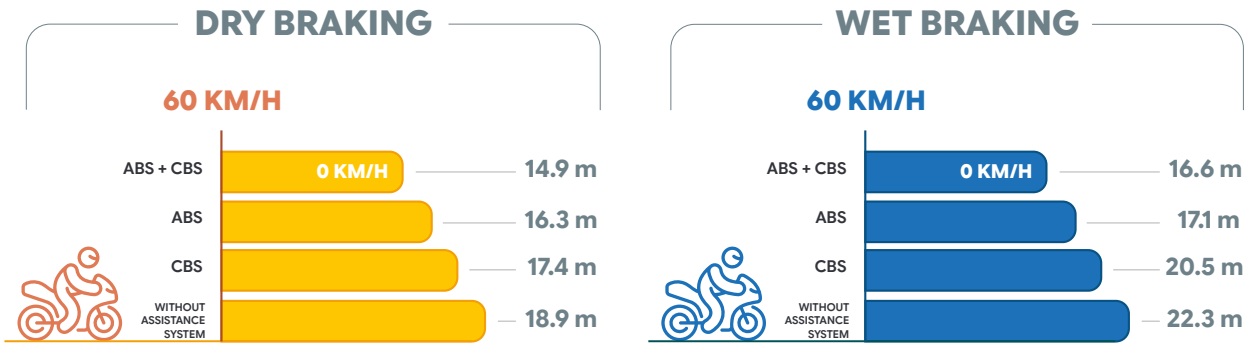
The Swedish Transport Administration (2016) estimates that equipping motorcycles with ABS would reduce motorcyclist fatalities by up to 40%.

Several studies estimate that ABS could potentially reduce serious motorcycle crashes by between 17% and 38%. Other estimates suggest that up to 44% of motorcycle crashes might have been prevented if ABS had been present. Furthermore, it has been found that 14% of motorcycle crashes could have been highly likely to be avoided if the motorcycle had been equipped with ABS (Martin, 2017).

CBS (Combined Braking System)

It helps distribute braking force between the front and rear wheels. Without CBS, the front brake often receives more force due to weight transfer during braking, leaving the rear wheel more prone to lock-up. CBS distributes brake power to both wheels, improving balance and braking performance, even when the rider operates only one brake lever (ITF, 2015).

Figure 34. Advantage of CBS and ABS in Braking Distance



Source: Authors' elaboration based on the Virtual School of Road Safety, ANSV - Colombia.

Regional Regulatory and Implementation Update on Motorcycle ABS and CBS

According to FIM Latin America, only Argentina, Brazil, Chile and Uruguay currently have ABS/CBS-related legislation. Colombia has recently acceded to the 1958 United Nations Agreement concerning vehicle safety standards and has introduced regulations requiring motorcycles over 125 cc to be equipped with ABS and smaller engine motorcycles must be equipped with CBS.

Table 17. Legislation Regarding Mandatory Motorcycles ABS and CBS

Country	National Law Mandating ABS for Motorcycles at the Time of First Commercialization	National Law Mandating CBS for Motorcycles at the Time of First Commercialization
Argentina	Yes (> 250 cc)	Yes (<250 cc)
Bahamas	No	No
Barbados	No	No
Belize	No	No
Bolivia (Plurinational State of)	No	No
Brazil	Yes (<125 cc)	Yes
Chile[62]	Yes – In implementation	Yes – In implementation
Colombia	No* - Implemented by most manufacturers.	No* - Implemented by most manufacturers.
Costa Rica	No	No
Cuba	No	No
Dominica	No	No
Dominican Republic	No	No
Ecuador	No	No
El Salvador	No	No
Guatemala	No	No
Guyana	No	No
Honduras	No	No
Jamaica	No	No
Mexico	No	No
Nicaragua	No	No
Panama	No	No
Paraguay	No	No
Peru	No	No
Saint Lucia	No	No
Trinidad and Tobago	No	No
Uruguay	Yes (>200 cc)	Yes
Venezuela	No	No

Source: Authors' elaboration based on FIM Latin America (Mobility Commission, 2025) and other sources.

*In the case of Colombia, it is clarified that the Country issued the technical regulation; however, it is not currently in force.

62 Updated with data available from CONASET: https://www.conaset.cl/mtt-decreta-obligacion-de-frenos-abs-en-motos-exigencia-rige-de-inmediato-para-nuevos-modelos-de-500-cc-o-mayor-cilindrada/

In the European Union, ABS is mandatory for motorcycles with engines capacities exceeding 125 cc, reducing fatalities by 40% (The Swedish Transport Administration, 2016). In 2018, the National Transportation Safety Board (NTSB) in the United States recommended the mandatory installation of ABS on all motorcycles.

The policy recommendation is to enact legislation and develop regulations to require and support the inclusion of ABS technology in motorcycle braking systems, in alignment with international best practices and successful examples from other countries.

> Daytime Running Lights System

Motorcycles and mopeds are more difficult to detect in traffic due to their smaller dimensions compared to the other road users with whom they share the roadway. In fact, a common cause of crashes involving these vehicles is the impossibility of being seen in time by the driver of the vehicle impacting them (Elvick et al., 2009).

One way to increase the conspicuity in traffic is through the use of daytime running lights, which is considered by the WHO (2022) as an intervention of promising effectiveness for improving of road safety of motorcycle users. This measure has also been recommended since 1968 under the Vienna Convention on Road Traffic for participating countries (ITF, 2015).

The use of daytime lights reduces between 29% and 40% of crashes linked to visibility limitations. In European countries where daytime driving with lights on is mandatory, crash rates are 10% lower than in European countries without such requirements. Considering the total number of crashes involving motorcycles and/or mopeds, daytime running lights use can reduce overall crashes by 7%. Reduction in fatal crashes involving motorcycles and mopeds during the daytime of 13% in the United States and 15% in Singapore have also been reported (WHO, 2022); (Elvick et al., 2009); (ITF, 2015).

It is recommended that daytime light use for motorcycles comply with United Nations Regulation No. 87, FMVSS 108, or analogous. In addition, to ensure consistent use of lighting systems, Automatic Headlamp On (AHO) technology can be implemented, which consists of a device that ensures that while the motorcycle is turned on its daytime running lights will also be on (WHO, 2017); (ITF, 2015).

Regional Regulatory Update:

The *Benchmarking Report on Road Safety in Latin America* highlights the legislative status regarding daytime use of front lights across several countries, as well as the adoption of AHO feature. Governments are encouraged to mandate either daytime use of front lights or AHO-equipped motorcycles, as this measure significantly improves visibility and reduces crash risks.

Table 18. Legislation on the Use of Front Lights and the AHO Device

Country	Front Light Mandatory (including Daytime)	Automatic Headlight on (AHO)
Argentina	Yes, only on national highways	Yes, for all models sold since 2012
Brazil	Yes	Yes
Chile	Yes	Yes, for motorcycles registered after 2001
Colombia	Yes	No
Costa Rica	Yes	No
Cuba	No	No
Ecuador	No	No
Mexico	Yes, only on federal highways	No
Paraguay	Yes	No
Uruguay	Yes	Yes[63]

Source: Authors' elaboration based on ITF (2017), Benchmarking Road Safety in Latin America, International Transport Forum Policy Papers No. 43, OECD Publishing, Paris. https://doi.org/10.1787/530f11da-en

> Tires

Tires are the only component in direct contact with the road surface and constitute one of the most important active safety systems.

At a minimum, the following aspects should be verified:

1. Surface hardness
2. Size and specifications
3. Tread pattern

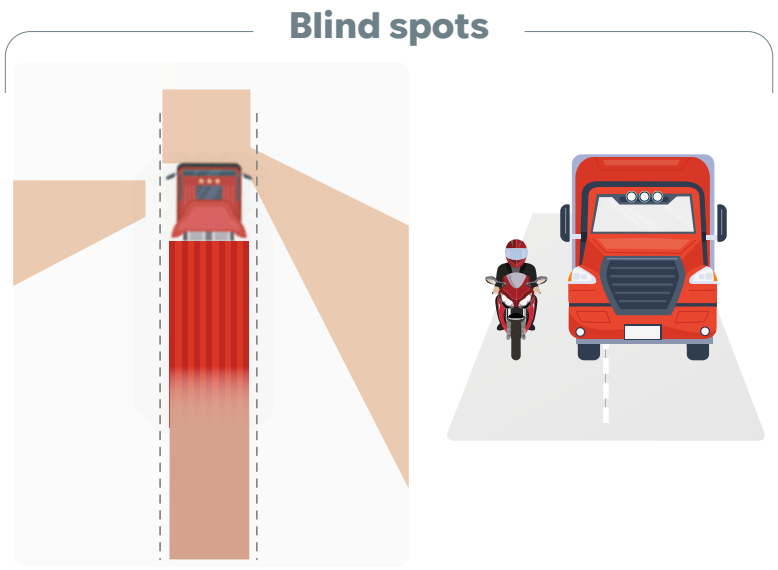
Establishing standards and conducting tests in accordance with United Nations Regulation No. 75 or FMVSS 119, or other international technical standards, ensures that tires provide the necessary safety conditions.

63 Updated with data available from Law 19824: https://www.impo.com.uy/bases/leyes-originales/19824-2019#~:text=Art%C3%ADculo%202,retrovisores%20certificados%20incorporados%20al%20veh%C3%ADculo.

> Mirrors and Equipment to Reduce Blind Spots (for Other Vehicles)

The dimensions of cargo and passenger transport vehicles create significant blind spots, limiting drivers to notice the presence of other road users in their vicinity. For this reason, it is essential to implement measures that enhance the visibility of motorcyclists within traffic flow. Such measures may include the mandatory use of reflective clothing at night or in low-visibility conditions, the requirement to keep motorcycle lights activated during the day, and modifications to large vehicles to reduce blind spots around them.

Figure 35. Blind Spot Areas Surrounding Large Vehicles



Source: Authors' elaboration based on Motorcyclist Protection Guide (ANSV, 2025).

Additionally, limited conspicuity is a major factor in motorcycle fatalities, often leading to collisions with cars. Improving motorcycle visibility, such as using daytime running lights, can significantly reduce crash risk, especially in urban environments. However, the effectiveness of these measures may vary in rural settings.

In Colombia, between 2022 and 2024, **23% of motorcyclist fatalities** involved collisions with **buses or trucks** (ANSV, 2025).

In Peru, **25% of motorcyclist fatalities** resulted from crashes involving **buses or trucks** (ONSV Peru, 2025).

The dimensions of freight and passenger transport vehicles create significant blind spots, making it more difficult for drivers to notice the presence of nearby road users (SWOV, 2020). For this reason, drivers of large vehicles can adhere to the following recommendations:

1. Properly adjust and use the vehicle's mirrors (rearview and side mirrors) when performing any maneuver.
2. If possible, install convex mirrors, as they reduce blind spot areas compared to standard mirrors.
3. Use technologies equipped with sensors or cameras to assist in detecting the proximity of objects or vulnerable road users.
4. Passenger transport vehicles should use designated and authorized areas for picking up and dropping off passengers.
5. Indicate the vehicle's movements before performing a maneuver using turn signals, with enough advance warning to allow other road users to identify, understand, and react to the signal.

Source: Authors

> Vehicle Technical Verification (VTV)

According to the World Bank and the Global Road Safety Facility (GRSF), the literature shows that vehicle defects contribute to a small proportion of crashes in high-income countries. However, in LMICs, the figures are significantly higher due to factors such as older vehicle fleets, less stringent vehicle standards, and inadequate vehicle maintenance. Estimates suggest that vehicle defects may account for up to 50% of crashes in LMICs. As a result, strengthening vehicle maintenance systems —particularly in LMICs —is expected to yield significant road safety benefits. Strong inspection schemes can reduce crash rates by up to 8% in high-income countries, and the potential benefits are likely to be even greater in LMICs, given the higher contribution of poorly maintained vehicles to crashes in these countries (The World Bank, 2021).

The use of motorcycles, like any mechanical system, generates diverse levels of wear and tear in their parts, which may cause traffic crashes, loss of vehicle control, or failure of passive safety systems, if not identified in a timely manner.

It must be recognized that not all mechanical failures or levels of wear can be observed through visual inspection alone. As technology advances, fault detection is performed by specifically designed equipment (Elvick et al., 2009).

The purpose of the Vehicle Technical Verification or (VTV)—also known as Vehicle Technical Inspection—(VTI) is to ensure that vehicles comply with the technical requirements under the legislation applicable to the country in which they circulate. It is conducted using calibrated equipment capable of determining whether a vehicle is roadworthy. In addition to ensuring that vehicles that circulate meet minimum safety standards, VTV has positive effects on reducing the environmental impact due to vehicle use (Rodríguez, Santana, & Pardo, 2015).

Among the United Nations legal instruments on road safety, we can find those that cover the technical vehicles inspection. In this regard, there is the 1997 Agreement on the VTI Regime.

Although it is well known that proper vehicle maintenance contributes to road safety, there is no broad consensus on how to quantify its precise contribution. A consensus has not been reached due to the differences in measurement methodologies, as well as the difficulty of determining whether a technical failure was the trigger primary cause for the crash or a series of other factors.

In the case of PTWs, one study found that in 5.1% of the crashes the motorcycles had technical failures that contributed to the crash. Most of the faults identified in this publication were related to tires and braking systems (ACEM, 2009).

On the other hand, another study (DEKRA , 2010) reported that 23.6% of the motorcycles inspected presented technical defects, and 33.9% of the crashes involved motorcycles with defects. This suggests that in 8% of cases the defects caused incidents.

The study *Reducing the death toll of road crashes in Costa Rica through the introduction of roadworthiness inspections by the government* (Schulz & Sebastian, 2019) relates the mandatory implementation of a roadworthiness inspection system to a 40% decrease in crashes one year after its implementation in 2002. At the same time, the study estimates the number of traffic fatalities prevented by roadworthiness inspections. Between 2003 and 2015, it is estimated that the system has saved 1,520 lives on Costa Rica's roads.

Although it remains challenging to establish an exact quantitative impact, VTV programs contribute to the safety of motorcyclists and vehicle users in general. In addition to ensuring that vehicles have no technical defects, these programs help ensure that vehicles have not been inappropriately modified. For example, one of the studies found that 17.8% of the mopeds tested had been manipulated to exceed the appropriate horsepower or other factors (ACEM, 2009).

The following presents the level of VTV implementation in selected LAC countries:

Table 19. Mandatory Vehicle Technical Inspection (VTI) for PTWs in Selected LAC Countries

Country	¿Does the country have a mandatory motorcycle inspection system?
Argentina	YES[64]
Brazil	YES[65]
Chile	YES[66]
Colombia	YES[67]
Ecuador	YES[68]
Jamaica	NO[69]
Paraguay	YES[70]
El Salvador	YES[71] (Pending regulation and implementation)
Bolivia	YES[72]
Costa Rica	YES[73]
Dominican Republic	YES[74]
Mexico	Partially[75] (in some states)
Uruguay	YES[76]

Source: Authors' elaboration.

After reviewing the regulatory framework related to motorcycles and their components, the following section presents selected experiences that illustrate how these frameworks operate in practice across the LAC region.

