MAIN FIGURES ON ROAD TRAFFIC ACCIDENTS SPAIN 2022

MINISTERIO DEL INTERIOR

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EXECUTIVE SUMMARY

The first edition of the report "Main figures on road accidents" was published in 2004, this being its 19th edition. The objective of the first report was to consolidate as the annual reference publication in Spain to analyse the evolution of the number and characteristics of road accidents in our country. We are confident that having reached its 19th edition means that such objective has again been achieved.

Analysing the recorded figures, **1,746 people were killed in 2022 (9 fewer than in 2019)[1], which represents a decrease of 1% in a total of 97,916 road accidents in Spain (a figure 6% lower than in 2019)**. Thus, fatality rate per million population stood at 37, remaining 9 points below the average rate of the European Union countries (46) and being the sixth lowest in the European Union, only behind Sweden (22), Denmark (26), Ireland (31), Germany (33) and Finland (35) and at the same level as the Netherlands and Estonia (both also at 37).

Regarding morbidity figures, **8,502 people were admitted to hospital, 111 fewer than in 2019, which represents a decrease of 1%, and 119,328 were non-hospitalised injured casualties, 11,417 fewer than in 2019, which means a decrease of 9%**.

These variations, together, **do not correspond to the registered variations in mobility, which have gone from 427.15 million in 2019 to 439.78 million in 2022 (that is, an increase of 3%)**. Furthermore, in the case of fatalities, they are fundamentally motivated by the compensation of the figures recorded on urban and interurban roads. Specifically, there was an increase of 37 fatalities on interurban roads (+3%) compared to a decrease of 46 on urban roads (-9%). Meanwhile, hospitalised injured casualties showed an inverse behaviour: a decrease of 411 individuals on interurban roads (-10%), compared to an increase of 307 individuals on urban roads (+7%). Thus, **urban roads accounted for 66% of road accidents, 27% of fatalities and 54% of hospitalised injured casualties, while interurban roads recorded 34% of road accidents and 73% of fatalities and 46% of hospitalised injured casualties**, a fact that shows that the accidents recorded on interurban roads continue to be fewer than on urban roads, but are, on average, of greater seriousness.

Besides, if the figures according to the type of road are disaggregated, it is observed that **conventional roads[2] recorded 926 fatalities (+3% compared to those registered in 2019) and 3,010 hospitalised injured casualties (-11% compared to those registered in 2019)**. In this way, conventional roads accounted for **73% of the total** number of fatalities on interurban roads and 77% of the hospitalised injured casualties on interurban roads.

Besides, **the set dual carriageways and motorways recorded 347 fatalities (2% compared to those registered in 2019) and 882 hospitalised injured casualties (-2% compared to those registered in 2019)**.In this way, dual carriageways and motorways accounted for **27% of the total** number of fatalities on interurban roads and 23% of the hospitalised injured casualties on interurban roads.

Similarly,in built-up area, sections of road running through town recorded barely 2% of road accidents, but they were more serious compared to the rest of urban roads. Specifically, 33 people were killed in them in 2022 (10 fewer than in 2019), and 177 individuals were admitted to hospital (50 more than

[1] Comparisons are made with respect to 2019 as it was the year preceding the COVID-19 pandemic.
[2] Interurban roads other than dual carriageways and motorways are called "conventional roads" or "rest of interurban roads" interchangeably in this report.

in 2019). In this way, sections of road running through town accounted for 7% of the total number of fatalities on urban roads and 4% of the hospitalised injured casualties on urban roads.

There are also differences within Spanish territory. In particular, the autonomous regions that register the greatest increases in fatalities compared to 2019 are Castilla and León (+43), Andalusia (+29) and Aragón (+17), while at provincial level this happens in Burgos (+19), Zaragoza (+18), Cuenca (+15) and Granada (+13). For its part, the greatest decreases at regional level have occurred in Catalonia (-40) and the Community of Madrid (-34), whereas at provincial level this has happened mainly in Madrid (-34) and Barcelona (-30).

Regarding the modes of transport, **the car is the mode with the highest number of fatalities (681, which means 39% of the total)**. However, while **compared to 2013** the number of people killed in passenger cars has decreased, **the figure for users of vulnerable modes[3] has increased, accounting for 50% of the fatalities in 2022**, due especially to the increase in the number of motorcyclists killed in the last 10 years, mode of transport that, in 2022, registered the second highest number in the last 10 years (401, 23% of the total). **The emergence of victims in Personal Mobility Vehicles (PMVs) in the last 3 years stands out**, increasing the percentage of the total victims (fatalities + hospitalised injured casualties) by 1 percentage point annually, reaching 3% in 2022.

Compared to 2019, and disaggregating the mode of transport by type of road, of the 681 car users who were killed (a figure that exceeds by 40 individuals the 2019 record, representing an increase of 6%), the majority were registered on interurban roads with 614 fatalities (90% of the total). This represents an increase in 35 individuals compared to 2019 (+6%). Regarding motorcycles, 69% of the fatalities were recorded on interurban roads. However, this distribution differs as regards road accidents (27,018) that have occurred to a greater extent on urban roads (75%), as well as in the number of hospitalised (58%) and non-hospitalised (77%) injured casualties. 94% of road accidents involving pedestrians have been recorded on urban roads, as a result, 348 pedestrians have been killed in 2022 (9% fewer than in 2019). Regarding bicycles, 81 individuals were killed as users of this mode of transport, most of them on interurban roads (74%). Compared to 2019, the figure has increased by 1 person: 12 more individuals on interurban roads (+25%) and 11 individuals fewer on urban roads (-34%).

For its part, if all casualties of road accidents are taken into account:

- On interurban roads, car users have accumulated the highest percentage of road victims (46% of the total), followed by motorcycles, which have accounted for 27% of the total. 41% of the casualties have occurred in accidents in which no other vehicle or pedestrian were involved.
- On urban roads, pedestrians accumulate 33% of the total casualties followed by motorcyclists with 32%.

As regards the distribution of the people killed by age and by mode of transport in 2022: in the 18 to 24 years old group, more than half of the fatalities travelled in passenger cars. As motorcyclists, the most heavily affected group are individuals between the ages of 25 and 54. From the age of 65, the percentage of pedestrian fatalities increases, and 51% of the fatalities over 75 years of age are pedestrians.

On the other hand, analysing the vehicle fleet figures in Spain, **an upward trend is observed in the number of vehicles in the fleet, with an approximate increaseby 1%**. However, not all types of vehicles are affected by this increase in the same way, while the fleet of trucks, vans and mopeds has been decreasing since 2013 over the total, **the increase in motorcycles stands out**, going from accumulating **9% of the total vehicle fleet in 2013 to 11% in 2022**, with an annual increase of approximately 50,000 – 150,000 units.

Of all of them, the vehicle fleet (excluding mopeds) under 25 years of age represent 85% of the total registered vehicles, and the vehicles under 15 years of age represent 51% of the registered vehicles. The average age of cars under 25 years of age is 11.8 years. On interurban roads in all types of vehicles analysed (this is the case of motorcycles, passenger cars, vans and trucks up to 3,500kg and more), **the average age of the vehicles in which the fatalities were travelling was greater than that of the vehicles involved in fatal accidents**. In the case of urban roads, the same trend continues, except in the case of motorcycles and trucks exceeding 3,500kg.

[3] Within this classification are the individuals who travel as pedestrians, motorcyclists, cyclists or PMVs.

Taking into account socio-demographic variables, **males register more deaths (1,350, representing 77% of the total) than females (395, representing 23% of the total)**, being **their fatality rate per million population also higher than that of women in all age groups**. In this sense, the age group with highest fatality rate is the 35 - 44 years old (280, representing 16% of the total), while the age group with the lowest number of fatalities is individuals under 14 years of age - 18 - who represent 1% of the total. For their part, **people over 64 years of age have registered 467 fatalities, which represents 27% of the total**, being the majority pedestrians (42%) and drivers (40%).

As for the characteristics of the user, drivers recorded a total of 1,131 fatalities, 65% of the total, mostly on interurban roads (79%); males represented the highest proportion of fatally injured drivers (90% compared to 10% of females). In turn, **the highest rate of drivers involved in casualty road accidents per thousand registered drivers occurs between 15 and 17 years of age (33)**. For their part, **passengers** recorded a total of 267 fatalities, **representing 15% of the total, being females the majority (56% compared to 44% of males)**, registering also more fatally injured female passengers than male passengers in all groups over 45 years of age.

For their part, **users of vulnerable means account for 50% of the total number of fatalities in 2022, representing 81% of people killed on urban roads and 39% of people killed on interurban roads**. Of these fatalities, motorcyclists registered the highest figure (50%) followed by pedestrians (40%) and, to a lesser extent, cyclists (9%) and users of PMVs (1%).

The most common contributory factor in road traffic accidents is distraction with 11,692 cases, which means 17% of the total. In fatal accidents, distraction is also the most frequent factor, with 404 cases (31%), followed by alcohol (29%) and inappropriate speed (23%).

In relation to safety devices, 11% of motorcycle users killed on urban roads were not using the helmet. Thus, looking at the series of the last 10 years, figures similar to those of previous years are observed. **Regarding the use of the seat belt in cars and vans**, it has been recorded that **31% of people killed on urban roads** (23 percentage points lower than in 2019) and **24% of people killed on interurban roads** (1 percentage point higher than in 2019), **did not wear that safety device**.

Regarding the presence of alcohol in drivers involved in casualty road accidents, it has been identified that **33% (221) of the individuals killed who were submitted to alcohol testing (74% of the total) tested positive, which means an increase compared to 2019 (+4 percentage points). Regarding drug testing, 73% of the fatally injured drivers were tested, with 21% of them (140) testing positive**, which represents a slight increase compared to 2019 (+1 percentage point). 60% of the drivers testing positive were so for cocaine, followed by cannabis (56%), amphetamine (6%), opioids (1%) and ketamine (1%).

In relation to the type of accident, 37% of the fatalities occurred due to run-off-collisions (645 individuals), which represents an increase of 11% compared to 2019. Specifically **on interurban roads, run-off-collisions is the type of accident that causes the greatest number of fatalities (533, representing 42% of the total) and on urban roads, 43% of the fatalities are from collision with pedestrians (202)**.

Regarding temporality, every month has a similar fatality figure ranging from 6% in the month of March to 11% in the month of July. Thus, there has been a monthly average of 146 fatalities per month, the same figure as in 2019. 70% of road accidents on interurban roads and 71% on urban roads have occurred during the day. However, while on urban roads at night with no lighting is the period of the day with fewer road accidents (4%), on interurban roads under these conditions 18% of road accidents occur. These differences are modulated by the scarcity of built-up areas that are in unlit conditions.

Regarding traffic-related injuries, considering that the latest data available at the date of publication of this report refer to 2021, for the same year:

- **5,654 hospitalised casualties scored 3 or higher on MAIS, being the incidence rate per 100,000 population at 11.9**. The highest percentage of seriously injured road casualties (MAIS3+) is observed on the 45-54 age group, 18%, and the lowest on the 85 and over age group,

2%. Males showed a percentage of 78% and females of 22%.

• In 2021, 19,147 individuals with road traffic injuries were discharged from Spanish hospitals, both public and private (excluding death as the reason for hospital discharge), with 54,543 injuries which means 2.8 injuries per individual. For their part, **those who died in hospital centres (418) sustained 2,540 injuries, that is, 6.1 injuries per individual**.

• Regarding the location of the injuries, as for fatalities, **the majority of the injuries recorded (31% of the total) were brain injuries, followed by injuries to the thorax (21%)**.

And regarding **the cost of victims caused by road accidents in 2022, a figure between 7,724 and 13,445 million euros** is estimated (which is equivalent to a range between **0.57% and 1% of Spanish GDP** as of 1 January 2022).

Finally, we would like to highlight that:

• As in previous years, we have received close collaboration from Autonomous Communities that have powers on traffic control; the Ministry of Transport, Mobility and Urban Agenda for reviewing the information on roads under their scope and for the data on the road network and traffic; the Spanish National Toxicology and Forensic Science Institute (INTCF) for providing data on psychoactive substances in dead individuals. The Directorate-General for Traffic would like to thank all these institutions for their collaboration and the facilities offered to share their consolidated data.

• DGT would also like to thank all the people who made the writing of this report possible and especially the Traffic Division of the Guardia Civil, the Local and Autonomous Police Forces and the experts at the Provincial Traffic Departments and at the National Road Safety Observatory.

DEFINITION OF THE MAIN INDICATORS

The definitions of the main indicators of accident rate used in this report are explained below and defined in Annex III to the Order INT/2223/2014, of 27 October, governing the report of information to the National Register for Road Traffic Accident Victims:

Road traffic accident with victims ("road traffic accident", in the document below):

That with the following conditions:

a) Occurs, or originates, on a road or land which is subject to the legislation on road traffic, motor vehicles and road safety.
b) One or several persons are killed or injured as a result or consequence of the accident.
c) Be involved, at least, a vehicle in motion.

Fatal road traffic accident ("fatal accident", in the document below): road traffic accident with victims in which, at least, one of them is killed.

Casualty ("victim", in the document below): any person who, as a result of a road traffic accident, is killed or injured.

Fatality ("killed person", in the document below): a person who, as a result of a road traffic accident, is killed on the spot or within 30 days after the accident. Confirmed cases of natural death or those where there is evidence of suicide will be excluded.

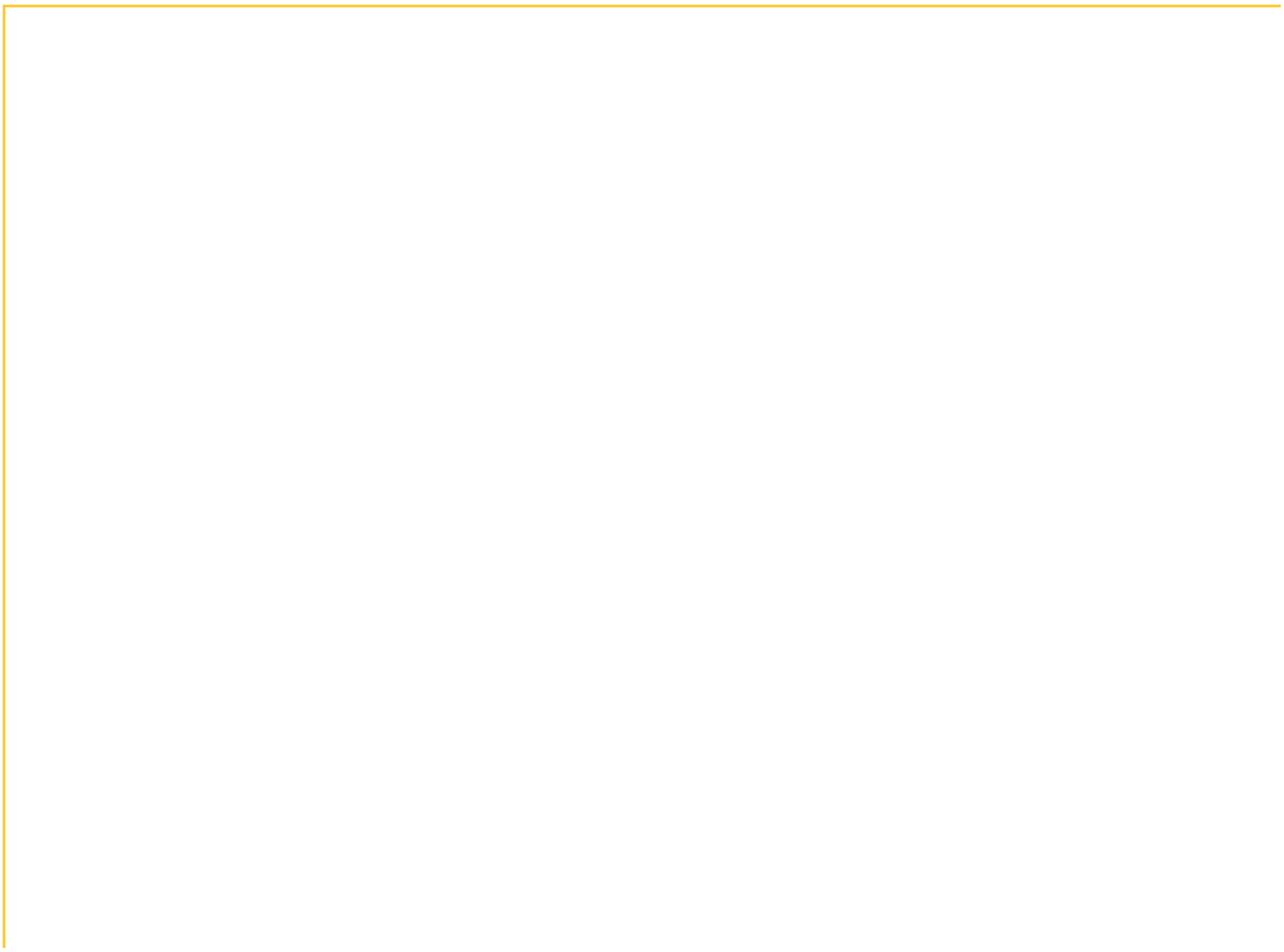
Injured ("injured person", in the document below): any person who, as a result of a road traffic accident, is injured and requires hospitalization or not, and the definition of fatality does not apply to them.

Hospitalised casualty ("hospitalised injured casualty", in the document below): any person who, as a result of a road traffic accident, requires hospitalization for more than 24 hours, and the definition of fatality does not apply to them.

Non-hospitalised casualty ("non-hospitalised injured casualty", in the document below): any person injured in a road traffic accident requiring health care for less than 24 hours, provided that the definitions of hospitalised injured casualty and fatality do not apply to him/her.

NOTE:

- **Personal mobility vehicle (PMV):** Vehicle with one or more wheels for a single user and exclusively propelled by electric motors with a maximum design speed between 6 and 25 km/h. They can only be equipped with a seat or saddle in case of self-balancing devices. Vehicles without self-balancing systems and with a saddle, vehicles designed for competing, vehicles for people with reduced mobility and vehicles with a working voltage greater than 100 VDC or 240 VAC as well as those included in the scope of Regulation (EU) No 168/2013 of the European Parliament and of the Council of 15 January 2013 are excluded from this definition.



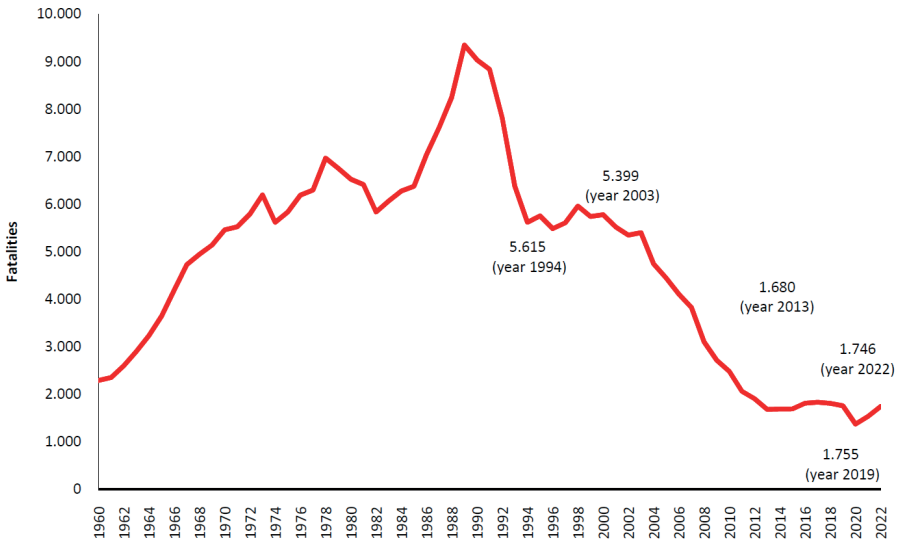
1

TRAFFIC ACCIDENT RATE IN 2022 AND ITS RECENT EVOLUTION

1.1. Time series, 1960-2022

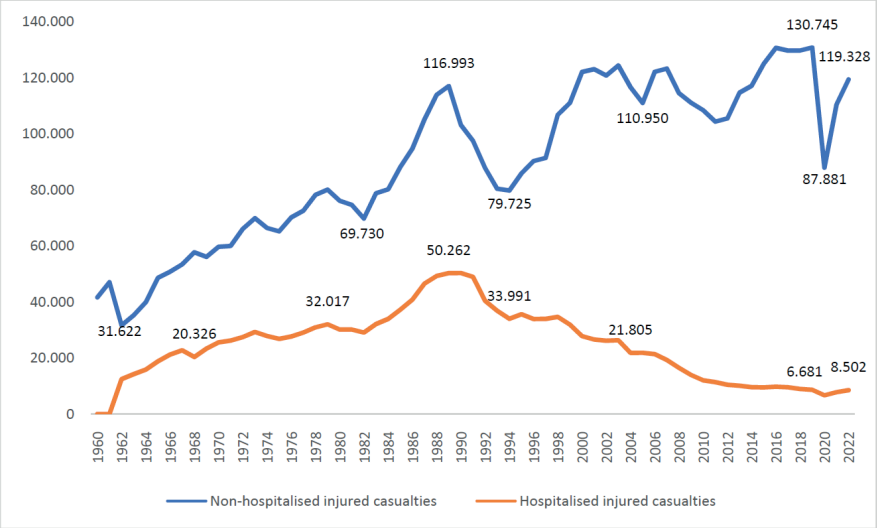
In 2022, 1,746 individuals were killed in traffic accidents —9 fewer than in 2019 (-1%)—, 8,502 individuals were hospitalised—111 fewer (-1%) —and 119,328 individuals were injured but did not require hospitalization, 9% less than in 2019. Thus, minor accidents have been reduced by a greater proportion than fatal and serious accidents.

Chart 1: Evolution of persons killed in road traffic accidents. Spain, 1960-2022



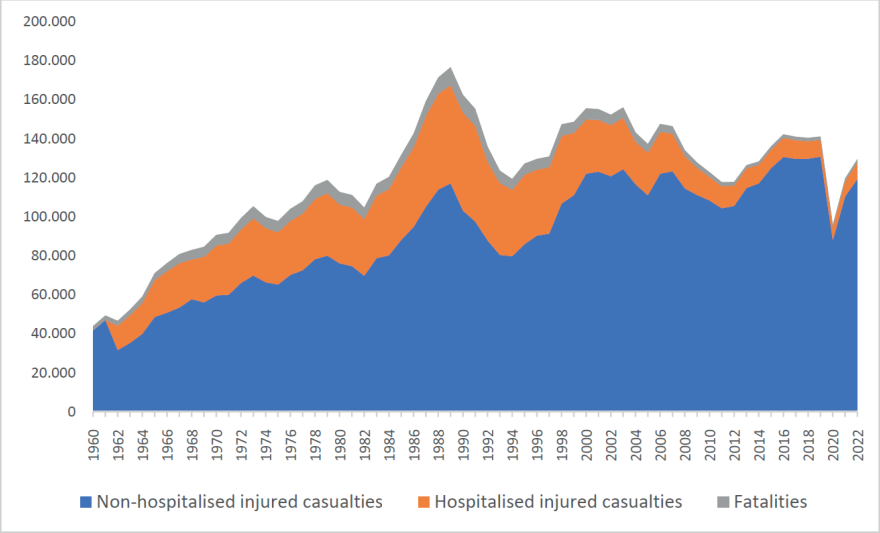
In Spain, all road traffic victims totalled 129,576 in 2022, of them: fatalities represented 1%, hospitalised injured casualties accounted for 7% and non-hospitalised injured casualties represented 92%.

Chart 2: Evolution of hospitalised and non-hospitalised injured casualties in road traffic accidents. Spain, 1960-2022



Note: 1960 and 1961 with no distinction between hospitalised and non-hospitalised injured casualties. In this chart, hospitalised injured casualties are included in non-hospitalised injured casualties for the years 1960 and 1961.

Chart 3: Evolution of road traffic victims. Spain, 1960-2022



Note: 1960 and 1961 with no distinction between hospitalised and non-hospitalised injured casualties.

1.2. 2013 to 2022

The main indicators of accident rate for the year 2022, and its comparison with 2019 and 2013, are summarised in the following table:

Table 1: Main indicators of accident rate and exposure to risk. Spain, 2013-2022

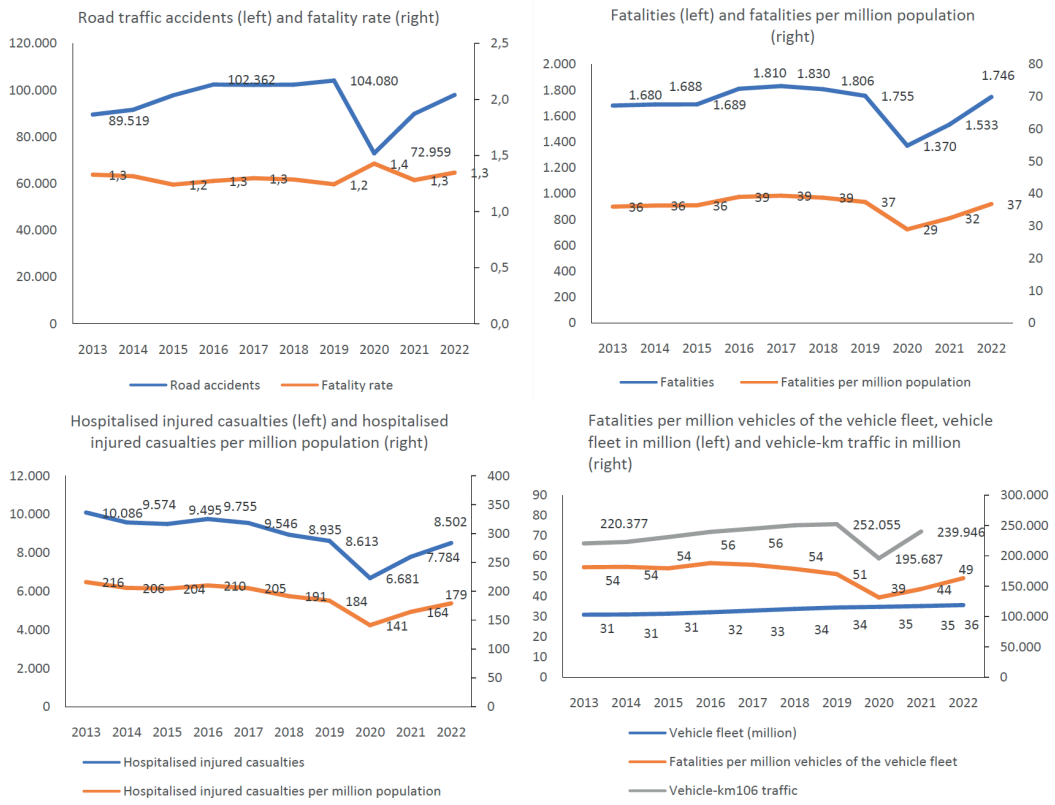
	2013	2019	2021	2022	Year-on-year variation 2013-2022	Annual diff. 2022-2013	Annual diff. 2022-2019
Road traffic accidents	89519	104080	89862	97916	1%	9%	-6%
Fatal accidents	1531	1651	1437	1620	1%	6%	-2%
Fatalities	1680	1755	1533	1746	0%	4%	-1%
Hospitalised injured casualties	10086	8613	7784	8502	-2%	-16%	-1%
Non-hospitalised injured casualties	114634	130745	110378	119328	0%	4%	-9%
Total de personas victimas	**126.400**	**141.113**	**119.695**	**129.576**	**0%**	**3%**	**-8%**
Fatalities per M p.tion	36	37	32	37	1	1	0
Hospitalised injured casualties per M p.tion	216	184	164	178	-2%	-17%	-2%
Non-hospitalised injured casualties per M p.tion	2.453	2.786	2.329	2.513	0%	2%	-10%
Daily average of fatalities	5	5	4	5	0	0,2	0
Case fatality rate	1,3	1,2	1,3	1,3	0	0	0,1
Vehicle fleet	32.616.105	35.855.460	36.534.370	36.984.398	2%	15%	4%
Fatalities per million vehicles of the vehicle fleet	54	51	44	49	-5	-5	-2
Traffic vehicle-km106 *	220.377	252.055	239.946	N/A	N/A	N/A	N/A
Long distance journeys	354.219.623	427.146.612	393.680.171	439.775.372	2%	24%	3%

Case fatality rate is defined as the number of people killed per 100 casualties.
** The source is the Yearbooks from the Ministry of Transport, Mobility and Urban Agenda (Chapter 8). Data refer to interurban roads*

In 2013, the number of fatalities reached a lowest on record: 1,680 individuals. Between 2013 and 2022:

- People killed in road accidents have increased by 0.4% year-on-year, while hospitalised injured casualties have decreased at an annual average rate of 2%. The series reflect the effect of the COVID-19 pandemic in 2020 and 2021.
- The death rate per million population has gone from 36 in 2013 to 37 in 2022.
- The total number of accidents has increased by 9% annually, while fatality rate, which represents the percentage of victims who are killed, registers the same value in 2022 as in 2013 (1.3).
- The vehicle fleet has increased steadily, going from 32.6 million vehicles in 2013 to 36.9 million in 2022. The number of fatalities per million vehicles of the vehicle fleet has decreased from 54 to 49.
- The number of long-distance journeys has increased from 354.2 million in 2013 to 439.8 million in 2022. This last value is higher than that of 2019, so it can be concluded that long distance mobility has completely recovered, after the declines related to the COVID-19 pandemic.

Chart 4: Evolution of the main indicators of accident rate and exposure to risk*. Spain, 2013-2022



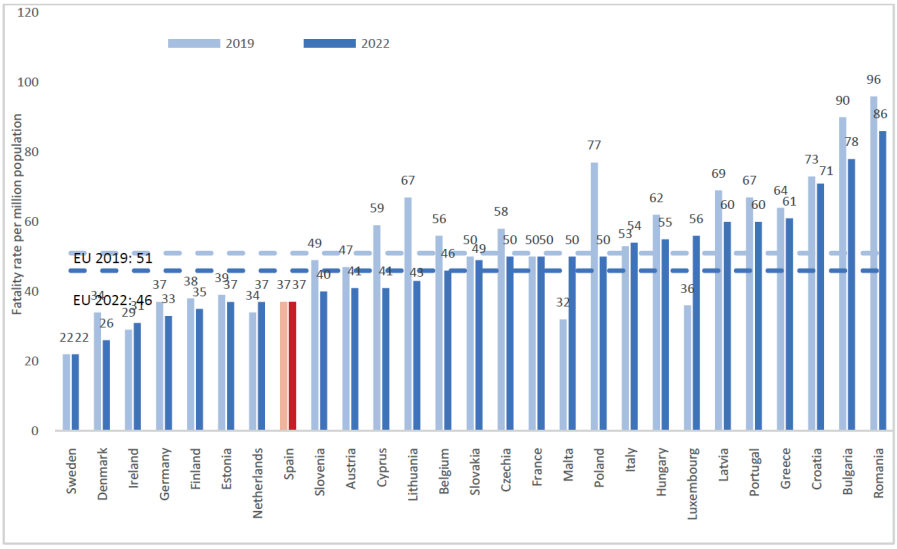
** In the title of every chart, alongside each variable it is indicated, in brackets, if this variable has been represented in the right or left vertical axis.*

1.3. Year 2022

In 2022, Spain had a rate of 37 fatalities per million population (same value as in 2019), below the European average (46), being the sixth lowest in the ranking of countries, only behind the three Nordic EU Member States (Sweden, Denmark and Finland), Ireland and Germany, and with the same value as Estonia and the Netherlands.

The following chart shows the evolution of fatality rates per million population in the European Union from 2019 to 2022 and, in the case of Spain:

Chart 5: Fatality rate per million population in the European Union. 2021 and 2022



For greater detail, the main indicators of accident rate for the year 2022, and its variation compared to 2019, are detailed in the following table. It is observed that:

- The narrowness of the variation in fatality figures (-9 compared to 2019) is mainly motivated by the compensation of the figures registered on urban roads (+37 on interurban roads, which corresponds to an increase of 3%, and a decrease of 46 on urban roads, which corresponds to a decrease of 9%). For their part, hospitalised injured casualties also perform differently, although with an inverse sign (decrease of 411 individuals on interurban roads, which corresponds to a fall in the decrease of 10%, compared to +307 on urban roads, which corresponds to an increase of 7%).

- Focusing on the case of fatalities, the main variations with respect to the type of accident are recorded in running-off-road collisions (+13%) and collisions with pedestrians (-13%), while, depending on the mode of transport of the victim, there was a decrease in pedestrians (-9%) and motorcycles (-4%) compared to an increase in passenger cars (+6%). By age groups, the 55-64 age group registered an increase of 17% while the 75-84 age group registered a decrease of 16%. And by gender, despite the differences recorded (-2% males and +7% females), the ratio remained at similar levels to 2019 (77%-23% in 2022 compared to 79%-21% in 2019).

Table 2: Road traffic accidents, fatalities, hospitalised and non-hospitalised injured casualties. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Total	**97.916**	**100%**	**1.746**	**100%**	**8.502**	**100%**	**119.328**	**100%**
Location								
Interurban	33.300	34%	1.273	73%	3.892	46%	44.798	38%
Motorway	3.540	4%	99	6%	280	3%	5.296	4%
Dual c'way	7.728	8%	248	14%	602	7%	11.454	10%
Conventional road	22.032	23%	926	53%	3.010	35%	28.048	24%
Urban	64.616	66%	473	27%	4.610	54%	74.530	62%
Road running through town	1.551	2%	33	2%	177	2%	1.779	1%
Streets	63.001	64%	437	25%	4.426	52%	72.666	61%
Motorway/Urban dual c'way	64	0%	3	0%	7	0%	85	0%
Days of the week [2]								
Working days	73.904	75%	1.140	65%	5.802	68%	88.975	75%
Weekend day	24.012	25%	606	35%	2.700	32%	30.353	25%
Type of road accident								
Head-on collision	3.261	3%	282	16%	855	10%	4.778	4%
Side and T-bone collision	29.513	30%	213	12%	2.075	24%	36.304	30%
Rear and multiple collision	18.260	19%	150	9%	710	8%	27.934	23%
Run-off-road collision	15.139	15%	645	37%	1.905	22%	17.394	15%
Overturning	3.683	4%	18	1%	198	2%	3.822	3%
Pedestrian impact [3]	12.097	12%	325	19%	1.580	19%	11.688	10%
Other type	15.963	16%	113	6%	1.179	14%	17.408	15%
Mode of travel [4]								
Pedestrian [3]	12.253	13%	348	20%	1.623	19%	11.105	9%
Bicycle	8.106	4%	81	5%	711	8%	7.033	6%
PMV	4.647	2%	8	0%	312	4%	4.003	3%
Moped	5.680	3%	36	2%	440	5%	5.522	5%
Motorcycle	27.018	17%	401	23%	2.621	31%	25.406	21%
Car	71.104	50%	681	39%	2.220	26%	56.470	47%
Goods vehicle	13.876	7%	149	9%	365	4%	5.301	4%
Bus or coach	2.286	1%	13	1%	59	1%	2.290	2%
Type of user								
Driver	79.455	81%	1.131	65%	5.631	66%	81.112	68%
Passenger	20.285	21%	267	15%	1.248	15%	27.111	23%
Pedestrian	12.629	13%	348	20%	1.623	19%	11.105	9%

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Age [4,5]								
0-14	4.521	5%	18	1%	261	3%	5.093	4%
15-24	18.494	19%	194	11%	1.168	14%	20.669	17%
25-34	22.813	23%	225	13%	1.300	15%	23.878	20%
35-44	21.650	22%	280	16%	1.328	16%	21.911	18%
45-54	20.664	21%	278	16%	1.614	19%	20.441	17%
55-64	13.770	14%	273	16%	1.290	15%	13.237	11%
65-74	6.874	7%	200	11%	730	9%	6.571	6%
75-84	3.838	4%	167	10%	524	6%	3.459	3%
85 and over	1.091	1%	100	6%	145	2%	886	1%
Gender [4,5]								
Male	67.167	69%	1,350	77%	6.009	71%	70.937	59%
Female	42.274	43%	395	23%	2.466	29%	47.915	40%

[1] The differences have been estimated as a percentage when the number of cases is higher than 100 and in absolute values when the number is below 100.
[2] The working day includes from 0:00 hours on Monday to 14:59 hours on Friday; weekend days start at 15:00 on Friday and end at 23:59 on Sunday.
[3] The number of people killed when struck by a vehicle does not include all pedestrians hit by a vehicle because the classification by type of road accident is made according to the first manoeuvre and not to its harmful outcome.
[4] In the road traffic accident indicator, the addition does not correspond to the total because the same accident can fall under various subheadings.
[5] Accidents resulting in one or more persons being killed or injured are recorded on the reference group.
[6] PMVs are personal mobility vehicles.

Table 3: Year-on-year variation in 2022 compared to 2021 and 2019.