64 Agencia Nacional de Seguridad Vial (Argentina). https://www.argentina.gob.ar/seguridadvial/licencianacional/documentacion
65 JusBrasil. https://www.jusbrasil.com.br/artigos/voce-sabe-o-que-e-a-inspecao-veicular-do-detran-saiba-por-que-voce-nao-precisa-se-preocupar-ainda/496186770
66 ChileAtiende (Government of Chile). https://www.chileatiende.gob.cl/fichas/23978-revision-tecnica-de-vehiculos-motorizados
67 Agencia Nacional de Seguridad Vial (Colombia). https://www.ansv.gov.co/es/revision-tecnico-mecanica
68 Municipality of Quito / GADDMQ (Ecuador). https://www.gob.ec/gaddmq/tramites/revision-tecnica-vehicular-rtv
69 Jamaica Customs Agency – Pre-Shipment Inspection Information. https://www.inspections.jp/service/accredited/jamaica_psi/
70 Municipality of Asunción (Paraguay). https://www.asuncion.gov.py/transito/vehiculos-mas-5-anos-antiguedad-deben-realizar-la-inspeccion-tecnica-vehicular-anualmente
71 Portal De Transparencia. https://www.transparencia.gob.sv/descarga_archivo.php?id=NjA3Nzg0&inst=607784
72 Bioseguros Bolivia. https://oferta.bisaseguros.com/blog/inspeccion-tecnica-vehicular
73 https://pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=78425&nValor3=98843&strTipM=TC
74 Instituto Nacional de Tránsito y Transporte Terrestre (INTRANT), Dominican Republic. https://wp.intrant.gob.do/wp-content/uploads/2023/06/Decreto-5-19-Reglamento-de-la-Inspeccion-Tecnica-Vehicular.pdf
75 Toluca State. https://www2.toluca.gob.mx/entran-en-vigor-conduce-sin-alcohol-moto-segura-y-verificacion-vehicular-en-toluca/
76 Montevideo Government. https://normativa.montevideo.gub.uy/articulos/65183

Technical Brake Regulation

Country: Colombia
Entity: ANSV
Ministry of Transport

Motorcyclists are the most vulnerable road users in Colombia, accounting for 62% of road fatalities in 2024.

The popularity of motorcycles has surged due to affordability and efficiency, with the fleet growing from 3.84 million in 2010 to 8.5 million in 2018, representing 56.5% of vehicle fleet. To address rising risks, the National Road Safety Plan emphasizes the need for strengthen safety measures, including the adoption of advanced braking systems such as ABS, as part of technical regulations aligned with the 1958 United Nations Agreement (ANSV, 2022).

On October 13, 2022, the Colombian Ministry of Transport issued the Technical Brake Regulation, aligning with international vehicle technical regulations. The following rules apply:

Effective from October 13, 2026:

- Motorcycles with an engine capacity between 50 cc and 150 cc must be equipped with CBS or ABS.
- Motorcycles with an engine capacity above 150 cc must be equipped with ABS.

Effective from April 13, 2027:

- Motorcycles with an engine capacity above 125 cc must be equipped with ABS.

Lesson Learned or Recommendations

- The development of the brake regulation coincided with Colombia's efforts to formally adhere to the 1958 United Nations Agreement. This alignment ensured that the regulation met global safety standards, fostering international credibility and compliance for vehicles entering the Colombian market.
- It is essential to focus on regulations that will have the greatest impact on road safety. While some countries may adopt highly demanding standards, prioritizing regulations with the most significant potential to reduce crashes ensures efficient use of resources and maximizes the benefits of new safety measures.
- Engaging the automotive industry from the outset was critical to the regulation's success. Collaboration with manufacturers, importers, and assemblers helped ensure that technical requirements were feasible and practical while fostering industry support for the new standards.
- Involving civil society organizations in the process strengthened the regulation's legitimacy and effectiveness. By building alliances with key stakeholders, the government aligned public and private interests, creating shared goals for improving road safety and encouraging compliance across sectors.
- It is important to establish gradual implementation phases to manage the transition effectively. This approach allows sufficient time to adapt to technological changes while ensuring that institutional capacities are strengthened to enforce the regulations effectively.

Source: Alcaldía Mayor de Bogotá, Secretaría Jurídica Distrital. Sistema de Información Jurídica (SISJUR). https://www.alcaldiaBogota.gov.co/sisjur/normas/Norma1.jsp?i=128980

Technical Brake Regulation

Country: Argentina
Entity: ANSV

On June 21, 2022, Disposition 497/2022 was issued, formalizing an agreement between the Secretariat of Industry, Knowledge Economy, and Foreign Trade Management; the ANSV; the Argentine Motorcycle Chamber; the Motorcycle Vehicle Manufacturers Chamber; and the Motorcycle, Bicycle, and Related Products Industry Chamber.

Regulation Details:

CBS: Required for motorcycles with an engine capacity of 250 cc or less (or their electric equivalent).

ABS: Required for motorcycles with an engine capacity greater than 250 cc (or their electric equivalent).

Implementation Timeline:

January 1, 2024: Applies to all new models.
January 1, 2025: Applies to all existing models, with exceptions as specified in the regulation.

Lesson Learned or Recommendations

- Socializing the benefits of safety regulations is essential. Emphasizing how improved braking systems (CBS and ABS) enhance road safety can foster public and industry support.
- Generating tangible benefits for motorcycles complying with safety standards, such as tax incentives or reduced registration fees, can encourage the widespread adoption of safety-compliant vehicles.
- Collaboration between public agencies and private industry is critical to achieve regulatory milestones, as demonstrated by the agreement between the government and motorcycle industry representatives.
- A short transition period, as established in this regulation, signals a strong commitment to road safety while requiring clear communication and support mechanisms to ensure compliance.

Source: ANSV, Argentina. Disposición 497/2022.
https://www.argentina.gob.ar/normativa/nacional/disposici%C3%B3n-497-2022-366653/texto

Vehicle Road Safety Systems in Trucks to Protect Motorcyclists

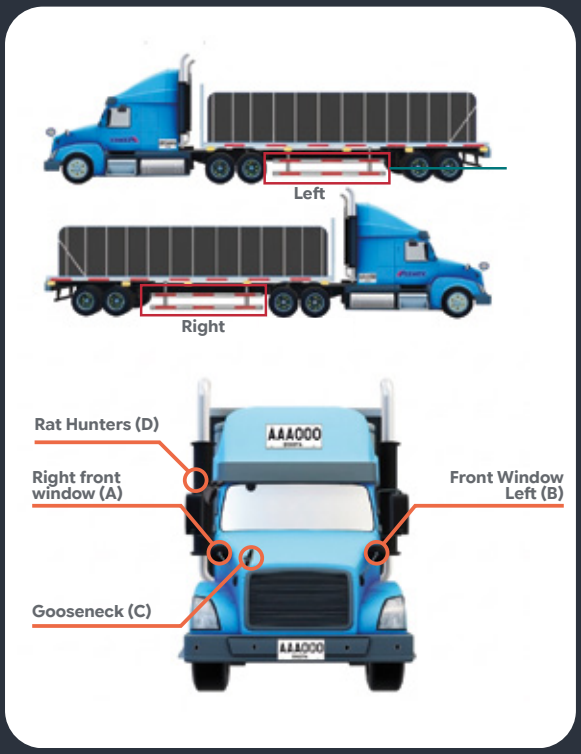
Location: Peru, Colombia, Nicaragua, Jamaica,Dominican Republic, Puerto Rico and Trinidad and Tobago

Entity: CEMEX

CEMEX has developed a road safety program in Peru, Colombia, Panama, Nicaragua, Jamaica, Dominican Republic, Puerto Rico and Trinidad and Tobago called SMART ZERO PREDICTOR, which includes the following activities as part of a continuous cycle:

- Vehicle inspections.
- Adequate design of routes and schedules
- Monitoring behaviors such as speed, fatigue, and braking, among others. During this monitoring, there is permanent communication with the driver, establishing alerts based on signs of fatigue and sending messages according to driving parameters. This monitoring is carried out through a mobile phone application.
- Measures such as the installation of mirrors and sensors in large vehicles to reduce blind spots and protect vulnerable road users, as well as checking and verification of braking systems. Additionally, lateral side barriers between axles have been implemented.

In addition, CEMEX has promoted a program called “Together Along the Road.”



This program aims to encourage other organizations with similar operational characteristics to adopt best practices in technology, safe vehicles, and road safety training and culture.

The implementation of these measures contributed to a 54% reduction in road crashes over a six-year period.

Lesson Learned or Recommendations

- Many collisions involving motorcyclists occur with trucks. Therefore, it is essential for companies operating these vehicles to implement technological tools to collision risk. These practices include mirrors to reduce blind spots, audible alerts, speed-limiting tools, and side barriers. Mechanisms should be created to encourage the incorporation of these technologies in heavy vehicles.
- The implementation of advanced safety features in trucks can significantly reduce the risk of collisions with motorcyclists.
- Regular maintenance and updating of safety tools and technologies are crucial to ensure their effectiveness.
- Incentives and regulations can motivate companies to adopt and maintain these safety technologies, contributing to overall road safety.

Source: Cemex Interview.

Measures associated with advancements in vehicle technology, specifically in motorcycle braking systems, have demonstrated effectiveness, as set out in the WHO document *Safety of Two- and Three-Wheeled Motor Vehicles*.

STRATEGIC PLANNING, GOVERNANCE AND REGULATION OF MOTORCYCLIST ROAD SAFETY

The rapid growth of the motorcycle fleet in the region, particularly the concentration of its use in urban areas and the increase in crashes with casualties, justifies focusing efforts on improving motorcyclist road safety through public policies developed within mobility frameworks at both the national and local levels. In response to this challenge, the CAF (2013) generated a methodology for developing road safety plans, with the goal of providing a useful and simple-to-implement tool that would facilitate the work for policymakers and municipal-level technicians to approach challenges and solutions for motorcycle safety.

Governance in motorcyclist road safety plays a central role in reducing the frequency and severity of road traffic crashes. Effective governance relies on a systematic approach that clearly defines the roles and responsibilities of all stakeholders, ensuring cohesive action toward shared safety objectives. Governments, civil society, and private-sector entities must collaborate to develop comprehensive policies, allocate resources efficiently, and implement evident-based interventions. This collaborative framework is crucial for addressing the specific vulnerabilities faced by motorcyclists, who are more exposed to injury risks due to limited physical protection and hazardous road environments.

A successful governance strategy begins with mapping all relevant actors—including transport ministries, enforcement agencies, urban planners, and civil society organizations—to promote accountability and coordinated action. Clear role definition ensures that initiatives such as helmet-use enforcement, infrastructure adaptation, and rider education programs are implemented effectively and consistently. Countries that establish dedicated road safety agencies often demonstrate greater progress in reducing motorcycle-related fatalities, as responsibilities are centralized and oversight is strengthened.

Table 20. List of Potential Stakeholders to Be Considered in the Development of a Road Safety Plan for Motorcyclists

Category	Subcategories
Manufacturers	Vehicles, Components, Helmets, Equipment
Vendors	City Motorcycles, Sport Motorcycles, Equipment
Repair shops	Small Workshops, Specialized Workshops, Technical Inspections Centers
Insurance Companies	Insurance Companies, Insurance Consortia
Other Road Users	Pedestrians, Cyclists, Car drivers, Transport Operators
Motorcyclists Organizations	Motorcyclist associations, Unions, Sports federations
Professional Motorcycle Organizations	Couriers, Delivery Services, Motorcycle Taxis, Others (e.g., Doctors, Mechanics)
Media Outlets	Specialized magazines, Press, Audiovisual Media
Health System	Emergencies Medical Services, Hospitals, Rehabilitation Services
Trainers/Educators	Driving Schools, Specialized Schools, Educational Centers
Public Administrators	National Administration, Regional Administration, City Councils, Areas of Industry, Transport, Health, Infrastructure and Education
Regulatory Agencies and Police	Local Traffic Police, Labor Inspectors, Transport Inspectors, Prosecutor's Office

Source: Authors' elaboration based on CAF (2013).

Strong governance frameworks also prioritize data-driven decision-making to address the multifaceted nature of motorcyclist safety. Reliable crash and injury data allow authorities to monitor trends, assess the impact of implemented policies, and adjust strategies accordingly. Incorporating rider associations into stakeholder discussions further enhances policy relevance by ensuring that the perspectives and needs of motorcyclists are adequately represented. Ultimately, improving governance not only enhances safety for motorcyclists but also contributes to broader national road safety objectives, helping build safer and more sustainable mobility systems.

Several countries in the region have implemented road safety plans focused on motorcyclists. El Salvador, Chile, Colombia, and Argentina have recognized the issues associated with motorcycle crashes and developed public policy documents that guide specific actions to mitigate their frequency and severity.

Source: Authors

Motorcycle Road Safety Plan

Country: El Salvador
Entity: FONAT

Every day, 3.4 people in El Salvador lose their lives due to traffic crashes. Despite a 7% decrease in the number of road deaths between 2022 and 2023, motorcyclist fatalities increased by 12%, representing 39% of total traffic crashes fatalities.

In addition, the number of motorcycles in El Salvador has experienced an exponential growth of 500% over the last 12 years, revealing a sustained increase in the preference for this mode of transport.

For this reason, the FONAT, the Vice Ministry of Transport (VMT), in conjunction with the IDB, developed a consultancy with a participatory methodology to build the Motorcyclists' Chapter of the National Road Safety Strategic Plan.

For the development of the Plan, the following activities were carried out:

- Information collection (commonly referred to as "data gathering" or "information gathering" in consultancy terms).
- Stakeholder identification and definition.
- Institutional analysis to identify the competencies of each State Entity.
- Identification of the regulatory status regarding motorcyclist road safety.
- Survey of strategic stakeholders.

- Participatory workshop to construct the problem tree.
- Definition of objectives and actions.
- Workshop for action definition and prioritization with stakeholders.
- Consolidation of the plan document, in collaboration with the national government.

Nine specific objectives structure the plan, complemented by 26 detailed actions. Each action includes a complete description, specific activities, milestones to be achieved, an implementation period, the main responsible entity, strategic allies involved, performance indicators, established targets, the level of importance attributed by stakeholders, and the expected level of impact.

Lesson Learned or Recommendations

- It is essential to engage all stakeholders from the diagnostic phase through problem identification, objective setting, and the design of measures, in order to foster ownership of the Plan and identify related programs that may influence its implementation.
- To better guide the implementation of actions and identify areas for improvement, it is important for governments to establish clear communication and feedback channels.
- It is advisable that the expected impact of proposed measures be analyzed based on successful implementations and through available academic and institutional literature. Furthermore, proposed objectives should include monitoring and impact indicators.
- Governments are encouraged to actively engage with diverse motorcyclist groups during the Plan design and implementation stages. This approach ensures broad representation of these road users, recognizing that motorcyclists are not always represented by a single organization.

Source: FONAT, El Salvador. Plan de Seguridad Vial de Motociclistas de El Salvador. https://www.fonat.gob.sv/wp-content/uploads/2024/06/Plan-de-Seguridad-Vial-de-Motociclistas-de-El-Salvador.pdf

Source: Authors

Motorcycle Road Safety Plan

Country: Chile
Entity: CONASET

The rapid growth of the motorcycle fleet over the last decade, with more than 186,000 motorcycles coexisting on the streets and roads alongside pedestrians, cyclists, public transport, and private vehicles, makes it necessary to address existing challenges, such as the high number of users of these vehicles involved in traffic crashes.

According to CONASET (2024) between 2014 and 2023, motorcycle fatalities totaled 1,806 deaths, with an additional 56,000 people sustained various types of injuries.

Based on a participatory process, the community, NGOs, companies, motorcyclist organizations, vehicle importers, and the State outlined five strategic axes and sixteen concrete measures that, within a limited timeframe, aim to ensure that those who choose this mode of transport have adequate conditions to carry out their daily activities.

Lesson Learned or Recommendations

- Sometimes it is difficult for stakeholders to participate in person in the development of national road safety policies. Technology can facilitate this process. Progress reports can be shared online, and platforms can be used for stakeholders to review and validate policy documents. In Chile, a participatory approach was adopted through public consultation. A form was hosted on CONASET's website to present a draft of the new Plan. Stakeholders were given the opportunity to submit their observations through this platform.
- It is recommended that objectives be aligned with the timelines established in the National Road Safety Plan and other national and local planning instruments. In Chile, the indicators were aligned with the National Road Safety Strategy 2021–2030 and other CONASET planning tools.
- Road safety public policy instruments provide an opportunity to incorporate lessons learned from implemented programs. They can include improvements based on technological and procedural advances. For instance, in Chile, there is a proposal for a stringent vehicle technical inspection, building on previous experience with other vehicle categories.

Source: CONASET Chile. Plan Nacional de Seguridad Vial para Motocicletas 2024–2029. https://www.conaset.cl/wp-content/uploads/2024/09/Plan-Nacional-de-Seguridad-Vial-para-Motocicletas-2024-2029-22-08-2024.pdf

Regional Plan of Action for Asia and the Pacific for the Second Decade of Action for Road Safety 2021 –2030[77]

The Regional Plan of Action for Asia and the Pacific for the Second Decade of Action for Road Safety 2021–2030 aims to reduce road traffic fatalities and injuries by at least 50% by 2030. This plan aligns with global initiatives while addressing the region's unique challenges, including diverse geographies, income disparities, and the prominence of vulnerable road users such as pedestrians, cyclists, and motorcyclists. Notably, the plan reflects a regional commitment to shared objectives, with previous versions updated to address emerging issues and maintain relevance, ensuring its validity through 2030.

Key Focus Areas:

1. Regional Adaptation: Tailoring global road safety strategies to address specific regional issues, ensuring relevance and effectiveness.

2. Diverse Challenges: Recognizing the region's vast diversity in cultures, geographies, and income levels, the Plan emphasizes solutions suitable for various contexts, from densely populated urban centers to remote rural areas.

3. Vulnerable Road Users: Prioritizing the safety of pedestrians, cyclists, and motorcyclists, who represent a significant proportion of road traffic victims in the region.

4. Evidence-Based Interventions: Promoting the implementation of proven road safety measures, such as speed management, enforcement of helmet and seatbelt use, and the reduction of drink-driving incidents.

5. Capacity Building: Enhancing the capabilities of institutions and stakeholders in LMICs to effectively implement road safety initiatives.

6. Monitoring and Evaluation: Establishing robust mechanisms to track progress, assess the impact of interventions, and facilitate continuous improvement.

- Implementing a well-defined plan with continuous monitoring is essential to evaluate its effectiveness.
- Active participation from motorcyclists and key stakeholders is equally important, as it significantly enhances the Plan's impact and effectiveness.
- Whether the strategy is part of a broader plan or a standalone initiative, it must include clear and specific objectives, measures, and targets focused on motorcyclists.
- The government should actively engage with diverse motorcyclist groups during both the design and implementation stages of the Plan. This approach ensures broad representation of these road users, recognizing that motorcyclists are not always represented by a single organization.

77 United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Regional Plan of Action for Asia and the Pacific for the Second Decade of Action for Road Safety 2021–2030. https://events.development.asia/system/files/materials/2022/10/202210-regional-plan-action-asia-and-pacific-second-decade-action-road-safety-2021-2030_0.pdf

Motorcycle Teams Within the ANSV Organization Structure

Location: Argentina
Entity: ANSV

The ANSV of Argentina created a specialized group whose mission is to "achieve peaceful coexistence in traffic, by incorporating vulnerable road users, particularly motorcyclists. Their presence should be considered in the design of all projects related to mobility, transport, training, campaigns, safety, and road coexistence."

Their main objectives:

- Reduce the involvement of motorcycle users in crashes in Argentina.
- Decrease the fatality rate among motorcyclists and the severity of injuries.
- Increase the use of safety gear among motorcycle riders.
- Raise awareness in society about mutual respect in road coexistence.

Lesson Learned or Recommendations

- Creating specialized teams allows for more targeted interventions that specifically address the needs of motorcyclists, considering their unique characteristics.
- Having an internal team dedicated to motorcyclists plays a crucial role in the collection and analysis of motorcyclist-specific data. This data can serve as evidence to inform policy decisions and help direct programs and resources towards motorcyclists.
- Furthermore, it helps foster internal advocacy across various departments and agencies, addressing the concerns and needs of this road user group, either within the same agency or across other entities.
- It also enables the implementation of evaluation mechanisms and monitoring of measures from the motorcyclist perspective.
- Additionally, including an analysis of the externalities related to motorcyclists in any transport policy is essential for a comprehensive approach to road safety.

Source: Agencia Nacional de Seguridad Vial (ANSV), Argentina. Seguridad de motociclistas. https://www.argentina.gob.ar/seguridadvial/seguridadmotociclistas

Youth on Track

Country: Mexico
Entity: YOURS – Youth for Road Safety

General description

According to the 2023 WHO *Global Status Report on Road Safety*, deaths from road traffic crashes are a significant burden on the Mexican economy, with more than 15,000 deaths annually[78]. A 2021 study[79] found that the number of young people aged 15-29 who die in motorcycle crashes has increased by 40% over the past decade in Mexico.

To support the identification of permanent solutions to this pressing issue threatening young lives, YOURS (Youth for Road Safety), with the support of Autoliv Safety Foundation, local partners, and authorities, is starting[80] a one-year project aiming to activate youth as agents of change in the State of Mexico to reduce motorcycle-related fatalities.

Specifically, the programme empowers youth through participatory and innovative pedagogical strategies to increase knowledge about road safety, motorcycle safety, helmet standards, and other basic skills. Equipped with technical and soft skills, young leaders will spread messages peer-to-peer through community activations in youth-oriented spaces, such as universities and festivals, to spark a 'ripple effect' in their social environments. Finally, the programme expects to generate awareness and visibility about the motorcycle safety problem in the State of Mexico in order to increase the commitment of the population and state and municipal governments toward safer and more sustainable roads.

By promoting road safety awareness, helmet use, and safety skills through peer-to-peer engagement and an award-winning knowledge transfer cascade programme, YOURS aims to reach 20,000 people through meaningful youth involvement with the ultimate outcome of building a better transportation system for future generations.

One of the expected successes of the programme is a multisectoral and inter-institutional approach that ensures the expertise, vision, and contributions of a wide range of actors toward significantly reducing two-wheeler related injuries and fatalities.

Lesson Learned or Recommendations

- Involving youth meaningfully in efforts to reduce motorcycle-related deaths is crucial to ensure they become part of the solution and contribute their perspective to a problem that directly affects them. Additionally, as young people advocate for safe riding practices, it is not only more likely to resonate with their friends and peers, but also builds a sense of ownership that can lead to more conscientious and safer riding behavior.

Source: Youth for Road Safety.

78 WHO. *Global Status Report on Road Safety 2023*. https://www.who.int/teams/social-determinants-of-health/safety-and-mobility/global-status-report-on-road-safety-2023
79 Government of Mexico, Ministry of Health. Informe sobre la Situación de la Seguridad Vial en México 2021. https://www.gob.mx/salud/documentos/informe-sobre-la-situacion-de-la-seguridad-vial-mexico-2021-331817
80 The program will start in March 2025 and it is expected to last for one year. Final results will be shared upon completion.

PAHO: Motorcyclist Workshop

Country: LATAM
Entity: PAHO Colombia

The "Workshop to strengthen policies and legislation that promote safety for motorcyclists", took place on November 2023 in Bogota, Colombia, and had the participation of 39 people representing the countries of Brazil, Mexico, Argentina, and Colombia.

The workshop had three main objectives:

1. Review the most current evidence on best practices and evidence-informed interventions to accelerate impact.
2. Discuss alternatives that could strengthen the legal and regulatory framework to improve road safety for motorcyclists in participating countries.
3. Incorporate the impact cycle methodology[81] into policies and legislation on motorcyclist safety:

- Analysis of current gaps and opportunities to strengthen the legal and regulatory framework.
- Advance in the preparation of a first version of a PAHO Regional Action Plan to advance the implementation of at least one or two priority interventions.
- Identify the next steps, including the actions to be initiated by the participating countries and the technical support of PAHO/WHO to implement the Action Plan.

At the end of the workshop, the following was achieved:

- Provision of updated information on strategies with evidence of being effective and recommendations to reduce injuries and fatalities among motorcyclists.
- Provision of information on the legal and regulatory vision associated with road safety, the need to strengthen intersectoral coordination, and promote social participation in decision-making.
- Presentation of the rights-based vision associated with road safety and strategies and legal tools that could be used to combat the determinants of road safety, focusing on motorcycles and avoiding injuries, disabilities, and death.
- Dialogue on parliamentary work and the American Parliamentary Network for Road Safety, which can be consolidated as a high-level political advocacy tool for the promotion of road safety.
- Highlighting the need to strengthen the better use, organization, and systematization of information in various sectors with the objective of having evidence bases to improve planning, implementation, surveillance, and compliance with goals, with transparency.
- Prioritization of strategies at the country level based on the identified gaps and define objectives, goals, and indicators for at least one of the identified priorities.
- Identify concrete technical cooperation actions to promote the use of regulations and legislation to promote road safety, especially in strengthening medical emergency systems, with the support of PAHO offices in the countries and the Regional Office.
- Agreement to maintain a continuous virtual communication network among participants to sustain the dialogue initiated, share information, and identify common best practices based on national experiences.

81 Impact Cycle methodology is a comprehensive framework for instructional coaching that includes three stages: Identify, Learn, and Improve. This model provides a structured approach to coaching teachers to strengthen their instructional practices and, in the process, improve student outcomes. Source: https://www.vai.org/article/the-impact-cycle-how-instructional-coaching-practices-can-enhance-the-leadership-of-school-administrators/

Lesson Learned or Recommendations

- Workshops are essential for fostering collaboration and shared learning among countries. They provide an opportunity for nations to recognize shared challenges in road safety and exchange experiences, enabling continuous improvement through mutual support.
- Evidence-based decision-making is crucial to improving road safety outcomes. Strategies must rely on reliable data and proven methods to be effective. Strengthening data collection, organization, and transparency ensures that planning, implementation, and monitoring processes are grounded in evidence and aligned with measurable goals.
- Collaboration across sectors and active stakeholder participation are important for impactful road safety policies. Engaging different sectors helps address the multifaceted nature of road safety challenges. Including stakeholders in the decision-making process ensures diverse perspectives are considered, increasing the relevance and acceptance of policies.
- Legal and regulatory tools play a vital role in advancing road safety. Countries can use laws and regulations to address specific challenges, such as improving emergency response systems or enforcement. Strengthening these tools helps create safer environments for all road users, particularly vulnerable groups like motorcyclists.
- Continuous engagement and communication are key to sustaining momentum in road safety initiatives. Maintaining networks for dialogue and sharing best practices ensures that progress is not lost. Defining clear priorities with measurable objectives and indicators helps focus efforts and track achievements over time.

Source: Based on a document shared by PAHO via email communication.

ASIAN - Workshop on Motorcyclists Safety: Riding in a Safe System

In June 2021, the Federation of Asian Motorcycle Industries (FAMI), in collaboration with the ITF, organized a workshop focused on motorcycle safety in Southeast Asia. The event highlighted regional statistics, in-depth crash investigation findings, and road safety initiatives in the area (ITF & FAMI, 2021).

The workshop identified several countermeasures recommended to enhance motorcycle safety:

Training and Licensing:

- Implement mandatory training courses for drivers prior to licensing exams.
- Include crash prediction skills in the driving test.
- Improve the practical examination process for obtaining licenses.
- Require attendance at safe driving courses, incorporating crash prediction, for license renewals.

Law Enforcement and Regulations:

- Strictly enforce traffic laws and maintain records of violations.
- Establish and enforce regulations against illegal parking of vehicles, especially large trucks, on all roads. These vehicles should be equipped with highly reflective signs on the rear.
- Continuously promote and enforce the use of standard helmets and ensure proper helmet usage.
- Introduce new technologies for helmet use enforcement.

The mobility of motorcyclists has particularities associated with their physical configuration, the population group that uses them intensively, as well as the passive safety elements required to ensure occupant safety. For this reason, it is recommended to seek the advice of technical experts and motorcyclists to incorporate the motorcyclist perspective across the actions proposed for each Safe System Pillar.

Road Coexistence Law

Country: Chile
Entity: CONASET / FIM LATAM

According to CONASET[82], the Traffic Coexistence Law aims to place all modes of transportation on equal footing on the roads. 53% of those killed in traffic crashes are the most vulnerable road users: pedestrians, cyclists, and motorcyclists.

This law introduced changes to the circulation of all vulnerable road users. For example, for cyclists, it established the obligation for vehicles overtaking them to maintain a 1.5-meter distance. It also made it mandatory for cyclists to use mixed-traffic roads, with some exceptions.

Additionally, it sets the urban speed limit at 50 km/h, following international recommendations.

In the case of motorcycles, it establishes motorcycle overtaking zones before traffic lights:

"53) Special waiting area: A designated area marked according to regulations, allowing bicycle or motorcycle riders to stop and restart their movement in front of other motorized vehicles at a signal-controlled intersection."

Additionally, it allows motorcycles to travel between vehicles only when they are stopped (lane filtering):

"Additionally, bicycles, motorcycles, or scooter riders may pass other vehicles in the same lane, on either side of them, to reach the stop line or advanced stop line, as applicable. This maneuver must be performed at a moderate speed, taking necessary precautions to ensure safety, and only if the vehicles being passed are stationary."

The modification to the law exclusively refers to situations where other vehicles are stationary. The lane-splitting maneuver (commonly referred to as "conejeo") remains prohibited when other vehicles are in motion.

It is quite common for motorcycles to travel between vehicles due to their size, but this practice is not always safe if it is not carried out correctly. For this reason, the Traffic Coexistence Law establishes clear rules to regulate this common behavior, defining under which conditions it may be done and prohibiting those situations where the safety of all road users is at risk. In this way, it promotes responsible driving, reduces the likelihood of crashes, and fosters an environment of greater respect and coexistence on the roads. (Kisha, et al., 2023).

Lesson Learned or Recommendations

- It is essential to implement legislation that encompasses improvements for all vulnerable road users, prioritizing their safety.
- Equally important is conducting preliminary work with the public, understanding their preferences and needs, and how this influence road safety.
- It is advisable that the legislation on motorcyclists' behavior consider the drivers' point of view and be supported by technical studies conducted by international institutions.
- Monitoring filtering practices is crucial, especially because Chile is one of the first Latin American countries to regulate this behavior—thus formalizing a practice that often arises due to the size of motorcycles and the space between lanes—and, together with clearer liability rules, proper enforcement, and education, it can justify the introduction of lane filtering in others countries.