	Variation1 2022/2021				Variation1 2022/2019			
	Road traffic accidents	Fatalities	Hospitalised injured casualties	Non-hospitalised injured casualties	Road traffic accidents	Fatalities	Hospitalised injured casualties	Non-hospitalised injured casualties
Total	**9%**	**14%**	**9%**	**8%**	**-6%**	**-1%**	**-1%**	**-9%**
Location								
Interurban	5%	14%	7%	5%	-11%	3%	-10%	-13%
Motorway	21%	18	51%	22%	3%	8	10%	0%
Dual c'way	5%	6%	12%	5%	-15%	0%	-7%	-16%
Conventional road	3%	16%	3%	3%	-11%	3%	-11%	-13%
Urban	11%	13%	11%	10%	-3%	-9%	7%	-6%
Road running through town	-1%	-1	25%	-6%	-1%	-10	39%	-3%
Streets	12%	14%	11%	11%	-3%	-8%	6%	-6%
Motorway/Urban dual c'way	-326	2	-10	-487	-25	0	4	-43%
Days of the week [2]								
Working days	10%	12%	8%	9%	-6%	2%	0%	-9%
Weekend day	7%	18%	12%	5%	-5%	-6%	-4%	-8%

	Variation1 2022/2021				Variation1 2022/2019			
	Road traffic accidents	Fatalities	Hospitalised injured casualties	Non-hospitalised injured casualties	Road traffic accidents	Fatalities	Hospitalised injured casualties	Non-hospitalised injured casualties
Type of road accident								
Head-on collision	9%	29%	10%	8%	-5%	-1%	-8%	-8%
Side and T-bone collision	10%	-2%	6%	9%	-6%	-7%	1%	-9%
Rear and multiple collision	7%	11%	16%	6%	-15%	3%	-10%	-17%
Run-off-road collision	6%	21%	7%	6%	0%	13%	2%	-1%
Overturning	6%	-9	-3%	6%	2%	-14	-18%	1%
Pedestrian impact [3]	20%	15%	18%	20%	-9%	-13%	-5%	-10%
Other type	5%	-7%	5%	5%	1%	-5%	12%	-2%
Mode of travel [4]								
Pedestrian [3]	17%	16%	16%	18%	-10%	-9%	-4%	-10%
Bicycle	0%	18	0%	-1%	3%	1	10%	4%
PMV	93%	-1	81%	94%	N/A	N/A	N/A	N/A
Moped	3%	-2	10%	3%	-19%	-13	-7%	-20%
Motorcycle	13%	12%	7%	13%	-7%	-4%	-4%	-8%
Car	8%	11%	6%	3%	-9%	6%	-9%	-13%
Goods vehicle	8%	28%	6%	8%	-14%	6%	-5%	-21%
Bus or coach	27%	8	14	30%	-4%	10	23	-1%
Type of user								
Driver	8%	11%	8%	8%	-5%	-1%	0%	-6%
Passenger	5%	27%	8%	5%	-15%	14%	-3%	-17%
Pedestrian	21%	16%	16%	18%	-7%	-9%	-4%	-10%
Age [4,5]								
0-14	8%	-7	5%	10%	-19%	-14	-10%	-20%
15-24	4%	-3%	-5%	4%	-5%	13%	-4%	-5%
25-34	4%	15%	6%	4%	-13%	-7%	-8%	-14%
35-44	6%	19%	2%	6%	-14%	9%	-12%	-16%
45-54	10%	1%	13%	10%	-4%	-12%	2%	-4%
55-64	15%	13%	21%	15%	2%	17%	17%	1%
65-74	20%	32%	12%	21%	-3%	9%	-5%	-4%
75-84	17%	18%	32%	16%	-5%	-16%	12%	-8%
85 and over	16%	44	12%	11%	-15%	-9%	-23%	-15%
Gender [4,5]								
Male	8%	11%	8%	7%	-7%	-2%	-2%	-8%
Female	10%	24%	11%	9%	-7%	7%	2%	-9%

[1] The differences have been estimated as a percentage when the number of cases is higher than 100 and in absolute values when the number is below 100.
[2] The working day includes from 0:00 hours on Monday to 14:59 hours on Friday; weekend days start at 15:00 on Friday and end at 23:59 on Sunday.
[3] The number of people killed when struck by a vehicle does not include all pedestrians hit by a vehicle because the classification by type of road accident is made according to the first manoeuvre and not to its harmful outcome.
[4] In the road traffic accident indicator, the addition does not correspond to the total because the same accident can fall under various subheadings.
[5] Accidents resulting in one or more persons being killed or injured are recorded on the reference group.
[6] PMVs are personal mobility vehicles.

2

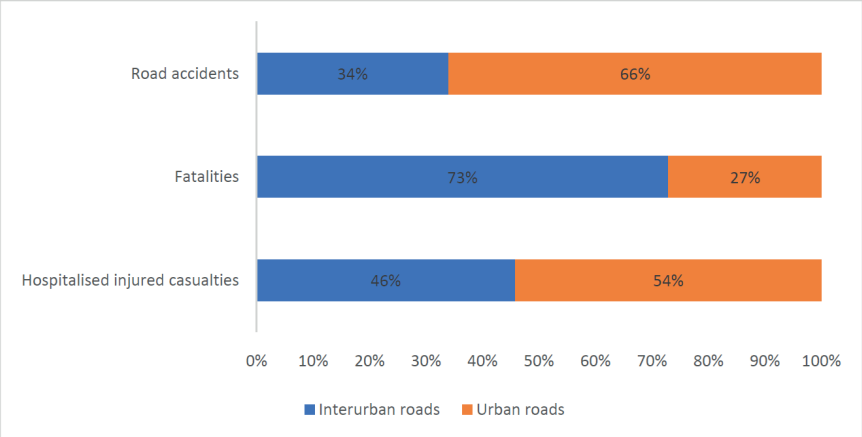
INFRASTRUCTURE

2.1. Performance indicators: road traffic accidents and victims

2.1.1. Scene of the road traffic accident

In 2022, 66% of road traffic accidents occurred on urban roads; however, 73% of the fatalities were registered on interurban roads. The number of hospitalised injured casualties is distributed on urban and interurban roads in similar percentages.

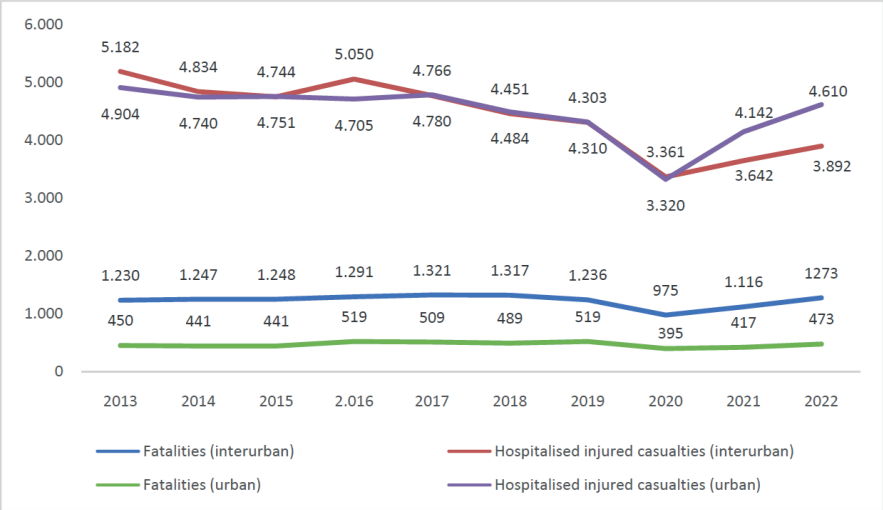
Chart 6: Distribution of the number of road traffic accidents, fatalities and hospitalised injured casualties by road type. Spain, 2022



Until 2013, the number of fatalities and hospitalised injured casualties had been decreasing on interurban roads and in a similar way on urban roads. Between 2013 and 2019, the number of fatalities increased by 0.5% on interurban roads and by 15% on urban roads. In 2020, due to the COVID-19 pandemic, fatalities on interurban roads decreased by 21% compared to 2019, and by 24% on urban roads.

In 2022, compared to 2019, the number of fatalities increased by 3% on interurban roads and by 9% on urban roads.

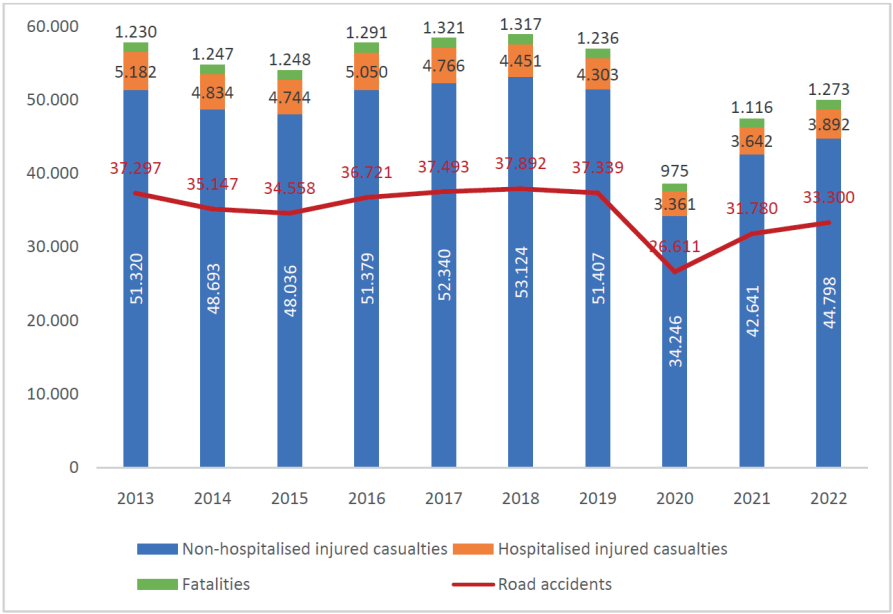
Chart 7: Evolution of road fatalities and injured casualties admitted to hospitals on interurban and urban roads. Spain 2013-2022



2.1.2. Interurban roads

In 2022, 34% of the road traffic accidents were registered on interurban roads, that is, 33,300. Compared to 2019, there were fewer accidents on interurban roads but, on average, they were more serious. The number of people killed has increased by 3% between 2019 and 2022, while hospitalised injured casualties have decreased by 10% and those who did not require hospitalisation have decreased by 13%.

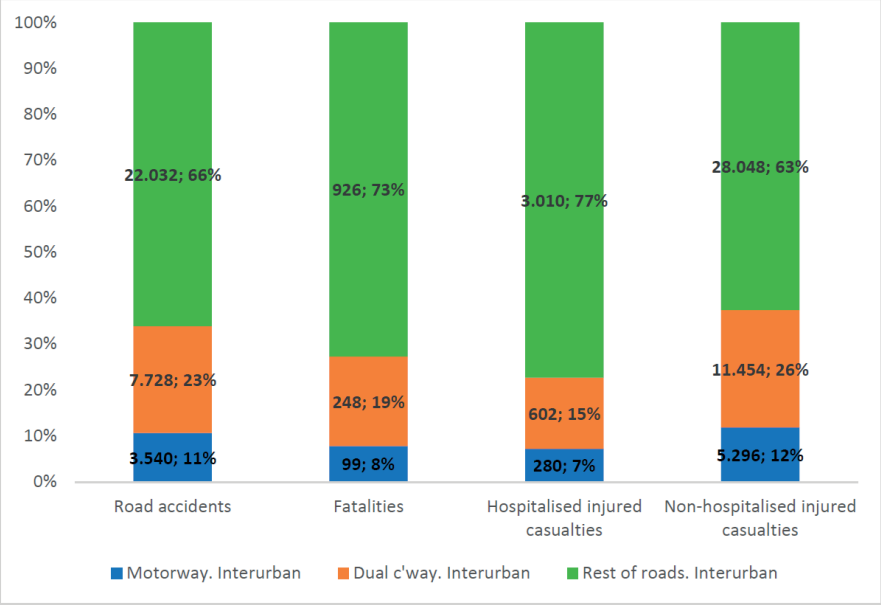
Chart 8: Evolution of road traffic accidents, fatalities and injured casualties on interurban roads. Spain, 2013-2022



By type of interurban road, in 2022:

- 926 people were killed on conventional roads, accounting for 73% of all fatalities on interurban roads; 3,010 injured casualties were hospitalised, which accounted for 77% of the total.
- 19% of the fatalities occurred on dual carriageways and 15% of the hospitalised injured casualties were registered on interurban roads.
- 8% of the fatalities were registered on motorways and 7% of the hospitalised injured casualties on motorways.

Chart 9: Road traffic accidents, fatalities, hospitalised and non-hospitalised injured casualties on interurban roads by road type. Spain, 2022



In 2022 there were 99 fatalities on motorways, 8 fewer fatalities than in 2019. On dual carriageways, 248 fatalities were registered, 1 fewer than in 2019; on the rest of roads, with 926 fatalities, we can observe a 3% increase, 30 more fatalities than in 2019. Hospitalised injured casualties have decreased on dual carriageways and rest of roads in 2022 as compared with 2019 - 7% and 11% respectively - and the figure has increased on motorways —10%—.

Table 4: Road traffic accidents on interurban roads by road type. Spain, 2014-2022*

Road traffic accidents	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Dif. 22/19	Dist. 22
Motorway	2.369	2.398	3.592	3.932	3.722	3.438	2.154	2.915	3.540	21%	3%	11%
Dual c'way	8.411	8.431	8.641	8.608	9.388	9.086	5.741	7.377	7.728	5%	-15%	23%
Rest of interurban roads	24.367	23.729	24.488	24.953	24.782	24.815	18.716	21.488	22.032	3%	-11%	66%
Total interurban	**35.147**	**34.558**	**36.721**	**37.493**	**37.892**	**37.339**	**26.611**	**31.780**	**33.300**	**5%**	**-11%**	**100%**

** In 2013 the road catalogue was updated to classify road traffic accidents occurring on Catalonian interurban roads, so the data cannot be compared with those corresponding to previous years. In 2016 the data of catalogues of roads from Catalonia and the Basque Country updated to the corresponding year were uploaded into the National Register for Road Traffic Accident Victims.*

Table 5: Fatalities on interurban roads by road type. Spain, 2014-2022*

Type of road	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist. 22
Motorway	64	75	85	85	82	91	65	81	99	18	8	8%
Dual c'way	226	202	242	223	241	249	159	235	248	6%	0%	19%
Other interurban roads	957	971	964	1.013	994	896	751	800	926	16%	3%	73%
Total	**1.247**	**1.248**	**1.291**	**1.321**	**1.317**	**1.236**	**975**	**1.116**	**1.273**	**14%**	**3%**	**100%**

** In 2013 the road catalogue was updated to classify road traffic accidents occurring on Catalonian interurban roads, so the data cannot be compared with those corresponding to previous years. In 2016 the data of catalogues of roads from Catalonia and the Basque Country updated to the corresponding year were uploaded into the National Register for Road Traffic Accident Victims.*

Table 6: Hospitalised injured casualties on interurban roads by road type. Spain, 2014-2022*

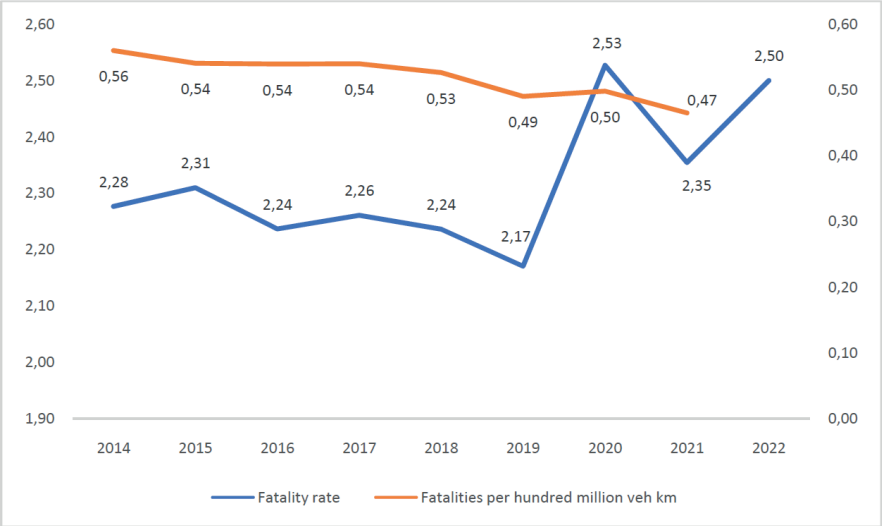
Type of road	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist. 22
Motorway	263	223	290	285	271	254	184	186	280	51%	10%	7%
Dual c'way	758	741	830	728	741	650	468	539	602	12%	-7%	15%
Other interurban roads	3.813	3.780	3.930	3.753	3.439	3.399	2.709	2.917	3.010	3%	-11%	77%
Total	**4.834**	**4.744**	**5.050**	**4.766**	**4.451**	**4.303**	**3.361**	**3.642**	**3.892**	**7%**	**-10%**	**100%**

** In 2013 the road catalogue was updated to classify road traffic accidents occurring on Catalonian interurban roads, so the data cannot be compared with those corresponding to previous years. In 2016 the data of catalogues of roads from Catalonia and the Basque Country updated to the corresponding year were uploaded into the National Register for Road Traffic Accident Victims.*

According to mobility, the number of people killed per a hundred million vehicle-km has reduced from 0.56 to 0.47 between 2014 and 2021, the latest year with data available on journeys made on interurban roads. In 2019, the rate was at 0.49.

On the contrary, fatality rate (individuals who have died per 100 victims) has increased from 2.28 to 2.35 in the same period. In 2019, this rate was 2.17 and in 2022 it was 2.50.

Chart 10: Evolution of case fatality rate and fatality figure per a hundred million vehicle-km on interurban roads. Spain, 2014-2022



2.1.3. Urban Roads

In 2022, compared to 2019, there were 9% fewer fatalities on urban roads whereas hospitalised injured casualties increased by 7%. Over the last ten years, the year-on-year growth rates for fatalities was at 1%.

66% of the road traffic accidents occurred on urban roads, 27% of the fatalities, 473 fatally injured casualties, and 54% of the hospitalised injured casualties, 4,610 injured individuals.

Sections of road running through towns are included in urban roads, showing a higher severity ratio than the rest of roads in built-up areas. In 2022, 33 people were killed on sections of road running through towns, 10 fewer fatalities than in 2019.

Chart 11: Evolution of the number of road traffic accidents, fatalities and hospitalised injured casualties on urban roads. Spain, 2013-2022

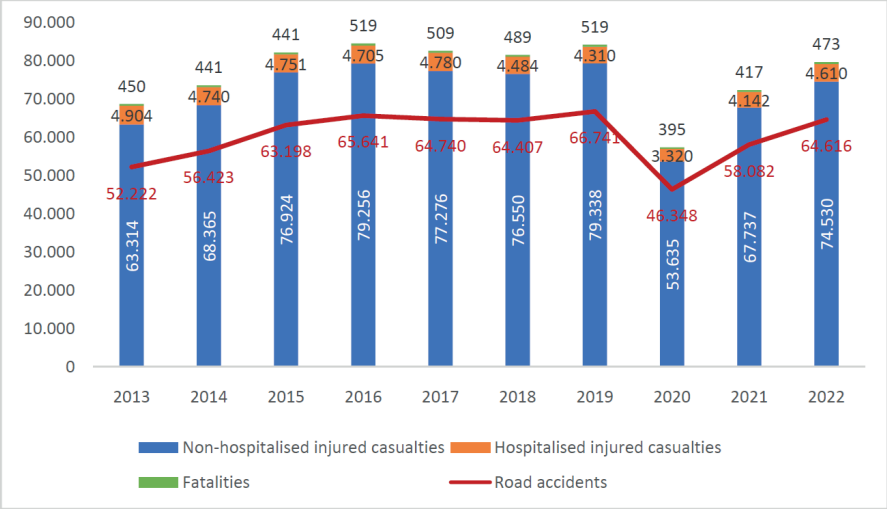


Table 7: Road traffic accidents on urban roads by type of road. Spain, 2014-2022

Road traffic accidents	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist. 22
Road running through town	767	1.443	1.403	1.465	1.655	1.597	1.563	1.081	1.561	1.551	-1%	-1%	2%
Others	51.455	54.980	61.795	64.176	63.085	62.810	65.178	45.267	56.521	63.065	12%	-3%	98%
Total	**52.222**	**56.423**	**63.198**	**65.641**	**64.740**	**64.407**	**66.741**	**46.348**	**58.082**	**64.616**	**11%**	**-3%**	**100%**

Table 8: Fatalities on urban roads by type of road. Spain, 2014-2022

Fatalities	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist. 22
Road running through town	38	43	41	47	48	43	43	25	34	33	-1	-10	7%
Others	412	398	400	472	461	446	476	370	383	440	15%	-8%	93%
Total	**450**	**441**	**441**	**519**	**509**	**489**	**519**	**395**	**417**	**473**	**13%**	**-9%**	**100%**

Table 9: Hospitalised injured casualties on urban roads by typeof road. Spain , 2014-2022

Hospitalised injured casualties	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist. 22
Road running through town	153	205	167	149	162	169	127	114	142	177	25%	39%	4%
Others	4.751	4.535	4.584	4.556	4.618	4.315	4.183	3.206	4.000	4.433	11%	6%	96%
Total	**4.904**	**4.740**	**4.751**	**4.705**	**4.780**	**4.484**	**4.310**	**3.320**	**4.142**	**4.610**	**11%**	**7%**	**100%**

Madrid and Barcelona, two cities with a population of over a million population, have registered 11% of fatalities on urban roads; in 2021 this percentage was 14%. For their part, municipalities with up to 60,000 inhabitants account for 13% of road traffic accidents, but 40% of the fatalities.

It should be emphasised that the level of communication in case of a non-fatal road traffic accident may vary in both the reporting time-frames and among municipalities, although it should be noted that the population coverage as regards information on the accident rates on urban roads (percentage of the population represented by municipalities reporting road traffic accidents) has significantly increased during the last few years, from 78% in 2009 to 95% in 2022.

Chart 12: Road traffic accidents by the size of the municipality on urban roads. Spain, 2013, 2019 and 2022

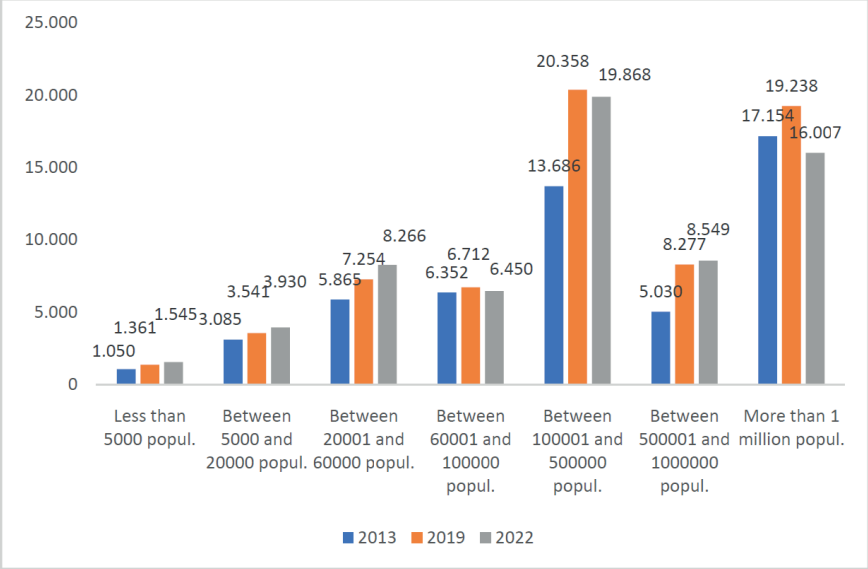


Chart 13: Fatalities by the size of the municipality on urban roads. Spain, 2013, 2019 and 2022

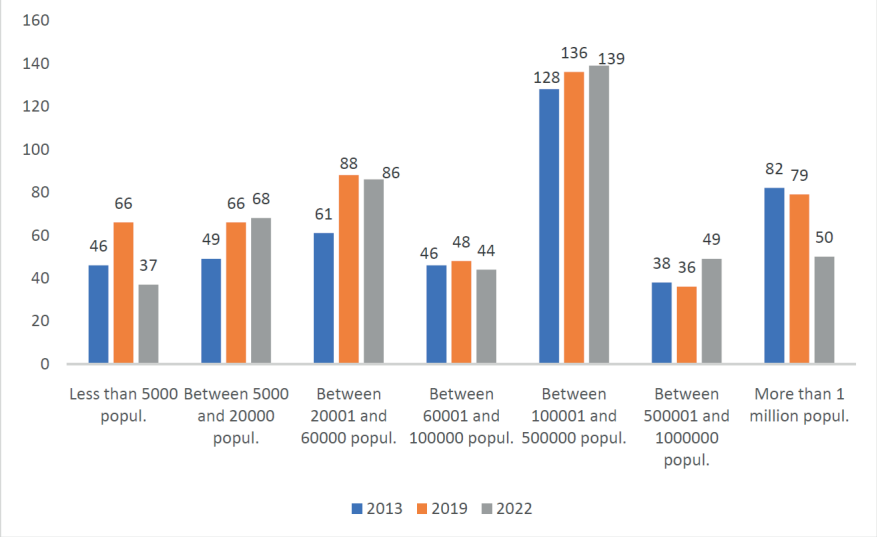
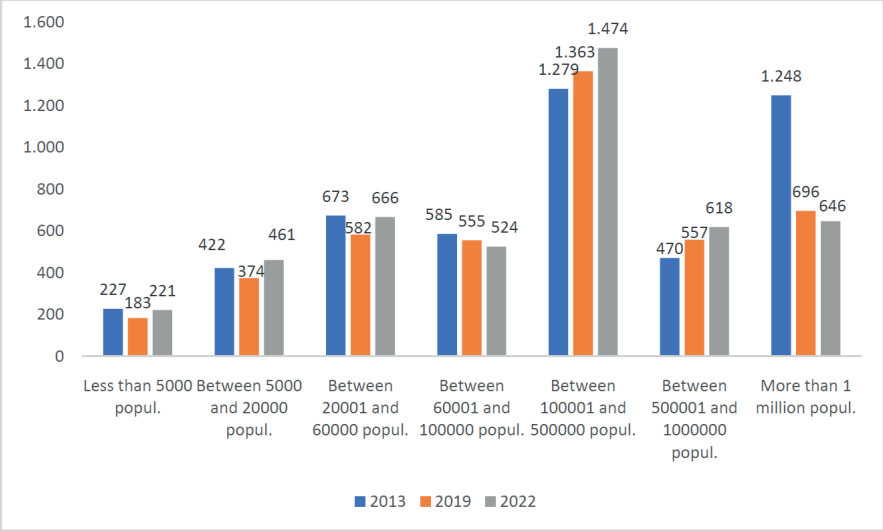


Chart 14: Hospitalised injured casualties by the size of the municipality on urban roads. Spain, 2013, 2019 and 2022

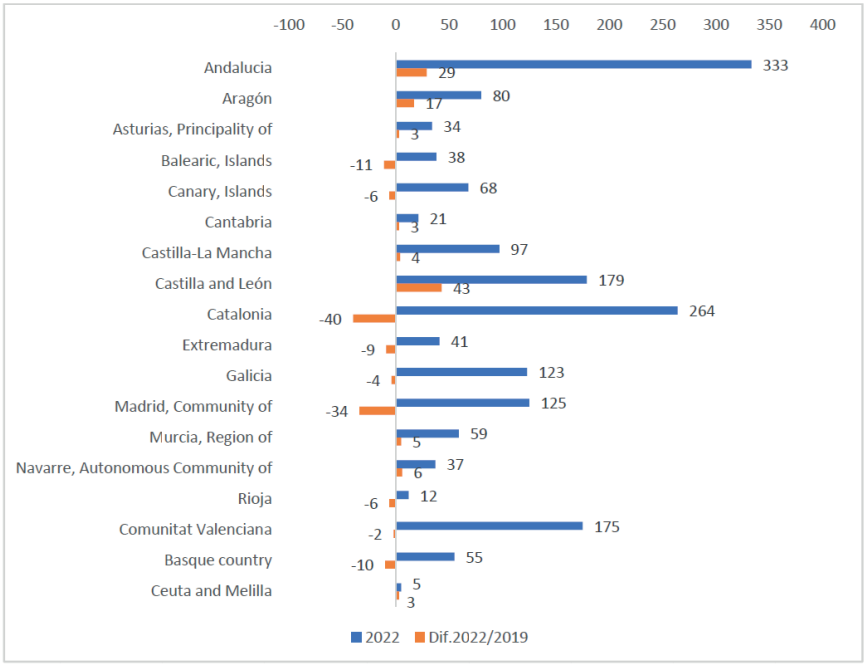


2.1.4. Autonomous regions and provinces

By autonomous regions, in 2022 there was an increase in the number of people killed in 8 Autonomous Regions and in the Autonomous Cities of Ceuta and Melilla. The largest increases were in Castilla and León (+43), Andalusia (+29) and Aragón (+17).

Besides, there have been decreases between 2019 and 2022 in 9 Autonomous Regions; the main decreases have occurred in Catalonia (-40) and the Community of Madrid (-34).

Chart 15: Fatalities and absolute difference compared to 2019 by autonomous region, on interurban and urban roads. Spain, 2022



By provinces, the number of people killed has increased in 26 provinces compared to 2019; the largest increases have been in Burgos (+19), Zaragoza (+18), Cuenca (+15) and Granada (+13).

For its part, the number of fatalities has decreased in 22 provinces compared to 2019; the largest decreases have been in Madrid (-34), Barcelona (-30), Lleida (-19) and Albacete and Alicante/Alacant (-15).

Table 10: Evolution of fatalities by provinces on interurban and urban roads. Spain, 2013-2022

Provincias	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist.22
Araba/Álava	17	5	10	13	11	15	16	5	13	11	-2	-5	1%
Albacete	19	23	22	24	16	11	28	10	11	13	2	-15	1%
Alicante/Alacant	42	67	62	68	64	60	80	61	66	65	-1	-15	4%
Almería	30	19	26	40	22	27	35	38	34	41	7	6	2%
Ávila	19	12	16	12	11	16	11	10	9	19	10	8	1%
Badajoz	25	40	37	38	36	32	34	25	28	28	0	-6	2%
Balears (Illes)	45	50	53	60	68	53	49	37	47	38	-9	-11	2%
Barcelona	141	159	128	131	145	163	171	115	117	141	24	-30	8%
Burgos	36	24	32	36	31	32	14	19	15	33	18	19	2%
Cáceres	22	16	17	24	26	19	16	15	12	13	1	-3	1%
Cádiz	37	41	32	41	34	36	36	22	41	40	-1	4	2%
Castellón/Castelló	22	29	28	43	39	35	25	17	27	32	5	7	2%
Ciudad Real	38	19	27	30	33	25	22	29	24	29	5	7	2%
Córdoba	36	37	26	22	37	34	38	14	30	36	6	-2	2%
Coruña, A	73	55	47	58	51	64	53	33	42	62	20	9	4%
Cuenca	30	17	16	15	18	20	8	18	27	23	-4	15	1%
Girona	47	27	41	55	47	55	42	28	48	51	3	9	3%
Granada	33	49	43	27	33	31	25	35	38	38	0	13	2%
Guadalajara	8	14	11	7	12	10	6	12	6	9	3	3	1%
Gipuzkoa	24	16	38	17	27	13	23	20	22	23	1	0	1%
Huelva	26	19	23	19	22	18	22	23	31	24	-7	2	1%
Huesca	22	24	17	21	25	27	29	20	13	28	15	-1	2%
Jaén	24	30	23	31	35	31	24	21	22	22	0	-2	1%
León	26	32	39	25	22	35	35	25	30	21	-9	-14	1%
Lleida	42	37	51	37	40	43	39	21	44	20	-24	-19	1%
Rioja, La	16	11	20	25	26	10	18	16	12	12	0	-6	1%
Lugo	14	33	22	32	22	26	22	16	12	20	8	-2	1%
Madrid	130	114	111	121	125	114	159	105	127	125	-2	-34	7%
Málaga	49	40	46	57	67	39	56	51	58	60	2	4	3%
Murcia	57	61	44	58	85	66	54	39	49	59	10	5	3%
Navarra	31	41	26	26	29	35	31	20	28	37	9	6	2%
Ourense	14	18	11	15	13	19	15	16	13	14	1	-1	1%
Asturias	46	38	36	35	37	43	31	22	30	34	4	3	2%
Palencia	15	12	6	13	13	11	12	10	11	12	1	0	1%
Palmas, Las	25	31	22	40	30	39	32	22	25	31	6	-1	2%

Provincias	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist.22
Pontevedra	31	33	43	36	31	35	37	38	37	27	-10	-10	2%
Salamanca	12	13	17	10	15	14	13	20	6	18	12	5	1%
S. C. de Tenerife	23	26	40	31	37	29	42	28	35	37	2	-5	2%
Cantabria	20	18	22	21	22	23	18	16	15	21	6	3	1%
Segovia	8	19	16	16	10	12	9	11	7	17	10	8	1%
Sevilla	48	52	43	66	55	58	68	50	48	72	24	4	4%
Soria	9	14	10	19	11	15	8	6	13	15	2	7	1%
Tarragona	42	49	71	59	51	65	52	40	33	52	19	0	3%
Teruel	6	14	16	9	18	10	7	10	10	7	-3	0	0%
Toledo	25	34	31	42	50	34	29	27	36	23	-13	-6	1%
Valencia/València	77	71	64	69	73	88	72	51	47	78	31	6	4%
Valladolid	22	13	24	24	27	23	18	13	24	23	-1	5	1%
Bizkaia	22	15	19	26	13	21	26	17	22	21	-1	-5	1%
Zamora	13	18	21	20	24	18	16	12	9	21	12	5	1%
Zaragoza	40	39	38	43	37	48	27	38	28	45	17	18	3%
Ceuta	1	0	3	2	2	3	2	2	0	1	1	-1	0%
Melilla	0	0	2	1	2	3	0	1	1	4	3	4	0%
Total	**1.680**	**1.688**	**1.689**	**1.810**	**1.830**	**1.806**	**1.755**	**1.370**	**1.533**	**1.746**	**213**	**-9**	**100%**

Chart 16: Fatalities by the location of the road traffic accident. Year 2022

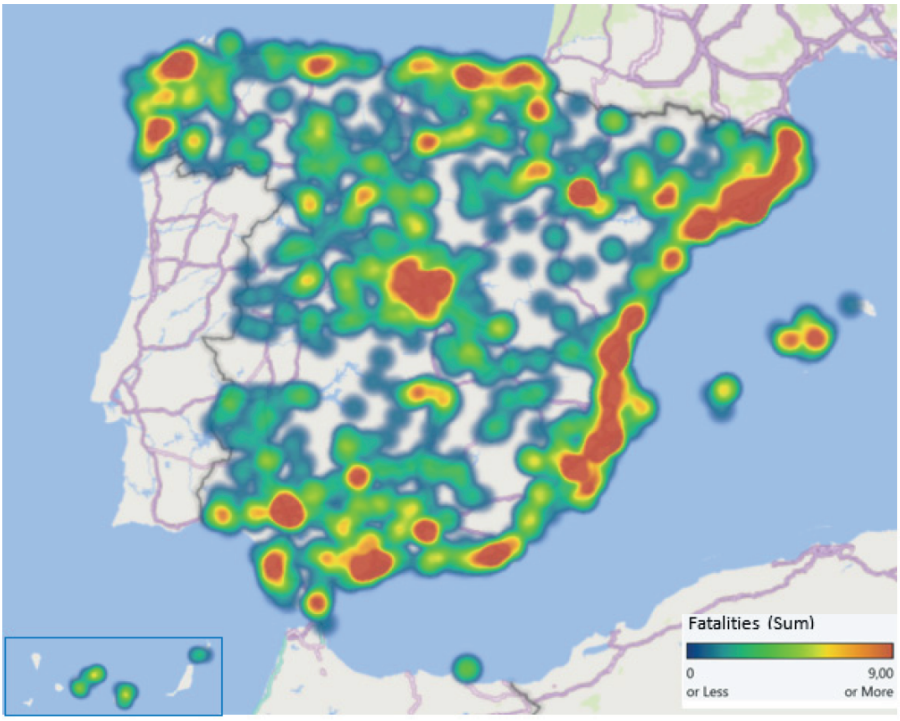


Chart 17: Fatalities by the location of the road traffic accident on interurban roads. Year 2022

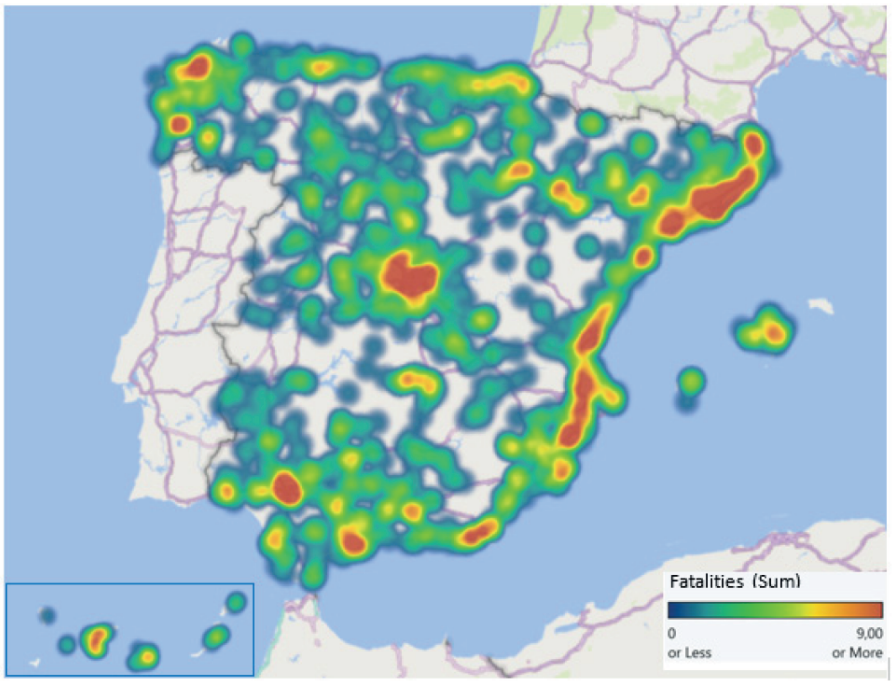
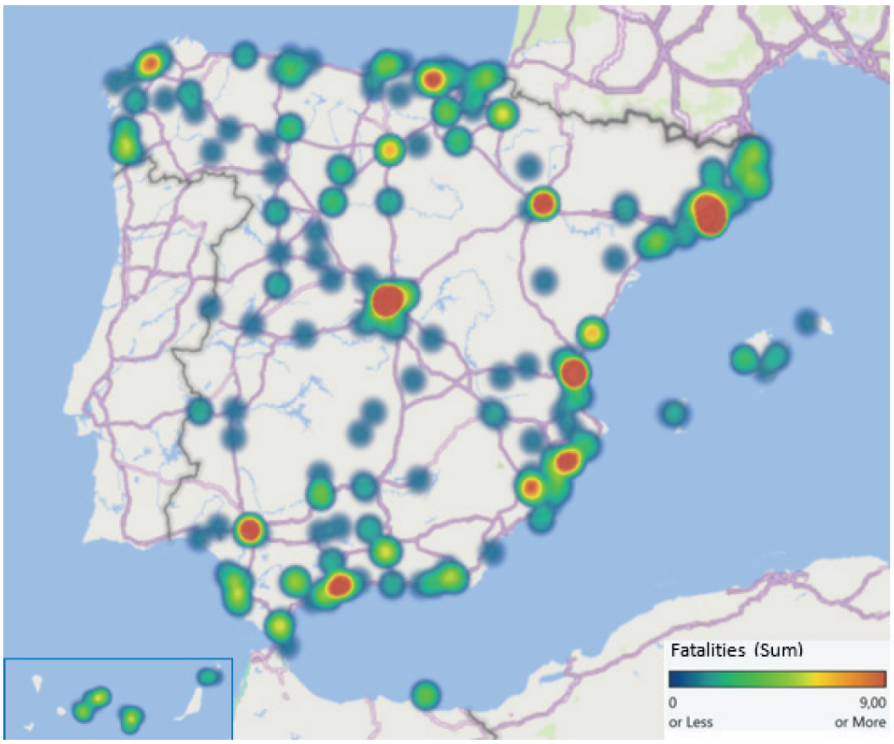


Chart 18: Fatalities by the location of the road traffic accident on urban roads. Year 2022



2.2. Exposure indicators

2.2.1. Road network

In 2021, of the 165,935 km of interurban roads belonging to the Central Administration, the Autonomous Communities, the Provincial Governments and the Island Councils recorded and classified in the Statistical Yearbooks of the Ministry of Transport and Sustainable Mobility, 1% were toll motorways, 8% motorways and dual carriageways, 1% multilane roads and the remaining 90% were conventional roads.