Source: FIM Latin American (FIM Latam). Interview. PL Motociclista. Ley de Convivencia Vial. https://www.plmotociclista.cl/post/ley-convivencia-vial
Biblioteca del Congreso Nacional de Chile. Ley N.º 21.088 (Ley de Convivencia Vial). https://www.bcn.cl/leychile/navegar?idNorma=1118358&idVersion=2018-11-11&idParte=
Comisión Nacional de Seguridad de Tránsito (CONASET), Chile. Convivencia de modos. https://www.conaset.cl/convivencia-de-modos/

82 Comisión Nacional de Seguridad de Tránsito (CONASET)

Julian Esteban Law

Country: Colombia
Entity: Colombia´s Congress

On July 14, 2022, the Colombian Congress enacted Law 2251, titled “which establishes regulations for the design and implementation of road safety policy under a Safe System approach and issues other provisions – Julián Esteban Law”.

The law aims to establish regulatory provisions to guide the formulation, implementation, and evaluation of public road safety policies using a Safe System approach.
In it, the following are regulated:

1. Implementation of the 1958 United Nations Agreement.
2. Road design that incorporates mechanisms to deter unsafe behaviors.
3. Road design with specifications for all types of vehicles that use the road network.
4. Regulation regarding the issuance of licenses and the obligation for authorities to consult informa tion systems to verify required documentation.
5. Motorcycle traffic regulations: mandatory use of lights 24 hours a day and helmets no longer required to display the motorcycle’s license plate.
6. Conditions for the registration of road traffic fatalities and injuries in the country.
7. Establishment of maximum speed limits:
   Urban areas: 50 km/h
   School zones: 30 km/h
   Single-lane national roads: 90 km/h
   Double-lane national roads: 120 km/h
   Cargo service: 80 km/h
8. Conditions for the implementation of local road safety plans.
9. Conditions for the installation of technological enforcement aids.
10. Regulation of emergency vehicle traffic.

Lesson Learned or Recommendations

- There should be clear regulations on speed limits in urban areas.
- The requirement to mark helmets with the motorcycle’s license plate has been eliminated, as it was causing inconvenience by encouraging the use of helmets that were incorrectly sized for the wearer.
- The law mandates the continuous use of front and rear lights, acknowledging their crucial role in enhancing motorcyclists’ visibility in traffic.
- The Safe system action areas are comprehensively compiled.
- A tragic event can motivate institutional support and inter-institutional coordination, fostering unity in commemoration of a victim.

Source: Department of Public Function (Función Pública), Colombia. Normative database.
https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=189806
Global Health Advocacy Incubator. Interview.

Mexico Mobility and Road Safety General Law

Country: Mexico
Entity: Global Health Advocacy Incubator

According to Mexico's federal structure, each state has the authority to develop its own traffic regulations. This makes it challenging to implement nationwide measures aimed at protecting vulnerable road users. However, in 2022, the House of Deputies of the Congress of the Union issued the General Law on Mobility and Road Safety. Its purpose is "to establish the foundations and principles to guarantee the right to mobility under conditions of road safety, accessibility, efficiency, sustainability, quality, inclusion, and equality," following a systemic and Safe System approach, based on information provided by the Territorial and Urban Information System.

The law contains 82 articles outlining the principles and characteristics of the measures that must be established in the National Mobility and Road Safety Strategy, which has a one-year deadline for development.

Following the enactment of the Law, the document outlining the National Mobility and Road Safety Strategy 2023–2042 was issued. Through five specific objectives, it develops 38 actions aimed at mitigating the risks faced by road users.

Article 49 of the General Law on Mobility and Road Safety establishes the minimum requirements that traffic regulations in Mexico must include. Key provisions include:

- The requirement to hold a valid driver's license or permit appropriate to the type of vehicle.
- Priority of right-of-way for pedestrians, in accordance with the mobility hierarchy.
- Speed limits based on scientific evidence, tailored to specific areas (hospitals, school zones, urban areas, and highways).
- Mandatory use of seat belts for all passengers in motorized vehicles.
- Use of technology to aid in detecting and preventing traffic violations.
- Mandatory use of child restraint systems when applicable.
- Use of secure fastening systems for wheelchairs in public transportation.
- The requirement that all motorized vehicles meet the standards set by the applicable Mexican Official Norm (NOM).
- Mandatory use of helmets for motorcycle riders and passengers.
- Prohibition of using a cell phone or sending text messages while driving unless hands-free technology is used.
- Ongoing breathalyzer checkpoints to prevent driving under the influence of alcohol, with specific parameters or passenger, cargo, and motorcycle vehicles.
- Oversight of vehicle weight and dimensions in line with the applicable Mexican Official Norms.
- Measures to prevent and mitigate risk factors.

In the specific case of motorcyclists, there is an emphasis on the mandatory use of helmets and the need for increased enforcement operations focused on these vulnerable road users, to ensure their safety and that of all roadway users.

Lesson Learned or Recommendations

- In federated countries, the autonomy granted to each state can hinder the alignment of minimum safety standards. Therefore, the recent inclusion of basic requirements—such as licensing processes—represents a key step toward harmonizing traffic regulations, even though significant disparities remain between states.
- Involving citizens in the creation and implementation of these regulations fosters higher levels of compliance and social acceptance, since addressing people's concerns lead to more effective standards, particularly when protecting vulnerable road users.
- Establishing unified minimum safety requirements and ensuring ongoing oversight enables the identification of opportunities for improvement and updates, covering everything from mandatory helmet use for motorcyclists to speed limits and vehicle inspections, thereby enhancing road safety across the entire federal territory.

Source: Chamber of Deputies of Mexico. Ley General de Movilidad y Seguridad Vial (LGMSV). https://www.diputados.gob.mx/LeyesBiblio/pdf/LGMSV.pdf

Age of the Passengers

According to international reports, children and adolescents are particularly vulnerable on the road. This vulnerability arises from the mode of transportation they use and developmental factors associated with their life stages. During childhood, their understanding of mobility begins to form, while in adolescence, they engage in more independent travel without having fully developed their physical and cognitive abilities. Young children, in particular, face challenges in interpreting signals and sounds, which can affect their ability to assess the proximity, speed, and direction of vehicles (WHO Regional Office for South-East Asia, 2015). As they grow, children gradually develop risk perception and cognitive skills necessary to interact with other road users, understand societal norms, and navigate public spaces.

A study by Arbogast et al. (2003) highlights several physiological factors contributing to the vulnerability of children. A child's brain and skull are at a more fragile stage of development compared to adults. For example, at birth, the average head circumference is 35 cm, growing approximately 10 cm per year. Children from birth to two years of age are especially prone to neck and head injuries due to their anatomy. At birth, the head accounts for 30% of their body mass and one-quarter of their height, whereas in teenagers, it accounts for 6% of body mass and one-seventh of height.

A study conducted by CAF and the Gonzalo Rodríguez Foundation (2018) denominated *Study on Children's Transportation in Motorcycles in Latin America* found:

> **Low use of children's helmets:** In observations across 45 cities in 6 countries, the use of certified helmets for children was found to be very low. The lack of availability of helmets for children under 2-3 years old and weak enforcement contribute to this issue.

> **Dangerous positioning of children on motorcycles:** In many studied cities, most children travel in unauthorized positions on motorcycles. In areas with weaker enforcement, it is common to see children riding in front of the driver or between two adults, increasing their risk of severe injuries.

> **Misconception of safety:** Despite the high risk, in most countries surveyed, over 60% of motorcyclists believe that transporting children on motorcycles is safe. This misconception is linked to a lack of awareness campaigns and proper education.

> **Higher number of children on motorcycles in cities with weak enforcement:** In cities with less regulation and oversight, the number of children riding motorcycles is significantly higher. In Paraguay and the Dominican Republic, over 40% of children on motorcycles do not wear helmets, whereas in São Paulo, where enforcement is stronger, this number drops to 10%.

Source: Ciudad Humana Foundation - Colombia

These findings highlight the urgent need for stricter regulations, public awareness campaigns, and stronger enforcement to improve child safety on motorcycles.

Infants cannot support their heads until about three months old, making proper head support critical to avoid cervical spine injuries. They begin to sit unassisted around nine months but still lack the bone and muscle strength to sit with a straight back. By age four, a child's head size reaches 90% of an adult's, increasing to 95% by age 12. Full closure of the cranial bone plates occurs only by age 20.

> In **Mexico** (specifically in Mexico City), children are allowed to ride on motorcycles starting at 12 years old, if they can hold on properly and firmly place their feet on the footrests, unless special safety equipment is provided. These rules may vary in other states.

> In **Uruguay**, there is no specific minimum age; however, it is prohibited to carry children who cannot reach the footrests. The executive branch is responsible for regulating the technical requirements for footrests.

> In **Colombia**, there are no specific restrictions regarding children riding on motorcycles.

Safe School Path

It is important to seek safe transportation alternatives to replace the use of motorcycles. For example, the "Safe School Path" project, developed by the Gonzalo Rodríguez Foundation in collaboration with Colombia's ANSV, promotes safe routes for children. The initiative includes training community leaders on child road safety, creating protected meeting points, and implementing a School Mobility Committee. This effort aims to reduce risks in school environments and encourage responsible road behaviors (Fundación Gonzalo Rodríguez, 2024).

There are general legislative measures that contribute significantly to the mitigation of motorcyclist crashes, such as the establishment of speed limits or the incorporation of differential approaches. In particular, legislation on road safety for motorcyclists should be based on the analysis of actual traffic conditions affecting motorcyclists.

It is advisable that legislation be oriented toward meeting the minimum recommended standards outlined in the "Regional Legislative Update" chapter—covering safety helmets, ABS, daytime use of front lights, licensing, mandatory insurance and periodic inspections—while also including specific provisions to regulate the conditions associated with motorcyclists.

> Insurance

Funded by the FIA, the IDB, and the FIA Foundation, the *Movernos Seguros* initiative facilitates and endorses governmental efforts to establish or enhance compulsory vehicle insurance, serving as an effective mechanism for crash prevention and comprehensive victim restitution programs.

The report *Mandatory Vehicle Insurance and Road Safety: Behavior of the Vehicle Fleet in LAC for 2021, Its Level of Insurance, and Users' Perspectives,* outlines the various insurance systems in the region, discusses their benefits in reducing crashes and providing care, and proposes improvements based on user feedback from polls conducted in Colombia and Paraguay.

Mandatory vehicle insurance can enhance road safety through four factors:

1. As an Incentive for Good Behavior:
International successful experiences, such as those in Australia, Japan, and the Netherlands, show that when insurance premiums offer discounts and surcharges based on driving behavior, drivers tend to prefer schemes where they can pay the lowest possible price.

2. As a Generator of Quality Information
Insurance systems provide valuable insights into the vehicle fleet, its composition, and trends. Additionally, insurance companies maintain records of both fatal and non-fatal traffic crash victims, which can complement the data collected by traffic and health authorities. This contributes to a comprehensive understanding of the impact of traffic crashes, healthcare costs, and the georeferencing of crash locations, enabling interventions at critical crash hotspots.

3. As a Channel for Institutional Strengthening Resources
Insurance funds can serve as a resource to strengthen institutional capacity, facilitating the implementation of public policies and initiatives aimed at improving road safety.

4. As a Responsible Risk Manager for Indemnifications and Victim Compensation – Post-Crash Care
Insurance systems are responsible for managing risks by providing indemnifications and compensations to crash victims, ensuring adequate post-crash care.

Mandatory vehicle insurance benefits victims, healthcare facilities, and governments by improving the delivery of medical care, particularly to trauma patients, who are primarily traffic crash victims.

Despite having a lower level of motorization than other regions, LAC has significantly higher rates of mortality and morbidity. However, some countries neglect to incorporate the advantages of insurance contracts into their road safety measures. Where applicable, there are clear opportunities for improvement.

Despite insurers' broad portfolio, the rate of vehicle insurance uptake does not align with the level of risks they face. This is also applicable to motorcycles. Due to the ramifications of traffic crashes on individual health and their influence on public health, nations globally have instituted mandatory vehicle insurance coverage. Some policies limit their coverage to personal injuries or fatalities, while others provide additional coverage for property damage. Nevertheless, several countries in Latin America still do not mandate the compulsory acquisition of such insurance.

Source: Authors

Table 21. Mandatory Vehicle Insurance in LAC[83]

Country	Mandatory Insurance	Coverage for PTWs	Percentage of Compliance[84]	Includes Medical Expenses	Includes Property Damage
Argentina	Yes	Yes	81.3%	Yes	Yes
Bolivia	Yes	Yes	65.5%	Yes	No
Brazil	Yes	Yes	59.8%	Yes	No
Chile	Yes	Yes	108%	Yes	No
Colombia	Yes	Yes	53.6%	Yes	No
Costa Rica	Yes	Yes	100%[85]	Yes	No
Ecuador[86]	No	-	-	-	-
El Salvador	No	-	-	-	-
Guatemala[87]	No	-	-	-	-
Guyana	Yes	Yes	ND	Yes	Yes
Honduras	No	-	-	-	-
Jamaica	Yes	Yes	ND	Yes	Yes
Mexico[88]	No	-	-	-	-
Nicaragua	Yes	Yes	ND	Yes	Yes
Panama	Yes	Yes	98.9%	Yes	Yes
Paraguay	No	-	-	-	-
Peru	Yes	Yes	45%	Yes	No
Dominican Republic	Yes	Yes	ND	Yes	Yes
Suriname	Yes	Yes	ND	Yes	Yes
Uruguay	Yes	Yes	80.34%	Yes	No
Venezuela	Yes	Yes	ND	Yes	Yes

Source: Authors' elaboration based on Movernos Seguros Diagnosis: Road Safety Through Vehicle Insurance in LAC (IDB, 2019) and the Movernos Seguros Public Opinion Survey (IDB-FIA) – FIDES (IDB, 2024), adapted from the first edition.

83 ND=No Data found.
84 Data available at www.movernosseguros.org,
85 Costa Rica calculates its number of registered vehicles based on this registry; therefore, the indicator is 100%.
86 Ecuador replaced the SOAT insurance scheme and implemented the SPPAT as a government service for which citizens pay a fee.
87 The regulation was adopted in 2025 but it was later repealed. It is currently under review.
88 Mexico adopted mandatory insurance in 2014 to cover crashes ocurring on federal roads, highways, and bridges.

Mandatory vehicle insurance in LAC is primarily focused on providing coverage for the medical care of victims, while also including coverage for permanent disability and payments in case of death. In addition, insurance policies in Jamaica, Nicaragua, Panama, and Venezuela provide coverage for material damages.

The current mandatory insurance system faces several challenges, including the following:

1. **Number of Injuries and Fatalities from Traffic Crashes:** As long as the frequency and severity of crashes remain high or increase, the expected compensation amounts will rise. High levels of indemnification lead to higher insurance premiums.

2. **Healthcare Costs and Expedited Compensation Processes:** The determination of healthcare prices is a critical factor when compensating for medical services required by victims. High service costs can quickly deplete the maximum coverage per person, even if all necessary services have not been provided. Additionally, incorrect pricing can discourage healthcare providers from offering the required services.

3. **Evasion of Legal Compliance with Mandatory Insurance Requirements:** Some individuals may attempt to evade legal requirements to hold mandatory insurance, which undermines the effectiveness of the system.

4. **Drivers and Risky Behavior on the Road:** In terms of insurance, this translates into the need to ensure that individuals exhibiting risky, recurrent, or reckless driving behaviors pay higher premiums, to incentivize safer driving practices.

5. **Discrepancy Between Registered and Circulating Vehicles:** There is a discrepancy between the number of registered vehicles and those effectively circulating on the roads.