Table 11: Length (km) of the interurban road network. Spain, 2013-2021

	2013	2014	2015	2016	2017	2018	2019	2020	2021	Dif. 21/19
Toll motorway	3.026	3.020	3.040	3.039	3.039	2.957	2.997	2.530	2.039	-32%
Dual c'way and motorway	11.955	12.029	12.296	12.405	12.484	12.626	12.725	13.222	13.786	8%
Multilane road	1.602	1.656	1.686	1.665	1.641	1.645	1.665	1.690	1.740	5%
Other roads	148.778	149.579	148.981	148.374	148.522	148.396	148.082	148.331	148.370	0%
Total	**165.361**	**166.284**	**166.003**	**165.483**	**165.686**	**165.624**	**165.469**	**165.773**	**165.935**	**0%**

Source: Statistical Yearbooks from the Ministry of Transport, Mobility and Urban Agenda. Chapter 7. The latest year available at the time of preparing this report was 2021.

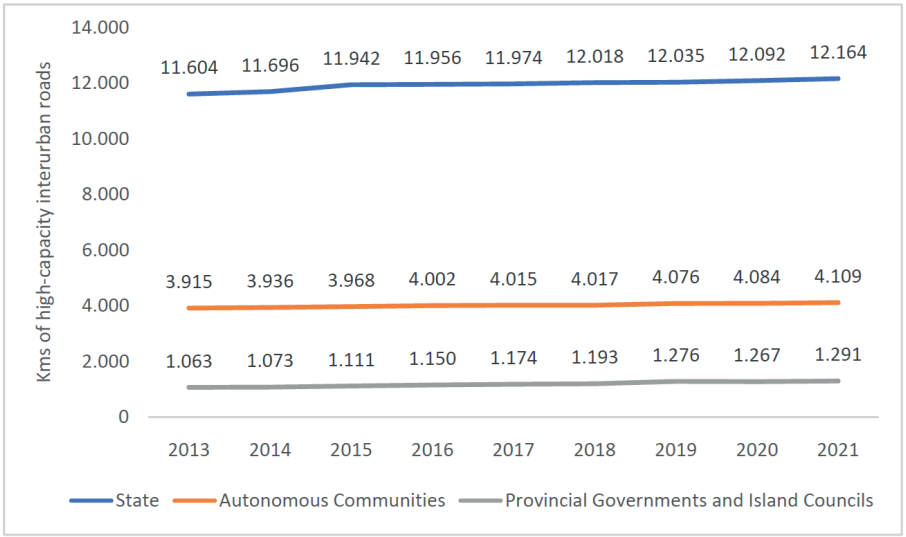
In 2021, the State Road Network was 26,403 kilometres, of which 46% were high-capacity roads: motorways, dual carriageways and multilane roads. On the contrary, high-capacity roads in the regional and provincial networks accounted only for 6% of the total.

Table 12: Length (km) of the interurban road network by ownership and road type.Spain, 2021

	Central Administration	Autonomous Regions	Provincial Governments and Island Councils	Total
Toll motorway	1.407	383	249	2.039
Dual c'way and motorway	10.278	2.879	629	13.786
Multilane road	480	848	413	1.740
Other roads	14.295	67.539	66.537	148.370
Total	**26.459**	**71.648**	**67.828**	**165.935**

Source: Statistical Yearbooks from the Ministry of Transport, Mobility and Urban Agenda. Chapter 7. The latest year available at the time of preparing this report was 2021.

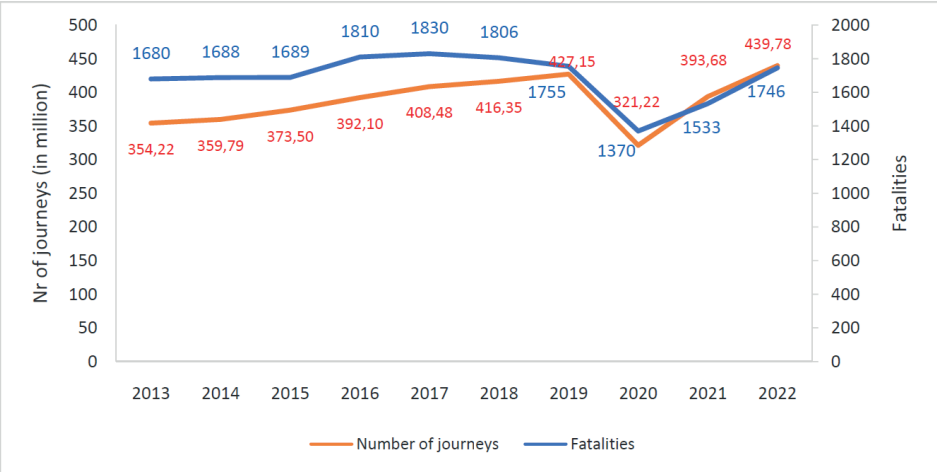
Chart 19:Length (km) of the high-capacity interurban roads. Spain, 2013-2021



2.2.2. Long-distance journeys

According to mobility, the fatality figure has increased from 1,680 to 1,746 between 2013 and 2022 (which means a 4% increase), whereas the number of journeys has increased from 354,22 million to 439,78 million (24% increase).

Chart 20: Evolution of long-distance journeys and the number of people killed. Spain, 2013-2022



2.2.3. Volume of traffic on interurban roads

The volume of traffic on interurban roads can also be studied from the data collected by the Ministry of Transport and Sustainable Mobility on its Statistical Yearbooks.

If the evolution of volume of traffic – or exposure to risk – is analysed, an increase of 9% is observed between 2013 and 2021. In 2020 the volume of traffic fell because of restrictions on mobility due to COVID-19 pandemic.

Table 13: Evolution of volume of traffic on interurban roads. Spain, 2014-2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff 21/20	Diff 21/19
Traffic vehicle-km 10^6	220.377	222.689	230.840	239.353	244.661	250.192	252.055	195.687	239.946	N/A	23%	-5%

3

MODES OF TRANSPORT

3.1. Performance indicators: road traffic accidents and victims

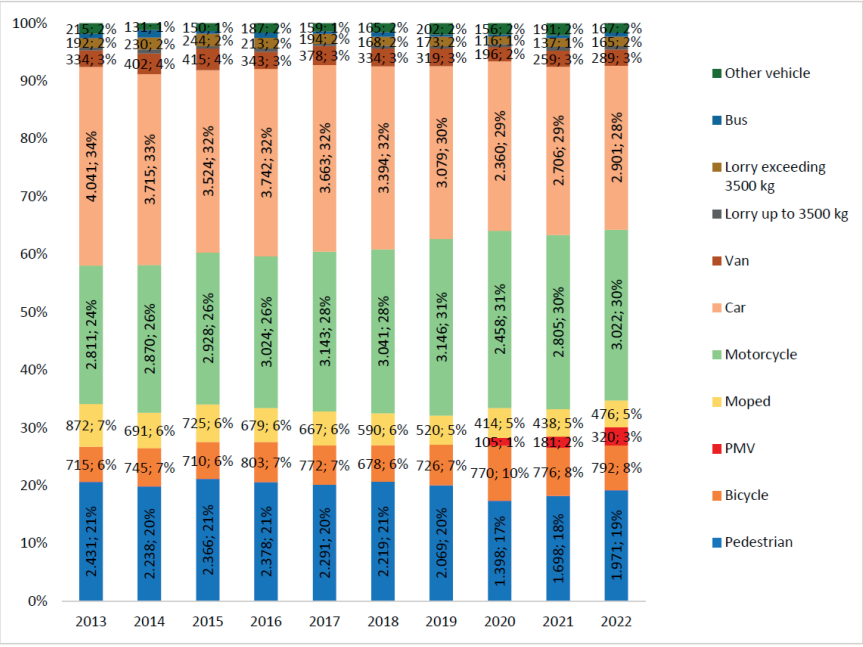
3.1.1. Mode of transport in road traffic accidents

In 2022 the mode of transport with the highest percentage of fatalities and hospitalised injured casualties was the motorcycle. This percentage has been increasing in the last decade, from 24% in 2013 to 30% in 2022. However, comparing the figures registered with those of 2019, a decrease of 1% is observed, from 3,146 (31% of the total) to 3,022 (30% of the total)

On the other hand, a downward trend is observed in the percentage of fatalities and hospitalised injured casualties in cars, going from 34% in 2013 to 28% in 2022. Furthermore, compared to 2019, a decrease of 2% is observed

Regarding vulnerable groups and modes, pedestrians with 19% of the total decreased by 1% compared to 2019 and by 2% compared to 2013, followed by bicycles with a slight upward trend with 8% of the total, an increase of 1% compared to 2019 and of 2% compared to 2013. It is worth highlighting the emergence of PMV casualties in the last three years, increasing the percentage of the total to 1 percentage point per year, reaching 3% in 2022. The percentage of casualties in buses, trucks and vans remains stable within the period analysed, with no significant variations identified.

Chart 21: Evolution of the distribution of fatalities and hospitalised injured casualties by mode of transport.



Cars are the mode of transport that concentrate the highest number of fatalities in traffic accidents, with 681 people killed, 39% of the total. However, a decrease has been observed since 2013, when the 715 people killed in passenger cars represented 43% of the total.

Along with the decrease in the weight of passenger cars in fatal accidents, the most notable trend is the increase in the weight of so-called vulnerable groups: pedestrians, cyclists, PMV users and motorcyclists. The percentage of people killed in these modes of transport has increased from 48% in 2013 to 50% in 2022, although with differences: the weight of pedestrians has decreased from 23% to 20%, whereas that of mopeds and motorcycles has increased from 21% % to 25%. The number of people killed on mopeds and motorcycles has increased from 355 to 437 (23%). For its part, in 2022 there were 81 cyclists and 8 PMV users killed.

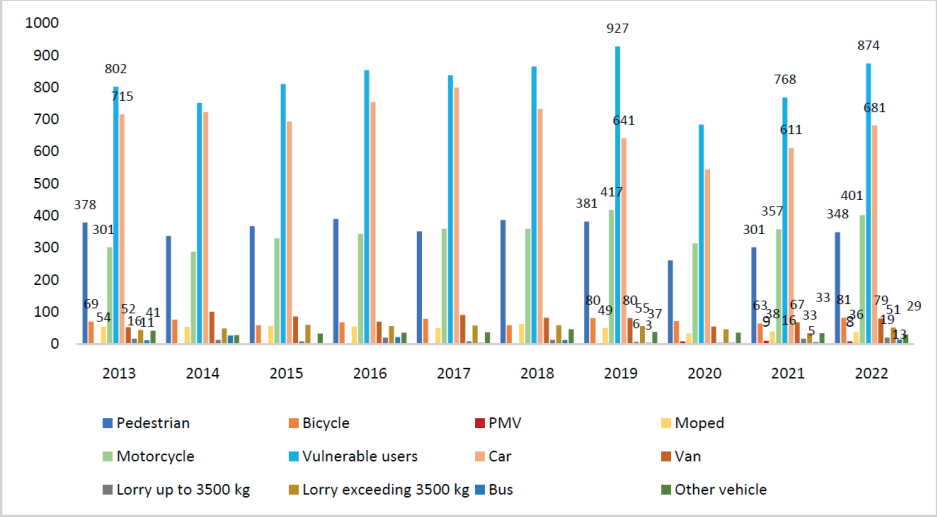
In other modes of transport other than passenger cars and the vulnerable groups, we can observe an increase in fatal accidents involving vans and trucks since 2013. In 2022, 79 people were killed in vans (5% of the total) and 70 people were killed in trucks (4% of the total).

As for buses, 13 fatalities were registered in 2022, 7 of whom were killed in the same accident.

Chart 22: Evolution of the distribution of fatalities by mode of transport. Spain, 2013-2022

Note: PMVs have been included since 2020.

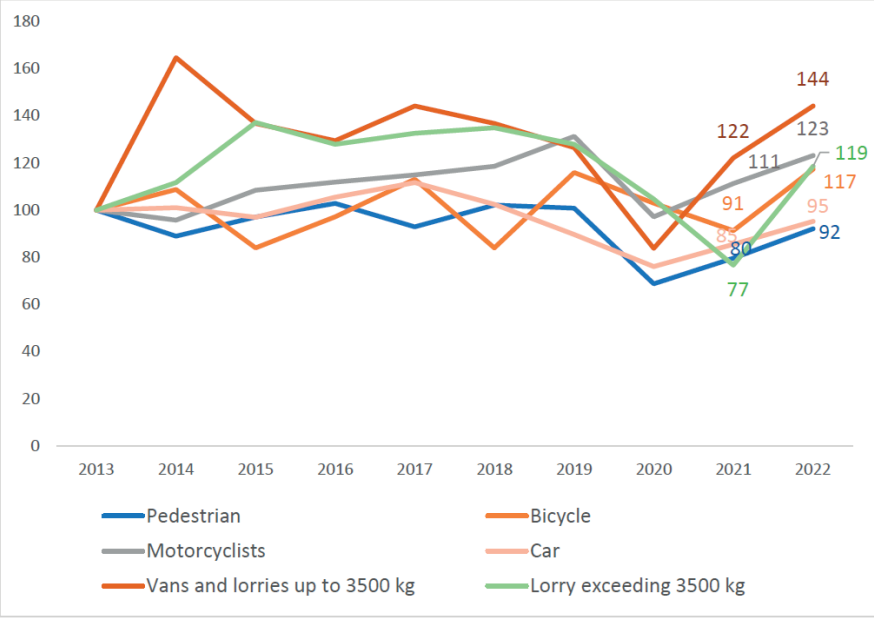
Chart 23: Evolution of fatalities by mode of transport. Spain, 2013-2022



Note: PMVs have been included since 2020.

Moreover, if we standardize to 100 the number of fatalities in 2013, the values in 2022 express the percentage change compared to 2013. In 2022, vans and lorries not exceeding 3500 kg are the mode of transport which show the worst evolution and at the opposite end are pedestrians.

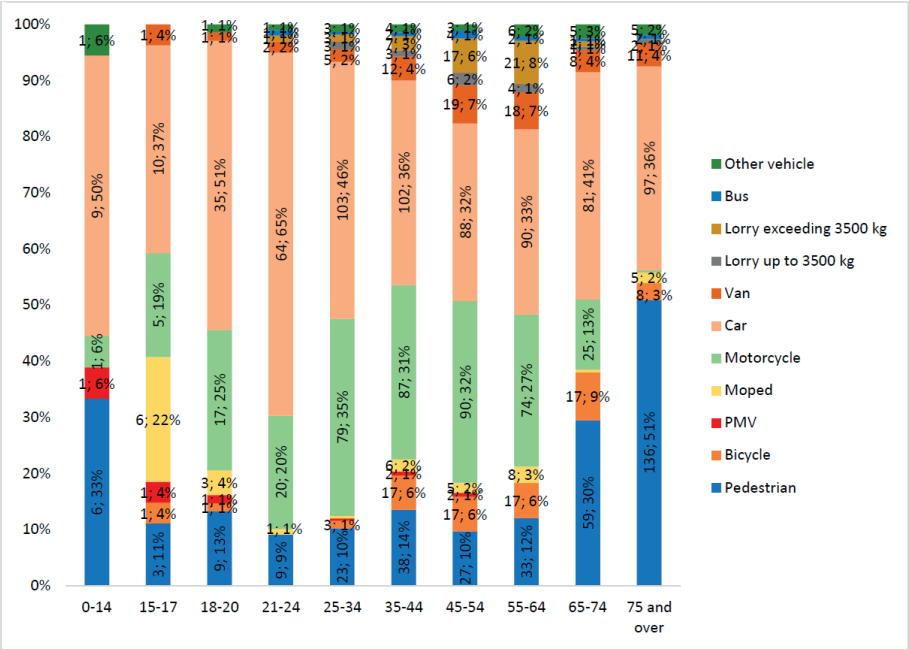
Chart 24: Evolution of fatalities by mode of transport. Base 2013=100. Spain, 2013-2022



As regards the distribution by age and by mode of transport of the people killed in 2022:

- Between 0 and 14 years of age, the fatalities are mainly pedestrians and car occupants.
- Between 18 and 24 years of age, the highest percentage is as car occupants.
- As motorcyclists, the most affected groups are the 25 - 54 age group, whereas the 15 - 17 age group is the most affected group in mopeds.
- Persons aged over 75 show high percentages as pedestrians.

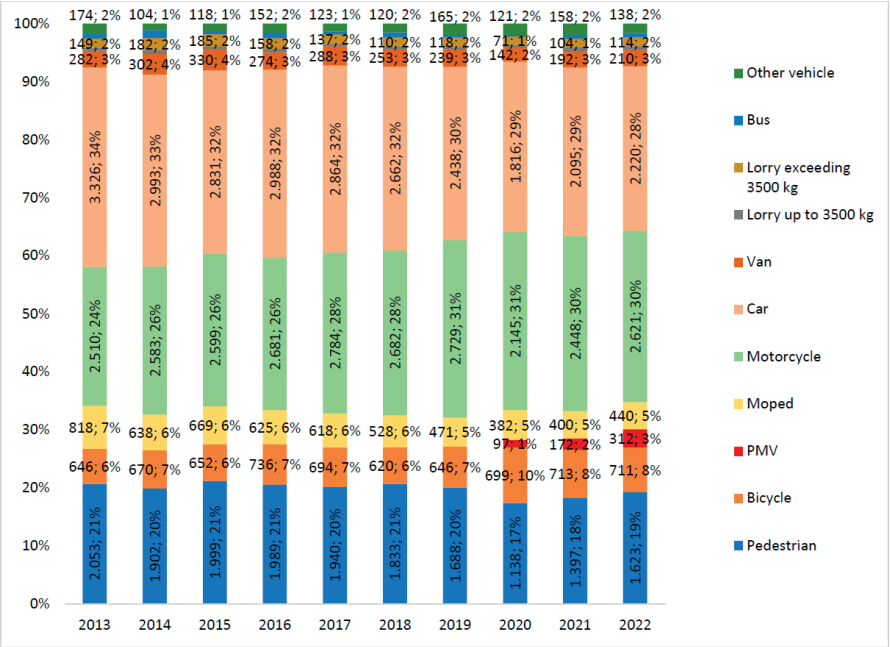
Chart 25: Percentage distribution of the number of fatalities by mode of travel and age. Spain, 2022



Note: PMVs have been included since 2020.

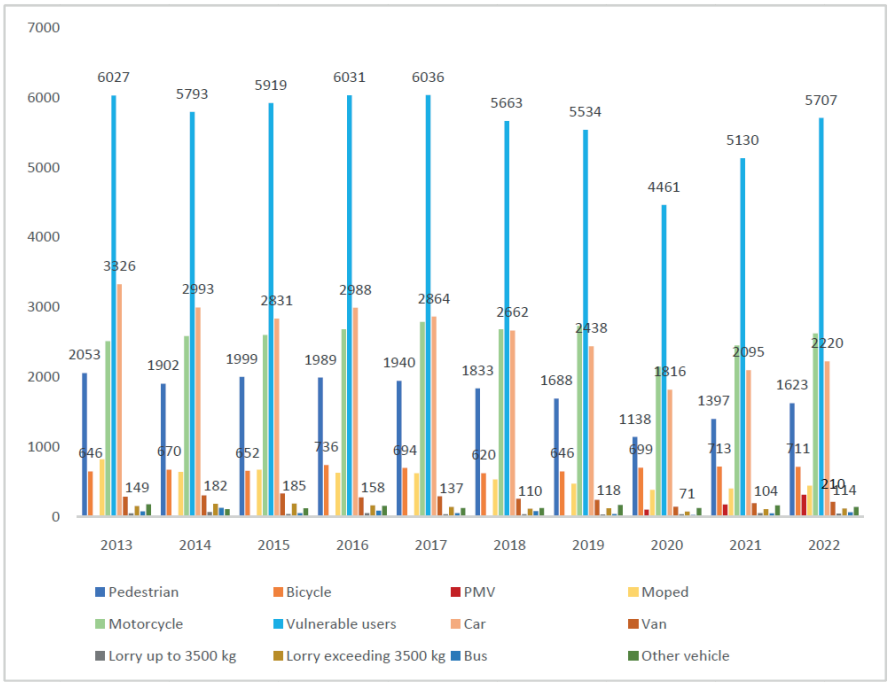
If we focus on hospitalised injured casualties, the trends are similar to those observed in the indicator of fatalities: decrease in the weight of passenger cars (from 33% of the total in 2013 to 26% in 2022) and increase in the weight of certain vulnerable modes, in particular, the set of mopeds and motorcycles (from 33% of the total in 2013 to 36% in 2022) and bicycles (from 6% of the total in 2013 to 8% in 2022). It is worth highlighting the appearance of PMVs, which accounted for 4% of hospitalised injured casualties in 2022.

Chart 26: Evolution of the distribution of hospitalised injured casualties by mode of transport. Spain, 2013-2022



Note: PMVs have been included since 2020.

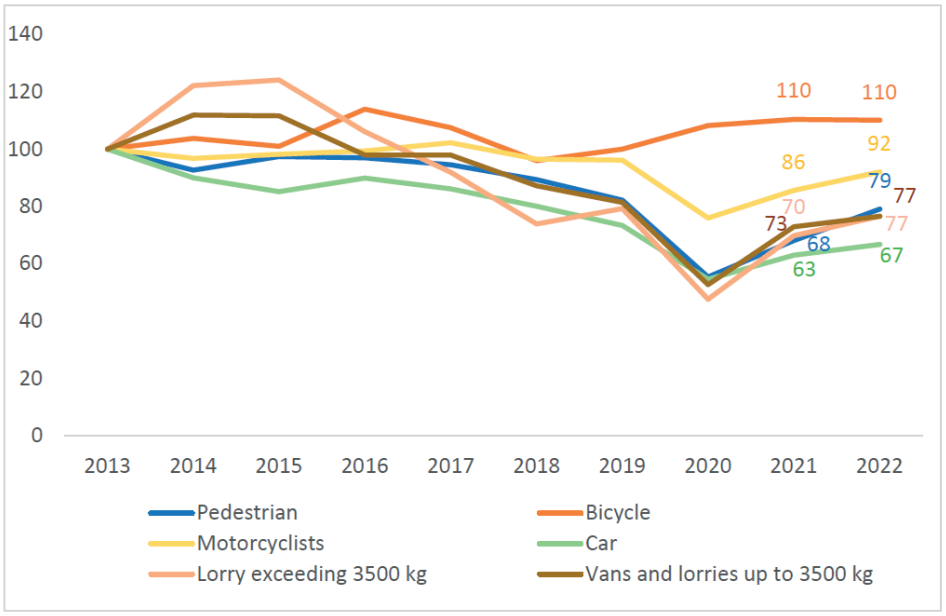
Chart 27: Evolution of hospitalised injured casualties by mode of transport. Spain, 2013-2022



Note: PMVs have been included since 2020.

Moreover, if we standardize to 100 the number of hospitalised injured casualties in 2013, the values in 2022 express the percentage change compared to 2013. In 2022, bicycles are the mode of transport which show the worst evolution and at the opposite end are cars.

Chart 28: Percentage distribution of the number of hospitalised injured casualties by mode of transport and age. Base 2013=100. Spain, 2022



By age, hospitalised injured casualties by mode of transport:

- Between 0 and 14 years of age, they are mainly pedestrians.

- Between 15 and 17 years of age, moped casualties stand out with 39% of the total.

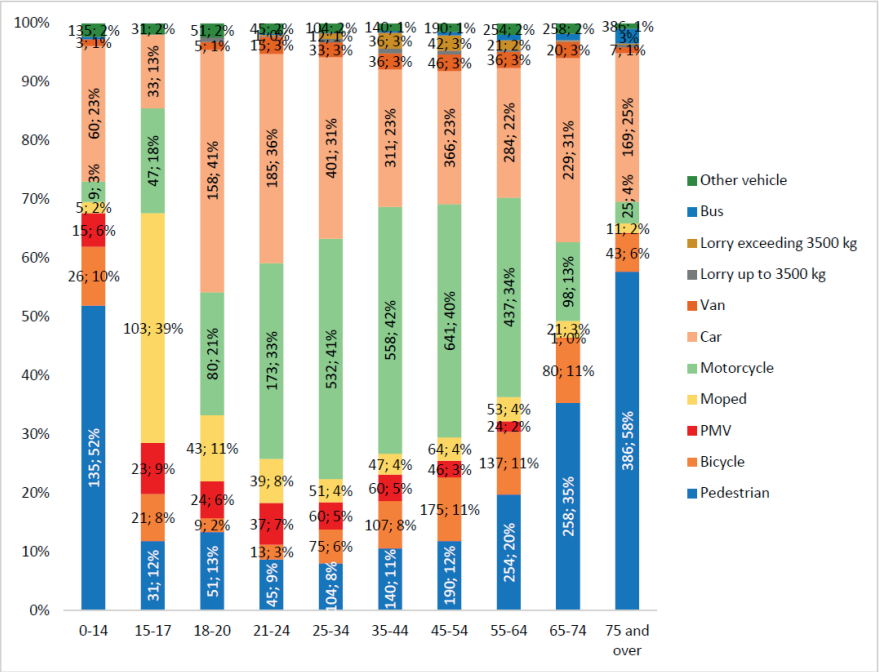
- Between 18 and 20 years of age, 41% of them travel in cars.

- Between 21 and 24 years of age, cars (36%) and motorcycles (33%) account for greater figures.

- Between 25 and 34 years old, they mainly concentrate on motorcycles (41%), which together with the 35-55 age group concentrate the largest numbers on motorcycles, with a difference of around 20% compared to cars.

- After 65 years of age, the percentage of pedestrians increases. Standing out from 75 years old with 58% of the total.

Chart 29: Percentage distribution of the number of hospitalised injured casualties by mode of transport and by age. Spain, 2022



Note: PMVs have been included since 2020.

3.1.1.1. Pedestrians

In 2022, 348 pedestrians were killed, 20% of the total number of fatalities (22% in 2019). Compared to 2019, there have been 33 fewer pedestrian fatalities (-9%), with different trends out of built-up area and in built-up area: 1 more pedestrian on interurban roads and 34 fewer on urban roads (-14%).

Besides, 1,623 pedestrians were admitted to hospital and 11,105 were non-hospitalised injured casualties. Accidents involving pedestrians mainly occurred on urban roads (94%), roads that registered the highest percentage of pedestrians killed (61%) and of hospitalised injured casualties (89%). On interurban roads, collisions with pedestrians are especially harmful: they account for 39% of pedestrians killed with only 6% of accidents.

More information regarding pedestrians and their characteristics is detailed in the section 4.1.7 Pedestrians.

Chart 30: Evolution of pedestrian fatalities and injured casualties admitted to hospitals on interurban and urban roads. Spain, 2013-2022

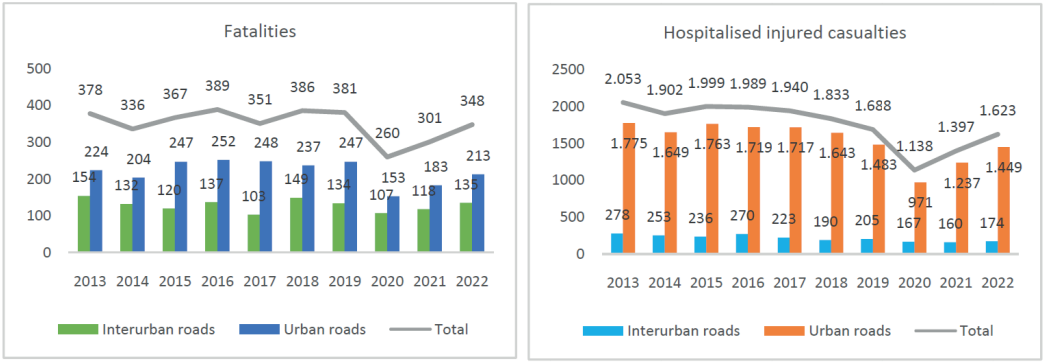


Table 14: Road traffic accidents involving pedestrians on urban and interurban roads. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	717	6%	135	39%	174	11%	445	4%
Urban roads	11.536	94%	213	61%	1.449	89%	10.660	96%
Total	**12.253**	**100%**	**348**	**100%**	**1.623**	**100%**	**11.105**	**100%**

3.1.1.2. Bicycles

In 2022, 81 pedal cyclists were killed, which meant 1 more pedal cyclist fatality than in 2019; distributed as follows: 12 more pedal cyclists killed on interurban roads and 11 fewer on urban roads.

Besides, 711 pedal cyclists were admitted to hospital and 7,033 were non-hospitalised injured casualties. Most of the accidents occurred on urban roads (72%); however, the greatest number of pedal cyclist fatalities occurred on interurban roads - 60 deaths - as against 21 deaths on urban roads.

Chart 31: Evolution of pedal cyclist fatalities and hospitalised injured casualties on interurban and urban roads. Spain, 2013-2022

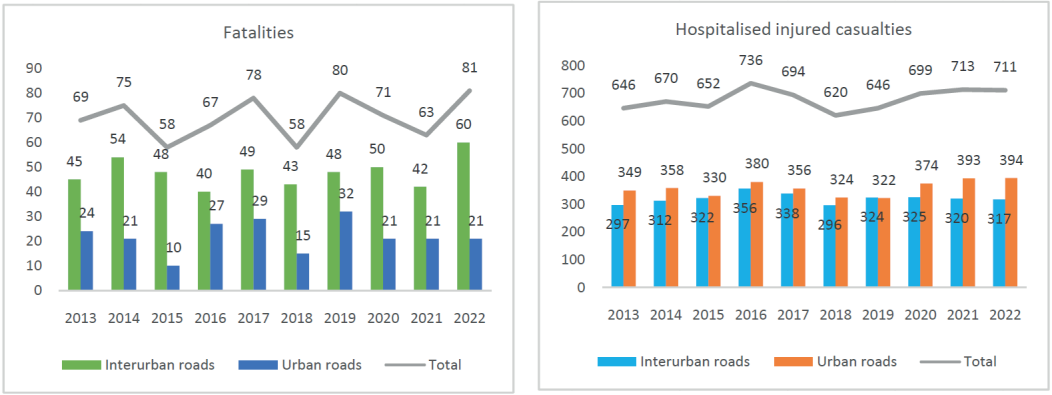


Table 15: Road traffic accidents involving a bicycle on urban and interurban roads. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	2.239	28%	60	74%	317	45%	2.030	29%
Urban roads	5.867	72%	21	26%	394	55%	5.003	71%
Total	**8.106**	**100%**	**81**	**100%**	**711**	**100%**	**7.033**	**100%**

3.1.1.3. Personal mobility vehicles

In 2022, 8 users of personal mobility vehicles were killed, there were 312 hospitalised injured casualties and 4,033 non-hospitalised injured casualties. Most of the accidents occurred on urban roads (98%) where more casualties from PMV have been registered: 7 fatalities, 293 hospitalised and 3,888 non-hospitalised injured casualties.

Chart 32: Evolution of fatalities and hospitalised injured casualties involving personal mobility vehicles on interurban and urban roads. Spain, 2013-2022

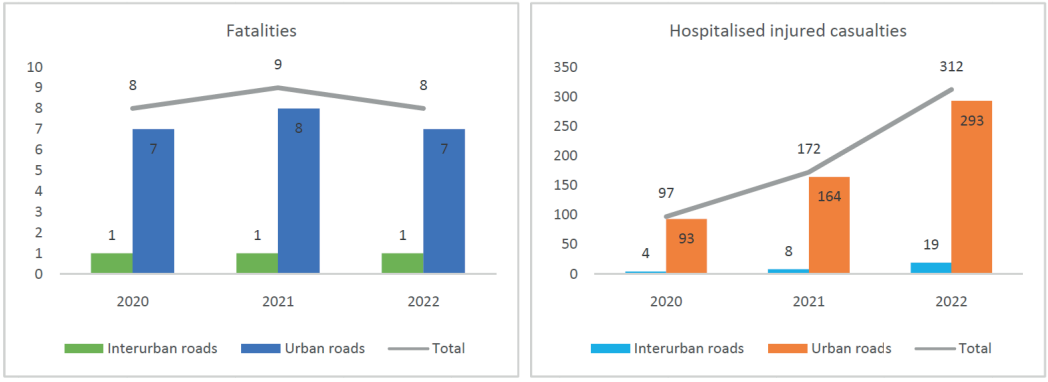


Table 16: Road traffic accidents involving personal mobility vehicles on urban and interurban roads. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	134	3%	1	13%	19	6%	115	3%
Urban roads	4.513	97%	7	88%	293	94%	3.888	97%
Total	**4.647**	**100%**	**8**	**100%**	**312**	**100%**	**4.003**	**100%**

As regards users of personal mobility vehicles (PMV), it should be noted that data on hospitalised and non-hospitalised injured casualties for 2020 and 2021 do not include those from Catalonia since they have not provided any data.

3.1.1.4. Mopeds

In 2022 there were 36 moped fatalities, 13 fewer deaths than in 2019. The number of hospitalised injured casualties has decreased by 7% in that period.

The number of road traffic accidents involving a moped was 5,459, accounting for 6% of the total, one percentage point above the figure corresponding to mopeds in the vehicle fleet for the year 2022.

The majority of accidents involving a moped occurs on urban roads (87%) where the highest number of hospitalised and non-hospitalised injured casualties (76% and 88% respectively) are registered. In the case of fatalities, the distribution is somewhat higher on urban roads (20) than on interurban roads (16). The evolution in the number of fatalities and hospitalised injured casualties involving mopeds shows a downward trend since 2013, accentuated in 2020 with the COVID-19 pandemic.