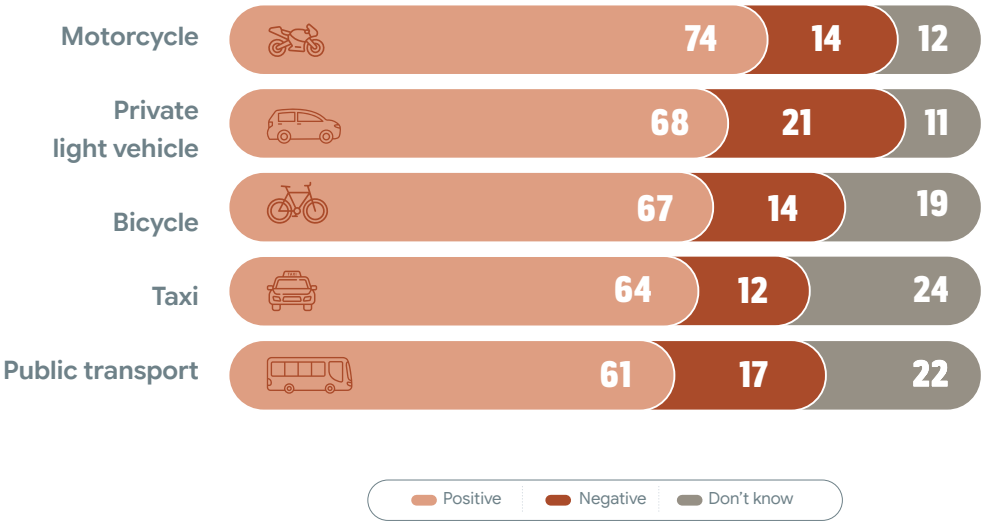
Finally, the study includes surveys to assess the public's perception of insurance systems, revealing the following:

- **Positive Perception of SOAT:** Most vehicle categories show a positive perception of SOAT, with motorcycles showing the highest positive perception rate (74%), followed by private light vehicles (68%) and bicycles (67%).

- **Negative Perception Varies by Vehicle Type:** Private light vehicles report the highest percentage of negative perception (21%), while taxis and bicycles display similar negative percentages (12%-14%).

- **Overall Trends in SOAT's Image:** Although positive perception dominates across all vehicle types, public transportation has the lowest positive perception (61%), highlighting an opportunity to improve SOAT's image in this sector.

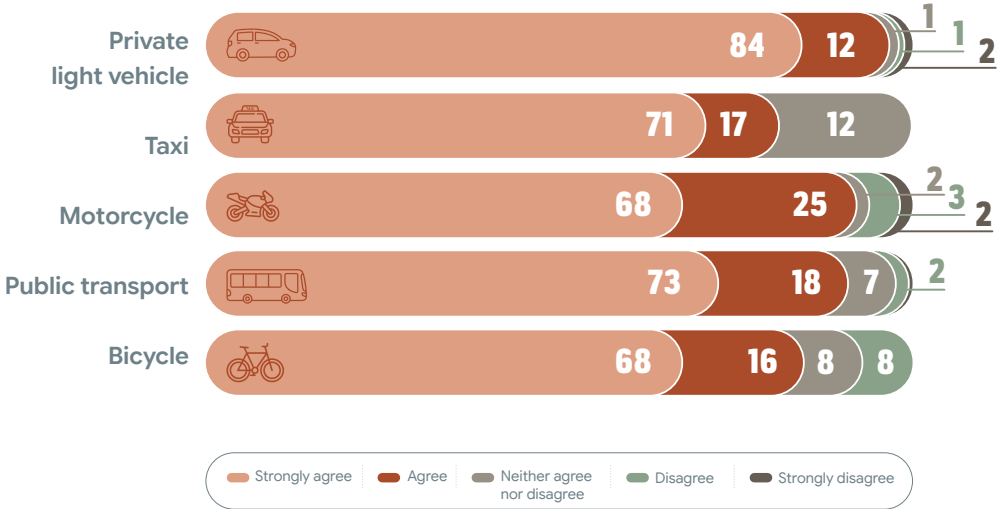
Figure 36. Perception of Mandatory Insurance in Traffic Crashes by Vehicle Type (%)



Source: Movernos Seguros Public Opinion Survey (IDB-FIA) – FIDES (IDB, 2024).

The high level of approval of SOAT by motorcyclists can be explained by the fact that this group uses insurance. Therefore, these users are the ones who directly experience the benefits provided by the coverage.

Figure 37. Agreement with the Mandatory SOAT Requirement by Vehicle Type (%)



Source: Movernos Seguros Public Opinion Survey (IDB-FIA) – FIDES (IDB, 2024).

Mandatory insurance enjoys the support of most road users. Its existence is generally perceived positively, with attributes such as coverage, protection, safety, and prevention being highlighted.

INFRASTRUCTURE

Safe road infrastructure plays a crucial role in ensuring road safety. It should be designed and managed to minimize or eliminate risks for all road users. Beyond safety, well-planned infrastructure can improve accessibility, particularly for individuals with disabilities, and support seamless transfers between different modes of transportation. Safety enhancements can be applied not only to new roads but also to rehabilitation and upgrading of existing road networks.

Motorcycles are inherently less stable than other vehicles sharing the road. A motorcyclist's ability to maintain balance depends on multiple factors, one of which is the condition of the road infrastructure. Other factors include the travel speed, tire conditions, and the rider's skill level. It is important to recognize that road defects that may be inconsequential for car drivers can pose significant challenges for motorcyclists.

The following measures, extracted from iRAP, are related to the different stages of infrastructure:

Figure 38. Infrastructure Measures for Improving Road Safety for Motorcyclists

Design

1 – Design intersections that account for high motorcycle traffic flows and turning movements.
2 – Enhancing road alignment and addressing poor road geometry.
3 – Reduce roadside hazards through improved design and safer barriers.
4 – Implement secondary rails for crash barriers, such as BikeGuard, BASYC, or Moto Tub systems, to protect riders from vertical posts.

Operation

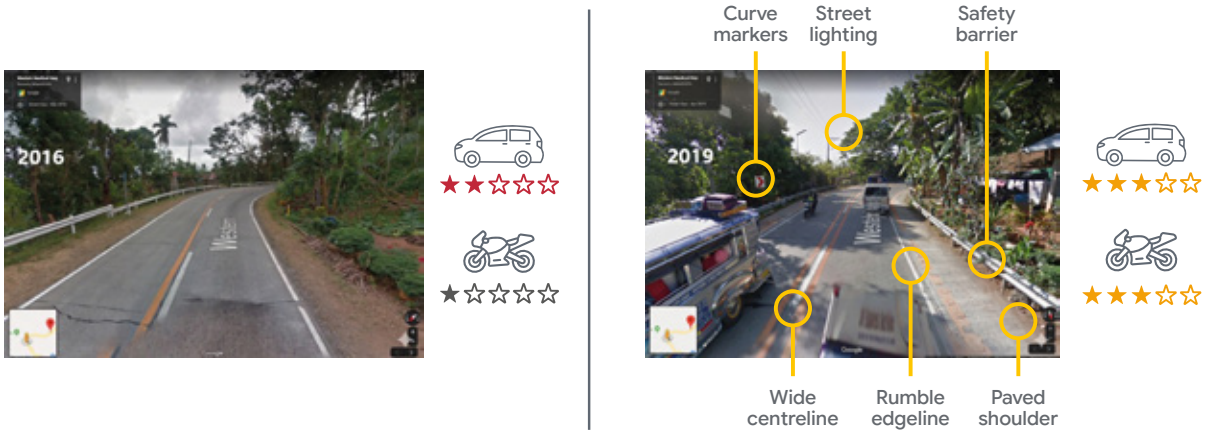
1 – Reduce road surface hazards such as water, oil, or excessive moisture.
2 – Minimize excessive linemarking and raised pavement markers.

Maintenance

1 – Improve road surfaces by addressing roughness, potholes, and debris.
2 – Cover barrier support posts with impact attenuators for better crash protection.

Source: Authors' elaboration based on iRAP Toolkit for Motorcyclists.

Figure 39. Improving Road Safety for PTWs Through iRAP Countermeasures in the Philippines



Source: Authors' elaboration based on iRAP success stories (https://irap.org/success-stories/).

Motorcycle Safety and Urban Road Infrastructure

In February 2025, the World Resources Institute (WRI) released a study focused on recommendations for the design and planning of urban road infrastructure (López, et al., 2025). The report analyzed how specific geometric, operational, and contextual features of urban streets influence motorcyclist safety. The main findings of the publication highlighted a set of infrastructure-related factors associated with either increased or reduced motorcycle injury risk, including:

Speed - Urban roads with higher overall traffic speeds of all vehicle types are associated with an increase in motorcycle crashes, fatalities, and injuries.

Number of Lanes - Roads with higher number of lanes in Nairobi and Buenos Aires are associated with an increase in motorcycle injuries.

Motorcycle Boxes - In Buenos Aires, roads with motorcycle boxes were associated with an increase in injuries to riders.

BRT Stations - In Latin American cities, the presence of well-designed BRT stations is associated with a decrease in motorcycle injuries.

Lower-Income Areas - Areas of lower socioeconomic status showed higher risk for motorcyclists in Bogota.

Medians - Medians with uncontrolled openings or merging resulted in increased injuries in Bogota and Buenos Aires.

Intersections - Although frequent intersections can help to reduce speeds and provide safety benefits, the increase in conflict points poses higher risks to motorcyclists in Latin American cities.

Land Use - Dense urban environments and areas with high commercial activity tend to generate more conflict points that result in higher risks in Latin American cities.

Pedestrian Bridges - Road segments with pedestrian bridges are associated with an increase in motorcycle injuries in Cali.

Public Space - Roads with a greater presence of public spaces around it were associated with fewer motorcycle-related injuries in Cali.

Below are several risk factors that should be considered when designing infrastructure for these road users:

Risk: Surface Roughness

Source: https://seguridadmotociclistas.org/contra-las-pinturas-deslizantes/

Description

The adhesion between a vehicle's tires and the road surface is determined by the coefficient of friction. Materials such as thermoplastics and metals tend to provide lower levels of friction, particularly in wet conditions. Certain types of road paint may also reduce adhesion.

It is recommended to use materials compliant with EN 1436 standards (or equivalent international standards) for horizontal markings. Additionally, maintenance intervals should be established to ensure proper roughness levels are retained (ERF & FEMA, 2018).

Risk: Water Pooling Areas

Source: El Colombiano. Inundaciones en Medellín por fuertes lluvias. https://www.elcolombiano.com/multimedia/imagenes inundaciones-en-medellin-por-fuertes-lluvias-HC17401204

Description

In both urban and rural areas, clogged or poorly maintained drainage systems can result in water accumulation, posing a hazard for motorcyclists. Such pooling can conceal pavement damage and hinder shared road usage, as passing vehicles may splash water onto motorcyclists, destabilizing them and obstructing their visibility.

Risk: Damaged Road Elements

Source: VMT - FONAT (El Salvador)

Description

In some cities, the deterioration or theft of manhole covers presents a significant risk to all road users. These hazards, due to their size, sharp edges, and depth, may cause motorcycle tires to become trapped, resulting in loss of control and potential crashes.

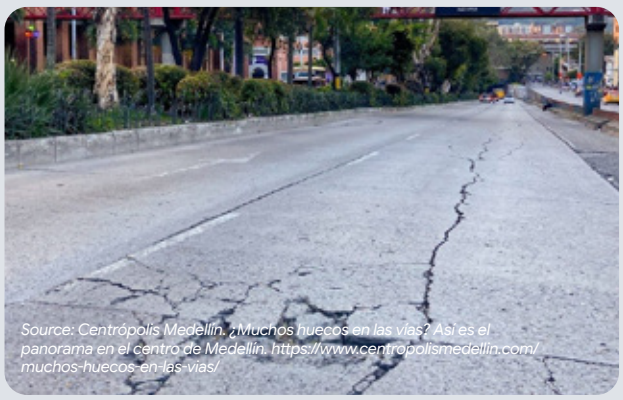
Risk: Raised Lane Markers

Source: Blu Radio. Medellín news section. https://www.bluradio.com/medellin

Description

Road marking manuals often recommend elevated markers to indicate lane alignment and deter drivers from crossing over. However, these markers can pose risks to motorcyclists navigating between lanes. Adequate signage and advance warning of their presence may encourage motorcyclists to maintain safer positioning within the center of the lane.

Risk: Deteriorated Pavement Joints



Source: Centrópolis Medellín, ¿Muchos huecos en las vías? Así es el panorama en el centro de Medellín. https://www.centropolismedellin.com/muchos-huecos-en-las-vias/

Description

Rigid pavement often consists of concrete slabs joined by seams. One common failure mode is vertical displacement between adjacent slabs, which poses an elevated risk to motorcyclists when the joint runs longitudinally (parallel to traffic flow). Such conditions can cause instability particularly during lane changes, potentially leading to falls (US Department of Transportation, 2022).

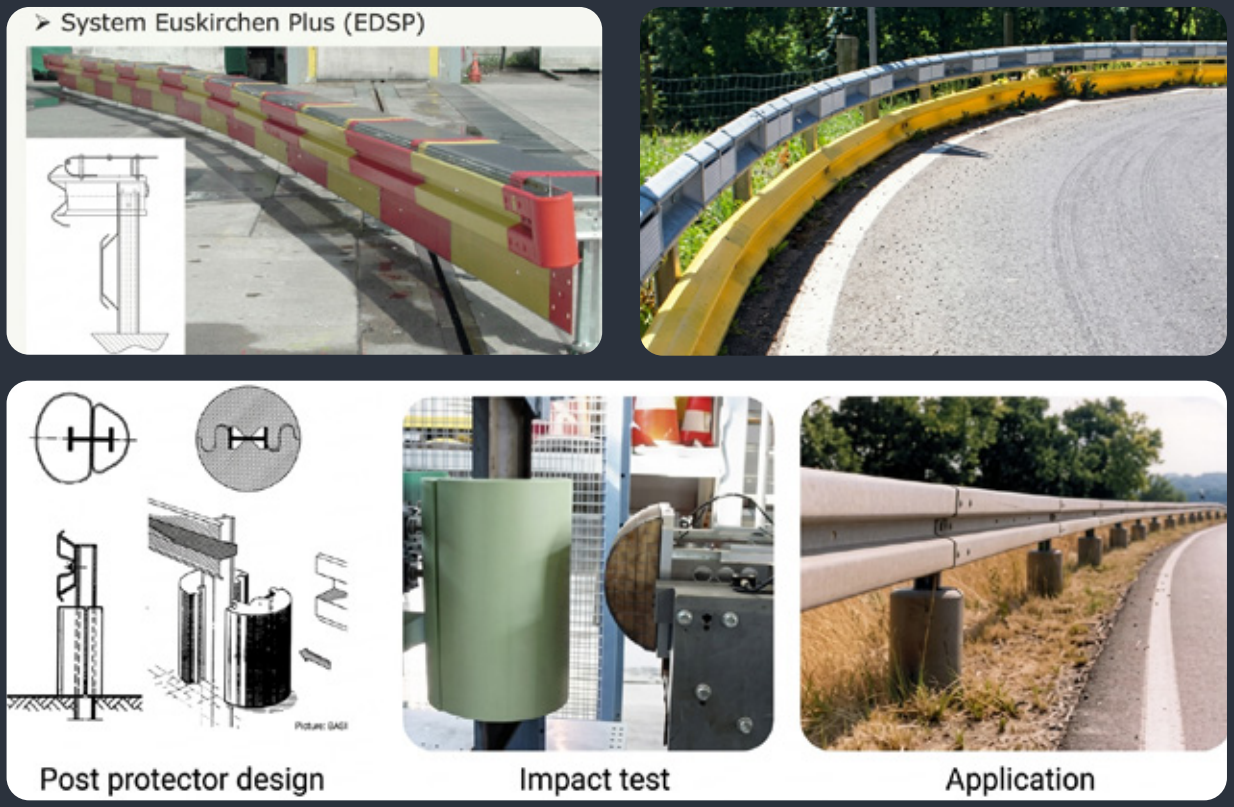
Roadside Barriers

The design of roadside barriers should contemplate motorcycle and moped users. The “classic” barrier design represents an elevated risk for these users. The risk of death of a motorcyclist upon impact against a side barrier is 80 times higher than for the occupants of a car, even when the motorcyclist is properly wearing a safety helmet (CAF, 2017)

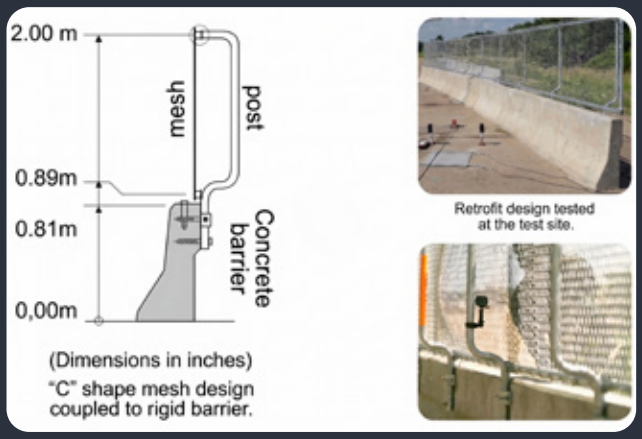
The space left uncovered between the crash barrier and the ground represents a danger for the motorcycle rider. In the event of a crash, the motorcyclist’s body may impact directly against the barrier or slide underneath it. There is also a risk of striking one of the vertical support posts, which can result in extremely severe injuries or death (DEKRA , 2010); (ERF & FEMA, 2018).