Chart 33: Evolution of moped fatalities and hospitalised injured casualties on interurban and urban roads. Spain, 2013-2022

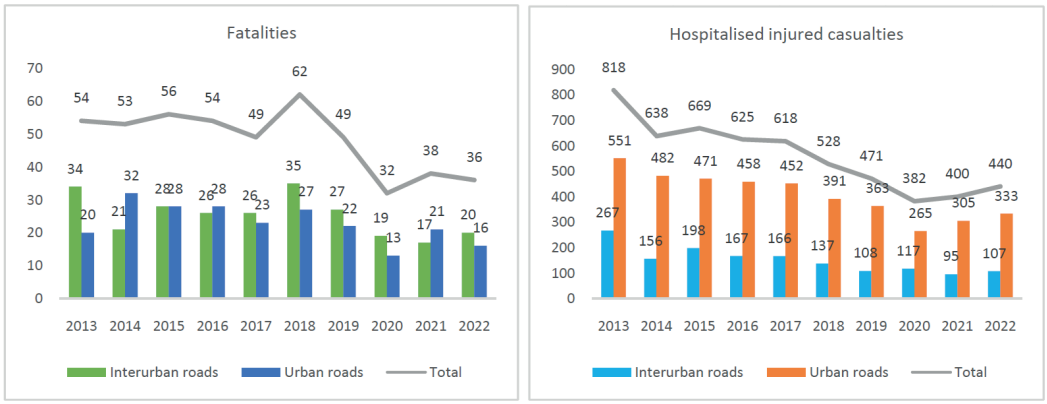


Table 17: Road traffic accidents involving mopeds on urban and interurban roads. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	690	12%	20	56%	107	24%	645	12%
Urban roads	4.990	88%	16	44%	333	76%	4.877	88%
Total	**5.680**	**100%**	**36**	**100%**	**440**	**100%**	**5.522**	**100%**

3.1.1.5. Motorcycles

In 2022 there were 401 motorcycle fatalities, 4% less than in 2019. On interurban roads there was a decrease in the number of motorcyclists killed by 5% and in hospitalised injured casualties by 11%. On urban roads, the number of motorcycle fatalities has been the same as in 2019, while hospitalised injured casualties have increased by 2%.

In 2022 motorcycle users represented 27% of the total road traffic accidents, i.e. they were involved in 26,103 accidents whereas the percentage of motorcycles on the vehicle fleet was 11%. 75% of the road traffic accidents involving motorcycles occurred on urban roads where 58% of hospitalised and 77% of non-hospitalised injured motorcyclists were registered. Meanwhile, fatal injuries occurred more frequently on interurban roads: 69% of motorcyclist fatalities occurred on this type of road.

The evolution of fatalities shows year-on-year increases since 2014, with the exception of 2020. The trend in the hospitalised injured casualty indicator is very similar.

Chart 34: Evolution of motorcycle fatalities and hospitalised injured casualties on interurban and urban roads. Spain, 2013-2022

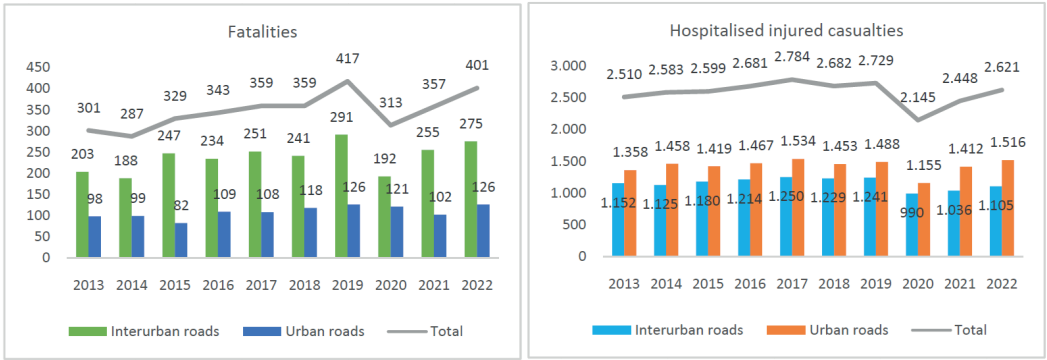


Table 18: Road traffic accidents involving a motorcycle on urban and interurban roads. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	6.623	25%	275	69%	1.105	42%	5.890	23%
Urban roads	20.395	75%	126	31%	1.516	58%	19.516	77%
Total	**27.018**	**100%**	**401**	**100%**	**2.621**	**100%**	**25.406**	**100%**

3.1.1.6. Cars

Of the 1,746 deaths as a result of a road traffic accident that occurred in 2022, 39% (681 individuals) were travelling in a car, either as drivers or passengers. Car fatalities have increased by 6% on interurban roads in comparison with 2019. On urban roads, the number of fatalities has increased with 5 more deaths compared with 2019.

Car users were involved in 71,104 road traffic accidents, that is, in 73% of the road accidents registered in 2022; cars account for 69% in the Spanish vehicle fleet.

64% of the road traffic accidents involving at least one car occurred on urban roads; however, 90% (614 individuals) of car fatalities occurred on road accidents on interurban roads.

Since 2013, the evolution shows a generally downward trend in the hospitalised injured casualty indicator; however, the fatality indicator does not show a clear trend.

Chart 35: Evolution of car fatalities and hospitalised injured casualties on interurban and urban roads. Spain, 2013-2022

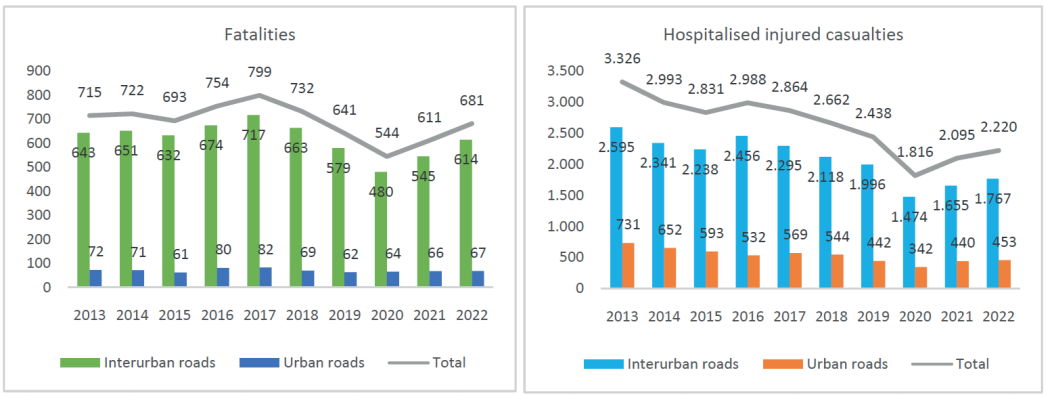


Table 19: Road traffic accidents involving cars on urban and interurban roads. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	25.693	36%	614	90%	1.767	80%	31.607	56%
Urban roads	45.411	64%	67	10%	453	20%	24.863	44%
Total	**71.104**	**100%**	**681**	**100%**	**2.220**	**100%**	**56.470**	**100%**

3.1.1.7. Vehicles for the transport of goods and passengers

Vans

A total of 79 van users were killed in 2022, decreasing by 1 person compared to 2019. Of them, the majority were registered on interurban roads, with 73 (92% of the total). As for hospitalised injured casualties, the total was 210, concentrating 84% of these on interurban roads. There is a 12% decrease in hospitalised injured casualties compared to 2019, mainly on interurban roads, with a 16% reduction. Regarding non-hospitalised injured casualties (3,792), 59% of them were registered on interurban roads.

Van users registered a total of 9,242 road accidents, 64% of them on urban roads.

Chart 36: Evolution of van fatalities and hospitalised injured casualties on interurban and urban roads. Spain, 2013-2022

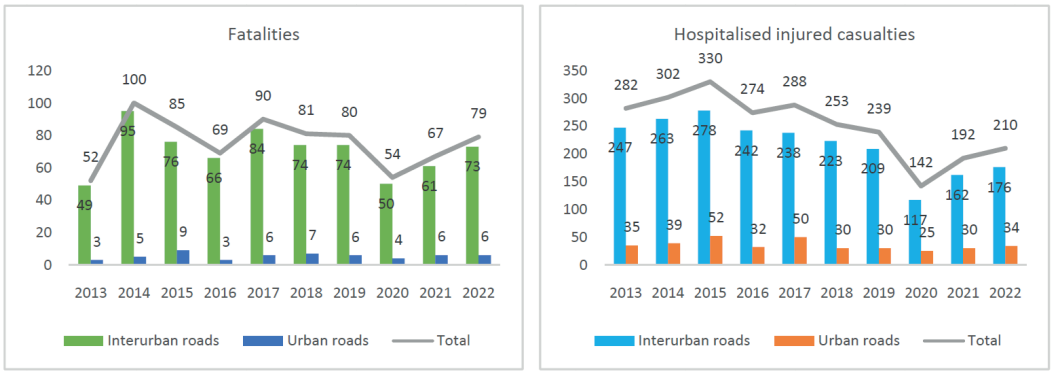


Table 20: Road traffic accidents involving a van on urban and interurban roads. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	3.350	36%	73	92%	176	84%	2.250	59%
Urban roads	5.892	64%	6	8%	34	16%	1.542	41%
Total	**9.242**	**100%**	**79**	**100%**	**210**	**100%**	**3.792**	**100%**

Lorries with a MAM not exceeding 3500 kg

In 2022, as for lorries with a MAM not exceeding 3,500 kg, 19 individuals were killed, most of them (16) on interurban roads. Increasing by 13 individuals compared to 2019, being the year with the highest number recorded in the series analysed together with 2016. Regarding hospitalised injured casualties (41), there was an increase in 13 individuals compared to 2019, the majority were also concentrated on interurban roads (34). However, road traffic accidents (1,708) were registered to a greater extent on urban roads (54%).

Gráfico 37: Evolución de las personas fallecidas y heridas hospitalizadas en camiones de hasta 3.500kg de MMA vías interurbanas y urbanas. España, 2014-2023

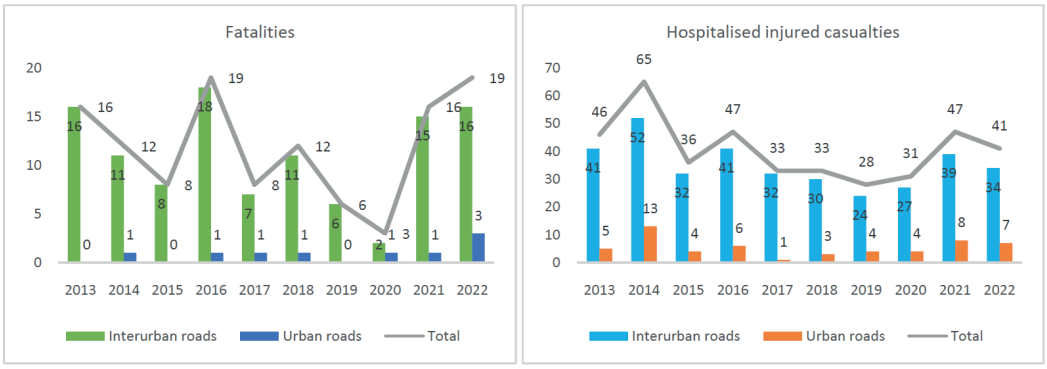


Table 21: Road traffic accidents involving lorries with a MAM not exceeding 3500 kg on urban and interurban roads. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	785	46%	16	84%	34	83%	416	68%
Urban roads	923	54%	3	16%	7	17%	194	32%
Total	**1.708**	**100%**	**19**	**100%**	**41**	**100%**	**610**	**100%**

Lorries with a MAM exceeding 3500 kg

In 2022, a total of 51 users of lorries with a MAM exceeding 3500 kg were killed, 4 fewer users than in 2019, of which 98% were registered on interurban roads. For its part, there were 114 hospitalised injured casualties, 4 fewer casualties than in 2019, with 91% of the total registered on interurban roads. There were 3,466 road traffic accidents, 76% of them occurred on interurban roads. As for non-hospitalised injured casualties (899), they also mainly occurred on interurban roads (86%).

Chart 38: Evolution of fatalities and hospitalised injured casualties involving lorries exceeding 3500 kg on interurban and urban roads. Spain, 2013-2022

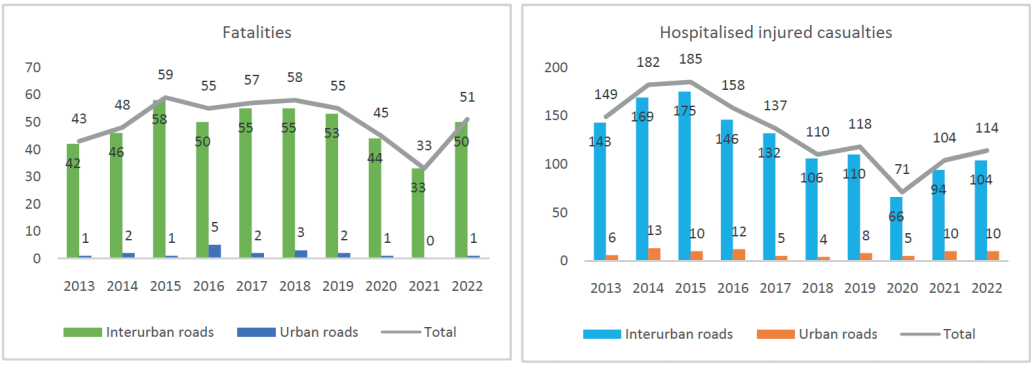


Table 22: Road traffic accidents with individuals involved in lorries with a MAM exceeding 3500 kg on urban and interurban roads. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	2.628	76%	50	98%	104	91%	771	86%
Urban roads	838	24%	1	2%	10	9%	128	14%
Total	**3.466**	**100%**	**51**	**100%**	**114**	**100%**	**899**	**100%**

Buses

In 2022, 13 bus users were killed, 10 more than in 2019, being the majority (11) on interurban roads. Regarding hospitalised injured casualties (59), there has been an increase in 13 individuals compared to 2019, with a similar distribution on interurban roads (29) and urban roads (30). Regarding road accidents (2,286), as well as non-hospitalised injured casualties (2,290), they have been mostly registered on urban roads, with 89% and 86% respectively.

Chart 39: Evolution of bus fatalities and hospitalised injured casualties on interurban and urban roads. Spain, 2013-2022

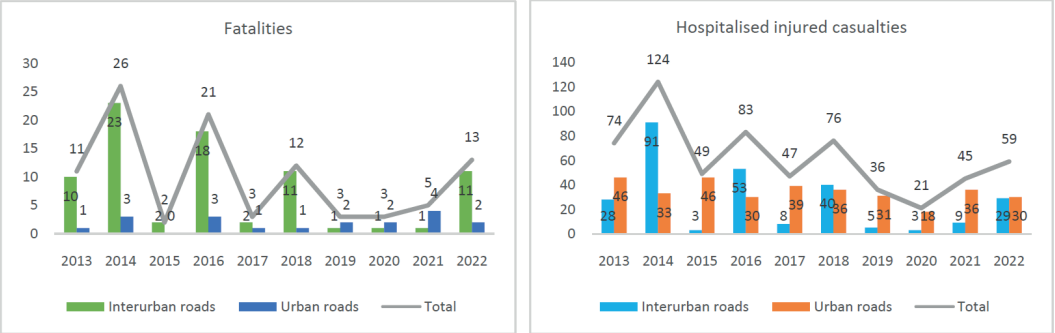


Table 23: Road traffic accidents involving buses on urban and interurban roads. Spain, 2022

	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	254	11%	11	85%	29	49%	318	14%
Urban roads	2.032	89%	2	15%	30	51%	1.972	86%
Total	**2.286**	**100%**	**13**	**100%**	**59**	**100%**	**2.290**	**100%**

3.1.1.8. The collision matrices

The collision matrix is an instrument that allows an analysis of accident rate in terms of the modes of transport involved in the road accident. The rows of the collision matrix include the mode of transport used by the casualties - whether this be fatalities, hospitalised or non-hospitalised injured casualties; whereas the columns of the matrix show the other mode of transport involved in the accident, if any.

If the collision matrices relating to the 49,963 casualties on interurban roads and the 79,613 casualties on urban roads reported in 2022 are analysed, the following conclusions are drawn:

- On interurban roads, car users accumulate the highest percentage of road traffic casualties (68% of the total), followed by motorcycles which account for 15% of the total. 35% of the casualties have occurred in accidents in which no other vehicle or pedestrian were involved. The car-car interaction is the one that accumulates the highest percentage of victims over the total (25%), followed by car-no other vehicle (22%).

- On urban roads, car users accumulate 32% of total casualties followed by motorcyclists - 27% - and pedestrians - 15% -. The car-car interaction is the one that accumulates the highest percentage of victims over the total (18%), followed by motorcycle-car (15%) and pedestrian-car (10%).

Table 24: Collision matrix on road traffic casualties. Interurban roads. Spain, 2022

	More than one vehicle	Single-vehicle	Pedestrian	Bicycle	PMV	Moped	Motorcy-cle	Car	Van	Lorry up to 3500 kg	Lorry exceeding 3500 kg	Bus or coach	Other vehicle	Total
Pedestrian	131	0	0	14	1	3	27	456	52	10	23	4	33	**754**
Bicycle	238	873	14	209	3	3	43	846	91	21	29	7	30	**2.407**
PMV	2	24	1	1	0	0	3	91	7	2	3	1	0	**135**
Moped	15	320	2	1	0	14	6	360	28	2	12	3	9	**772**
Motorcycle	412	3.426	17	26	2	10	271	2.569	309	62	86	25	55	**7.270**
Car	7.196	10.815	20	10	5	14	167	12.368	1.233	287	1.462	164	247	**33.988**
Van	582	739	1	1	0	0	11	781	150	38	163	15	18	**2.499**
Lorry up to 3500 kg	100	157	0	1	0	0	1	123	23	12	45	0	4	**466**
Lorry exceeding 3500 kg	111	514	0	0	0	1	1	112	24	10	117	2	33	**925**
Bus or coach	47	171	0	0	0	0	1	91	17	0	30	1	0	**358**
Other vehicle	34	210	1	1	0	0	2	94	12	4	23	1	7	**389**
Total	**8.868**	**17.249**	**56**	**264**	**11**	**45**	**533**	**17.891**	**1.946**	**448**	**1.993**	**223**	**436**	**49.963**

Table 25: Collision matrix on road traffic casualties. Urban roads. Spain, 2022

	More than one vehicle	Single-vehicle	Pedestrian	Bicycle	PMV	Moped	Motorcy-cle	Car	Van	Lorry up to 3500 kg	Lorry exceeding 3500 kg	Bus or coach	Other vehicle	Total
Pedestrian	528	5	0	417	379	145	738	7.962	971	151	111	256	659	**12.322**
Bicycle	130	1.429	130	250	76	23	183	2.687	257	43	26	37	147	**5.418**
PMV	41	1.341	81	72	88	16	63	2.165	211	14	15	27	54	**4.188**
Moped	185	1.424	63	26	17	75	169	2.790	287	40	33	38	79	**5.226**
Motorcycle	1.161	4.396	426	190	58	154	790	11.816	1.318	178	148	146	377	**21.158**
Car	4.769	2.956	147	30	30	74	428	14.160	1.559	273	331	312	314	**25.383**
Van	290	163	13	2	5	5	29	846	120	41	29	31	8	**1.582**
Lorry up to 3500 kg	38	34	1	1	0	0	4	92	22	2	2	7	1	**204**
Lorry exceeding 3500 kg	21	42	1	0	0	0	3	48	6	0	14	1	3	**139**
Bus or coach	52	878	48	19	6	2	42	732	100	21	11	36	57	**2.004**
Other vehicle	75	481	72	74	3	8	117	926	105	8	13	12	95	**1.989**
Total	**7.290**	**13.149**	**982**	**1.081**	**662**	**502**	**2.566**	**44.224**	**4.956**	**771**	**733**	**903**	**1.794**	**79.613**

As regards the collision matrices relating to the 5,165 fatalities and hospitalised injured casualties on interurban roads as well as the 5,083 fatalities and hospitalised injured casualties on urban roads reported in 2022, the following conclusions are drawn:

- On interurban roads, car users accumulate the highest percentage of road traffic casualties (46% of the total), followed by motorcycles which account for 27% of the total. 41% of the casualties have occurred in accidents in which no other vehicle or pedestrian were involved. The car-no other vehicle interaction is the one that accumulates the highest percentage of victims over the total (20%), followed by car-car (12%).

- On urban roads, pedestrians represent 33% of total casualties followed by motorcyclists - 32%. The pedestrian-car interaction is the one that accumulates the highest percentage of victims over the total (21%), followed by motorcycle-car (18%).

Table 26: Collision matrix on road traffic fatalities and hospitalised injured casualties. Interurban roads. Spain, 2022

	More than one vehicle	Single-vehicle	Pedestrian	Bicycle	PMV	Moped	Motorcycle	Car	Van	Lorry up to 3500 kg	Lorry exceeding 3500 kg	Bus or coach	Other vehicle	Total
Pedestrian	69	0	0	4	0	0	7	166	27	3	15	3	15	**309**
Bicycle	35	139	1	27	0	0	5	124	20	3	9	3	11	**377**
PMV	0	8	0	0	0	0	0	10	1	0	0	1	0	**20**
Moped	8	43	0	0	0	1	1	62	6	0	3	1	2	**127**
Motorcycle	93	645	2	4	0	1	54	451	64	18	29	4	15	**1.380**
Car	374	1.015	0	0	1	0	3	643	97	21	189	23	15	**2.381**
Van	35	99	0	0	0	0	0	64	8	7	31	4	1	**249**
Lorry up to 3500 kg	6	18	0	0	0	0	0	10	3	3	9	0	1	**50**
Lorry exceeding 3500 kg	25	78	0	0	0	0	1	12	5	1	27	1	4	**154**
Bus or coach	9	29	0	0	0	0	0	1	0	0	1	0	0	**40**
Other vehicle	7	46	0	0	0	0	0	10	3	1	9	0	2	**78**
Total	**661**	**2.120**	**3**	**35**	**1**	**2**	**71**	**1.553**	**234**	**57**	**322**	**40**	**66**	**5.165**

Table 27: Collision matrix on road traffic fatalities and hospitalised injured casualties. Urban roads. Spain, 2022

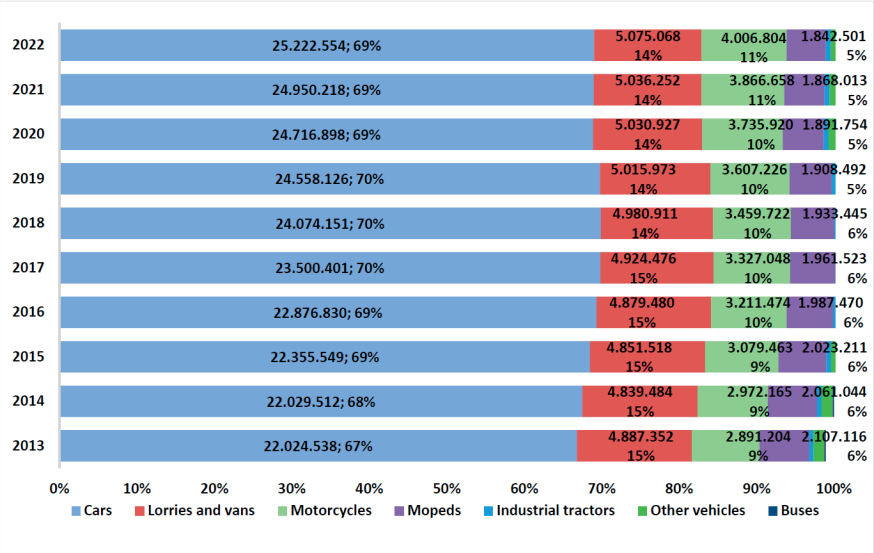
	More than one vehicle	Single-vehicle	Pedestrian	Bicycle	PMV	Moped	Motorcycle	Car	Van	Lorry up to 3500 kg	Lorry exceeding 3500 kg	Bus or coach	Other vehicle	Total
Pedestrian	83	1	0	24	21	13	118	1.053	163	34	27	68	57	**1.662**
Bicycle	17	151	7	21	3	1	6	164	20	7	3	5	10	**415**
PMV	3	126	5	0	14	2	5	119	10	2	1	5	8	**300**
Moped	18	93	1	2	1	4	10	181	22	3	5	5	4	**349**
Motorcycle	105	400	16	7	4	7	33	900	93	15	23	10	29	**1.642**
Car	59	233	8	0	2	0	6	163	18	5	18	5	3	**520**
Van	5	15	1	0	0	0	0	13	2	2	0	0	2	**40**
Lorry up to 3500 kg	2	3	0	1	0	0	0	2	1	0	1	0	0	**10**
Lorry exceeding 3500 kg	0	6	0	0	0	0	0	3	0	0	2	0	0	**11**
Bus or coach	0	22	0	0	0	0	1	6	1	0	0	0	2	**32**
Other vehicle	5	58	2	0	0	0	1	30	0	0	3	0	3	**102**
Total	**297**	**1.108**	**40**	**55**	**45**	**27**	**180**	**2.634**	**330**	**68**	**83**	**98**	**118**	**5.083**

3.2. Exposure indicators

3.2.1. Vehicle fleet

There has been an increase in the vehicle fleet by 1% (approximately 425,786 units) compared with the previous year and the greatest increase in absolute figures is for cars with an increase of 1%. Although the fleet of trucks and vans and mopeds has been decreasing since 2013 over the total, the increase in motorcycles stands out, going from accumulating 9% of the total vehicle fleet in 2013 to 11% in 2022, with an annual increase of approximately 50,000 – 150,000 units. The vehicle fleet is mainly made up by cars with more than 25 million units which represent 69% of the fleet; cars are followed by lorries and vans, 14% of the total vehicle fleet; and by motorcycles, 11%.

Chart 40: Evolution of the vehicle fleet over the last ten years. Spain, 2013-2022



Note: The "other vehicles" category includes special vehicles such as sweepers, snowploughs, cranes, work-site machines, etc. Trailers and semi-trailers, bicycles and personal mobility vehicles have been excluded.

3.2.2. Estimated annualized kilometres

Below is the distribution of annualized kilometres of vehicles being tested in the Technical Vehicle Inspection (ITV in Spanish) between the years 2014 and 2023. Only the Technical Vehicle Inspection with a favourable result have been considered for the calculation of kilometres. Technical Vehicle Inspections whose annualized kilometres are less than 50 in mopeds and motorcycles, and 1000 kilometres in other vehicles, have been considered anomalous.

Table 28. Distribution of annualized kilometres of vehicles being tested in the technical inspection years 2013-2023 (until July).

	Mopeds	Motorcycles	Cars	Vans	Trucks (MAM <=3500Kg)	Trucks (MAM >3500Kg)	Buses	Industrial tractors
N	705.575	4.818.979	98.555.498	9.568.337	14.081.573	1.361.853	363.042	1.104.048
Mean	2.185	2.751	11.188	13.066	13.161	26.187	48.110	97.324
Median	1.437	1.907	9.307	9.403	10.515	18.378	42.134	101.867

The evolution of the average annualized kilometres of the vehicles being tested at the technical inspection is shown in the following table (please note the effect of the reduction in mobility in some categories of vehicles as a result of the restrictions due to the COVID-19 pandemic):

Table 29. Evolution of annualized kilometres of vehicles being tested in the technical inspection.

	Mopeds	Motorcycles	Cars	Vans	Trucks (MAM <=3500Kg)	Trucks (MAM >3500Kg)	Buses	Industrial tractors
2014	2.622	3.370	11.624	12.651	13.938	25.233	47.483	94.128
2015	2.396	3.079	11.653	12.781	13.910	25.228	48.108	96.162
2016	2.289	2.926	11.800	12.978	13.933	25.082	49.510	96.594
2017	2.234	2.856	11.818	13.187	13.865	26.251	51.030	98.207
2018	2.162	2.820	11.719	13.387	13.625	27.076	51.668	98.274
2019	2.124	2.750	11.563	13.496	13.325	27.132	51.841	98.488
2020	2.092	2.659	10.248	12.047	11.667	24.665	40.790	96.491
2021	2.008	2.433	9.741	12.581	12.037	27.120	41.115	98.484
2022	2.099	2.566	10.896	13.712	12.505	26.441	48.677	97.998

To extrapolate these data to the entire vehicle fleet, a predictive model is adjusted on the aforementioned technical inspections. These models are applied to the entire fleet in operation in 2022. As fleet in operation we understand any vehicle of the vehicle fleet on the roads (without being deregistered), that in the last 10 years (with respect to the year 2022) has a record in the DGT registries in the following areas: being tested at a technical inspection, have insurance cover, a change of ownership, register the vehicle after a temporary deregistration or being the subject of a complaint. These criteria are intended to reduce the impact of vehicles (particularly very old ones) that are no longer on operation or that were de-registered in due course leaving aside regulated administrative procedures. The estimated annualized kilometres for the Spanish vehicle fleet in operation for the year 2022 are as follows:

Table 30. Estimated annualized kilometres for the Spanish vehicle fleet in operation for the year 2022.

	Mopeds	Motorcycles	Cars	Vans	Trucks not exceeding 3500kg	Trucks exceeding 3500kg	Buses	Industrial tractors
VEH-KM ($\cdot 10^7$ km)	188.2	992,9	30.294,9	3.584,2	2.664,5	686,8	268,1	1.965,3
Mean (Km)	1.759	2.831	13.073	15.815	13.642	25.235	46.607	88.291

In relation to the age of the vehicle fleet, a downward trend can be observed in each vehicle category.

Table 31. Estimated annualized kilometres for the vehicle fleet in operation for the year 2022, disaggregated by the age of the vehicle.

Age of the vehicle	Mopeds	Motorcycles	Cars	Vans	Trucks not exceeding 3500kg	Trucks exceeding 3500kg	Buses	Industrial tractors
0 to 4 years	3.602	4.909	21.646	28.730	25.014	47.042	68.357	127.229
5 to 9 years	2.792	3.144	13.980	21.461	18.986	44.664	57.617	100.153
10 to 14 years	1.978	2.385	11.464	14.729	14.247	29.338	39.098	65.023
15 to 19 years	1.700	2.072	9.941	10.656	11.612	21.152	28.533	38.720
20 years and over	1.134	1.225	7.687	6.561	8.492	11.741	17.808	19.787

With the above data we can calculate mortality indicators adjusted for exposure to risk (excluding industrial tractors):

Table 32. Exposure to risk by type of vehicle.

	Mopeds	Motorcycles	Cars	Vans	Trucks not exceeding 3500kg	Trucks exceeding 3500kg	Buses (Adjusted by average occupancy in buses)*
Fatalities	36	401	681	79	19	51	13
Veh-km (•10^7)	188	993	30.295	3.584	2.665	687	10.365
Fat. veh-km	0,191	0,404	0,022	0,022	0,007	0,074	0,001
Risk Resp. Car	8,5	18,0		1,0	0,3	3,3	0,1

** In buses, the VEH-KM value has been adjusted by the average occupancy of buses with at least one fatality (268.14•107 VEH-KM and 38.65 average occupants of buses).*

The comprehensive study on the analysis of the annualized kilometres travelled by the Spanish vehicle fleet can be consulted here.

3.3 Performance indicators

3.3.1.1. Age of the vehicle fleet

It is essential to make the following observations in order to determine the age of the vehicle fleet:

1. Mopeds are excluded from the calculation of the fleet age since it was not compulsory to register them until 27 July 1999, date of entry into force of the General Regulations on Vehicles (RD 2822/98) being the latest deadline for registering used mopeds 27 January 2002.

2. There are vehicles that almost certainly are not used on public roads and have not been deregistered by their owners so the fleet figures are probably overstated, and the older the vehicles the greater the overestimation.

Table 33: Basic statistical measures of the vehicle fleet (mopeds excluded) and their age by vehicle type. Spain, 2022

Age of the fleet	Measure	Lorries and vans	Buses	Cars	Motorcycles	Industrial tractor les	Other vehicles*	Total without mopeds
Complet	**Total**	**5.075.068**	**65.377**	**25.222.554**	**4.006.804**	**245.075**	**527.019**	**35.141.897**
	Mean	18	15	15	17	11	17	7
	St.Dev	12	14	12	15	10	10	4
	Coef. Variation	67	93	77	84	89	58	60
Less than 25 years	**Total**	**4.006.906**	**56.012**	**22.142.539**	**3.125.466**	**224.397**	**440.265**	**29.995.585**
	Mean	13	10	12	11	9	14	12
	St.Dev	7	6	7	7	6	7	7
	Coef. Variation	54	60	58	61	71	48	58
Less than 15 years	**Total**	**1.999.441**	**40.633**	**13.544.348**	**2.086.203**	**172.391**	**162.919**	**18.005.935**
	Mean	7	7	7	6	6	7	7
	St.Dev	4	4	4	4	4	5	4
	Coef. Variation	62	58	59	64	64	73	60

For the above reasons, a detailed study on the age of the vehicle fleet requires the exclusion of mopeds and the consideration of various groups depending on the age of the vehicles that involve an approach to the real vehicle fleet. The vehicle fleet under 25 years of age represent 85% of the total registered vehicles, the vehicles under 15 years of age represent 51% of the registered vehicles.

Other useful statistical measures to avoid the problem of older vehicles that probably are not driven on public roads are the percentile values, especially the median or the 50th percentile. Thus, in the following table, in which the percentiles for the entire vehicle fleet have been calculated, it can be observed that half of all passenger cars are 13.5 years of age or older. Where the rest of the vehicles is concerned, the medians range from 7.5 of industrial tractors to 16.5 of lorries and vans.

Table 34: Percentiles in years by type of vehicle of the vehicle fleet. Spain, 2022

	10	20	30	40	50	60	70	80	90
Trucks and vans	3.5	6.5	10.5	14.5	16.5	18.5	21.5	25.5	33.5
Buses	2.5	4.5	6.5	8.5	11.5	14.5	16.5	19.5	34.5
Cars	2.5	4.5	7.5	10.5	13.5	15.5	17.5	20.5	27.5
Motorcycles	2.5	4.5	7.5	11.5	14.5	16.5	18.5	27.5	37.5
Industrial tractors	1.5	2.5	4.5	5.5	7.5	9.5	14.5	17.5	22.5
Other vehicles[1]	2.5	5.5	13.5	15.5	16.5	18.5	19.5	22.5	29.5
Total	**2.5**	**4.5**	**7.5**	**11.5**	**14.5**	**16.5**	**18.5**	**21.5**	**30.5**

[1] The "other vehicles" category includes special vehicles such as sweepers, snowploughs, cranes, work-site machines, etc. Trailers and semi-trailers, bicycles and personal mobility vehicles have been excluded.

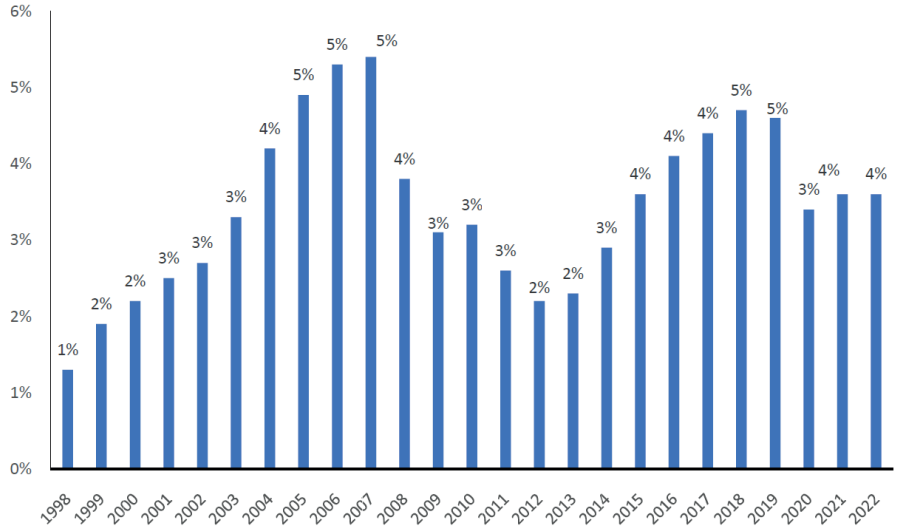
In 2022, the average age of the vehicle fleet under 25 years ranges from 9.1 years for industrial tractors to 14.6 years for lorries with a MAM not exceeding 3500 kg. The average age of cars is 11.8 years, over the average age of motorcycles that is 10.7 years. The average age of buses or coaches is 10.2 years. Compared to the 2013 figures, the average has increased in all types of vehicles analysed.