In addition, these barriers often have sharp edges and are dimensioned to adequately absorb the impact of high-mass vehicles, resulting inefficient in mitigating the deceleration of a body upon impact (CAF, 2017). The use of containment barriers is recommended, which contemplate these dangers suffered by users of two-wheeled motor vehicles, which cover the space mentioned above, in addition to better cushioning the impact, protecting users against the danger situations addressed. In some cases, existing barriers can be modified and adapted with these additional protection systems (DEKRA , 2010); (ERF & FEMA, 2018); (Fundación Mapfre, 2021).

Risk: Collision with Barrier Posts



Risk: Concrete Barrier Overrun



Description

Concrete barriers can be equipped with mesh extensions designed to prevent unprotected road users from being projected over the barrier (Silvestre Dobrovolny, Shi, Kovar, & Bligh, 2019).

Additionally, road safety audits are essential for enhancing motorcyclist safety, as they proactively identify and address potential hazards in road design and maintenance. The International Road Assessment Programme (iRAP) emphasizes that tailored road design and safety engineering measures can significantly reduce risks for motorcyclists[89]. Furthermore, the Federation of European Motorcyclists[90] Associations (FEMA) highlights the importance of audits, warnings, and alerts in mitigating crash risks, advocating for the inclusion of motorcyclist needs in road planning and maintenance (FEMA: Safer Roads for Motorcycles). Implementing these proactive assessments is crucial for creating safer road environments for motorcyclists.

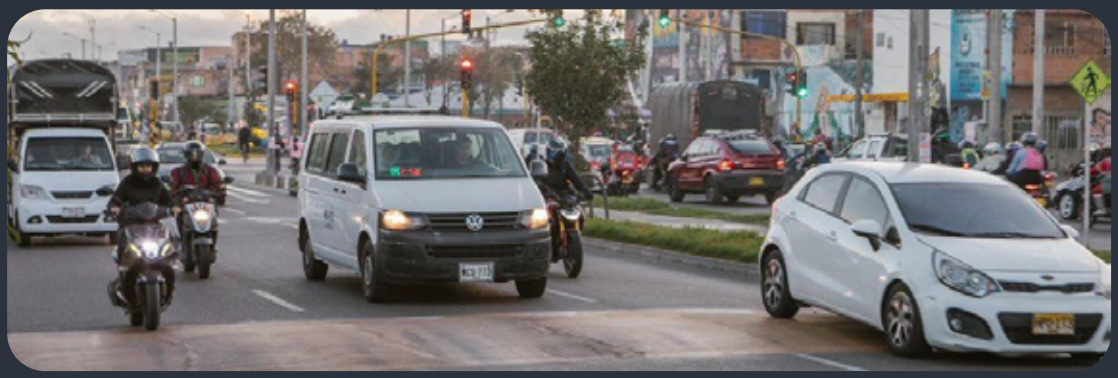
With this background in mind, the next section outlines important approaches and measures related to infrastructure that enhances PTW road safety across the LAC region.

Source: iRAP

89 International Road Assessment Programme (iRAP). (n.d.). Motorcyclists – Road Safety Toolkit. https://toolkit.irap.org/road-users/motorcyclists/
90 Federation of European Motorcyclists' Associations (FEMA). (n.d.). Safer roads for motorcycles. https://www.femamotorcycling.eu/safer-roads-for-motorcycles/

Parabolic Speed Humps on Main Roads

Location: Bogota, Colombia
Entity: Bogota's Mobility Secretariat and WRI



In February 2024, the WRI, through research - based approaches, developed a report funded by BIGRS. The report titled *Road Safety Recommendations for Motorcycle Road Crashes in Bogota*, compiles the findings related to the research on the effects of speed cameras and the installation of parabolic speed humps.

This report includes the methodology for the case study, Impact of the Speed Bump on an Arterial Road (Carrera 19 and Calle 112) in Bogota, which involved assessing the corridor speeds by analyzing primary and secondary data on the speeds of various road users.

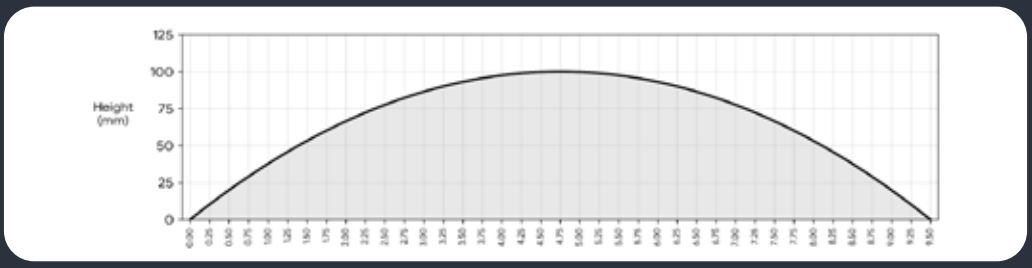
Key findings include:

- "In summary, the analysis showed that the speed hump reduced speed, especially for motorcyclists, during off-peak hours and improved the average speed during peak hours, implying improved traffic flow." Additionally, it significantly reduced the number of injured motorcyclists, even though it was a safe location. The analysis found that the speed hump reduced vehicle speeds by an average of 9 km/h, from 30 km/h to 21 km/h, and more significantly, from 40 km/h to 26 km/h for motorcycles.
- There was also a higher concentration of values around the speed mode, indicating a lower dispersion of speed records, or a more organized and less turbulent traffic flow due to the reduced difference in speeds among vehicles.

Following this study, since August 2024, a pilot program has been implemented along Avenida Guayacanes, a road that recorded three fatalities and 143 injuries since its opening.

Preliminary findings have shown promising outcomes, with zero fatalities and injuries reported involving motorcycles. The dimensions for these speed humps are as follows:

- For 50km/h design speed:



- For 30km/h design speed:

Lesson Learned or Recommendations

- Every infrastructure intervention should be analyzed to ensure safety for all road users. These parabolic speed humps have demonstrated a positive impact on speed reduction in a safety way, so it is advisable to continue monitoring their effectiveness and replicate such measures on other corridors.
- The implementation of measures by public entities based on technical studies conducted by international organizations with technical expertise enhance effectiveness, as the resources are invested in measures with demonstrated benefits.
- Measures designed to protect or improve accessibility conditions for the most vulnerable road users—such as pedestrians in the case of speed humps or parabolic humps—result in benefits for the protection of other road users, such as motorcyclists.
- It is recommended to communicate the benefits of these measures to the public, demonstrating that motorcyclist safety was considered throughout the planning, implementation, and evaluation stages.

Source: Bogota's Mobility Secretariat and WRI

Road Planning: "It's Time to Include Motorcyclists"

Location: Argentina
Entity: ANSV

Led by the Motorcycle Safety Area, the ANSV of Argentina has published the *Road Planning and Motorcyclists Manual* (2021), aimed at including motorcycle and moped users into infrastructure planning, thus recognizing them as "designed vehicles" in these plans.

This manual provides recommendations for distinct types of interventions, with a focus on the Safe System approach, aiming to address the challenges faced by motorcyclists. The recommendations cover the following types of intervention:

- Exclusive or preferential spaces for motorcyclists
- Protective roadside barriers
- Speed humps
- Lateral obstacles along roads
- Intersections, particularly roundabouts
- Curve design

Lesson Learned or Recommendations

- Incorporating motorcycles as "designed vehicles" in infrastructure planning ensures their operational characteristics and risk exposure are considered, improving safety and integration.
- Adopting Safe System principles in road design, such as the creation of exclusive spaces and implementing protective barriers, directly addresses the structural vulnerabilities of motorcyclists.
- Prioritizing interventions like safer intersections, properly designed curves, and targeted speed enforcement measures, contribute to reducing crash risks and enhancing motorcyclist safety.

Source: Agencia Nacional de Seguridad Vial (Argentina), Planificación vial y motociclistas. https://www.argentina.gob.ar/sites/default/files/planificacion_vial_y_motociclistas-3.pdf

MOTORCYCLES AS WORK TOOLS

In the LAC region, motorcycle sales and adoption have grown significantly owing to the advantages they offer to individuals seeking mobility. These include access to credit and financial mechanisms, lower operating and maintenance costs compared to other motorized transport options, the absence of licensing requirements for purchase, and the perception of shorter travel times in congested urban areas due to their smaller size, reduced parking space requirements, and adaptability. Additionally, the deficiencies in public transportation systems, rising costs, or lack of viable public transportation alternatives have driven this trend. Since the COVID-19 pandemic, motorcycles have also been promoted as bio secure mobility options.

The pandemic accelerated digital transformation processes in LAC, particularly through the consolidation of digital delivery platforms and new forms of work. During lockdowns, businesses increasingly relied on delivery platforms to continue operating. These platforms, which outsourced delivery services, presented establishments without prior home delivery services with opportunities to expand sales without requiring significant capital investments, hiring additional staff, or developing IT infrastructure.

In Asuncion, the main trip's purpose associated with motorcycle use is work, accounting for 17.6% of trips. Additionally, 22.3% of households own at least one motorcycle (INE, MOPC, PNUD, FMAM, 2023).

In the Metropolitan Area of San Salvador, nearly 80% of motorcyclists use their motorcycles as a work tool (USAID, 2022).

A study conducted by the International Labor Organization during the pandemic in Argentina revealed that delivery workers are typically required to provide their own vehicles and assume the costs of fuel, insurance, and compliance with traffic regulations. They are also responsible for acquiring safety equipment and obtaining the necessary authorizations for motorcycle use. Companies deduct the cost of safety equipment from the delivery worker's income. Moreover, delivery workers must own compatible mobile devices and finance mobile data plans to access digital platforms.

Unemployment and limited opportunities have made platform-based delivery work an attractive option, particularly due to its low entry barriers. The study found that 95% of surveyed delivery workers with less than six months of experience cited difficulty finding other jobs as their primary reason for joining the sector, compared to 40% of workers surveyed in 2019.

The Ibero-American Social Security Organization (OISS) in its study *Promotion of Occupational Road Safety in Latin America*, identified a lack of statistical information on occupational traffic crashes in the region. The study highlighted that no comparable methodology exists across Ibero-American countries for collecting such data. While some partial indicators are available in some countries and workplace risk insurers, the criteria used are inconsistent, complicating efforts to analyze and address the issue comprehensively.

Motorcyclists who use their vehicles for work purposes are exposed to distinct risk factors. Prolonged daily use increases exposure to traffic hazards, leading to premature degradation of both personal protective equipment (PPE) and the motorcycle itself. This extended exposure also contributes to physical strain on the musculoskeletal and respiratory systems, as well as heightened stress and fatigue due to interactions with traffic. Additional risks include imbalances caused by uneven loads, increased braking distances, and accelerated suspension wear from constant weight adjustments.

Recognizing the heightened vulnerability of motorcyclists who use their vehicles for work, some LAC countries have implemented measures to improve their safety. These efforts fall under broader road safety initiatives aimed at mitigating workplace risks for this population. Below, the characteristics of four key documents are presented as examples of actionable recommendations for other countries in the region to consider.

Table 22. Characteristics of Workplace Motorcycle Road Safety Documents Recently Developed in the Region

Protocol for Safe Practices for Workers Using Motorcycles as a Work Tool	Guide for Good Practices for Workers Using Motorcycles
Colombia	**El Salvador**
2023	2024
ANSV	FONAT
Ministry of Labor	IDB
Update	First version
Recommendations for Companies and Independent Workers	
Validation carried out with academia and representatives of organizations working for road safety	Validation carried out with groups of motorcyclists using motorcycles as work tools
Joint effort between the technical teams of ANSV and the Ministry of Labor, incorporating Road Safety Strategic Plans and Occupational Health and Safety Management Systems	Conducted within the framework of a consultancy led by the IDB. Summary sheets of recommendations and good practices in the region are configured

Source: Authors' elaboration.

The International Transport Forum's report on regulating app-based mobility services in ASEAN highlights several road safety considerations (ITF, 2023):

1. Driver and Vehicle Standards:
The rapid growth of app-based mobility services has led to concerns about the safety standards of drivers and vehicles. Ensuring that drivers are properly licensed and that vehicles are regularly inspected is crucial for passenger safety.

2. Regulatory Oversight:
The report emphasizes the need for clear and consistent regulations to address safety issues without stifling innovation. This includes setting safety standards for app-based services and ensuring compliance through effective enforcement mechanisms.

3. Data Utilization:
Leveraging data from app-based services can enhance road safety by identifying high-risk areas and behaviors. The report suggests that data sharing between service providers and regulators can inform targeted safety interventions.

4. Equitable Treatment of Services:
The report recommends that both traditional and app-based mobility services be subject to similar safety regulations to ensure a level playing field and maintain high safety standards across all transport modes.

5. Public Awareness and Education:
Educating both drivers and passengers about safety practices is essential. The report highlights the role of public awareness campaigns in promoting safe behaviors among users of app-based mobility services.

Addressing these considerations can help mitigate safety risks associated with the proliferation of app-based mobility services in the ASEAN region.

Safety of Commercial Motorcycles

The World Bank's 2025 publication *Safety of Commercial Motorcycles: Guidelines and Good Practices for Governments and the Private Sector* examines the rapid expansion of commercial motorcycle use—particularly for deliveries, passenger transport, and courier services—in LMICs. The report highlights the substantial social, economic, and public-health burden caused by motorcycle crashes, driven by the absence of dedicated regulation, inconsistent enforcement, inadequate rider training, and the lack of infrastructure adapted to this mode of transport. The study provides policymakers with evidence-based guidance for designing safer commercial motorcycle systems through coordinated government action and private-sector engagement.

The publication underscores the need for structured governance and regulatory approaches to mitigate the risks faced by commercial motorcycle riders, who are disproportionately exposed to severe injuries and fatalities. It stresses the economic impact of crashes on households, employers, health systems, and national productivity. Based on global evidence, the report offers a set of practical recommendations, emphasizing minimum vehicle and equipment standards, improved training, insurance obligations, better data systems, and coordinated multisectoral frameworks (World Bank, 2025).

Key Cost Components Identified

> **Productivity losses** due to workdays lost after crashes and long-term disability among commercial riders.

> **Direct medical expenses,** including emergency care, surgery, hospitalization, rehabilitation, and long-term treatment.

> **Vehicle-related costs**, such as repairs, the replacement of damaged motorcycles, and operational downtime for companies and riders.

> **Public-sector financial impacts**, including a higher burden on health systems, emergency-response services, and compensation mechanisms.

> **Indirect socioeconomic costs**, including reduced household income, long-term
> disability effects, and increased vulnerability of families dependent on commercial motorcycle income.

Key Recommendations

> Establish and enforce **minimum safety standards** for commercial motorcycles, covering vehicle condition, maintenance, licensing, and rider qualifications.

> Ensure access to **certified helmets and protective gear**, eliminate counterfeit equipment, and promote awareness of their proper use.

> Implement **fleet-management systems and telematics** in commercial operations to monitor speed, fatigue, route compliance, and riding behavior.

> Require **mandatory insurance and legal registration** for commercial motorcycles to ensure accountability and financial protection.

> Integrate **motorcycle-specific design elements** into urban mobility planning, such as dedicated lanes, advanced stop boxes, and improved separation from heavy vehicles.

> Develop and mandate **training and certification programs** focusing on defensive riding, fatigue management, and traffic law compliance.

> Promote **multi-stakeholder coordination** among government agencies, private operators, rider associations, and insurers.

> Strengthen **data systems** for crashes, injuries and exposure information to guide and continuously refine policymaking.

Law 12,997/2014 amended Article 193 of the Brazilian CLT (Consolidação das Leis do Trabalho) to classify work performed with a motorcycle as a hazardous activity, due to the high risk of traffic exposure and frequent crashes. This change grants workers such as couriers and delivery riders the right to receive a 30% hazard pay bonus when motorcycle use is regular and essential to the service, reinforcing the need for the professionalization and regulation of these drivers[91].

After gaining a clearer understanding of this context, the following section presents a series of relevant practices related to motorcycle-based work in the LAC region:

91 Lei No. 12.997 (2014). Altera a Lei no 9.503, de 23 de setembro de 1997, que institui o Código de Trânsito Brasileiro. https://www.planalto.gov.br/ccivil_03/_ato2011-2014/2014/lei/l12997.htm

Motorcycle as a Work Tool

Country: Mexico
Entity: DiDi – ITDP

In 2020, DiDi and ITDP Mexico launched the Road Safety Program for Delivery Workers to enhance road safety education for cyclists and motorcyclists in Mexico. With this initiative, the Chinese company aims to provide DiDi Food delivery partners with more road safety tools, helping them feel safer while performing their tasks.

As part of this program, the *Road Safety Guide* was launched in 2023, offering safety recommendations for every stage of the delivery partner's journey.

Lesson Learned or Recommendations

- Delivery platforms are an opportunity not only to track behavior but also to share information with partners to further educate them on road safety.
- Messages can be tailored to different road users (motorcyclists or cyclists) according to their role on the platform.
- Beyond sending messages or alerts related to the expiration of required driving documents, the platform can also track inappropriate behaviors and design incentives to improve safety-related behavior.

Source: DiDi Food (2024), Guía de seguridad vial: Conoce las guías de seguridad vial para repartidores que entregan en motocicleta y bicicleta. https://web.didiglobal.com/mx/food/blog/guia-de-seguridad-vialconoce-las-guias-de-seguridad-vial-para-repartidores-que-entregan-en-motocicleta-y-bicicleta/

Motorcycle as a Work Tool

Country: Colombia
Entity: FEMSA

During 2024, Coca-Cola FEMSA designed a road safety program for its operation in Colombia, which consists of a cycle with the following stages:

- **Pre-entry:** this stage considers characteristics such as experience, medical examination, theoretical and practical tests, and validation of the history of traffic violations.
- **Entry:** Once employees join the company, they go through an induction program that includes a module on road safety and responsibilities associated with driving a motorcycle.
- **Training:** Subsequently, a cycle to reinforce knowledge, skills and abilities is implemented during which drivers' competences are certified.
- **Follow-up and control:** During the execution of these activities, road behavior is monitored by means of telemetry devices.
- **Feedback:** In this last step, an evaluation of the monitored results is conducted, and adjustments are made to the ongoing training program.

In addition to the above, the program includes the delivery of certified protective equipment. Among the items delivered are helmets, airbag vests, and knee pads.

Lesson Learned or Recommendations

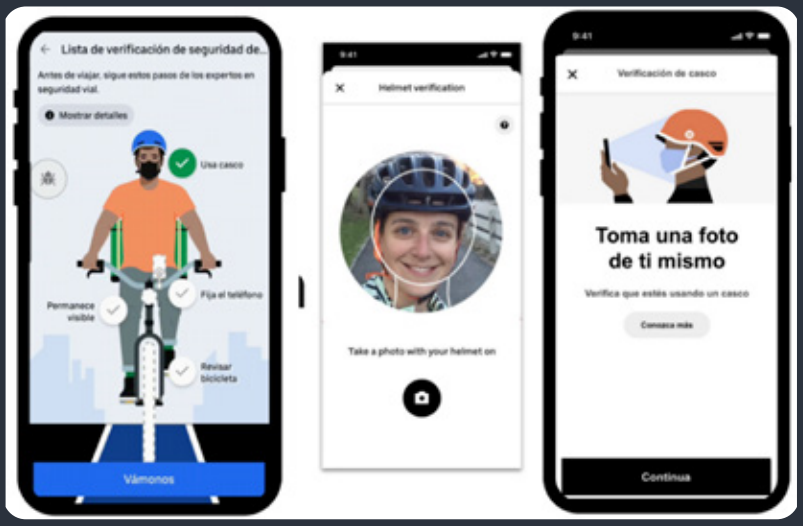
- Companies provide an opportunity to plan, implement, and measure the impact of actions related to motorcyclist behavior change because these actions are implemented within a known and relatively homogeneous population.
- A solution to implement road safety initiatives is to hire professionals or companies specialized in road safety. These external experts, while considering the company's resources, can help establish road safety programs based on actions with evidence of their impact.
- Ongoing awareness-raising, complemented by a behavioral follow-up program, contributes to behavioral change. It is recommended to evaluate whether behavioral change is maintained even when monitoring is not in place.
- In-vehicle technology or mobile applications are valuable tools in the design of monitoring programs and incentives for positive behavioral changes.
- The policy of adequately equipping drivers with all personal protection equipment should be accompanied by follow-up to ensure their correct use, as well as a replacement plan that considers the wear and tear of these elements.

Source: FIM (2025). Interview.

Technology and Prevention Before, During, and After Motorcycle-Based Rides

Location: 400 cities in LATAM, including cities in Argentina, Bolivia, Brazil, Colombia, Dominican Republic, Ecuador, El Salvador, Guatemala, Paraguay, Mexico, and Costa Rica.

Entity: Uber



Uber has implemented a comprehensive set of safety measures in its motorcycle-based operations, using technology to promote safer mobility for drivers, riders, and delivery partners before, during, and after trips. These measures include vehicle checks and real-time identity verification, and in-app safety education before trips. Drivers are also required to verify helmet use and complete a safety checklist.

Every trip or delivery is covered by insurance protection at no additional cost. This coverage includes both incidents involving injuries or death, as well as damages to third parties. During trips, Uber focuses on preventing fatigue with driving hour limits, detecting potential incidents through RideCheck technology, and sending real-time speed limit alerts. The app also offers encrypted recordings and an emergency button for direct dispatch to relevant services.

After trips, mutual ratings promote accountability, and 24/7 support services are available to address potential issues.

Uber's collaboration with law enforcement, government agencies, and road safety NGOs and experts further enhances public safety. Taken together, these measures help reduce road crashes and promote safer mobility overall.

Lesson Learned or Recommendations

- Delivery platforms can monitor variables such as helmet use, speed, work hours, and more. Through incentives and alerts, these platforms can encourage safe behaviors among motorcyclists, contributing to road safety.
- Safety features such as helmet verification, driving hour limits, and speed limit alerts could help reduce risks for both riders and drivers. Uber should continue refining these features based on feedback from users and safety experts to ensure they address emerging challenges and provide real-time safety support for motorcyclists.
- The use of technology, including real-time identity verification, speed limit alerts, emergency services integration, and in-app recording, could enhance safety for motorcyclists.
- One of the key lessons learned is the importance of ongoing education for motorcyclists on road safety. Uber Moto has implemented in-app education, safety checklists, and partnerships with local organizations to teach safe riding practices and the use of certified helmets. Moving forward, Uber should continue expanding these educational efforts, incorporating more interactive and region-specific safety content, and enabling all riders and delivery partners to access safety trainings. However, road safety management should not be limited to these educational actions alone.
- It is crucial to continue measuring key outcome indicators, such as the occurrence of crashes with injuries or fatalities, and monitoring speed, among other safety metrics.

Source: Uber (2025), Moto in LATAM: Policy Brief.

Source: Authors

Source: Authors

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Conclusions and recommendations

- The Marrakech Declaration (2025) underscores that ensuring PTW safety requires a comprehensive approach combining stronger regulations, improved infrastructure, and technological advancements. Integrating PTW-specific needs and promoting corporate responsibility in rider safety are essential measures to reduce fatalities and enhance protection for all road users.

- Overall, very few countries have achieved sustained reductions in line with the targets of the Decade of Action for Road Safety 2020–2030. An analysis of the 2019–2024 period shows that Chile, El Salvador, the Dominican Republic, Paraguay, Peru, and Argentina recorded reductions in total road traffic fatalities. However, when focusing specifically on motorcyclist deaths, **Argentina is the only country that consistently maintained a downward trend.**

- Motorcyclists represent the primary challenge for public policy regarding road safety in LAC. While overall road traffic fatalities **decreased by 11% between 2010 and 2021**, fatalities among motorcyclists **increased by 62%**. This trend has remained a significant concern in recent years, regarding motorcyclists. **Between 2021 and 2024**, overall road traffic fatalities in LAC countries are estimated to have increased **by 10%**, while motorcycle-related fatalities rose by 20%. Overall, between 2010 and 2024, total road traffic **fatalities are estimated to have remained relatively stable, whereas fatalities among PTW users have nearly doubled**. These statistics underscore the urgent need for targeted interventions to address the growing risks associated with motorcycle use in the region.

- The motorcyclists most affected by fatalities in the region are young men, a demographic group that consistently faces higher risks on the road. Within this group, a substantial number of motorcycles are used for work-related purposes, as data from cities like Asunción and San Salvador reveal, where motorcycles are employed for delivery services and other informal economy tasks. Additionally, **socioeconomic analyses in some countries, such as Costa Rica, have shed light on the economic conditions of motorcycle crash victims.** These studies indicate that most victims are men from low-income backgrounds, with minimal earnings.

- In LAC, the **ratio of motorcycles to population has nearly tripled over the past decade,** increasing from approximately **5 motorcycles per 100 inhabitants in 2010, to 14 in 2024.** This trend is even more pronounced in specific countries. For instance, **in the Dominican Republic, it increased from 14 in 2010, to 31 by 2024.** These numbers highlight how motorcycles have become increasingly embedded in the daily lives of citizens, posing significant challenges for policymakers tasked with addressing safety, infrastructure, and mobility issues associated with their growing prevalence.

- There are many common patterns across the LAC region regarding motorcycle fatalities. A considerable proportion of these deaths occur **between Friday and Sunday**, particularly during periods of low visibility, **such as nighttime hours.** This consistent trend highlights the need for targeted interventions to address these high-risk periods. Strengthening **enforcement mechanisms during these days and hours** is essential, considering the specific enforcement capacities and resources available in each city. By tailoring strategies to local conditions, authorities can effectively reduce motorcycle-related fatalities and enhance road safety across the region.

- Motorcycle fatalities **are concentrated mainly in five countries**: Brazil, Colombia, Mexico, the Dominican Republic, and Argentina. According to the data collected for 2024, these countries recorded nearly 28,000 **cases, representing 77% of the estimated total PTW fatalities for the entire LAC region.**

- The collected data show that it is important to examine both the countries that have experienced the largest increases in PTW fatalities from 2019 to 2024—for instance, Guyana (148%), Bolivia (109%), and Mexico (74%), as well as those that have recorded the fastest growth in their motorcycle fleets, such as Mexico (87%), El Salvador (84%), and Ecuador (67%).

- Strategic planning for motorcyclist safety is essential and should be addressed through well-structured approaches, either integrated into national public policy or as separate plans, **always including specific actions, goals, and indicators focused on motorcyclists**. These plans must align with the Safe System approach to minimize the severity of injuries caused by human error. Collaboration with public administration, civil society, and diverse motorcyclist groups is crucial to ensure inclusivity and relevance. Immediate measures, such as infrastructure improvements and enforcement, should be prioritized alongside long-term strategies like licensing reforms and technological adoption. **Clear stakeholder responsibilities, robust evaluation mechanisms, and lessons learned from other countries** are vital for creating effective, locally tailored, and sustainable solutions.

- Effective governance is the backbone of improving motorcyclist road safety. Establishing internal teams within governmental institutions focused on motorcyclist safety enables better data collection, analysis, and resource allocation. These teams can advocate for motorcyclist-related concerns across departments and collaborate with external entities to address specific needs. Policies should recognize the distinct nature of motorcyclists compared to car users, factoring in their socioeconomic contexts and mobility patterns. For instance, differentiating regulations for low-power motorcycles commonly used by lower-income populations helps ensure fairness and practicality. At the same time, promoting reliable and affordable public transportation alternatives can reduce motorcycle dependency, particularly for economic reasons. **Policymakers must also evaluate how broader mobility policies might unintentionally increase motorcycle reliance**, and design interventions to mitigate these effects.

- **The proper use of helmets and protective gear** is essential to reduce fatalities and injuries among motorcyclists. Governments should mandate the use of helmets that meet international technical standards and enforce these laws rigorously. **Establishing national regulatory bodies to oversee** helmet certification, importation, and sale is critical to ensure only high-quality, certified helmets are available. Affordability is another key factor, tax incentives or subsidies can reduce the cost gap between standard and non-standard helmets, making safety equipment more affordable. Partnerships with civil society, industry, and government can improve both the quality and usage of helmets, supported by educational campaigns that emphasize their life-saving benefits. These campaigns should shift the narrative from avoiding penalties to understanding the protective functionality of helmets. Special considerations should also be made for populations that transport children on motorcycles, including certified helmets designed for children. Finally, broader protective clothing standards should be implemented and enforced to provide motorcyclists with comprehensive safety solutions.