Table 35: Age of the vehicle than fleet*. Spain, 2013-2022

Age of the fleet	Lorries ≤ 3.500kg	Trucks >3.500kg	Industrial tractors	Vans	Buses	Cars	Motorcycles
2013	10.5	12.2	8.8	12.2	9.5	10.1	9.4
2022	14.6	14.2	9.1	11.6	10.4	11.8	10.7

** Only vehicles under 25 years of age are considered.*

Chart 41: Percentage distribution of the vehicle fleet under 25 years of age, mopeds excluded, by registration year. Spain, 2022

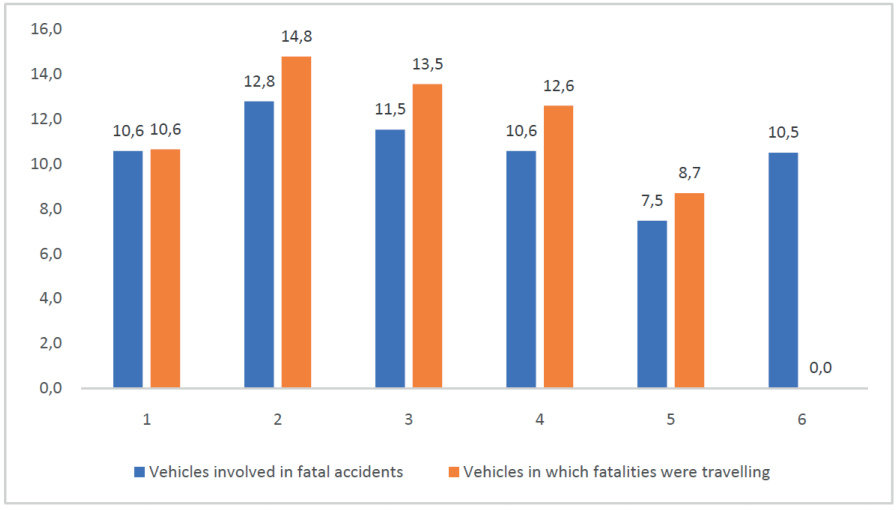


3.3.1.2 Age of the vehicles involved in fatal road traffic accidents

In 2022 on interurban roads, for all types of vehicles analysed (cars, vans and lorries exceeding and not exceeding 3500 kg), the average age of the vehicles involved in fatal accidents is below the average age of the vehicles in which the fatalities were travelling.

The greatest differences in the age of the vehicles involved in accidents with respect to those in which fatalities were travelling are in passenger cars and vans, both with a difference of 2 years. Passenger cars and vans also stand out for being the oldest vehicles in which fatalities were travelling, recording figures of 14.8 years in the case of passenger cars and 13.5 years in the case of vans.

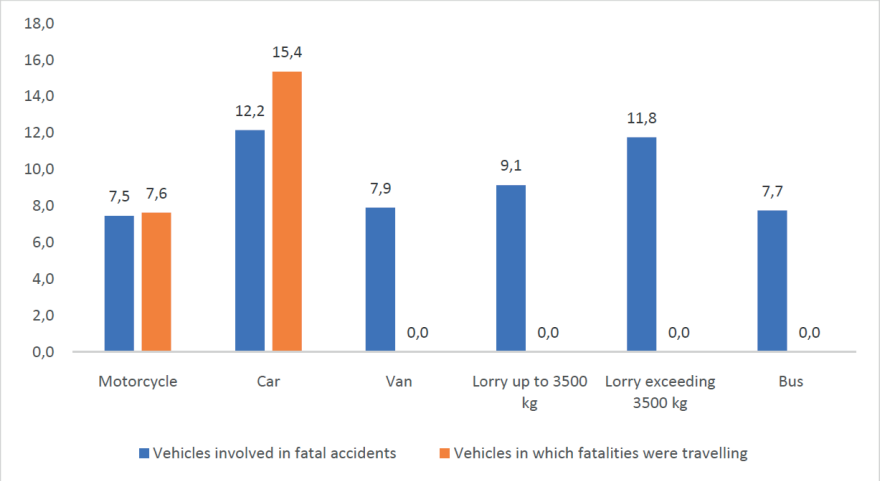
Chart 42: Average age of the vehicles involved in fatal accidents and of the vehicles in which the fatalities were travelling. Interurban roads. Spain, 2022



Note: The average age of the vehicles is not shown when the number of units is below 10

On urban roads, the average age of passenger cars involved in fatal accidents compared to that of the vehicles in which fatalities were travelling was lower in passenger cars, vans and lorries exceeding 3,500kg. The case of vans and lorries not exceeding 3500 kg, with a difference of 7,9 and 9,1 years respectively, highlights. Regarding motorcycles, there are no differences, with an average age of 7.5 years in both cases. For its part, the age of lorries exceeding 3,500kg involved in accidents is older compared to those in which fatalities were travelling.

Chart 43: Average age of the vehicles involved in fatal accidents and of the vehicles in which the fatalities were travelling. Urban roads. Spain, 2022

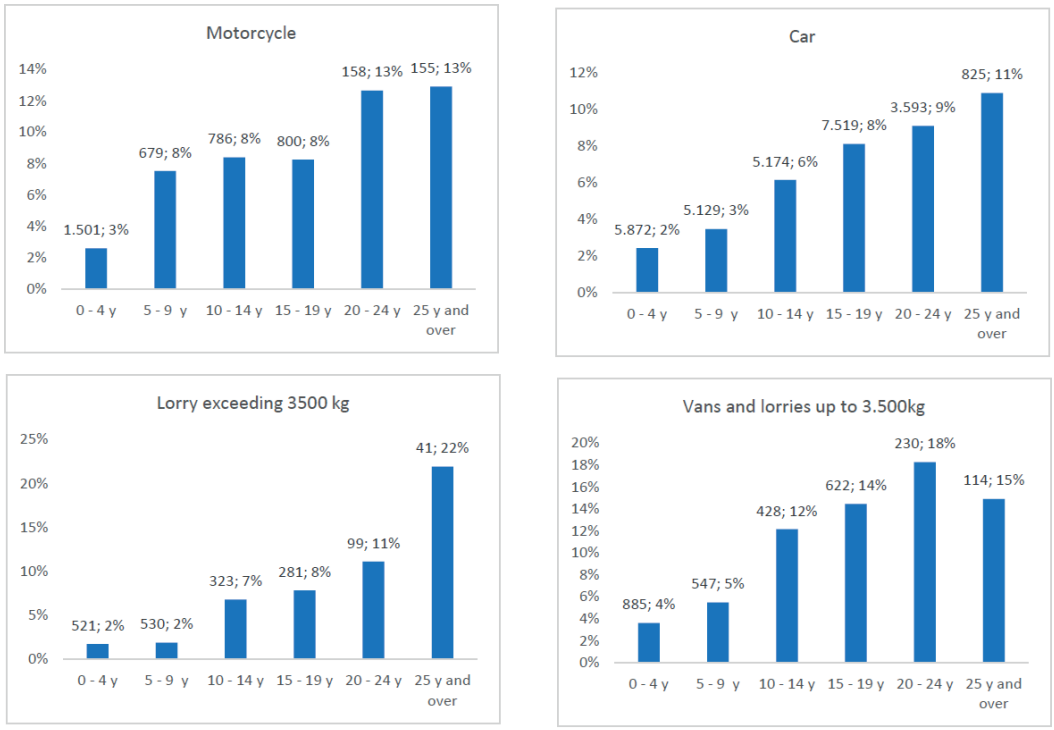


Note: The average age of the vehicles is not shown when the number of units is below 10

3.3.2. Roadworthiness tests for the vehicles involved in road traffic accidents

On interurban roads, there is a link between the age of the vehicle involved in the accident and the result of its technical inspection. In the case of motorcycles, the percentage of vehicles with an expired roadworthiness test certificate went from 3% between 0 and 4 years to 8% from the age of 10 years. In the case of cars, the percentage went from 3% between 5 and 9 years to 8% from the age of 15 years. As for vans and lorries up to 3500 kg, the percentage of vehicles with an expired roadworthiness test certificate ranged between 4% and 18%. In lorries exceeding 3500 kg the variation is between 2% and 22%.

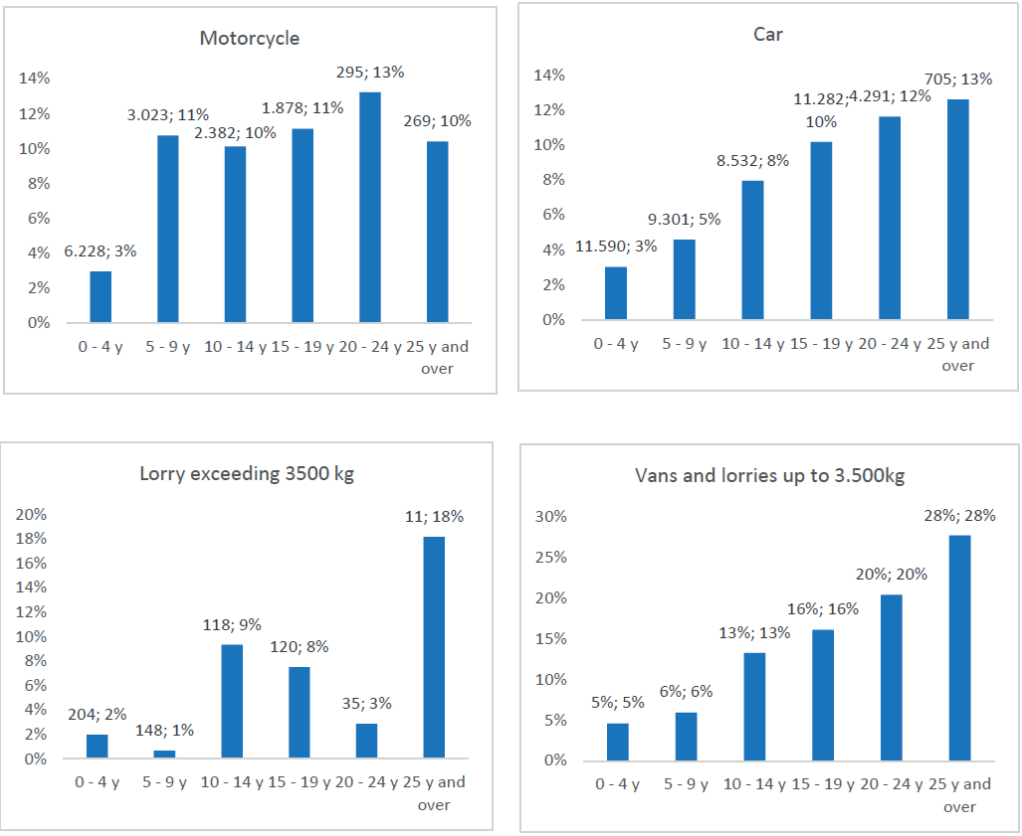
Chart 44: Percentage of vehicles with an expired roadworthiness test certificate at the time of the accident. Vehicles involved in road traffic accidents on interurban roads. Spain, 2022.



** Those road traffic accidents occurring in the Autonomous Regions of Catalonia and the Basque Country are not included. The total number of cases is indicated in each age group.*

Regarding urban roads, the link mentioned above is clearer in cars, vans and lorries not exceeding 3,500kg. In the case of motorcycles, the percentage of vehicles with an expired roadworthiness test certificate went from 3% between 0 and 4 years to 11% from the age of 10 years. In the case of cars, the percentage went from 3% between 0 and 4 years to 15% from the age of 15 years. As for vans and lorries up to 3500 kg, the percentage of vehicles with an expired roadworthiness test certificate ranged between 5% and 28%. In lorries exceeding 3500 kg the variation is between 2% and 18%.

Chart 45: Percentage of vehicles with an expired roadworthiness test certificate at the time of the accident. Vehicles involved in road traffic accidents on urban roads. Spain, 2022



** Those road traffic accidents occurring in the Autonomous Regions of Catalonia and the Basque Country are not included. The total number of cases is indicated in each age group.*

3.3.3. Insurance of the vehicles involved in road traffic accidents

The percentage of vehicles with an expired insurance at the time of the accident is very low, ranging between 0% and 3% up to 19 years old; however, as age increases, the percentages reach a maximum of 5% in the case of motorcycles on interurban and urban roads mainly at around 20 years of age.

Table 36: Percentage of vehicles with an expired insurance policy at the time of the accident. Vehicles involved in road traffic accidents on interurban roads. Spain, 2022

	0 to 4 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 24 years	Age 25+
Motorcycle	2%	1%	2%	2%	5%	2%
Car	1%	1%	1%	2%	3%	1%
Van	1%	1%	1%	1%	2%	1%
Lorry up to 3500 kg	0%	0%	0%	1%	0%	0%
Lorry exceeding 3500 kg	0%	0%	1%	1%	1%	0%

Table 37: Percentage of vehicles with an expired insurance policy at the time of the accident. Vehicles involved in road traffic accidents on urban roads. Spain, 2022

	0 to 4 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 24 years	Age 25+
Motorcycle	1%	1%	1%	3%	5%	1%
Car	1%	1%	1%	2%	3%	1%
Van	1%	1%	2%	2%	3%	1%
Lorry up to 3500 kg	1%	1%	1%	2%	4%	1%
Lorry exceeding 3500 kg	0%	1%	1%	0%	0%	0%

3.3.4. Vehicle propulsion

Regarding the vehicles involved in fatal and serious accidents by type of propulsion, in 2022 the majority are distributed in a similar way between diesel (49%) and petrol (49%). However, it is worth highlighting the increase in electric vehicles involved, increasing by 128% compared to 2019, showing an upward trend, as well as gas-fuelled vehicles (+10%). Both petrol- and diesel-powered vehicles involved have decreased by 7% and 4% respectively.

Regarding interurban roads, the majority of vehicles involved in fatal and serious accidents (56%) are diesel, while petrol-powered vehicles accumulate 43%. Likewise, the increase in electric vehicles involved stands out with an increase by 233% compared to 2019. On the other hand, gas-fuelled vehicles have decreased by 27% compared to 2019.

On urban roads, petrol-powered vehicles involved in fatal and serious accidents accumulate 55% of the total, while diesel-powered vehicles accumulate 41%. Electric vehicles and gas-fuelled vehicles accumulate 2% and 1% of the total, increasing by 35% and 15% respectively.

Table 38: Evolution of vehicles involved in fatal and serious road accidents by type of vehicle propulsion

	2019	2020	2021	2022	Diff 22/21	Diff 22/19	Dist. 22
Diesel	6.453	4.784	5.571	6.015	8%	-7%	49%
Electric	71	77	124	162	31%	128%*	1%
Gas	98	82	99	106	9%*	10%*	1%
Petrol	6.287	4.820	5.643	6.016	7%	-4%	49%
Other	4	1	3	1	-67%*	-75%*	0%
Unspecified	25	1	23	20	-13%*	-20%*	0%
Total	**12.938**	**9.765**	**11.463**	**12.322**	**7%**	**-5%**	**100%**

** This fact cannot be interpreted in isolation due to its low frequency (N<100), since it can give rise to high and poorly representative percentage variations*

Table 39: Evolution of vehicles involved in fatal and serious road accidents by type of vehicle propulsion on interurban roads

	2019	2020	2021	2022	Diff 22/21	Diff 22/19	Dist. 22
Diesel	3.812	2.852	3.177	3.463	9%	-9%	56%
Electric	6	11	19	20	5%*	233%*	0%
Gas	22	11	19	16	-16%*	-27%*	0%
Petrol	2.966	2.282	2.553	2.616	2%	-12%	43%
Other	0	0	0	0	N/A	N/A	0%
Unspecified	20	0	16	16	0%*	-20%*	0%
Total	**6.826**	**5.156**	**5.784**	**6.131**	**6%**	**-10%**	**100%**

** This fact cannot be interpreted in isolation due to its low frequency (N<100), since it can give rise to high and poorly representative percentage variations*

Table 40: Evolution of vehicles involved in fatal and serious road accidents by type of vehicle propulsion on urban roads

	2019	2020	2021	2022	Diff 22/21	Diff 22/19	Dist. 22
Diesel	2.641	1.932	2.394	2.552	7%	-3%	41%
Electric	65	66	105	142	35%	118%*	2%
Gas	76	71	80	92	15%*	21%*	1%
Petrol	3.321	2.538	3.090	3.400	10%	2%	55%
Other	4	1	3	1	-67%*	-75%*	0%
Unspecified	5	1	7	4	-43%*	-20%*	0%
Total	**6.112**	**4.609**	**5.679**	**6.191**	**9%**	**1%**	**100%**

** This fact cannot be interpreted in isolation due to its low frequency (N<100), since it can give rise to high and poorly representative percentage variations*

Regarding the vehicles involved in fatal accidents, 60% are diesel-powered vehicles, compared to 39% that are petrol-powered vehicles. The involvement of gas- or electric-powered vehicles is small, representing between 0 and 1% of the total, with no significant differences observed in the period analysed.

Table 41: Evolution of vehicles involved in fatal road accidents by type of vehicle propulsion

	2019	2020	2021	2022	Diff 22/21	Diff 22/19	Dist. 22
Diesel	1.387	1.073	1.225	1.391	14%	0%	60%
Electric	5	11	9	11	22%*	120%*	0%
Gas	12	12	11	13	18%*	8%*	1%
Petrol	927	711	823	883	7%	-5%	38%
Other	1	0	0	0	N/A	-100%*	0%
Unspecified	8	1	6	10	67%*	25%*	0%
Total	**2.340**	**1.808**	**2.074**	**2.308**	**11%**	**-1%**	**100%**

** This fact cannot be interpreted in isolation due to its low frequency (N<100), since it can give rise to high and poorly representative percentage variations*

Table 42: Evolution of vehicles involved in fatal road traffic accidents by vehicle propulsion on interurban roads

	2019	2020	2021	2022	Diff 22/21	Diff 22/19	Dist. 22
Diesel	1.059	862	966	1.128	17%	7%	65%
Electric	2	2	3	4	33%*	100%*	0%
Gas	5	3	4	3	-25%*	-40%*	0%
Petrol	656	456	592	607	3%	-7%	35%
Other	0	0	0	0	N/A	N/A	0%
Unspecified	6	0	6	6	0%*	0%*	0%
Total	**1.728**	**1.323**	**1.571**	**1.748**	**11%**	**1%**	**100%**

** This fact cannot be interpreted in isolation due to its low frequency (N<100), since it can give rise to high and poorly representative percentage variations*

Table 43: Evolution of vehicles involved in fatal road traffic accidents by vehicle propulsion on urban roads

	2019	2020	2021	2022	Diff 22/21	Diff 22/19	Dist. 22
Diesel	328	211	259	263	2%	-20%	47%
Electric	3	9	6	7	17%*	133%*	1%
Gas	7	9	7	10	43%*	43%*	2%
Petrol	271	255	231	276	19%	2%	49%
Other	1	0	0	0	N/A	N/A	0%
Unspecified	2	1	0	4	N/A	N/A	1%
Total	**612**	**485**	**503**	**560**	**11%**	**-8%**	**100%**

** This fact cannot be interpreted in isolation due to its low frequency (N<100), since it can give rise to high and poorly representative percentage variations*

3.4. Key performance indicators

3.4.1. Safety of the vehicle fleet

Spain has provided data to the European Baseline project in relation to the vehicle safety indicator. The indicator used in this project to quantify vehicle safety has been the percentage of new passenger cars registered with a Euro NCAP test rating equal to or greater than four or five stars. Therefore, it is a safety indicator of new registrations, and not of the vehicle fleet as a whole.

In the case of Spain, the estimate has been made for the years 2019 and 2020. If registrations for which a Euro NCAP result was not available are excluded, the percentage of new passenger cars with a score equal to or greater than 4 stars in 2020 is 99% (98% in 2019), and vehicles with a score of 5 stars (the maximum) account for 83% of new passenger car registrations (79% in 2019).

4

USERS

4.1. Performance indicators: road traffic accidents and victims

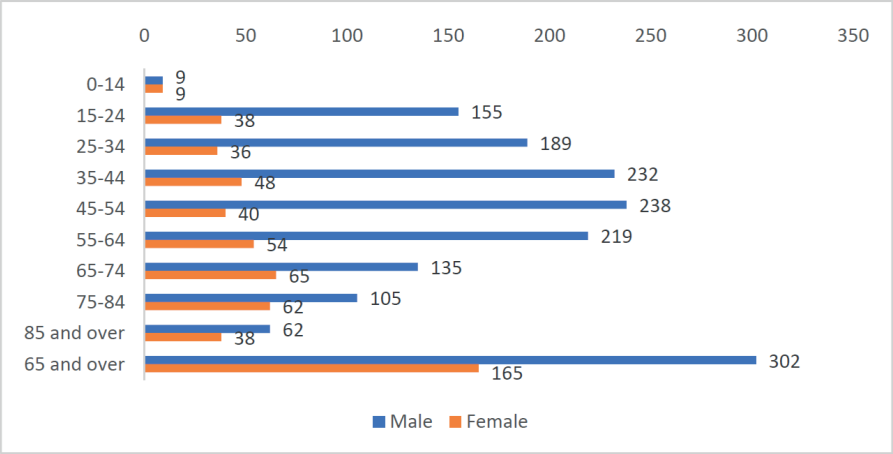
4.1.1. Age and gender

In relation to the gender variable, males register more fatalities (1,350, i.e. 77% of the total) than females (395, which represents 23% of the total). For its part, the age group[4] that registers more deaths is the 35-44 years old group (280, 16% of the total), followed by the 45-54 years old group (278, 16% of the total), and the 55-64 years old group (273, 16% of the total). The age group under 14 is the group with the lowest fatality figure: 18 individuals, which represent 1% of the total.

Taking into account the gender and age variable crossing, the group that registers the highest number of fatalities is the age group of males between 45 and 54 years old, with 238 people representing 14% of the total, followed by males between 35 and 44 years old with 232 people, i.e. 13% of the total.

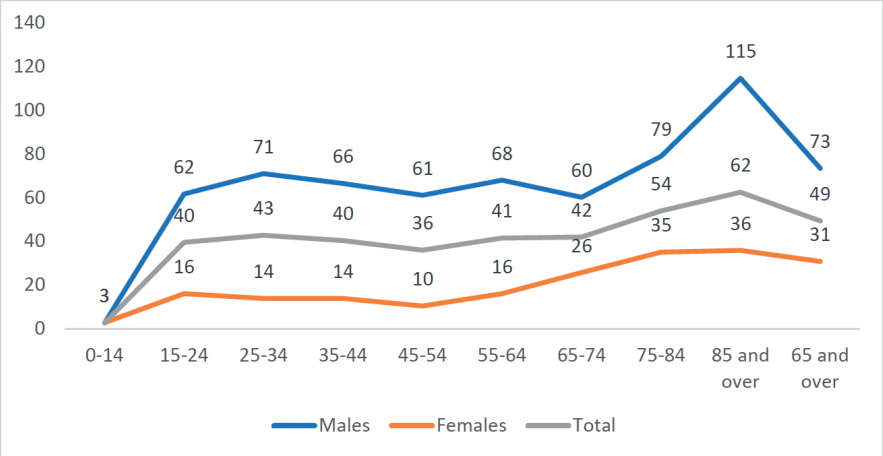
The fatality rate per million population in males is higher than that in females in all age groups. Specifically, males aged 85 and over are the group with the highest rate (115), registering a figure substantially higher than the rest of the user groups. Thus, the next highest rates are for males between 75 and 84 years old (79) and males between 25 and 34 years old (71). The group of males over 65 years of age has a rate of 73 fatalities per million population. As for females, the highest rate is recorded by the age group 85 years old and over (62), followed by the group between 75 and 84 years old (54).

Chart 46: Fatalities by age groups and by gender. Spain, 2022



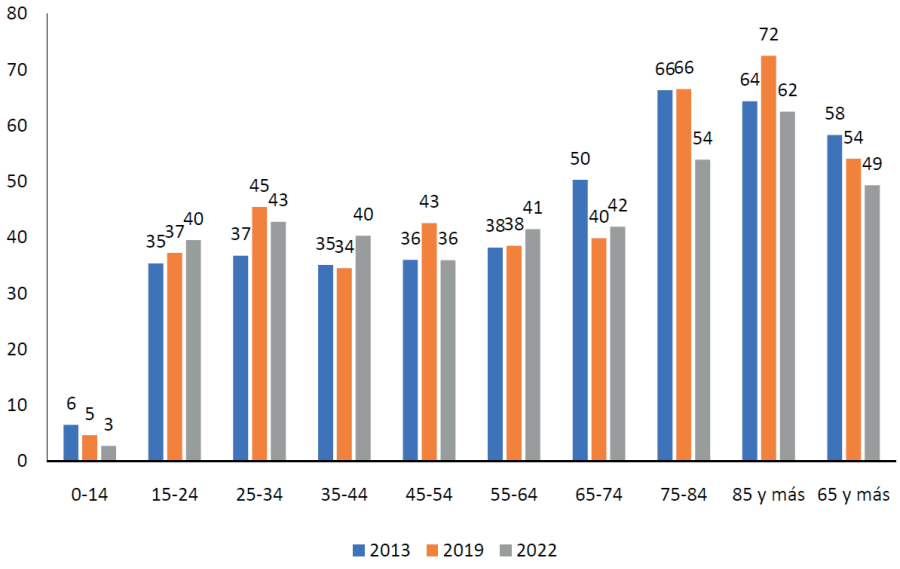
[4] Note: The total figures for males (1,350) and females (395) are those shown in Table 2, but they differ from those shown in the following chart due to cases with unknown age.

Chart 47: Fatality rate by age and gender per million inhabitants. Spain, 2022



Taking into account total rates, irrespective of gender, a decrease is observed compared to 2013 and 2019 in the age groups between 75 and 84 years old, those over 84 years old and those under 14 years old. A downward trend is also identified in the group of persons aged 65 and over. On the contrary, the group between 15 and 24 years old, 35 and 44 years old, and 55 and 64 years old register an increase in the rate per million population compared to previous years (2013 and 2019).

Chart 48: Fatality rate by age groups per million population. Spain, 2013, 2019, 2022



4.1.2. People under 15 years of age

The group of children under 15 years of age has registered 18 fatalities, which represents 1% of the total. For its part, the number of hospitalised injured casualties in this age group is 261 individuals (3%) and the number of non-hospitalised injured casualties is 5,093 (4%), making a total of 5,372 victims (5%), which represents a fatality rate of 0.3 (notably lower than that of the rest of the age groups, which is at 1.4).

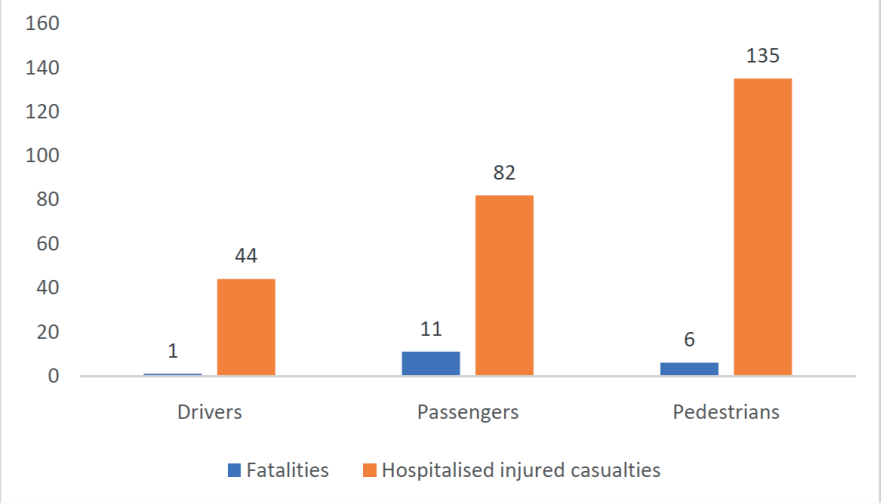
The distribution of fatalities under 15 years of age by the type of user is 11 passengers (61%), 6 pedestrians (33%) and 1 driver (6%). In relation to hospitalised injured casualties, the majority are pedestrians

(135, which represents 52% of the total), followed by 82 passengers (31%) and 44 drivers (17%).

Table 44: Comparison of severity degree as a result of a road traffic accident in people under 15 years of age and rest of the population. Spain, 2022

	Under 15 years of age	% on the total of ages	Rest of ages
Fatalities	18	1%	1.728
Hospitalised injured casualties	261	3%	8.241
Non-hospitalised injured casualties	5.093	4%	114.235
Total casualties	**5.372**	**5%**	**124.204**
Case fatality rate	0,3		1,4
Fatality rate per million population	3		42
Hospitalised injured casualty rate per million population	40		201

Chart 49: People killed and hospitalised under 15 years of age by type of user. Spain, 2022



4.1.3. Young people aged 15 to 24

The 15-24 age group has registered 194 fatalities, which represents 11% of the total. Thus, the number of hospitalised injured casualties in this age group is 1,168 individuals (14%) and the number of non-hospitalised injured casualties is 20,669 (17%), making a total of 22,031 casualties (22%), which represents a fatality rate of 0.9.

The distribution of young fatalities by the type of user is 121 drivers (62%), 52 passengers (27%) and 21 pedestrians (11%). In relation to hospitalised injured casualties, the majority are drivers (745, which represents 64% of the total), followed by 296 passengers (25%) and 127 pedestrians (11%).

The fatality rate for the 15-24 age group per million population is at 40, over the rest of age groups (36). Specifically, the subgroup between 21 and 24 years of age is the one with the highest fatality rate per million population (51). And, in terms of temporary variables, 56% of fatalities between 15 and 24 years old occur at night, and 56% on weekdays.

Table 45: Comparison of severity degree as a result of road traffic accidents in young people aged 15 to 24 and rest of population. Spain, 2022

	From 15 to 24 years of age	% on the total of ages	Rest of ages
Fatalities	194	11%	1.552
Hospitalised injured casualties	1.168	14%	7.334
Non-hospitalised injured casualties	20.669	17%	98.659
Total casualties	**22.031**	**22%**	**107.545**
Case fatality rate	0,9		1,4
Fatality rate per million population	40		36
Hospitalised injured casualty rate per million population	239		172

Chart 50: People killed and hospitalised aged 15 to 24 by type of user. Spain, 2022

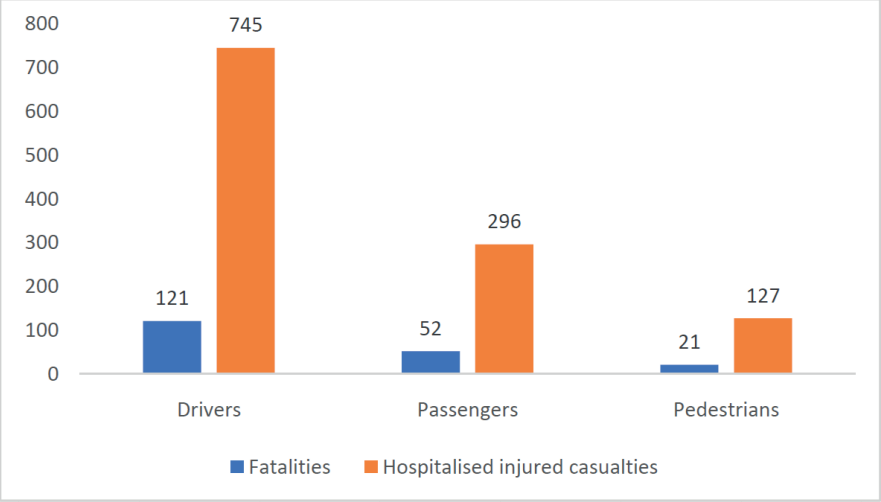


Chart 51: Fatality rate in young people aged 15 to 24 per million population distributed by gender and by age groups. Spain, 2022

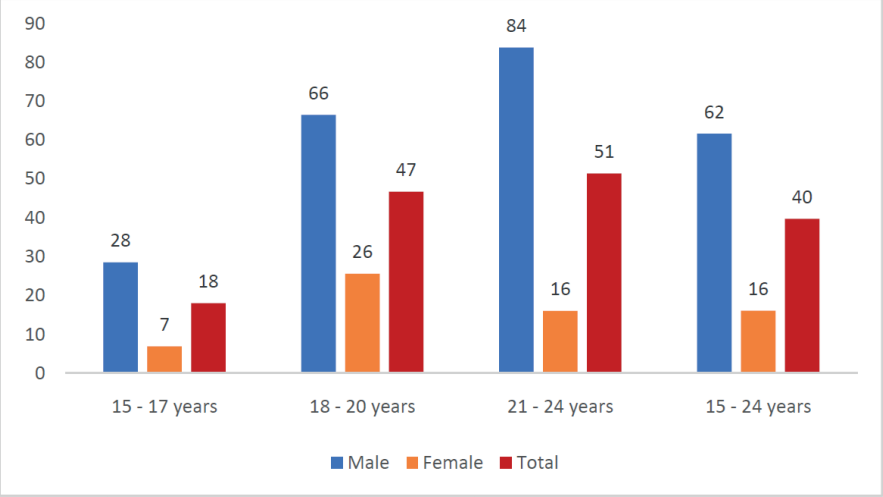
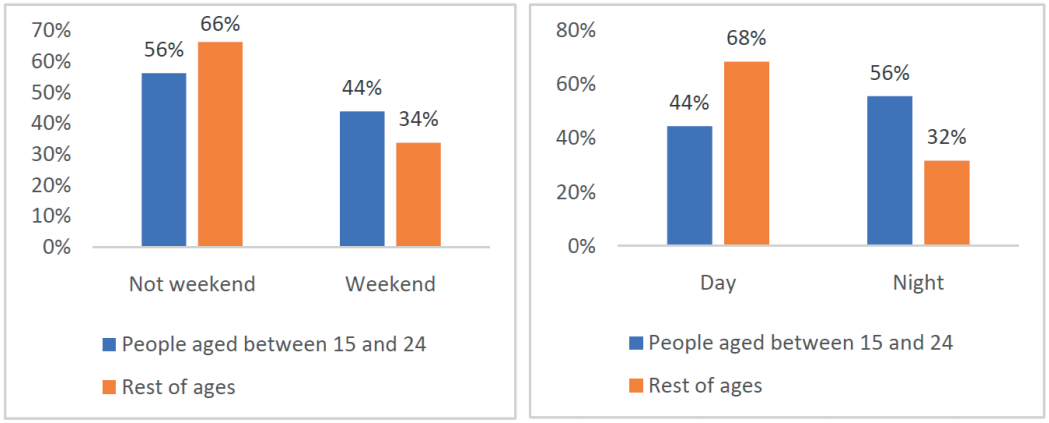


Chart 52: Percentage distribution of deaths among young people aged 18 to 24 and the rest of ages based on the day/night and weekend/not weekend parameters. Spain, 2022



4.1.4. Persons over the age of 64

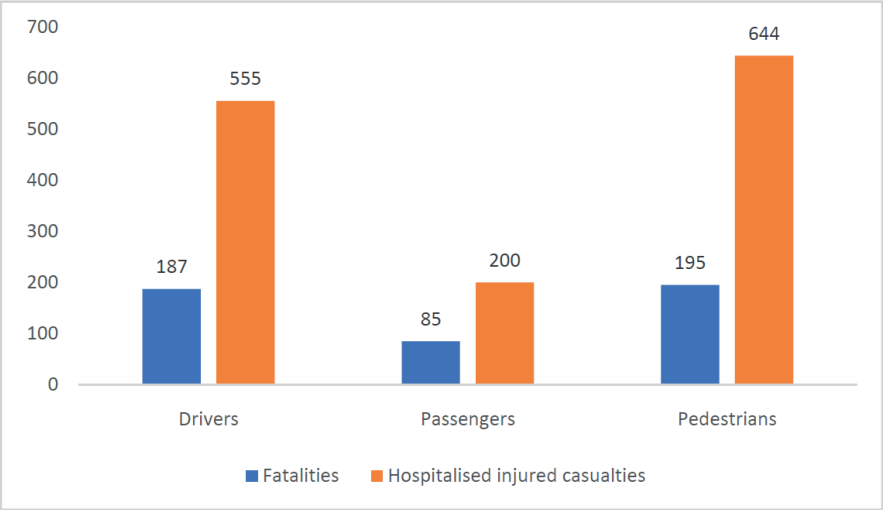
The group of people over 64 years of age has registered 467 fatalities, which represents 27% of the total. Thus, the number of hospitalised injured casualties in this age group is 1,399 individuals (16%) and the number of non-hospitalised injured casualties is 10,916 (9%), making a total of 12,782 casualties (13%), which represents a fatality rate of 3.7.

The distribution of fatalities over 64 years of age by the type of user is 195 pedestrians (42%), 187 drivers (40%) and 85 passengers (18%). In relation to hospitalised injured casualties, there were 644 pedestrians (46% of the total), followed by 555 drivers (40%) and 200 passengers (14%).

Table 46: Comparison of severity degree as a result of road traffic accidents in persons over the age of 64 and rest of the population. Spain, 2022

	65 or over	% over the total of ages	Rest of ages
Fatalities	467	27%	1.279
Hospitalised injured casualties	1.399	16%	7.103
Non-hospitalised injured casualties	10.916	9%	108.412
Total casualties	**12.782**	**13%**	**116.794**
Case fatality rate	3,7		1,1
Fatality rate per million population	5		34
Hospitalised injured casualty rate per million population	15		187

Chart 53: People killed and hospitalised over 64 years of age by type of user. Spain, 2022



61% of the fatalities in this age group were registered on interurban roads (283), while 39% occurred on urban roads (184). However, these percentages vary depending on the type of user. Thus, on interurban roads, the casualties who were travelling mainly as drivers (152, 54% of the total on interurban roads) or as passengers (78, 28% of the total on interurban roads), while in the case of urban roads the casualties were mostly pedestrians (142, 77% of the total on urban roads).