- A structured licensing system ensures motorcyclists are trained and competent, reducing the likelihood of traffic incidents. Based on the cases reviewed, countries in the region could **consider evaluating the implementation of graduated licensing systems based on the rider's age and the motorcycle's engine capacity.** Licensing processes should include comprehensive theoretical and practical training that emphasizes defensive driving and adherence to traffic laws. **Separating driving evaluations from training providers ensures unbiased assessments of rider competence.** A point-based licensing system can further encourage safe driving behaviors by holding riders accountable for infractions. Clear and enforceable licensing regulations tailored to motorcyclists are vital for building a culture of safety.

- Public awareness campaigns are powerful tools to address risky behaviors and improve motorcyclist safety. Effective campaigns should focus on specific issues like **speeding, helmet use, and visibility, highlighting the personal benefits of safer practices.** National and municipal governments should coordinate campaigns with enforcement initiatives to reinforce their impact. These campaigns must target high-risk times and behaviors, particularly on weekends and at night. Combining information with visible enforcement improves the perception of accountability and reinforces a culture of compliance among motorcyclists.

- Infrastructure plays a critical role in motorcyclist safety. **Road design should account for motorcyclists as key users,** incorporating features like signalized intersections, and appropriately designed speed humps. Speed limits must be aligned with the specific infrastructure and traffic context, **with urban areas limited to 50 km/h and areas involving vulnerable road users limited to 30 km/h.** Monitoring and maintaining road surfaces to address defects and joint wear are essential to prevent crashes. Protective roadside barriers designed specifically for motorcyclists can reduce the severity of crashes. Engaging motorcyclists in road safety audits ensures that infrastructure meets their unique needs and creates safer environments for all road users.

- According to the literature and identified best practices, there are key factors to consider in speed management. Automated systems, such as speed cameras, are effective in monitoring and penalizing speeding violations. Permanent on-road enforcement, especially during high-risk periods like nights and weekends, reinforces compliance. Linking violations directly to vehicle owners ensures accountability, particularly for motorcycles, which are often harder to identify. Additionally, **governments can leverage technology to monitor risky behaviors, such as sudden acceleration or speeding, among motorcyclists, creating data-driven enforcement strategies.** Technology can also be used by companies to monitor risk exposure, specifically focusing on speed.

- Strengthening traffic enforcement through technology significantly enhances road safety by improving enforcement efficiency and reducing human error. Automated systems, such as speed cameras, radar-based monitoring, and AI-driven traffic management, enable authorities to detect violations in real time, ensuring consistent law enforcement. Countries that have invested in these technologies have seen notable reductions in PTW fatalities, proving that integrating technology into road safety strategies is a key factor in protecting vulnerable road users.

- For many, motorcycles are essential work tools, particularly in delivery and courier services. **Aligning road safety policies with occupational health standards ensures worker safety while reducing workplace-related traffic incidents.** As part of integrated and structured strategies, companies could use technology to monitor risky behaviors among employees and offer incentives for achieving safety goals. Providing affordable protective gear for motorcycle workers further enhances their safety, creating a safer and more productive work environment.

In LAC, establishing specific research lines and evaluation mechanisms is essential to ensure the effectiveness and sustainability of implemented road safety measures. These efforts should address the unique characteristics of motorcyclist use in the region and be informed by local contexts and successful practices. To this end, key research needs include:

- **Gender and Motorcyclists:** Investigate how policies, safety measures, and infrastructure can address the unique needs of women who use motorcycles as work tools or means of transportation, ensuring inclusivity and equity in road safety strategies.

- **Enforcement:** Evaluate the effectiveness of average speed (section-control) enforcement in reducing incidents and fostering compliance among motorcyclists, particularly in urban and high-risk areas.

- **Filtering Lanes:** Study the practice of filtering lanes (lane splitting) in the Latin American context, with a particular focus on the Chilean case—where this maneuver was regulated through Road Coexistence Law—to assess its risks, benefits, and potential for regulated implementation as a safe mobility strategy.

- **Innovative licensing systems:** Assess the impact of point-based and graduated licensing systems on motorcyclist behavior and compliance with road safety regulations in LAC, identifying best practices and areas for improvement.

- **Sustainability of Best Practices:** Monitor the long-term impact of road safety initiatives that have shown initial success, ensuring they remain effective and scalable over time.

- **Infrastructure and Road Design:** While not related to enforcement, continued research on infrastructure adaptations specific to motorcyclists is essential to identify and prioritize designs that reduce crash risks and accommodate motorcyclists' unique needs.

Below is a table summarizing the recommendations for each analyzed pillar. These recommendations are derived from the literature and best practices; however, it is always advisable for each country to analyze its context and assess the relevance and feasibility of each measure.

Table 23. Summary of Recommendations

Category	Recommendations
Strategic Planning of Motorcyclist Road Safety	• Plan to mitigate crashes with motorcyclists, either integrated into national public policy or as standalone plans. • Implement short-term actions in parallel to contain and reduce the phenomenon, alongside high-impact and long-term measures.
Governance	• Establish internal teams within governmental institutions focused on motorcyclist safety to improve data collection, analysis, and resource allocation. These teams should transverse the view of motorcyclists in the actions proposed for each Safe System pillar. • Always base programs and investment lines on evidence. Likewise, frequently monitor the impact of implemented measures. • Policies should recognize the distinct nature of motorcyclists compared to car users, factoring in their socioeconomic contexts and mobility patterns. • Collaboration with public administration, civil society, and diverse motorcyclist groups is crucial to ensure inclusivity and ownership.
Legislative Instruments	• Adopt the regulatory guidelines outlined in this document, including safety helmets, ABS, daytime use of front lights, Vehicular Technical Inspection (VTI), and driver licencing schemes. • Strengthen legislation to enable the implementation of automatic or semi-automatic enforcement mechanisms. • Adopt traffic crashes Insurance.
Human Behavior	• Design campaigns focused on a single risky behavior. Prioritize speed management, helmet use, and visibility. • Campaigns articulated between the national government and municipal governments. Campaigns must be articulated with enforcement. • Increase the perception of enforcement and institutional control capacity.
Vehicles	• Implement ABS and CBS brake system regulations. • Adopt automatic headlight-on systems for motorcycles. • Implement blind-spot warning mechanisms in large vehicles.

Category	Recommendations
Protective Equipment	• Mandate helmet use, ensuring proper fastening at all times, on all types of roads, regardless of engine size, for both riders and passengers. At the same time, adopt technical regulations, taking international standards as a reference. • Adopt quality standards for protection equipment. • Implement tax benefits and tariffs reductions for helmets and protective elements. • Articulate efforts between civil society, industry, and government to increase the quality and use of helmets.
Infrastructure	• Monitor pavement joints and surface imperfections. • Design speed humps for motorcyclists. • Provide overtaking zones for motorcyclists at intersections. • Safe vehicle restraint elements for motorcyclists. • Ensure anti-slip pavement markings.
Speed Management and Enforcement	• Implement infrastructure-based measures, such as speed humps on main roads. • Implement automatic detection systems. • Conduct permanent road controls, focusing on nighttime and from Friday to Sunday. • Implement mechanisms to link the offender to the vehicle owner. • Monitor onboard risk factors through technology.
Motorcycle as a Work Tool	• Align road safety policies with occupational health and safety policies. • Monitor risky behaviors during courier and delivery services. • Develop plans to improve access to protective elements. • Implement incentives for companies that reduce road crashes.

Source: Authors' elaboration.

> Annex A - Sources Consulted for Data on Road Traffic Fatalities

Country	User	2019	2020	2021	2022	2023	2024
Argentina	All users fatalities	Own Survey					(Secretaría de Transporte Argentina, 2025) Preliminary data
	PTWs users fatalities						(Secretaría de Transporte Argentina, 2025) Data calculated using the fatalities data and the PTW users' participation rate of 46% included in this report. Preliminary data
Bolivia	All users fatalities	(Observatorio Boliviano de Seguridad Ciudadana y Lucha Contra las Drogas, 2025)					
	PTWs users fatalities	(Observatorio Boliviano de Seguridad Ciudadana y Lucha Contra las Drogas, 2025). Data referred to as "Vehículo automotor menor", in the Table 4.3.1.7.					
Chile	All users fatalities	(CONASET, 2025)					
	PTWs users fatalities						
Colombia	All users fatalities	Query from the National Road Safety Observatory dashboard (https://ansv.gov.co/es/observatorio/estad%C3%ADsticas/historico-victimas)					
	PTWs users fatalities						
Costa Rica	All users fatalities	Own Survey					Data obtained from the presentations of the OISEVI meeting in San Salvador, November 2025. The data are processed and shared by COSEVI. Data for 2024 are preliminary
	PTWs users fatalities						
Ecuador	All users fatalities	Own Survey					(Vital Strategies; Bloomberg Philanthropies; National Transit Agency, 2024)
	PTWs users fatalities						
El Salvador	All users fatalities	Own Survey					(Fondo para la Atención a Víctimas de Accidentes de Tránsito [FONAT], 2025)
	PTWs users fatalities						
Guatemala	All users fatalities	Own Survey					-
	PTWs users fatalities						-
Guyana	All users fatalities	Own Survey					-
	PTWs users fatalities						-
Mexico	All users fatalities	Own Survey			Data processed from the open data information bases of INEGI (Instituto Nacional de Estadística y Geografía) (https://www.inegi.org.mx/programas/edr/#datos_abiertos)		
	PTWs users fatalities						
Paraguay	All users fatalities	Own Survey		Data obtained from the presentations of the OISEVI meeting in San Salvador, November 2025.			-
	PTWs users fatalities			(Agencia Nacional de Tránsito y Seguridad Vial, Paraguay, 2025)			

Country	User	2019	2020	2021	2022	2023	2024
Dominican Republic	All users fatalities	Own Survey					Query from the INTRANT dashboard https://opsevi.intrant.gob.do/fatalities
	PTWs users fatalities						
Suriname	All users fatalities	Own Survey					-
	PTWs users fatalities	-	-	Own Survey			-
Peru	All users fatalities	(ONSV Perú, 2024)					(Observatorio Nacional de Seguridad Vial de Perú, 2025)
	PTWs users fatalities	(National Road Safety Observatory [ONSV Perú], 2025)					Data obtained from the presentations of the OISEVI meeting in San Salvador, November 2025.
Brazil	All users fatalities	(Observatório Nacional de Segurança Viária, 2025)					This value is an estimate based on fatalities recorded in 2023, adjusted by the 8.94% increase reported by SINESP (Sistema Nacional de Informações de Segurança Pública – SINESP, 2025)
	PTWs users fatalities	(Observatório Nacional de Segurança Viária, 2021)	This value is an estimate based on motorcyclist fatalities recorded in 2019, adjusted by the 7% increase reported by the Observatório Nacional de Segurança Viária for 2020.[92]	(Observatório Nacional de Segurança Viária, 2024)	(Observatório Nacional de Segurança Viária, 2025)		This value is an estimate based on motorcyclist fatalities recorded in 2023, adjusted by the 14.2% increase reported by Policia Rodovária Federal [93]
Uruguay	All users fatalities	(Unidad Nacional de Seguridad Vial, 2025)					
	PTWs users fatalities						
Panama	All users fatalities	-	-	-	-	-	-
	PTWs users fatalities						

92 https://www.onsv.org.br/comunicacao/materias/cresce-o-numero-de-mortes-no-transito-em-2020).

93 https://www.gov.br/prf/pt-br/noticias/nacionais/2025/julho/semana-de-prevencao-de-sinistros-prf-faz-alerta-para-o-aumento-no-numero-de-colisoes-mortes-e-feridos-envolvendo-motocicletas

> Annex B - Sources Consulted for Data on Registered Vehicles and PTWs

Country	User	2019	2020	2021	2022	2023	2024
Argentina	All vehicles	Own Survey					Data provided via email by the National Road Safety Agency, November 2025. The data are preliminary and includes figures up to October 2024
	PTWs						
Bolivia	All vehicles	(Observatorio Boliviano de Seguridad Ciudadana y Lucha contra las Drogas, 2025)					
	PTWs						
Chile	All vehicles	(CONASET, 2025)					
	PTWs	Own Survey					This value is an estimate derived from registered PTWs in 2023, supplemented by the number of new motorcycles sold in 2024[94]
Colombia	All vehicles	Own Survey					Data obtained from RUNT[95]
	PTWs						
Costa Rica	All vehicles	Own Survey					Data obtained from the presentations of the OISEVI meeting in San Salvador, November 2025. The data is processed and shared by COSEVI.
	PTWs						
Ecuador	All vehicles	(Instituto Nacional de Estadística y Censos, 2025)					
	PTWs						
El Salvador	All vehicles	Own Survey					Query from the FONAT dashboard https://observatoriovial.fonat.gob.sv/parque-vehicular/#tab-18972
	PTWs						
Guatemala	All vehicles	Own Survey					-
	PTWs	-	-	-	-	-	-
Mexico	All vehicles	Own Survey					(Instituto Nacional de Estadística y Geografía - INEGI, 2025)
	PTWs						
Paraguay	All vehicles	Own Survey					(Agencia Nacional de Tránsito y Seguridad Vial, Paraguay, 2025)
	PTWs						
Dominican Republic	All vehicles	Own Survey					Query from the INTRANT dashboard https://opsevi.intrant.gob.do/vehicles
	PTWs						
Peru	All vehicles	Parque automotor nacional estimado por años (Gobierno de Perú, 2025)					
	PTWs	"Informe de siniestralidad de tránsito con motocicletas" (Observatorio Nacional de Seguridad Vial de Perú, 2025)					Data obtained from the presentations of the OISEVI meeting in San Salvador, November 2025.

94 https://www.trendtic.cl/2025/02/venta-de-motos-alcanza-una-importante-recuperacion-en-ultimo-trimestre-de-2024-y-cierra-el-ano-con-optimismo/
95 https://www.runt.gov.co/sites/default/files/Bolet%C3%ADn%20de%20Prensa%20001%20de%202025.pdf

Country	User	2019	2020	2021	2022	2023	2024
Brazil	All vehicles	https://www.gov.br/transportes/pt-br/assuntos/transito/arquivos-senatran/estatisticas/renavam/2019/dezembro/frota_reg_uf-tipo_modelo_dezembro_2019.xls	https://www.gov.br/transportes/pt-br/assuntos/transito/arquivos-senatran/estatisticas/renavam/2020/dezembro/frota-reg-uf-tipo-modelo-06-dezembro2020.xls	https://www.gov.br/transportes/pt-br/assuntos/transito/arquivos-senatran/estatisticas/renavam/2021/dezembro/frota-reg-uf-tipo-modelo-dezembro-2021.xls	https://www.gov.br/transportes/pt-br/assuntos/transito/arquivos-senatran/estatisticas/renavam/2022/dezembro/frota_reg_uf-tipo_modelo_dezembro_2022.xls	https://www.gov.br/transportes/pt-br/assuntos/transito/conteudo-Senatran/copy2_of_FrotaporUFeTipodeVeculoDez2023.xlsx	https://www.gov.br/transportes/pt-br/assuntos/transito/conteudo-Senatran/FrotaporUFeTipodeveiculoDezembro2024.xlsx
	PTWs						
Uruguay	All vehicles	(Unidad Nacional de Seguridad Vial, 2025)					
	PTWs	(Ministerio de Industria, energía y Minería - Uruguay, 2025)					
Panama	All vehicles	-	-	Data provided via email, November 2025.			
	PTWs	-	-	-	-	-	-

> NOTE: Own survey was conducted in 2024.

Source: Authors

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