Chart 54: Persons over the age of 64 killed by area (urban or interurban) and by type of user. Spain, 2022

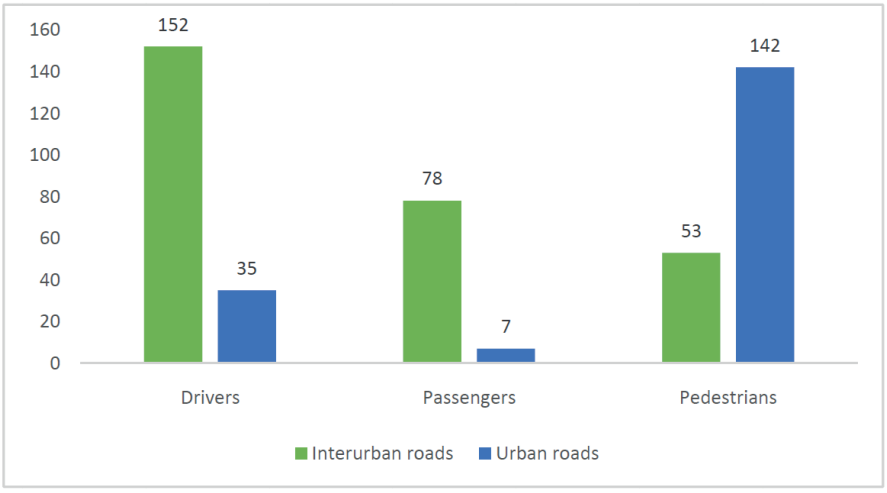


Chart 55: Distribution of persons over the age of 64 killed by age group and by type of user. Interurban roads. Spain, 2022

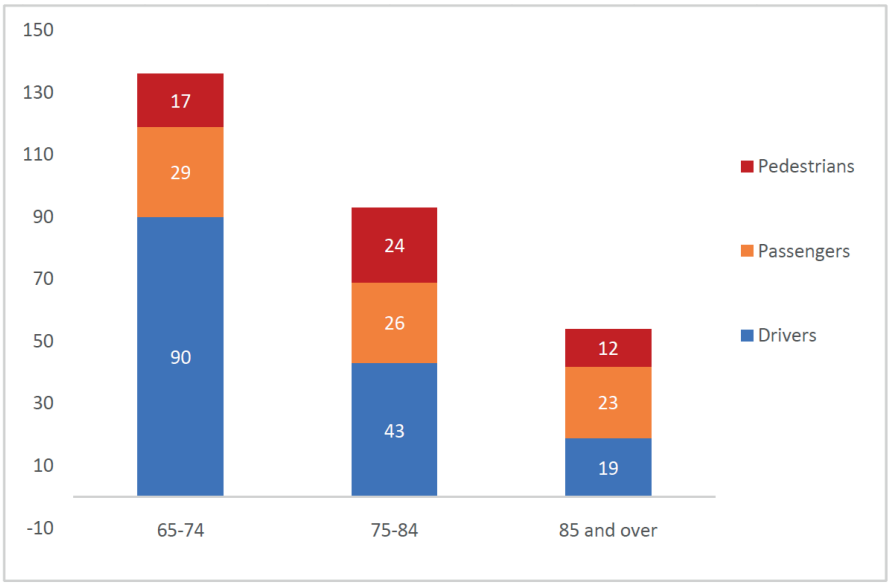
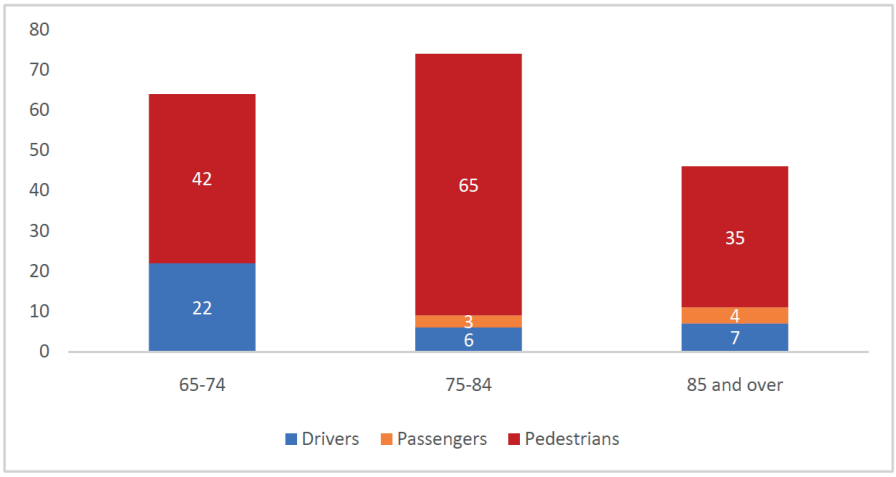


Chart 56: Distribution of persons over the age of 64 killed by age group and by type of user. Urban roads. Spain, 2022



4.1.5. Drivers

Fatally injured drivers (1,131) represent 65% of the total number of people killed in 2022, mainly on interurban roads (79% of the cases, 899) and males (90% compared to 10% of females). There were 5,631 hospitalised injured drivers (50% on interurban roads and 50% on urban roads) and 81,112 non-hospitalised injured drivers (38% on interurban roads and 62% on urban roads).

In relation to age and gender, both in the age groups of drivers under 14 years of age (1) and those over 85 years of age (26), 100% of the fatalities are males. Likewise, in all age groups, there are more male drivers killed than female drivers. The age group with the highest percentage of fatally injured female drivers is the 65-74 age group with 13% (15).

Besides, the highest rate of drivers involved in casualty road accidents per thousand registered drivers occurs between 15 and 17 years of age (33), followed by the 18-20 age group (14) and the 21-24 age group (10). The lowest rates are found in older drivers, being 3 in all groups over 60 years of age.

Table 47: Driver fatalities, hospitalised and non-hospitalised injured drivers and their case fatality rate. Interurban and urban roads. Spain, 2022

	Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties		Case fatality rate
	Number	%	Number	%	Number	%	
Interurban roads	899	79%	2.826	50%	31.031	38%	2,6%
Urban roads	232	21%	2.805	50%	50.081	62%	0,4%
Total	**1.131**	**100%**	**5.631**	**100%**	**81.112**	**100%**	**1.3%**

Chart 57: Evolution of driver fatalities and of the total. Spain, 2013-2022

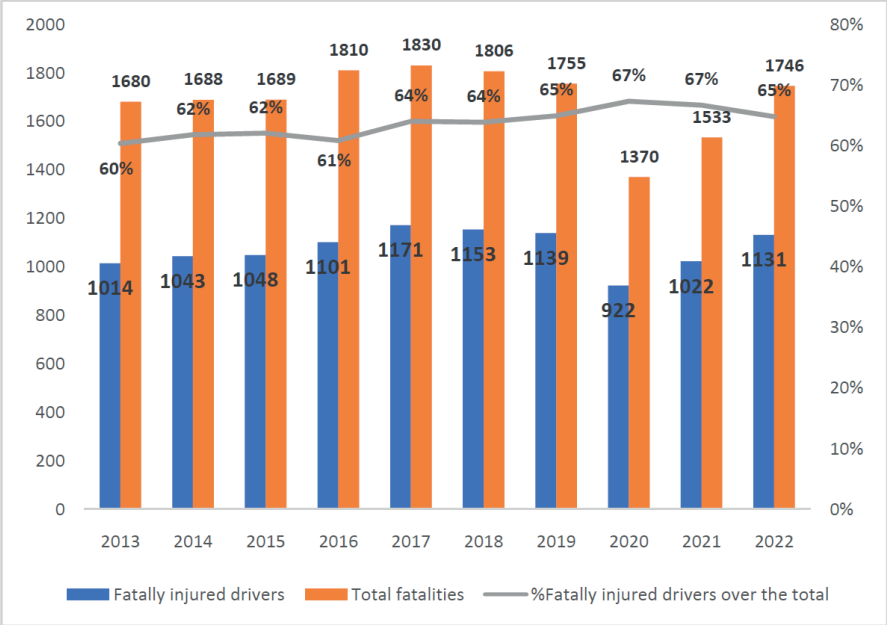


Chart 58: Proportion of driver fatalities by age groups and by gender. Spain, 2022

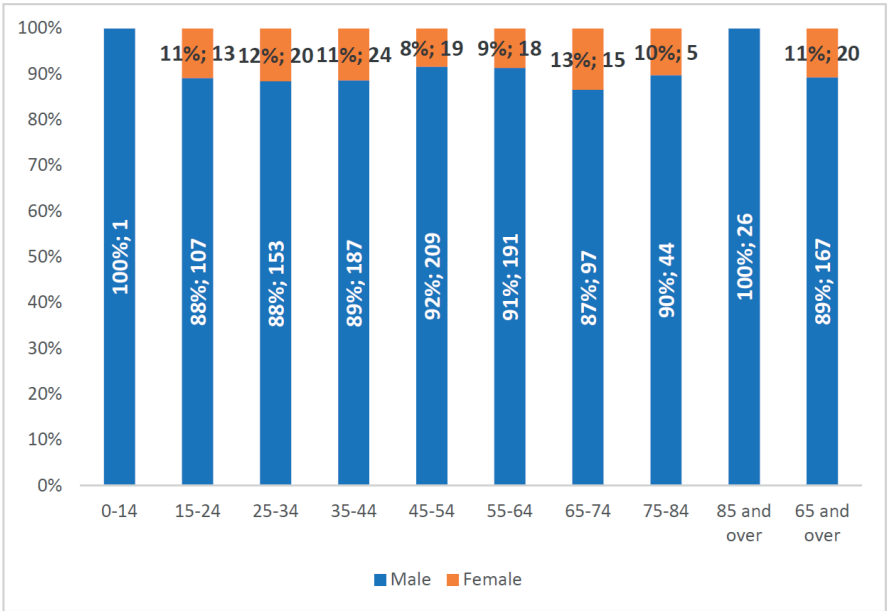
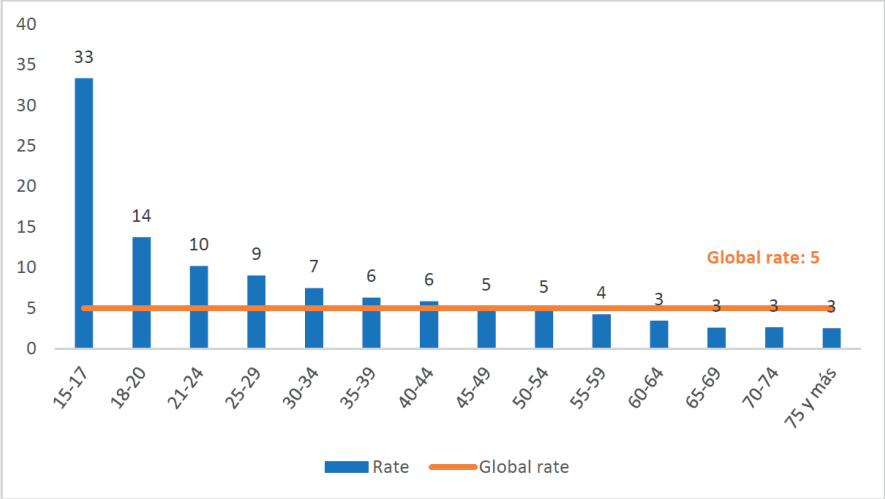


Chart 59: Rate of drivers involved in a road traffic casualty accident per thousand registered drivers, by age groups. Spain, 2022



4.1.6. Passengers

Passengers registered a total of 267 fatalities, representing 15% of the total number of people killed, mostly on interurban roads (90%) and females (56% compared to 44% of males). There were 1,248 hospitalised injured passengers (71% on interurban roads and 29% on urban roads) and 27,111 non-hospitalised injured passengers (49% on interurban roads and 51% on urban roads).

Regarding age and gender, in all age groups over 45 years of age, more female passengers than male passengers were killed. Likewise, this distribution also occurs in children under 14 years of age. However, in the age group between 15 and 44 years old, male passengers register higher numbers of fatalities in relation to female passengers.

Table 48: Passenger fatalities, hospitalised and non-hospitalised injured passengers and their case fatality rate. Interurban and urban roads. Spain, 2022

	Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties		Case fatality rate
	Number	%	Number	%	Number	%	
Interurban roads	239	90%	892	71%	13.322	49%	1,7%
Urban roads	28	10%	356	29%	13.789	51%	0,2%
Total	**267**	**100%**	**1.248**	**100%**	**27.111**	**100%**	**0.9%**

Chart 60: Evolution of passenger fatalities and of the total. Spain, 2013-2022

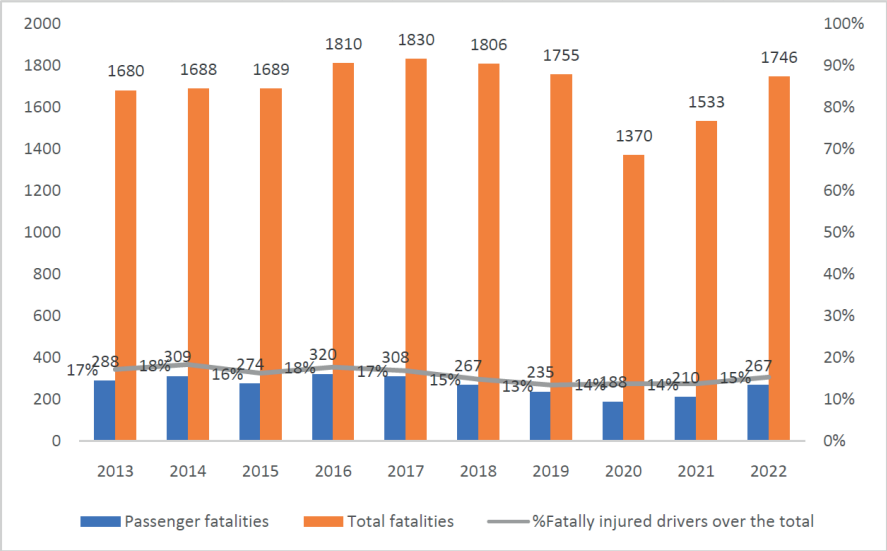
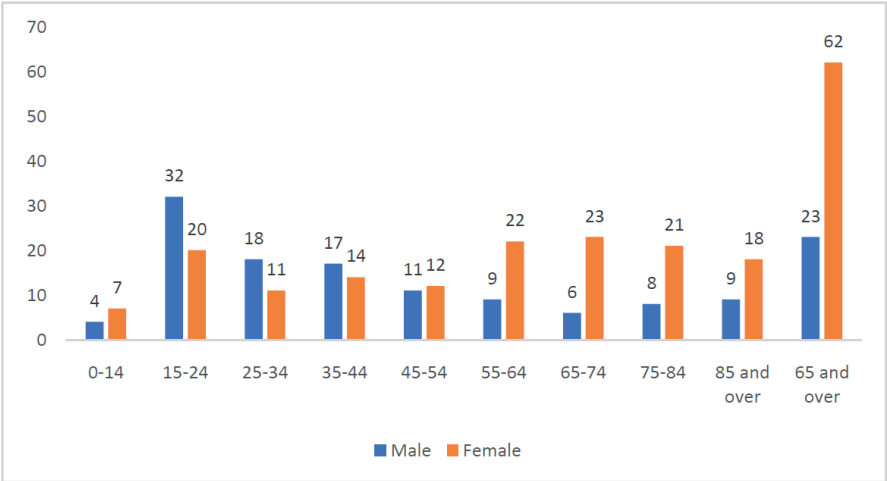


Chart 61: Number of passengers killed by age groups and gender. Spain, 2022



4.1.7. Pedestrians

Pedestrians registered a total of 348 fatalities, representing 20% of the total fatality figure in 2022. 39% of the casualties were registered on interurban roads (135) and 61% (213) on urban roads. There were 1,623 hospitalised injured pedestrians (11% on interurban roads and 89% on urban roads) and 11,105 non-hospitalised injured pedestrians (4% on interurban roads and 96% on urban roads).

Regarding interurban roads, there is an upward trend compared to 2019 in the age groups between 15 and 24 years old (from 7 to 11 pedestrian fatalities), between 35 and 44 years old (from 15 to 28), between 75 and 84 years old (from 17 to 24), over 65 years of age (from 45 to 53) and over 85 years of age (from 11 to 12). On the contrary, there has been a decrease in the number of pedestrians killed in children under 14 years of age (from 3 to 0), between 25 and 34 years old (from 17 to 15), between 45 and 54 years old (from 32 to 15) and between 55 and 64 years old (from 13 to 11). The 75-84 years old group has remained stable (17).

On urban roads, a decrease is registered in all age groups (-3 in those under 14 years of age; -3 between 35 and 44 years old; -3 between 45 and 54 years old; -10 between 75 and 84 years old and -24 in those over 85 years old), with the exception of the groups between 15 and 24 years old (+3 pedestrian fatalities), between 25 and 34 years old (+6 pedestrian fatalities), and between 65 and 74 (+4 pedestrian fatalities).

Table 49: Pedestrian fatalities, hospitalised and non-hospitalised injured pedestrians and their case fatality rate. Interurban and urban roads. Spain, 2022

	Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties		Case fatality rate
	Number	%	Number	%	Number	%	
Interurban roads	135	39%	174	11%	445	4%	17,9%
Urban roads	213	61%	1.449	89%	10.660	96%	1,7%
Total	**348**	**100%**	**1.623**	**100%**	**11.105**	**100%**	**2.7%**

Chart 62: Number of pedestrians killed by age groups. Interurban roads. Spain, 2013, 2019 and 2022

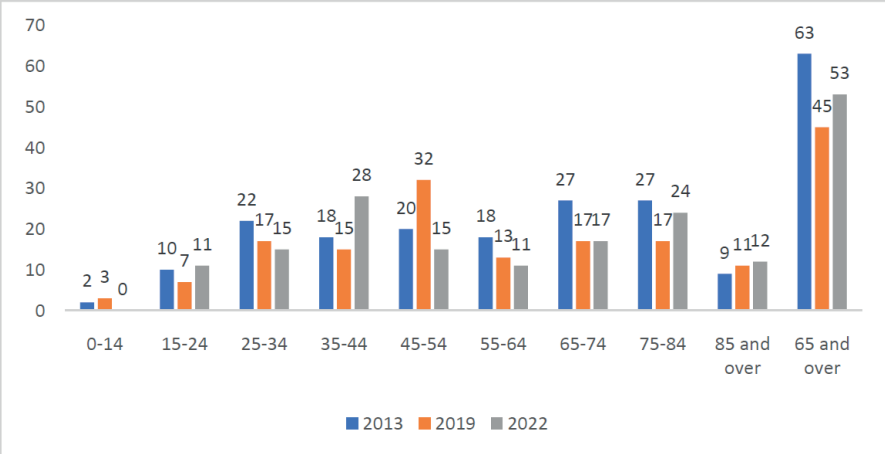
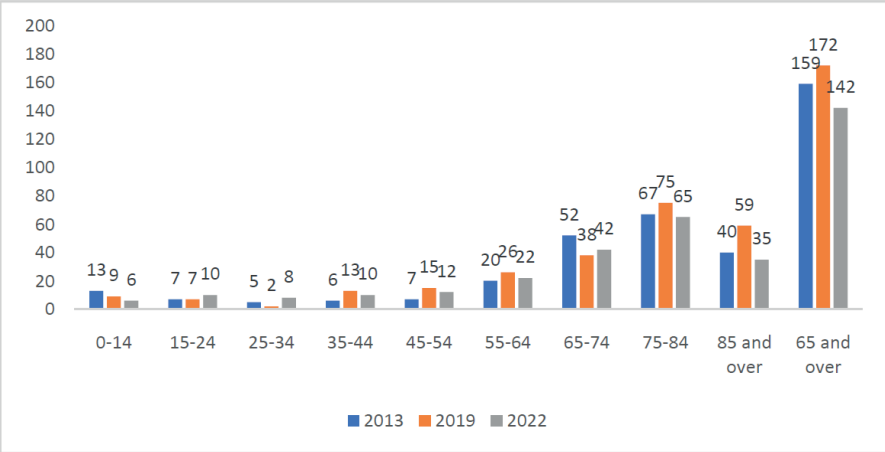


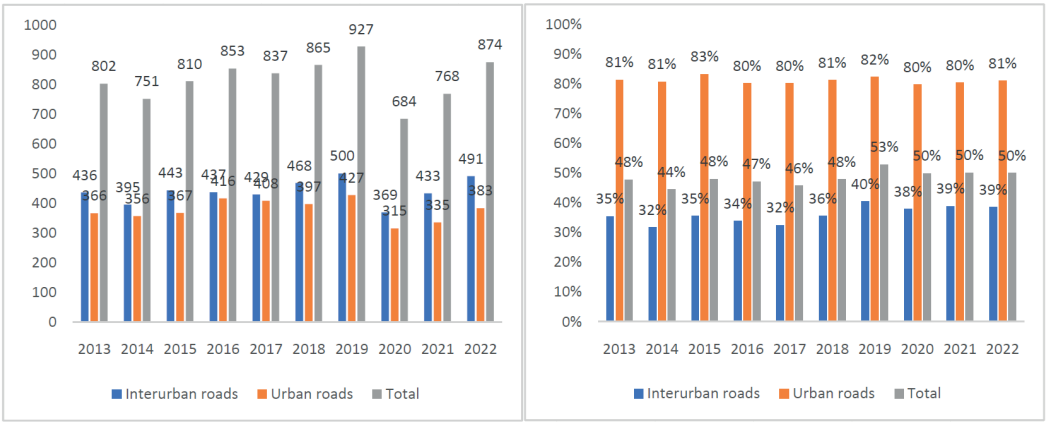
Chart 63: Number of pedestrians killed by age groups. Urban roads. Spain, 2013, 2019 and 2022



4.1.8. Users of vulnerable means

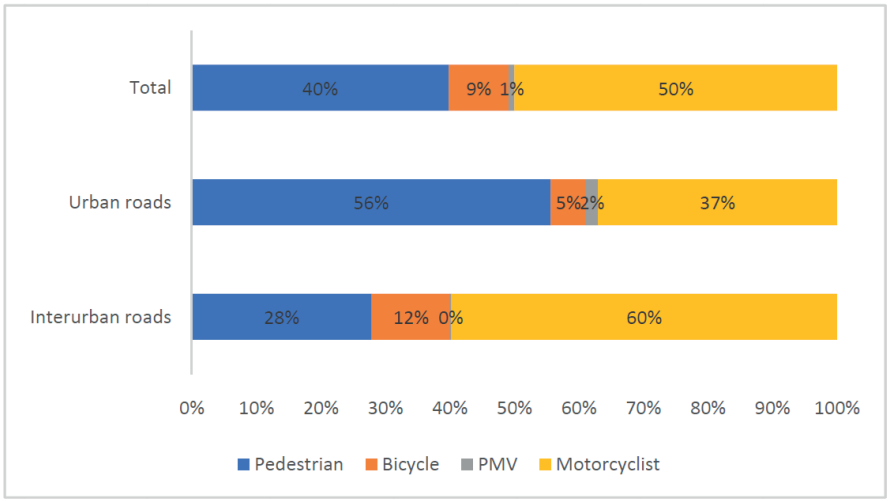
50% of the people killed in 2022 were users of vulnerable means (pedestrians, cyclists, users of personal mobility vehicles or motorcyclists). Specifically, they account for 81% of the people killed on urban roads and 39% of people killed on interurban roads, which represents a similar percentage to that registered in previous years.

Chart 64: Evolution of the number of fatalities using vulnerable means and percentage over the total of people killed by type of road. Spain, 2013-2022



Specifically, motorcycle users are the group who register the highest numbers of vulnerable means user fatalities, accounting for 50% of the total. In second place are pedestrians (40%), followed by bicycle users (9%) and PMV users (1%). This order in the distribution also occurs considering only people killed on interurban roads where motorcycle users represent 60% of the fatalities. However, the distribution is different on urban roads, where pedestrians, with 56%, register the highest numbers of fatalities, followed by motorcycle users (37%), bicycle users (5%) and PMV users (2%).

Chart 65: Percentage of users of vulnerable means killed by mode of transport and by type of road. Spain, 2022



4.1.9. Contributory factors

The most frequent contributory factor in road accidents is distraction with 11,692 cases, which means 17% of the total. In fatal accidents, distraction is also the most frequent factor, with 404 cases (31%).

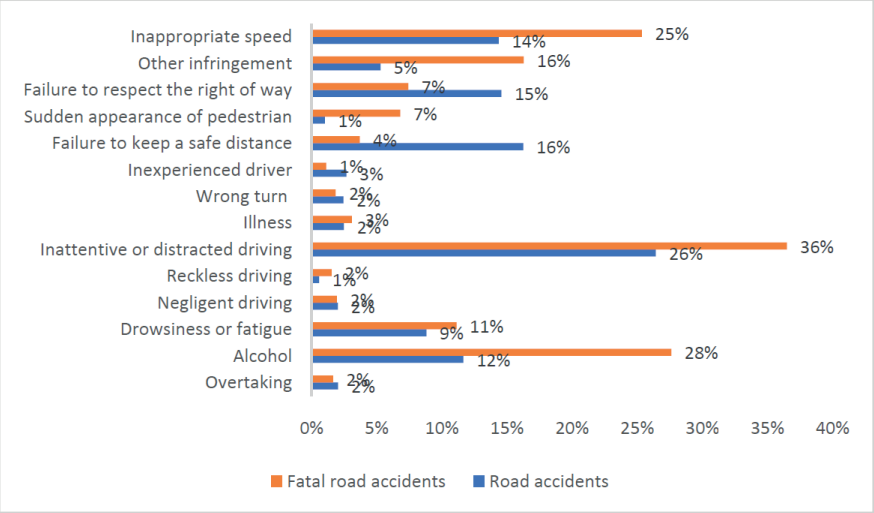
On interurban roads it is possible to conduct a more detailed analysis of the contributory factors. As regards fatal accidents, the most common factors in police reports are distraction (36%), alcohol consumption (28%) and inappropriate speed (25%).

Table 50: Distribution of contributory factors in casualty and fatal accidents occurring on interurban and urban roads. Year 2022. (Catalonia and Basque Country excluded)

Contributory factor	Road traffic accidents		Fatal accidents	
	No of cases	%	No of cases	%
Alcohol*	3.414	14%	264	29%
Distractions	11.692	17%	404	31%
Inappropriate speed	4.716	7%	309	23%

Note: The actual total number of road traffic accidents is 70,399 and of fatal accidents is 1,320.Several factors may be present in a single road traffic accident.
**As regards alcohol, the sample considered is 23,701 road traffic accidents and a sample of 921 fatal accidents, in which all drivers involved were submitted to test. Of these accidents, alcohol is considered a contributory factor when, at least, one of the drivers involved in the accident tests positive.*

Chart 66: Distribution of contributory factors in casualty and fatal accidents occurring on interurban and urban roads. Year 2022. (Catalonia and Basque Country excluded)



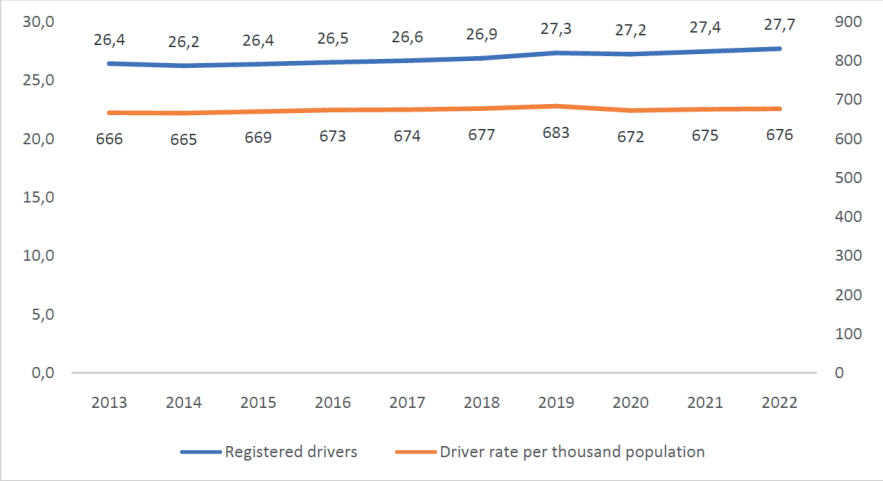
Note: The actual total number of road traffic accidents is 23,735 and of fatal accidents is 1,153.Several factors may be present in a single road traffic accident.
**As regards alcohol, the sample considered is 17,405 road traffic accidents and a sample of 706 fatal accidents, in which all drivers involved were submitted to test. Of these accidents, alcohol is considered a contributory factor when, at least, one of the drivers involved in the accident tests positive.*

4.2. Exposure indicators

4.2.1. Registered drivers

In 2022, the number of people with at least one driving license or permit was 27,664,075 which represents a rate of 676 drivers per 1,000 population. Thus, the number of drivers has increased by 0.9% compared to 2021, in the same way as the rate of drivers per 1,000 population, which has increased slightly compared to 2021.

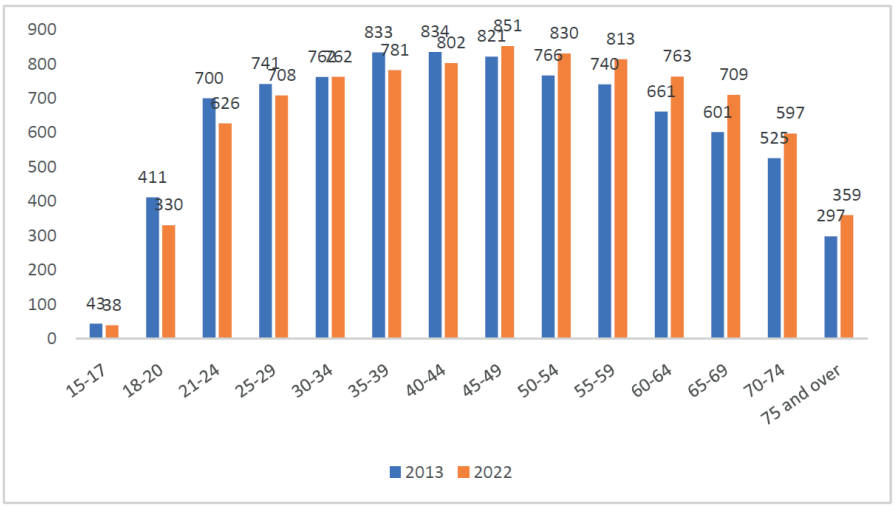
Chart 67: Evolution of the registered drivers per million population. Number of holders with at least one permit or driving licence. Evolution of the rate of drivers per 1,000 population. Spain, 2013-2022.



Note: Number of drivers match the number of holders with at least one permit or driving licence. The data on the registered drivers can be consulted in table 31 of the "General Statistical Yearbook 2022", available at DGT - DGT en cifras detalle.

Regarding age groups, the highest rate of drivers is between 45 and 49 years old. As can be seen in the following chart, the trend in registered drivers per 1,000 population indicates that the population of drivers is ageing, registering an increase from the 45-49 age group and a decrease from the 15-55 age group compared to 2013.

Chart 68: Registered drivers per 1000 population. Spain, 2013-2022

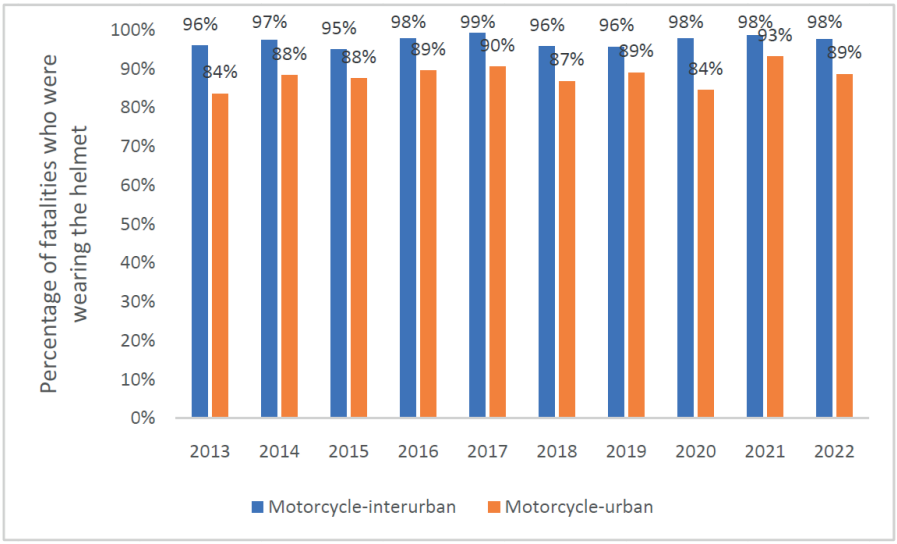


4.3. Performance indicators

4.3.1. Seat belt and helmet

In 2022, 11% of motorcycle users killed on urban roads were not using the helmet. Thus, looking at the series of the last 10 years, figures similar to those of previous years are observed. In relation to interurban roads, 2% of fatally injured motorcycle users were not using the helmet, also maintaining the trend of the last decade.

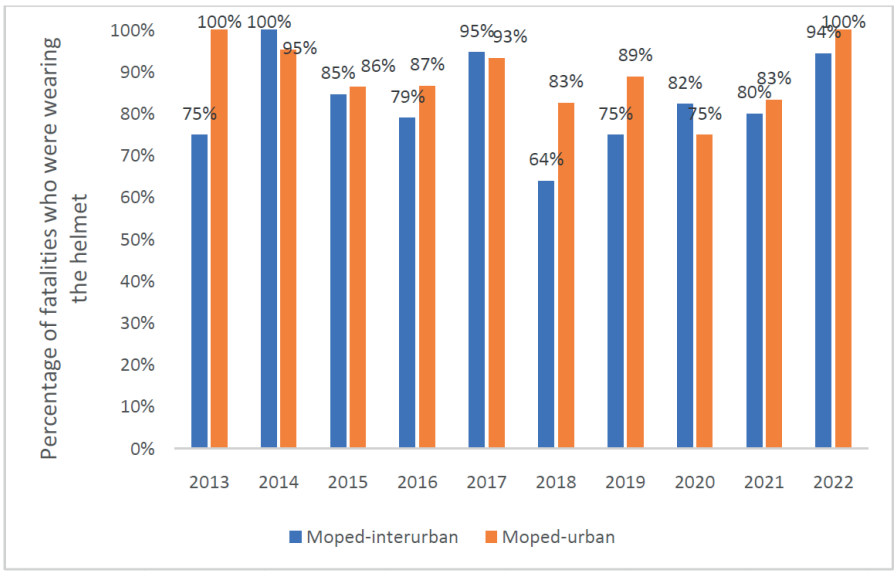
Chart 69: Motorcyclist fatalities regarding the use of the helmet. Spain, 2013-2022



Note: The percentage of safety devices usage has been calculated considering only the cases in which such usage was known.

For their part, practically all of the fatally injured moped users were using helmets, 94% on interurban roads and 100% on urban roads, which represents an increase in their use compared to previous years.

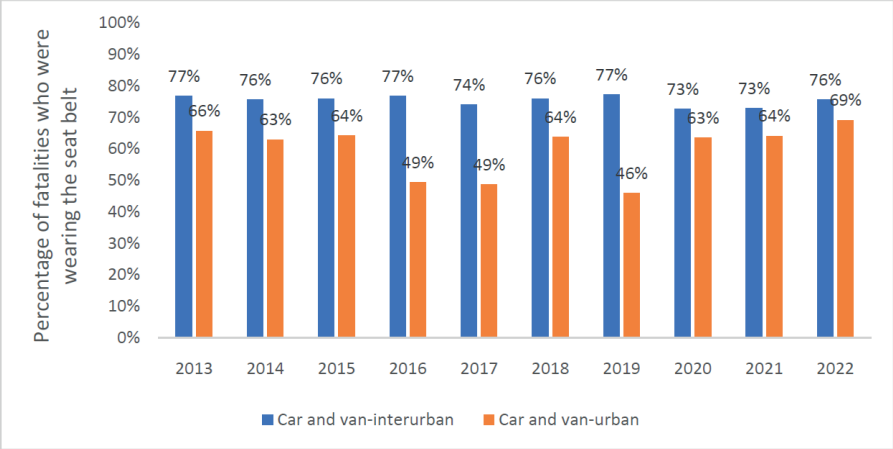
Chart 70: Moped user fatalities regarding the use of the helmet. Spain, 2013-2022



Note: The percentage of safety devices usage has been calculated considering only the cases in which such usage was known.

Regarding the use of seat belts in cars and vans, it has been registered that 31% of people killed on urban roads and 24% of people killed on interurban roads did not use that safety device being, in both cases, figures similar to those registered in previous years. On interurban roads, in 2022, the 6 child fatalities under 12 years of age who were travelling in a car or van were using a safety device — child restraint system or seat belt—. On urban roads there was 1 fatality under 12 years of age as a car and van user, who was using the safety devices.

Chart 71: Car and van occupant fatalities aged 12 and over by seat belt use. Spain, 2013-2022



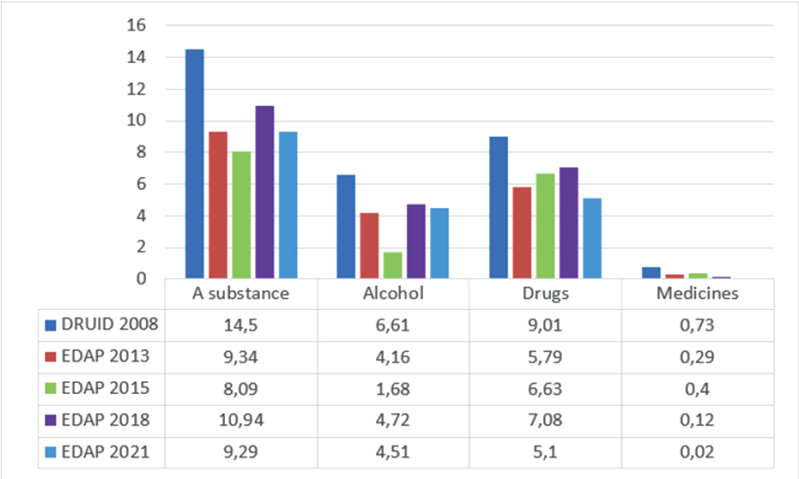
Note: The percentage of safety devices usage has been calculated considering only the cases in which such usage was known.

4.3.2. Alcohol and drugs

4.3.2.1. Prevalence of psychoactive substances consumption in drivers

The prevalence study of psychoactive substance consumption carried out in drivers in 2021 registered a presence of 9% in the consumption of some substance, being 5% in drugs, 5% alcohol, and less than 1% in medicines.

Chart 72: Evolution of the consumption of alcohol, drugs and medicines when driving (years 2008, 2013, 2015, 2018 and 2021).



	A substance	Alcohol	Drugs	Medicines
DRUID 2008	14,5	6,61	9,01	0,73
EDAP 2013	9,34	4,16	5,79	0,29
EDAP 2015	8,09	1,68	6,63	0,4
EDAP 2018	10,94	4,72	7,08	0,12
EDAP 2021	9,29	4,51	5,1	0,02

Note: Alcohol >0.05 mg/l exhaled air.

DRUID analytical cut-off values have been used to compare data from the studies for the years 2008, 2013, 2015, 2018 and 2021.

4.3.2.2. Presence of psychoactive substances in individuals involved in road traffic accidents

4.3.2.2.1. Drivers

Regarding the presence of alcohol in drivers involved in casualty road accidents, it has been identified that 33% (221) of the drivers killed who were submitted to alcohol testing (74% of the total) tested positive, which means an increase compared to 2019 (+4 percentage points). Regarding hospitalised injured casualties, 14% (160) tested positive for alcohol, only 27% of the drivers were submitted to testing. Whereas 10% of non-hospitalised injured casualties (1,187) had a positive test result, 37% of the drivers with that injury severity were tested.

Table 51: Results of alcohol testing in drivers involved in casualty accidents. Total, interurban and urban roads. Year 2022, 2019 values in red and in brackets. (Catalonia and Basque Country excluded)

Injury severity within 30 days	Total drivers	Drivers with proof of testing	%	Drivers testing positive	%
Fatalities	905	671	74% (68%)	221	33% (29%)
Hospitalised injured casualties	4.274	1.140	27% (26%)	160	14% (15%)
Non-hospitalised injured casualties	57.648	21.114	37% (36%)	2.187	10% (9%)
No healthcare required	52.685	21.243	40% (42%)	1.726	8% (7%)
People with unassigned injury severity	2.661	241	9% (14%)	22	9% (5%)
Total	**118.173**	**44.409**	**38% (38%)**	**4.316**	**10% (9%)**

Disaggregating the data based on the type of road, alcohol testing is mainly performed on interurban roads rather than on urban roads. Specifically in the case of people killed, this test was performed on 77% of the drivers on interurban roads where 30% tested positive. While on urban roads, alcohol testing was performed on 61% of the fatally injured drivers, where 52% tested positive.

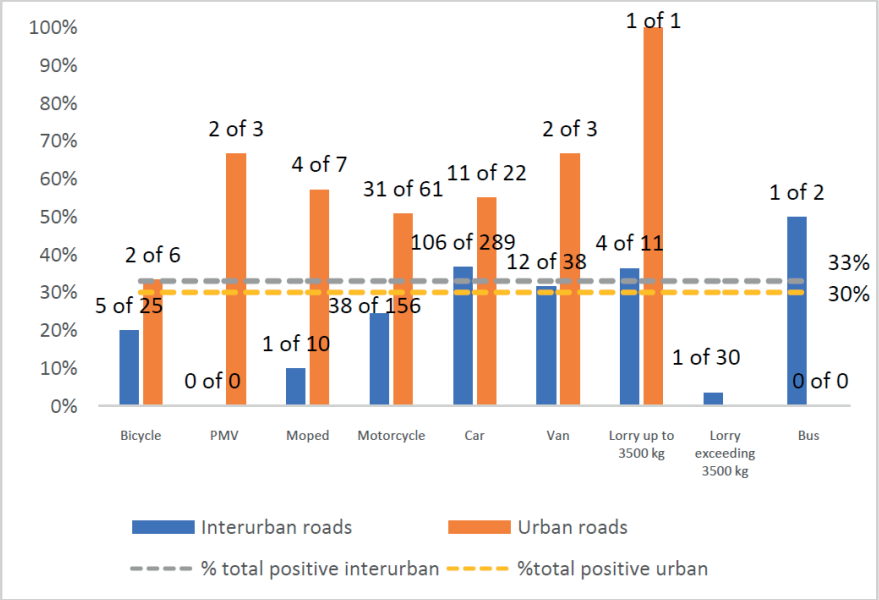
Table 52: Results of alcohol testing in drivers involved in casualty accidents on interurban roads. Year 2022, 2019 values in red and in brackets. (Catalonia and Basque Country excluded)

Injury severity within 30 days	Total drivers	Drivers with proof of testing	%	Drivers testing positive	%
Fatalities	739	569	77% (69%)	168	30% (28%)
Hospitalised injured casualties	2.147	879	41% (38%)	86	10% (11%)
Non-hospitalised injured casualties	21.756	17.094	79% (75%)	1,278	7% (7%)
No healthcare required	15.537	14.404	93% (91%)	648	4% (4%)
People with unassigned injury severity	341	127	37% (42%)	4	3% (2%)
Total	**40.520**	**33.073**	**82% (79%)**	**2.184**	**7% (6%)**

Table 53: Results of alcohol testing in drivers involved in casualty accidents on urban roads. Year 2022, 2019 values in red and in brackets. (Catalonia and Basque Country excluded)

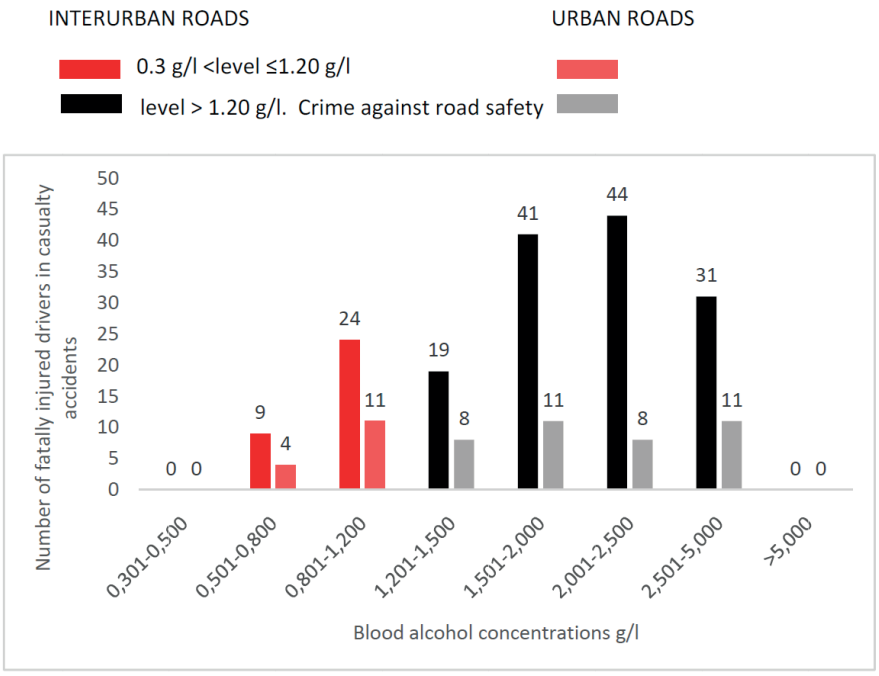
Injury severity within 30 days	Total drivers	Drivers with proof of testing	%	Drivers testing positive	%
Fatalities	166	102	61% (62%)	53	52% (41%)
Hospitalised injured casualties	2.127	261	12% (10%)	74	28% (35%)
Non-hospitalised injured casualties	35.892	4.020	11% (10%)	909	23% (20%)
No healthcare required	37.148	6.839	18% (18%)	1.078	16% (13%)
People with unassigned injury severity	2.320	114	5% (7%)	18	16% (11%)
Total	**77.653**	**11.336**	**15% (14%)**	**2.132**	**19% (16%)**

Chart 73: Percentage of drivers killed as a result of a road traffic accident testing positive for alcohol by type of vehicle. Interurban and urban roads. Year 2022. (Catalonia and Basque Country excluded)



The most frequent blood alcohol level among fatally injured drivers who were tested on interurban roads is between 2.001 and 2.500 (44 individuals), whereas on urban roads the rate is between 1.501 and 2.000, and 2.501 and 5.000, being in both cases 11 individuals. Although these results must be considered with caution since not all fatalities are submitted to alcohol testing.

Chart 74.- Blood alcohol concentration in drivers killed in road traffic accidents who tested positive. Interurban and urban roads. Year 2022. (Catalonia and Basque Country excluded)



In 2022, there were 283 people killed in fatal road accidents in which at least one driver tested positive for alcohol, being the highest number in the series, and representing an increase of 20% compared to 2019. Depending on the type of road, the number of people killed on interurban roads in 2022 was 209 (similar figures to the previous year, but which represent an increase of 20% compared to 2019). On urban roads, 74 fatalities were registered, an increase of 21% compared to 2019.

Table 54: Evolution of people killed in fatal road traffic accidents in which at least one driver involved tested positive for alcohol. Years 2016-2022.(Catalonia and Basque Country excluded)

	2016	2017	2018	2019	2020	2021	2022	Diff 22/21	Dif 22/19
People killed in traffic accidents	228	254	195	235	191	273	283	4%	20%
% fatal road traffic accidents with test over the total fatal road traffic accidents	65%	68%	65%	67%	61%	72%	70%	-2%	3%

Table 55: Evolution of people killed in road traffic accidents in which at least one driver involved tested positive for alcohol on interurban roads. Years 2016-2022. (Catalonia and Basque Country excluded)

	2016	2017	2018	2019	2020	2021	2022	Diff 22/21	Dif 22/19
People killed in traffic accidents	168	200	152	174	138	210	209	0%	20%
% fatal road traffic accidents with test over the total fatal road traffic accidents	68%	69%	66%	68%	62%	75%	73%	-2%	5%

Table 56: Evolution of people killed in road traffic accidents in which at least one driver involved tested positive for alcohol on urban roads. Years 2016-2022. (Catalonia and Basque Country excluded)

	2016	2017	2018	2019	2020	2021	2022	Diff 22/21	Dif 22/19
People killed in traffic accidents	60	54	43	61	53	63	74	17%	21%
% fatal road traffic accidents with test over the total fatal road traffic accidents	59%	64%	63%	64%	60%	62%	61%	-1%	-2%

Regarding drug testing, 73% of the fatally injured drivers were tested, 21% of them (140) tested positive, which represents a slight increase compared to 2019 (+1 percentage point). 60% of the drivers testing positive were so for cocaine, followed by cannabis (56%), amphetamine (6%), opioids (1%) and ketamine (1%).

Table 57: Results of drug testing in drivers killed in road traffic accidents. Interurban and urban roads. Year 2022, 2019 values in red and in brackets. (Catalonia and Basque Country excluded)

	Total driver fatalities	Drivers with proof of testing	% proof of testing	Drivers testing positive	Drug positive percentage
Interurban roads	739	561	76% (70%)	110	20% (18%)
Urban roads	166	102	61% (63%)	30	29% (25%)
Total	**905**	**663**	**73% (69%)**	**140**	**21% (20%)**

Table 58 Substances tested for in drug testing performed on fatally injured drivers with a positive result. Interurban and urban roads. Year 2022, 2019 values in red and in brackets. (Catalonia and Basque Country excluded)

	Driver fatalities	Distribution
Cocaine	84	60% (55%)
Opioids	2	1% (1%)
Ketamine	2	1% (0%)
Amphetamine	8	6% (6%)
Cannabis	78	56% (56%)
Total	**140**	**100% (100%)**

Regarding drivers who have been tested for alcohol and drugs, 44% tested positive for both, which represents an increase compared to 2019 (+5 percentage points).

Table 59: Fatally injured drivers submitted to alcohol and/or drug testing and results. Interurban and urban roads. Year 2022, 2019 values in red and in brackets. (Catalonia and Basque Country excluded)

	Evidence of tests performed for alcohol and/or drugs	Positive in alcohol and/or drug testing	Percentage of positive in alcohol and/or drug testing
Driver fatalities	**671**	**294**	**44% (39%)**

4.3.2.2.2. Pedestrians

Regarding fatally injured pedestrians, 60% were submitted to alcohol testing, 16% of them tested positive (27 individuals). Specifically on interurban roads, 22% (20 individuals) of the 78% tested fatally injured pedestrians tested positive. On urban roads, 49% of the pedestrians killed were tested, 8% of them (7 individuals) tested positive.

Table 60: Pedestrian fatalities, alcohol testing performed and results of the tests. Year 2022, 2019 values in red and in brackets. (Catalonia and Basque Country excluded)

	Total	Tested pedestrians	% tested pedestrians	Pedestrians result > 0.5 g/l	% Pedestrians result > 0.5 g/l
Pedestrian fatalities	288	174	60% (46%)	27	16% (22%)

Table 61: Pedestrian fatalities, alcohol testing performed and results of the tests on interurban roads. Year 2021, 2019 values in red and in brackets. (Catalonia and Basque Country excluded)

	Total	Tested pedestrians	% tested pedestrians	Pedestrians result > 0.5 g/l	% Pedestrians result > 0.5 g/l
Pedestrian fatalities	114	89	78% (59%)	20	22% (21 of 66)

Table 62: Pedestrian fatalities, alcohol testing performed and results of the tests on urban roads. Year 20221, 2019 values in red and in brackets. (Catalonia and Basque Country excluded)

	Total	Tested pedestrians	% tested pedestrians	Pedestrians result > 0.5 g/l	% Pedestrians result > 0.5 g/l
Pedestrian fatalities	174	85	49% (38%)	7	8% (9 of 72)

4.4. Activity indicators

4.4.1. Controls performed by the Traffic Division of the Guardia Civil (ATGC)

Alcohol

In 2022 the Traffic Division of the Guardia Civil performed 5,836,074 breath alcohol tests within the framework of their competences, which means 28% more as compared to the tests conducted in 2021. Of the 4,823,397 preventive control tests performed, 1.47% were positive for alcohol (above the legal limits).

Drugs

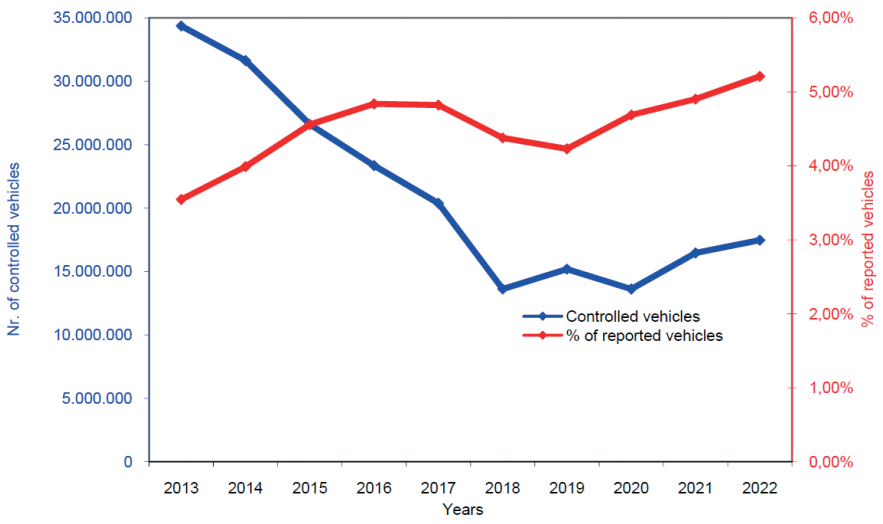
In the context of the duties performed by the Traffic Division of the Guardia Civil, 58,126 drug tests were performed in 2022, as against the 123,211 tests carried out in 2021, which means a decrease by 53%. Of the 38,859 preventive control tests performed, 45% were positive.

Speed

In 2022 the total number of traffic offences reported by DGT was 3,704,680. Of them, 67% were speed-related. These traffic offences were detected by the Traffic Division of the Guardia Civil and by fixed safety and point-to-point speed cameras and helicopters.

In 2022, the Traffic Division of the Guardia Civil performed speed controls to 17.4 million vehicles, with an outcome of 909,770 vehicles being reported. As compared with 2021, around 1 million more vehicles have been controlled and the percentage of reported vehicles has been 5.2%.

Chart 75: Number of controls performed by the Traffic Division of the Guardia Civil. Year 2013-2022



4.5. Key performance indicators

Below are the data provided by Spain to the European Baseline project, a consortium of 18 European countries, led by VIAS (Belgium), with the aim of promoting the harmonized collection of road safety indicators in all Member States. Specifically, data are provided concerning the use of seat belts and child restraint systems in Spain, the use of helmets on motorcycles and mopeds, the use of helmets on bicycles, distracted driving and driving without exceeding the legal alcohol level.

4.5.1. Use of seat belts and child restraint systems

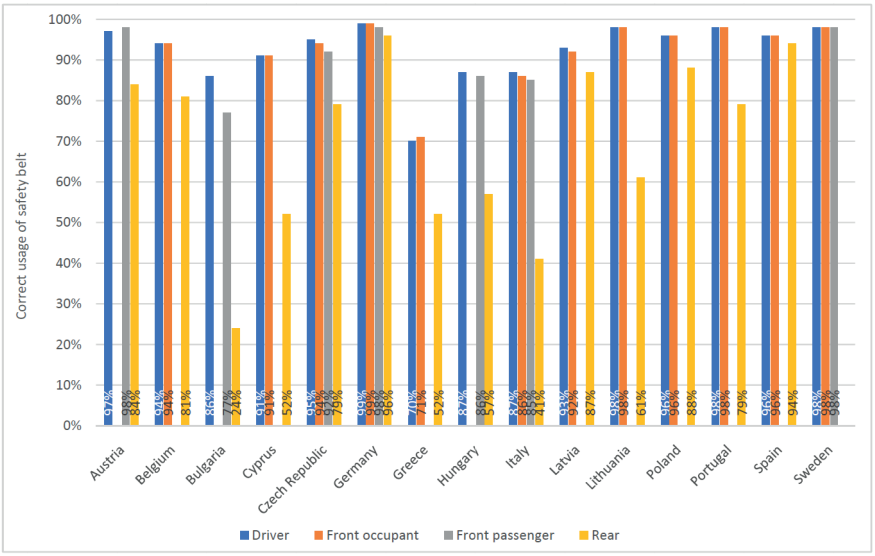
According to the data provided by Spain to the European Baseline project, the use of the seat belt in front seats in our country is 96%, whereas in rear seats it is 94%.

The use of seat belts by car drivers and front passengers in our country (96%) is in a medium-high range of the countries observed; the highest values are between 98% and 99%. In rear seats, with 94% level of use, Spain registers the second highest value of all the countries with observations.

The results for Spain have been obtained from the observation of 21,659 cars carried out between October and November 2021 in 130 locations (65 in built-up area, 25 on interurban roads, and 30 on dual carriageways, and 10 on motorways).

The following figure shows the results provided by the countries to the Baseline project:

Chart 76: Percentage (%) of seat belt use by car occupants during the week and the day depending on their position inside the vehicle.



Note: in the case of Spain, front occupants include the driver.
Source: Van den Broek B., Aarts, L. &Silverans, P. (2022). Baseline report on the KPI Safety belt and Child restraint systems. Baseline project, Brussels: Vias institute.

By type of road, and in the specific case of car drivers in Spain, the observed use is 100% on motorways, 98% on interurban roads, 96% on dual carriageways, and 94% on urban roads.

In the case of the child restraint system, in-depth inspections were carried out, and it was observed that the percentage for their correct use was 46%, the lowest value of all the countries with data.

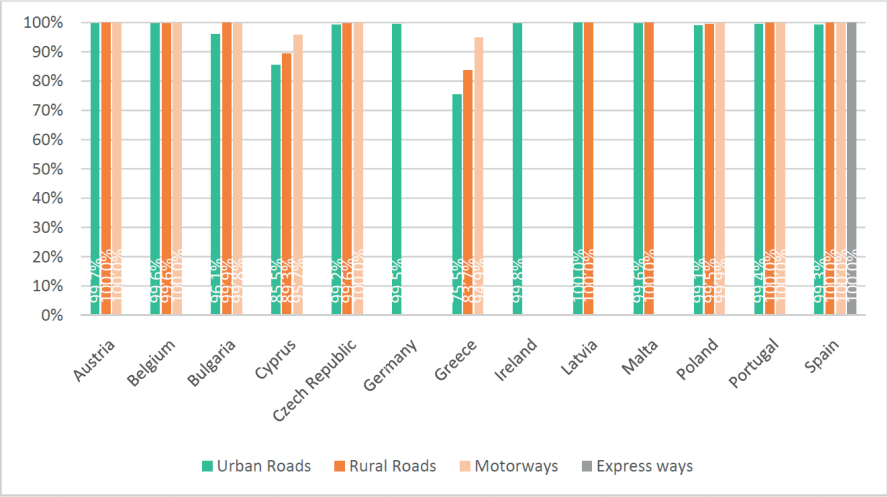
4.5.2. Use of helmet in motorcyclists and mopeds

In relation to the use of helmets by motorcyclists in Spain, and according to the data provided to the Baseline project, this ranges between 99% on urban roads and 100% on interurban roads (conventional, dual carriageways and motorways).

The results for Spain have been obtained from the observation of 3.504 users of motorcycles and mopeds carried out between October and November 2021 in 130 locations (65 in built-up area, 25 on interurban roads, and 30 on dual carriageways, and 10 on motorways).

The following figure shows the results provided by the countries to the Baseline project:

Chart 77: Percentage of helmet use in motorcycles and mopeds. Period 2021



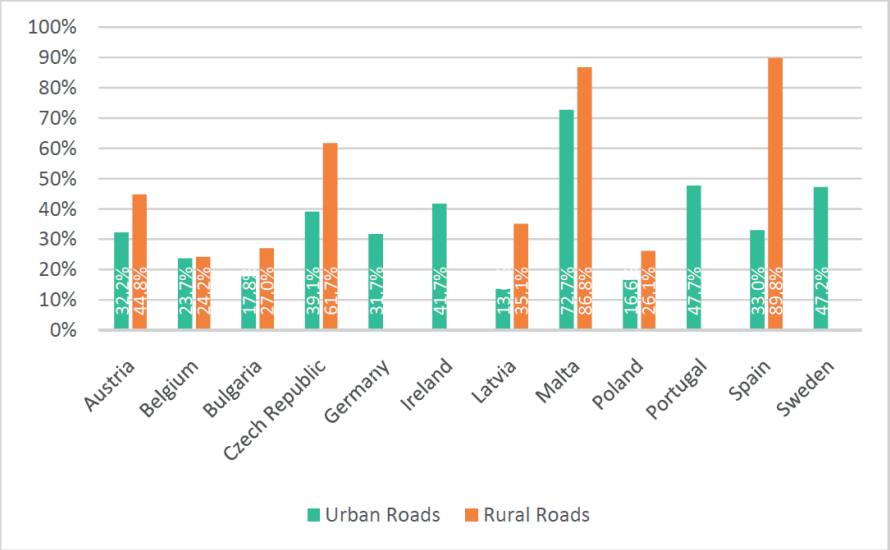
Source: Yannis, G., Folla K. (2022). Baseline report on the KPI Helmet use among Cyclists and Powered twowheelers (PTWs). Baseline project, Brussels: Vias institute.

4.5.3. Using a helmet when riding a bicycle

In relation to the use of helmets by bicycle users in Spain, and according to the data provided to the Baseline project, the use of helmets by bicycle users in Spain ranges between 90% on interurban roads, the highest value of all countries that provided data, and 33% on urban roads. and 100% on interurban roads (conventional, dual carriageways and motorways).

The following figure shows the results provided by the countries to the Baseline project:

Chart 78: Percentage of helmet use among cyclists



Source: Yannis, G., Folla K. (2022). Baseline report on the KPI Helmet use among Cyclists and Powered twowheelers (PTWs). Baseline project, Brussels: Vias institute.

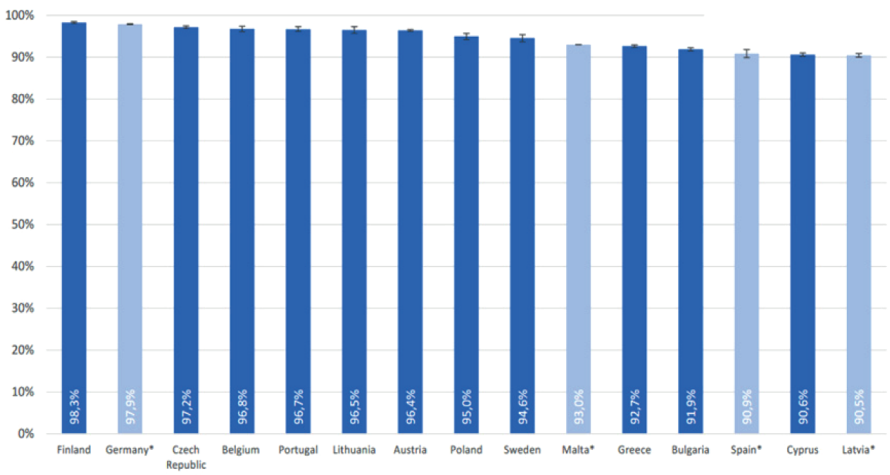
4.5.4. Distractions

The percentage of drivers who did not use mobile devices while driving is 90.9% in Spain, and ranges between 88% in built-up area and 95% on motorways. The values are low compared to other European countries, although it should be taken into account that there have been methodological differences, in Spain an "expanded" definition of distraction was considered, and it did not impose the condition that the device had to necessarily be held with the hand (it could be manipulated with the hand) nor be a mobile device (it could be a device on board the vehicle), conditions that other countries did impose.

The results for Spain have been obtained from the observation of 24,216 drivers of cars, light vehicles (lorries not exceeding 3,500 kg and vans) and buses, carried out between October and November 2021 in 130 locations (65 in built-up area, 25 on conventional roads, and 30 on dual carriageways, and 10 on motorways).

The following figure shows the results provided by the countries to the Baseline project:

Chart 79: Percentage of drivers who did not use a mobile device while drving



Source: Boets, S. (2023). Baseline report on the KPI Distraction. Baseline project, Brussels: Vias institute.

4.5.4. Alcohol

As for the results provided to Baseline by Spain on drivers who have not exceeded the legal level of alcohol when driving:

- The percentage of car drivers who tested negative for alcohol in the tests carried out by traffic police officers ranged between 96% on motorways and dual carriageways, and 98% in built-up area and on conventional roads.

- The lowest negative value, 88%, was observed on weekend nights, the second lowest value among the 9 countries with data.

Chart 80: Percentage of car drivers who tested negative for alcohol by type of road.

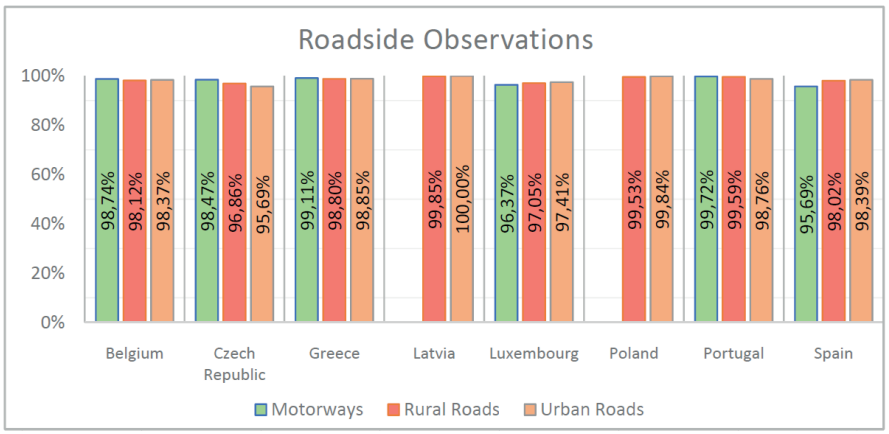
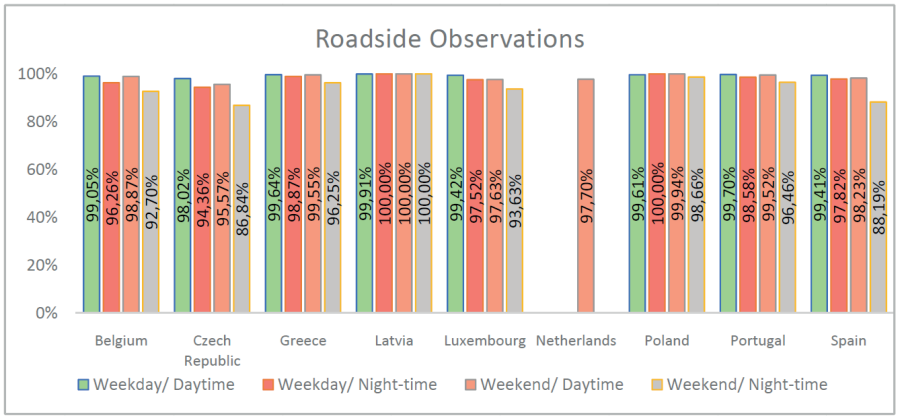


Chart 81: Percentage of car drivers who tested negative for alcohol by temporality.



The results have been obtained from controls carried out in October 2021 in 440 locations (230 in built-up area, 147 on conventional roads, and 63 on motorways and dual carriageways), testing 2,411 car drivers.

5

OTHERS

5.1. Type of road traffic accident

In relation to the type of road accident, 37% of the fatalities occurred due to run-off-collisions (645 individuals), which represents an increase of 11% compared to 2019. In second place is the pedestrian collision that represents 19% of the total number of people killed (325), identifying a decrease of 14% compared to 2019.

Specifically on interurban roads, run-off-collisions is the type of accident that causes the greatest number of fatalities (533, representing 42% of the total) followed by head-on collisions (263 which represent 21% of the total). On urban roads, 43% of the fatalities are pedestrian collisions (202), followed by run-off-collisions (112, which represents 24% of the total).

Table 63: : Fatalities by type of road traffic accident. Spain, 2013-2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist.22
Head-on collision	222	225	209	277	327	290	284	209	219	282	29%	-3%	16%
Side and T-bone collision	246	204	190	253	259	243	228	186	217	213	-2%	-12%	12%
Rear and multiple collision	153	145	169	145	144	140	146	106	135	150	11%	7%	9%
Run-off-road collision	508	548	522	601	601	582	573	485	532	645	21%	11%	37%
Overturning	30	17	16	22	20	26	32	25	27	18	-9	-8	1%
Pedestrian collision	349	310	306	386	338	378	373	243	282	325	15%	-14%	19%
Other type	172	239	277	126	141	147	119	116	121	113	-7%	-23%	6%
Total	**1.680**	**1.688**	**1.689**	**1.810**	**1.830**	**1.806**	**1.755**	**1.370**	**1.533**	**1.746**	**14%**	**-3%**	**100%**

**The number of people being killed when struck by a vehicle does not include all pedestrians hit by a vehicle because the classification by type of accident is made according to the first manoeuvre and not to its harmful outcome.*

Table 64: Fatalities by type of road traffic accident. Interurban roads Spain, 2013-2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist.22
Head-on collision	214	208	195	254	306	282	263	192	205	263	28%	-7%	21%
Side and T-bone collision	184	153	140	183	179	173	152	126	146	150	3%	-13%	12%
Rear and multiple collision	132	122	136	114	126	109	125	91	123	137	11%	26%	11%
Run-off-road collision	441	476	464	524	519	506	482	406	445	533	20%	5%	42%
Overturning	26	11	12	17	16	19	23	13	18	14	-4	-5	1%
Pedestrian collision	135	118	97	133	99	146	128	97	105	123	17%	-16%	10%
Other type	98	159	204	66	76	82	63	50	74	53	-21	-29	4%
Total	**1.230**	**1.247**	**1.248**	**1.291**	**1.321**	**1.317**	**1.236**	**975**	**1.116**	**1.273**	**14%**	**-3%**	**100%**

**The number of people being killed when struck by a vehicle does not include all pedestrians hit by a vehicle because the classification by type of accident is made according to the first manoeuvre and not to its harmful outcome.*

Table 65: Fatalities by type of road traffic accident. Urban roads Spain, 2013-2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist.22
Head-on collision	8	17	14	23	21	8	21	17	14	19	5	11	4%
Side and T-bone collision	62	51	50	70	80	70	76	60	71	63	-8	-7	13%
Rear and multiple collision	21	23	33	31	18	31	21	15	12	13	1	-18	3%
Run-off-road collision	67	72	58	77	82	76	91	79	87	112	25	36	24%
Overturning	4	6	4	5	4	7	9	12	9	4	-5	-3	1%
Pedestrian collision	214	192	209	253	239	232	245	146	177	202	14%	-13%	43%
Other type	74	80	73	60	65	65	56	66	47	60	13	-5	13%
Total	**450**	**441**	**441**	**519**	**509**	**489**	**519**	**395**	**417**	**473**	**13%**	**-3%**	**100%**

**The number of people being killed when struck by a vehicle does not include all pedestrians hit by a vehicle because the classification by type of accident is made according to the first manoeuvre and not to its harmful outcome.*

5.2. The time component in road traffic accidents

In relation to the temporal component, the month with the highest percentage of deaths is July with 11% of the total, while March accumulates 6% of the total, being the month with the lowest percentage. Thus, there has been a monthly average of 146 fatalities per month, the same figure as in 2019.

5.2.1. By periods of the year

Table 66: People killed by periods. 2013-2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Diff. 22/21	Diff. 22/19	Dist.22
January-April	516	485	461	568	534	528	544	388	401	522	30%	-4%	30%
May-June	243	276	286	277	299	288	258	157	305	283	-7%	10%	16%
July-August	334	309	338	379	334	371	345	298	288	348	21%	1%	20%
September-December	587	618	604	586	663	619	608	527	539	593	10%	-2%	34%
Total	**1.680**	**1.688**	**1.689**	**1.810**	**1.830**	**1.806**	**1.755**	**1.370**	**1.533**	**1.746**	**14%**	**-3%**	**100%**

5.2.2. Months of the year

Chart 82: Distribution of fatalities by months. Spain, 2013-2022

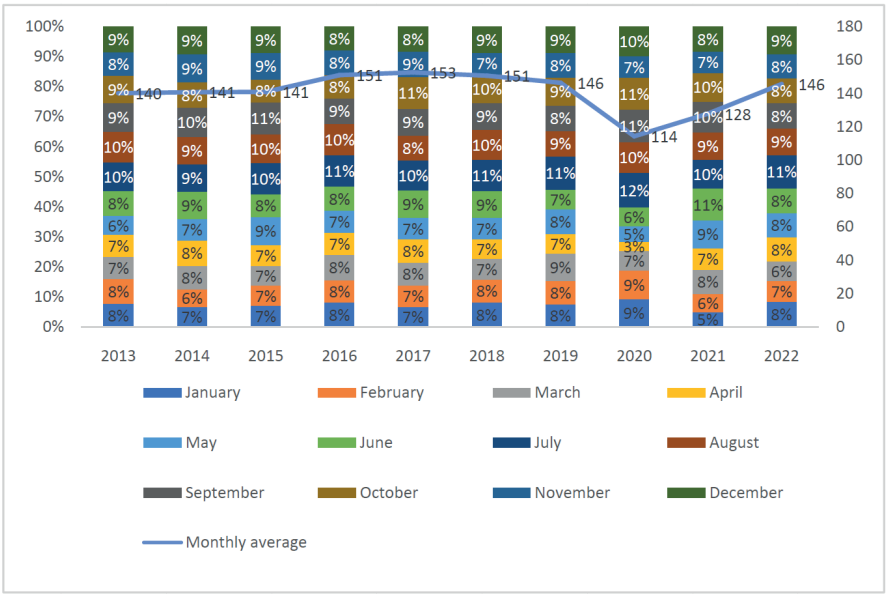
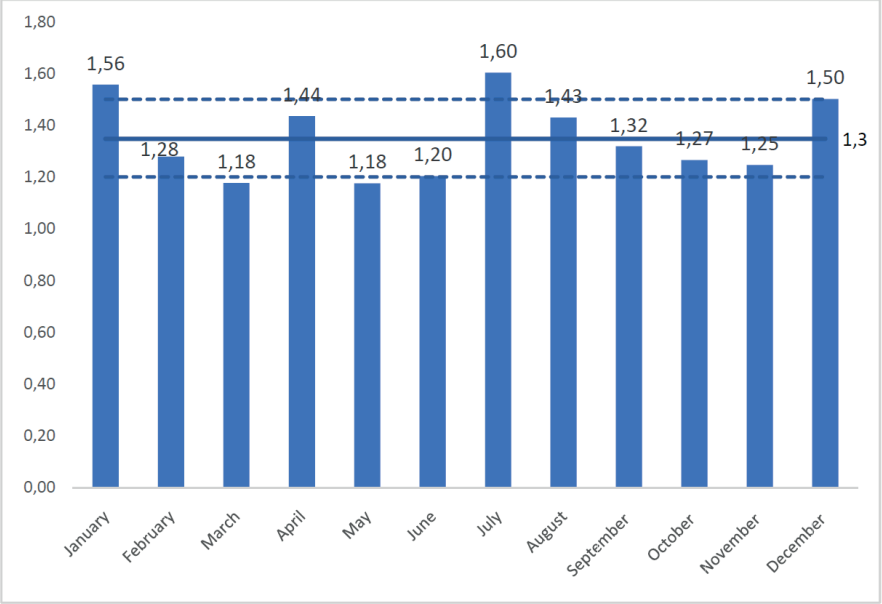


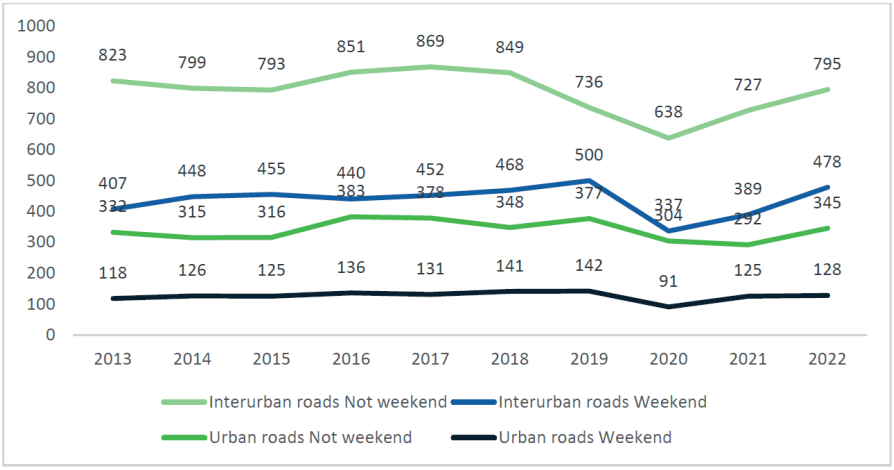
Chart 83: Case fatality rate by months. Spain, 2022.



5.2.3. Days of the week

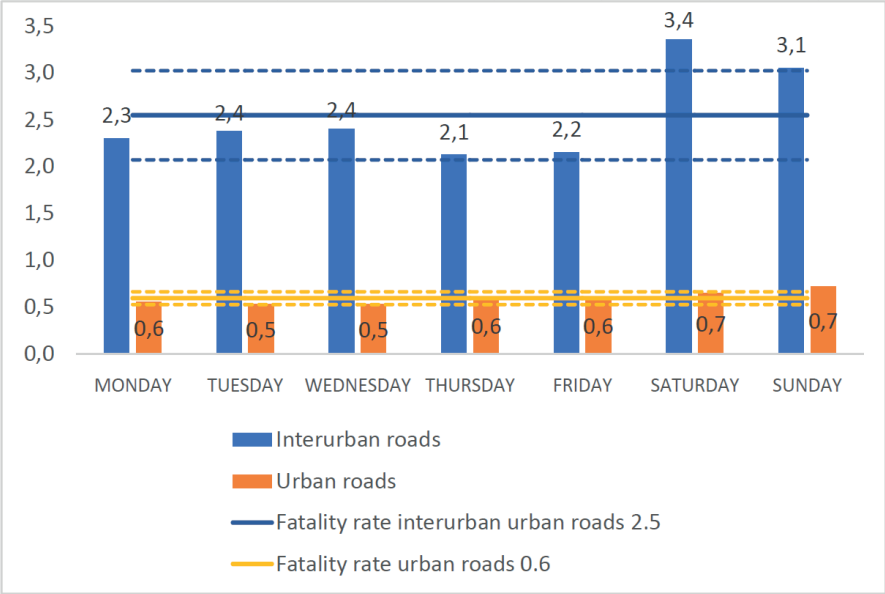
The majority of fatalities are registered on interurban roads both on weekdays (795) and on weekends (478). On urban roads, 345 people died on weekdays and 128 people died on weekends. The days with the highest fatality rate are Saturday (3.4 on interurban roads and 0.7 on urban roads) and Sunday (3.1 on interurban roads and 0.7 on urban roads).

Chart 84: Fatalities by time of the accident, at weekends or not, on interurban and urban roads. Spain, 2022



Note: The weekend days start at 15:00 on Friday and end at 23:59 on Sunday.

Chart 85: Case fatality rate by days of the week, on interurban and urban roads. Spain, 2022.



** Case fatality rate is defined as the number of people killed per 100 casualties.*

5.2.4. Times of the day

For its part, 1,092 people have been killed between 8:00 a.m. and 7:59 p.m., while 654 people have been killed at night from 8:00 p.m. to 7:59 a.m., with a decrease in both time periods compared to 2019.

Chart 86: Fatalities by time slot. Spain, 2013-2022.

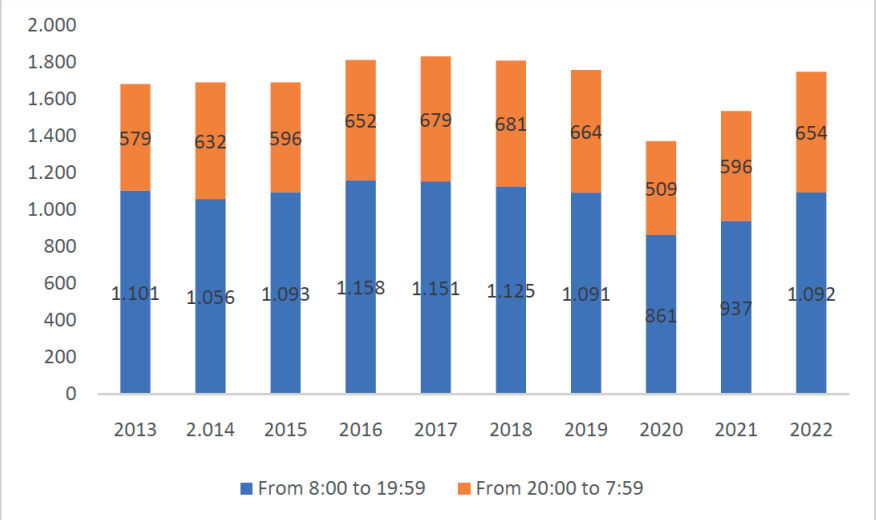
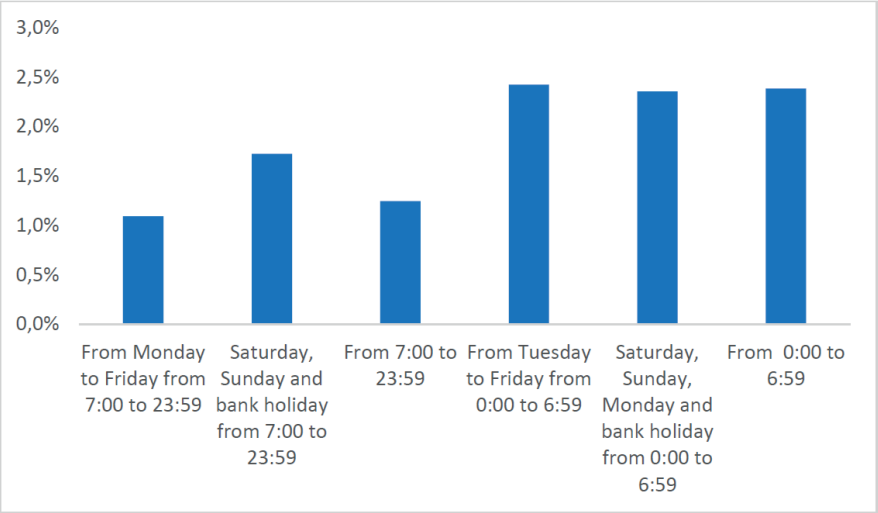


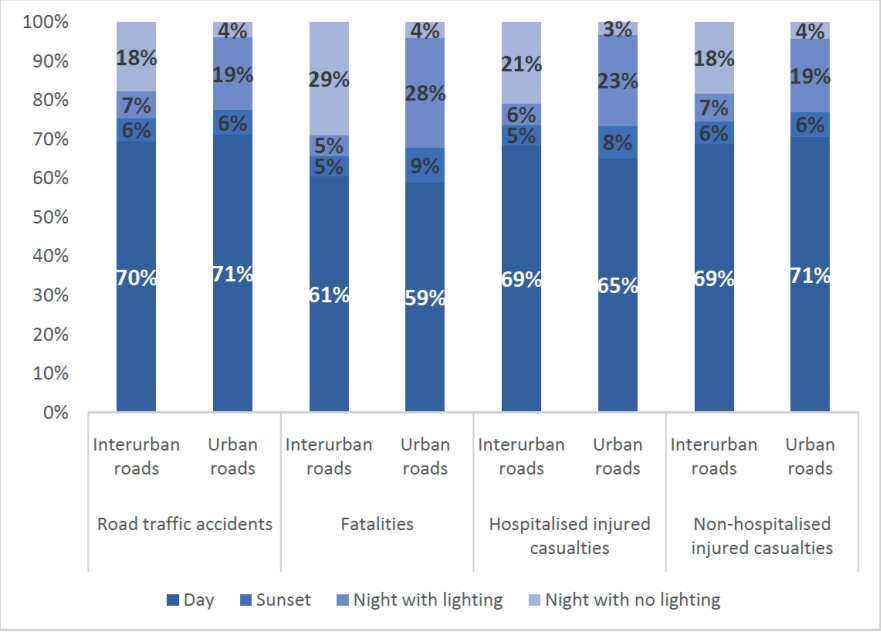
Chart 87: Case fatality rate by time slot and day of the week. Spain, 2022.



5.2.5. Brightness

Regarding brightness, 70% of road accidents on interurban roads and 71% of those registered on urban roads have occurred during the day. However, while the period of the day with fewer road accidents on urban roads is at night with no lighting (4%), on interurban roads 18% of accidents occur under these conditions. Similarly, on interurban roads, 61% of fatalities are registered during the day, and 29% are registered at night with no lighting. While, on urban roads, 59% of fatalities occur during the day, and 28% are registered at night with lighting.

Chart 88: Road traffic accidents, fatalities, hospitalised and non-hospitalised injured casualties by brightness. Interurban and urban roads. Spain, 2022



6

TRAFFIC RELATED INJURIES AND THE COST OF ROAD ACCIDENTS

6.1. Severity of injured road casualties (MAIS 3+)

Traffic related injuries shall be analysed here and in the next section of this document from the data recorded in the Minimum Basic Data Set provided by the Ministry of Health. The Minimum Basic Data Set includes all hospital discharges of patients admitted to hospital in Spain, selecting the cases concerning road casualties admitted to hospital.

A seriously injured road casualty has traditionally been defined as an injury which results in the person being admitted to hospital at least for 24 hours. However, from the medical point of view, an injured person should be considered as seriously injured depending on the importance of the injuries and not on the length of hospital stay, since it can vary according to the groups at risk and to the health policies in each country. At international level consensus has been reached to use indicators that clearly express the degree of seriousness of injury as a result of a road traffic accident, being the method that shows the highest degree according to the implementation of the Abbreviated Injury Scale, selecting the cases with a Maximum Abbreviated Injury Scale of 3 or greater. This definition of case, considering as seriously injured casualty the casualty sustaining an injury classified as MAIS 3+, has also been adopted by the European Union.

As for Spain, MAIS classification is made from the diagnoses recorded on RAE-CMBD (Activity Logging for Specialized Health Care - Minimum Basic Data Set) and codified according to ICD-10-CM since 2018 onwards and from the diagnoses recorded on CMBD according to ICD-9 for the years prior to 2016. The conversion table supplied by the European Union is applied and it provides injury severity in accordance with the international classification AIS, for each case the maximum value is taken, obtaining the classification MAIS 3+.

In 2021, 5,654 hospitalised injured casualties scored 3 or higher on MAIS, being the incidence rate per 100,000 population at 11.9. The above figures represent an increase of 18% in the absolute value and in the incidence rate compared to 2020 and a decrease of 8% in the absolute value and 9% in the incidence rate in relation to 2019, the year in which the corresponding figures were: 6.162 individuals with MAIS3+ and 13.1 as the incidence rate. The increases compared to 2020 and the decreases compared to 2019 are conditioned by mobility restrictions due to COVID-19.

There were differences in the percentage distribution by age and gender and in their prevalence rate too.

The highest proportion of seriously injured casualties -MAIS3+- is on the 45-54 age group, 18%, and the lowest proportion is found on the 85 and over age group, 2%. Males showed a proportion of 78% and females of 22%.

As regards age groups, the highest prevalence rate is observed among the 15-24 age group - 18.0 -, followed by the 25-34 age group - 14.4 - and by the 55-64 age group - 12.8. The lowest rate is observed among children under one year of age - 0.3 - followed by the 1-14 age group - 3.2. Males showed a prevalence of 18.9 and females of 5.2; the rate for males is 3.6 times as high as that among females.

Compared to 2019 rates, decreases are observed in all age groups, especially in the 75 to 84 age group from 16.3 in 2019 to 12.2 in 2021 and in the 84 years old and over from 13.1 in 2019 to 8.6 in 2021. As regards gender, the rates are also lower than in 2019, they have decreased for men from 20.1 to 18.9 and for women from 6.4 to 5.2. As previously indicated, these are conditioned by mobility restrictions due to COVID-19.

Table 67: Seriously injured casualties (MAIS 3+) by age groups, prevalence rate per 100,000 population. Spain, 2021

Age (in years)	Seriously injured casualties (MAIS 3+)	% Seriously injured casualties (MAIS 3+)	Prevalence rate MAIS 3+ per 100,000 population
Child under 1 y	1	0%	0,3
1 to 14 y	208	4%	3,2
15 to 24 y	870	15%	18,0
25 to 34 y	761	13%	14,4
35 to 44 y	870	15%	12,3
45 to 54 y	1.036	18%	13,6
55 to 64 y	826	15%	12,8
65 to 74 y	569	10%	12,1
75 to 84 y	378	7%	12,2
Over 84 y	135	2%	8,6
Total	**5.654**	**100%**	**11,9**

Chart 89: Seriously injured casualties (MAIS 3+) per 100,000 population by age groups. Spain, 2019, 2020, 2021

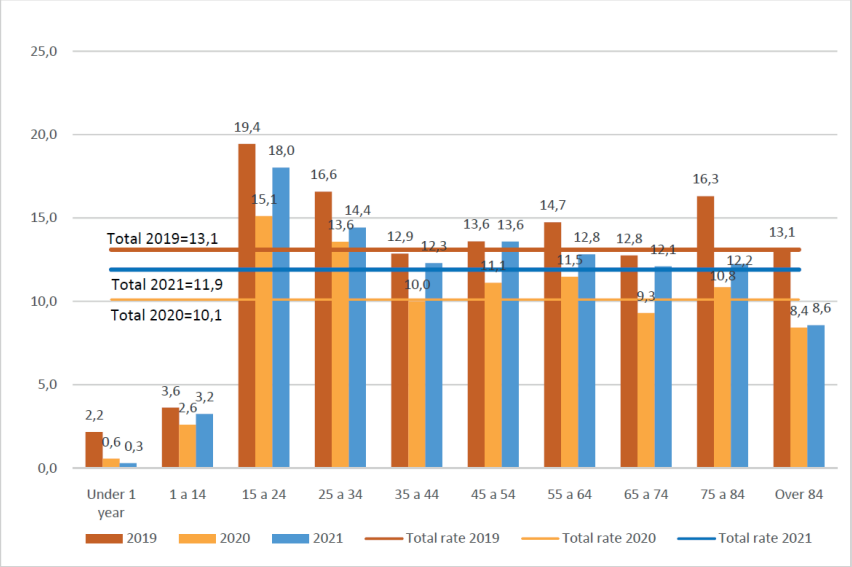
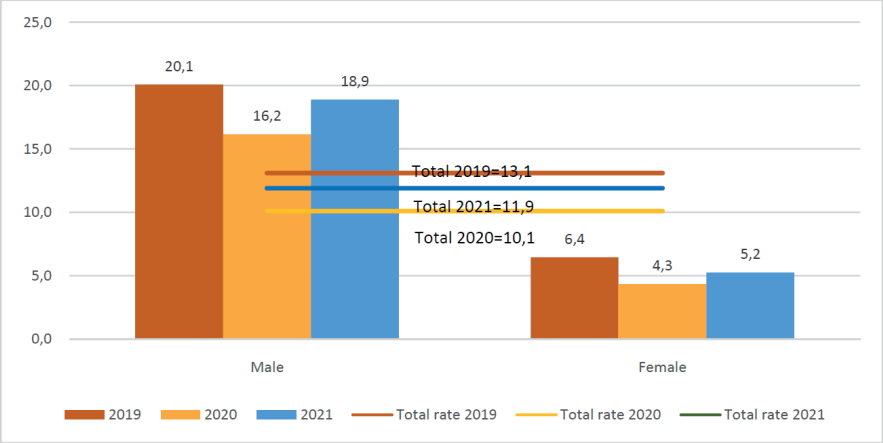


Table 68: Seriously injured casualties (MAIS 3+) by gender. Spain, 2021

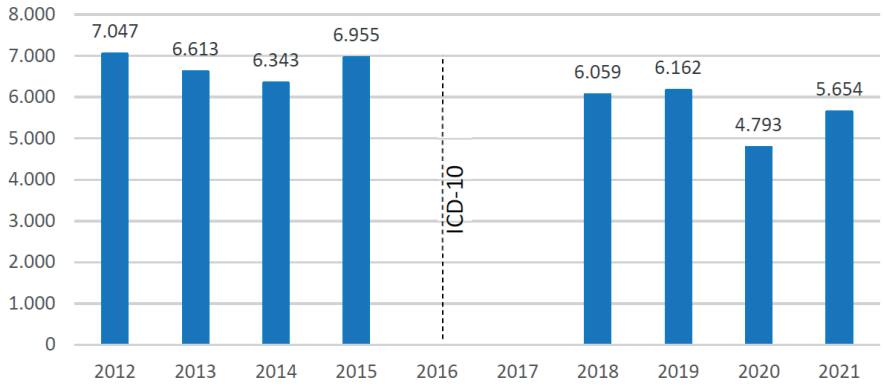
Gender	Seriously injured casualties (MAIS 3+)	% Personas Heridas Graves (MAIS 3+)	Tasa de incidencia MAIS3+ por 100.000 habitantes
Male	4.385	78%	18,9
Female	1.268	22%	5,2
Unknown	0	0%	0,0
Total	**5.654**	**100%**	**11,9**

Chart 90: Prevalence rate in seriously injured casualties MAIS 3+ per 100,000 population by gender. Spain, 2019, 2020, 2021



The evolution of the number of MAIS 3+ injured casualties shows a downward trend since 2011. The estimate of MAIS 3+ was performed on the basis of ICD-9 from 2009 to 2015, year in which a 10% increase in comparison with 2014 was observed. Since 2016, the diagnoses of hospital discharge have been codified according to the International Classification of Disease 10 (ICD-10) and from 2018 onwards the collected data have been sufficiently robust to be used. The number of MAIS3+ injured casualties in 2018 was 6,059, in 2019 6,162, in 2020 4,793 and in 2021 5,654, with the figure for 2021 being 18% higher than that of 2020 and 8% lower than that of 2019. As previously indicated, the decreases in road accident figures in 2020 are conditioned by mobility restrictions due to COVID-19.

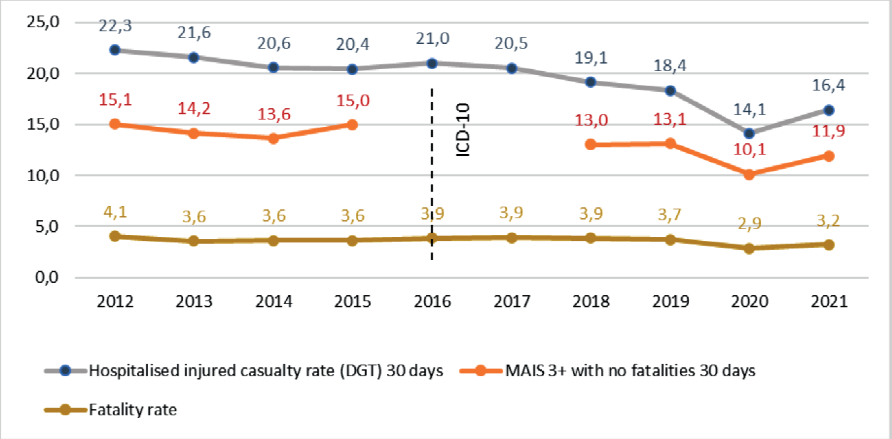
Chart 91: Evolution of the number of seriously injured road casualties (MAIS 3+). Spain, 2012-2021



Note: In 2016 and 2017, data on hospital discharge used to estimate MAIS 3+ are not entirely comparable to the whole country, which has been the cause of their exclusion from this analysis.

The evolution of the number of MAIS 3+ injured casualties shows a downward trend from 2012 to 2020. The hospitalised injured casualties obtained from the police records also show a downward trend in that period of time. That trend is also observed when the prevalence rate per 100,000 population is estimated for both indicators. Besides, it can be observed that the MAIS 3+ injury rate is more than three times the fatality rate from 2018 to 2021, highlighting the importance of collecting the MAIS 3+ indicator, since injury severity of these casualties implies a longer stay at hospital, greater after-effects and, in certain cases, disabilities.

Chart 92: Evolution of the rates of seriously injured road casualties (MAIS 3+), hospitalised injured casualties from police records and fatalities per 100,000 population. Spain, 2012-2021



6.2. Traffic-related injuries

In order to know more about the type of injury following a road traffic accident, the diagnostic classification for trauma injuries has been carried out in relation to injury location and mechanism of injury for external causes applicable to ICD-10 through the Injury Mortality Diagnosis Matrix. This classification replaces the classification made in the Barell matrix on ICD-9 and was published by the Centres for Disease and Control Prevention[5].

In the analysis of all the groups, two of them were considered: hospital discharge excluding all fatalities and only fatalities, because there are major differences between the two groups.

In 2021, 119,565 individuals with road traffic injuries were discharged from Spanish hospitals, both public and private (being death the reason for hospital discharge). If patients dying at a hospital are excluded from the analysis, the number of hospital discharges was 19,147, with 54.543 injuries, i.e. 2,8 injuries per individual.

Deaths due to road accidents occurring in hospital centres were 418 individuals and the number of injuries they sustained was 2,540, that is 6.1 injuries per individual, a figure above that published for injured survivors.

The most common injury location and the mechanisms of injury are very different, as one would expect, when analysing the classification matrix for hospital discharges without fatalities and the matrix exclusively for fatalities.

As for fatalities, 31% are traumatic brain injury, whether they be fractures or internal injuries, whereas for surviving casualties the percentage is less than half, 13%. Similarly, torso injuries, fractures or internal injuries are found in a much larger proportion in fatalities than in non-fatally injured casualties, 34% as against 27%.

As for hospitalised injured casualties excluding fatalities, injuries to the lower extremities represented 23% of the injuries and to the upper extremities accounted for 20%; injuries to the spinal column in non-fatally injured casualties made up 10%. As regards fatalities, the percentage is as follows: 8% injuries to the lower extremities, 7% to the upper extremities and 11% to the spinal column.

[5] /nchs/injury/injury_matrices.htm

Table 69: IMD Matrix*, ICD–10–CM, distribution of injuries by road accident in non-fatally injured casualties. Spain, 2021

Location of injury		Mechanism of injury												
		Fracture	Dislocation	Injury to the internal organs	Open wound	Amputa-tion	Blood vessels	Superficial contusion	Crushing	Burns	Foreign body	Others specified	Unspecified	Total
Head and neck	Traumatic brain injuries	1.699	0	3.866	1.141	0	0	0	0	0	0	36	323	**7.065**
	Other to the head	1.863	29	0	52	6	3	590	0	0	7	66	14	**2.630**
	Neck	35	0	0	13	0	11	70	0	0	0	77	31	**237**
	Head, neck and other	0	0	0	0	0	0	0	0	7	0	0	0	**7**
Spinal cord and spinal column	Spinal cord	0	0	411	0	0	0	0	0	0	0	0	0	**411**
	Cervical spine	4.796	148	1	0	0	11	0	0	0	0	233	0	**5.189**
Torso	Chest	5.188	5	3.431	32	0	45	360	1	0	41	65	222	**9.390**
	Abdomen	0	0	1.670	69	0	63	186	0	0	3	0	0	**1.991**
	Pelvis and dorso-lumbar spine	2.157	58	549	51	0	47	243	0	0	0	0	0	**3.105**
	Abdomen, dorso-lumbar spine and pelvis	0	0	0	0	0	7	56	3	0	0	84	134	**284**
	Other to the torso	0	0	0	0	0	0	0	0	31	59	0	0	**90**
Extremities	Upper extremities	0	651	0	311	41	43	464	6	63	0	591	44	**10.712**
	Hip	8.498	113	0	9	1	0	104	1	0	0	6	0	**1.008**
	Lower extremities	774	250	0	718	56	73	593	46	86	0	1.109	55	**11.526**
Not classified in a region	Multiple regions of the body	8.540	0	0	0	0	0	0	0	0	0	0	651	**651**
	Systemic disease	0	0	0	0	0	0	0	0	0	0	5	0	**5**
Unspecified	Not specified	0	0	0	0	0	0	0	0	37	0	0	205	**242**
	Total	**33.550**	**1.254**	**9.928**	**2.396**	**104**	**303**	**2.666**	**57**	**224**	**110**	**2.272**	**1.679**	**54.543**

Table 70: IMD Matrix, ICD–10–CM, distribution of injuries by road accident in fatally injured casualties. Spain, 2021

Location of injury			Mechanism of injury												
			Fracture	Dislocation	Injury to the internal organs	Open wound	Amputa-tion	Blood vessels	Superficial contusion	Crushing	Burns	Foreign body	Others specified	Unspecified	Total
Head and neck		Traumatic brain injuries	228	0	492	44	0	0	0	0	0	0	1	13	**778**
		Other to the head	115	3	0	5	1	0	22	0	0	0	4	0	**150**
		Neck	9	0	0	1	0	3	2	0	0	0	4	0	**19**
		Head, neck and other	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Spinal cord and spinal column		Spinal cord	0	0	39	0	0	0	0	0	0	0	0	0	**39**
		Cervical spine	253	12	1	0	0	5	0	0	0	0	2	0	**273**
Torso		Chest	244	0	246	4	0	9	3	0	0	12	1	9	**528**
		Abdomen	0	0	129	3	0	11	7	0	0	0	0	0	**150**
		Pelvis and dorso-lumbar spine	132	1	22	2	0	4	5	0	0	0	0	0	**166**
		Abdomen, dorso-lumbar spine and pelvis	0	0	0	0	0	0	2	0	0	0	6	4	**12**
		Other to the torso	0	0	0	0	0	0	0	0	0	14	0	0	**14**
Extremities		Upper extremities	168	8	0	2	1	0	6	0	2	0	1	0	**188**
		Hip	27	4	0	0	0	0	1	0	0	0	1	0	**33**
		Lower extremities	131	5	0	16	3	7	8	0	2	0	2	0	**174**
Not classified in a region		Multiple regions of the body	0	0	0	0	0	0	0	0	0	0	0	10	**10**
		Systemic disease	0	0	0	0	0	0	0	0	0	0	1	0	**1**
Unspecified		Not specified	0	0	0	0	0	0	0	0	0	0	0	5	**5**
		Total	**1.307**	**33**	**929**	**77**	**5**	**39**	**56**	**0**	**4**	**26**	**23**	**41**	**2.540**

Table 71: IMD Matrix, ICD–10–CM, percentage distribution of injuries by road accident in non-fatally injured casualties. Spain, 2021

Location of injury			Mechanism of injury												
			Fracture	Dislocation	Injury to the internal organs	Open wound	Amputa-tion	Blood vessels	Superficial contusion	Crushing	Burns	Foreign body	Others specified	Unspecified	Total
	Head and neck	Traumatic brain injuries	3.1%	0.0%	7.1%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.6%	**13.0%**
		Other to the head	3.4%	0.1%	0.0%	0.1%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.1%	0.0%	**4.8%**
		Neck	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	**0.4%**
		Head, neck and other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**
	Spinal cord and spinal column	Spinal cord	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.8%**
		Cervical spine	8.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	**9.5%**
	Torso	Chest	9.5%	0.0%	6.3%	0.1%	0.0%	0.1%	0.7%	0.0%	0.0%	0.1%	0.1%	0.4%	**17.2%**
		Abdomen	0.0%	0.0%	3.1%	0.1%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	**3.7%**
		Pelvis and dorso-lumbar spine	4.0%	0.1%	1.0%	0.1%	0.0%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	**5.7%**
		Abdomen, dorso-lumbar spine and pelvis	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.2%	0.2%	**0.5%**
		Other to the torso	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	**0.2%**
	Extremities	Upper extremities	15.6%	1.2%	0.0%	0.6%	0.1%	0.1%	0.9%	0.0%	0.1%	0.0%	1.1%	0.1%	**19.6%**
		Hip	1.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	**1.8%**
		Lower extremities	15.7%	0.5%	0.0%	1.3%	0.1%	0.1%	1.1%	0.1%	0.2%	0.0%	2.0%	0.1%	**21.1%**
	Not classified in a region	Multiple regions of the body	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	**1.2%**
		Systemic disease	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**
	Unspecified	Not specified	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.4%	**0.4%**
	Total		**61.5%**	**2.3%**	**18.2%**	**4.4%**	**0.2%**	**0.6%**	**4.9%**	**0.1%**	**0.4%**	**0.2%**	**4.2%**	**3.1%**	**100.0%**

Table 72: IMD Matrix, ICD–10–CM, percentage distribution of injuries by road accident in fatally injured casualties. Spain, 2021

Location of injury			Mechanism of injury												
			Fracture	Dislocation	Injury to the internal organs	Open wound	Amputa-tion	Blood vessels	Superficial contusion	Crushing	Burns	Foreign body	Others specified	Unspecified	Total
	Head and neck	Traumatic brain injuries	9.0%	0.0%	19.4%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	**30.6%**
		Other to the head	4.5%	0.1%	0.0%	0.2%	0.0%	0.0%	0.9%	0.0%	0.0%	0.0%	0.2%	0.0%	**5.9%**
		Neck	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.2%	0.0%	**0.7%**
		Head, neck and other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**
	Spinal cord and spinal column	Spinal cord	0.0%	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**1.5%**
		Cervical spine	10.0%	0.5%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	**10.7%**
	Torso	Chest	9.6%	0.0%	9.7%	0.2%	0.0%	0.4%	0.1%	0.0%	0.0%	0.5%	0.0%	0.4%	**20.8%**
		Abdomen	0.0%	0.0%	5.1%	0.1%	0.0%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	**5.9%**
		Pelvis and dorso-lumbar spine	5.2%	0.0%	0.9%	0.1%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	**6.5%**
		Abdomen, dorso-lumbar spine and pelvis	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.2%	0.2%	**0.5%**
		Other to the torso	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	**0.6%**
	Extremities	Upper extremities	6.6%	0.3%	0.0%	0.1%	0.0%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	**7.4%**
		Hip	1.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**1.3%**
		Lower extremities	5.2%	0.2%	0.0%	0.6%	0.1%	0.3%	0.3%	0.0%	0.1%	0.0%	0.1%	0.0%	**6.9%**
	Not classified in a region	Multiple regions of the body	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	**0.4%**
		Systemic disease	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**
	Unspecified	Not specified	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	**0.2%**
	Total		**51.5%**	**1.3%**	**36.6%**	**3.0%**	**0.2%**	**1.5%**	**2.2%**	**0.0%**	**0.2%**	**1.0%**	**0.9%**	**1.6%**	**100.0%**

Chart 93: Percentage distribution by injury location and mechanism of injury to hospitalised non-fatally injured casualties. Spain, 2021

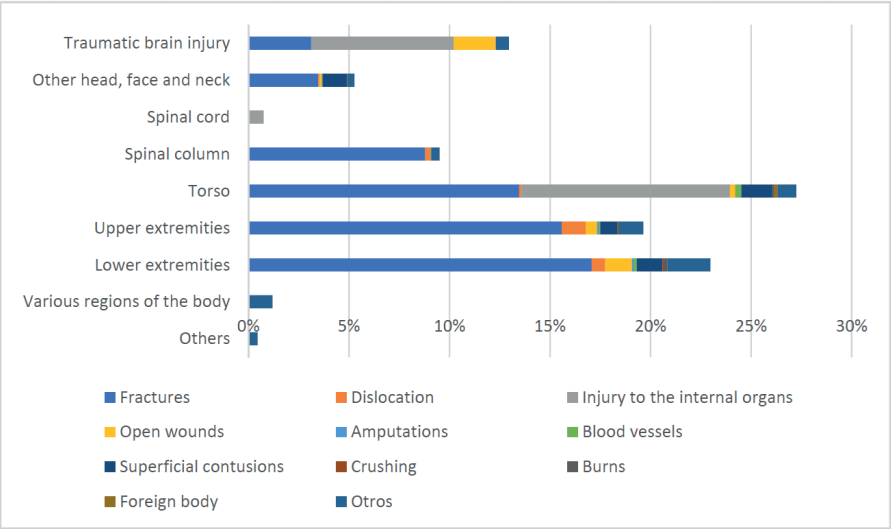


Chart 94: Percentage distribution by injury location and mechanism of injury to people who die at hospital. Spain, 2021

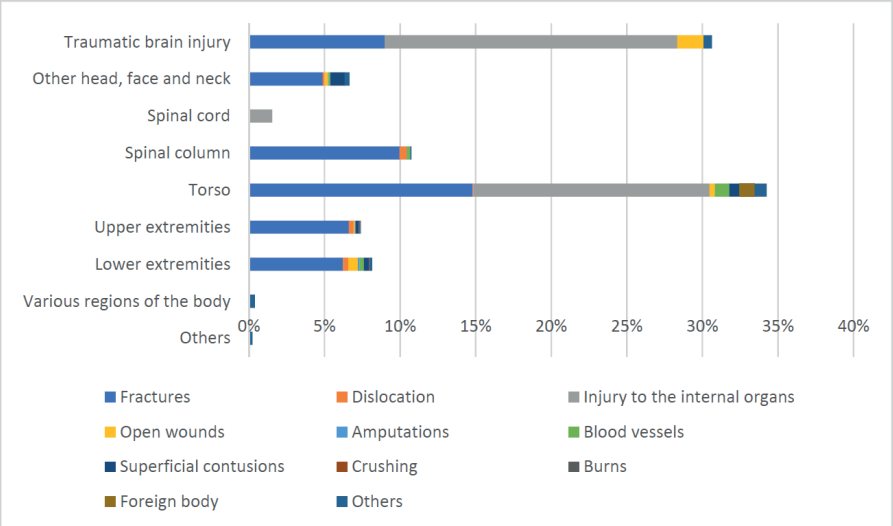
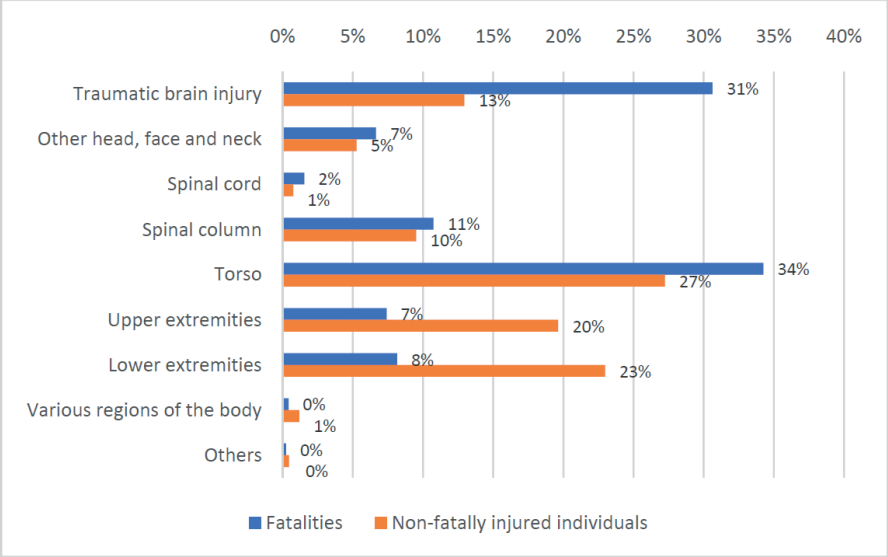


Chart 95: Percentage distribution by injury location to hospitalised non-fatally injured casualties and to deaths in hospital. Spain, 2021



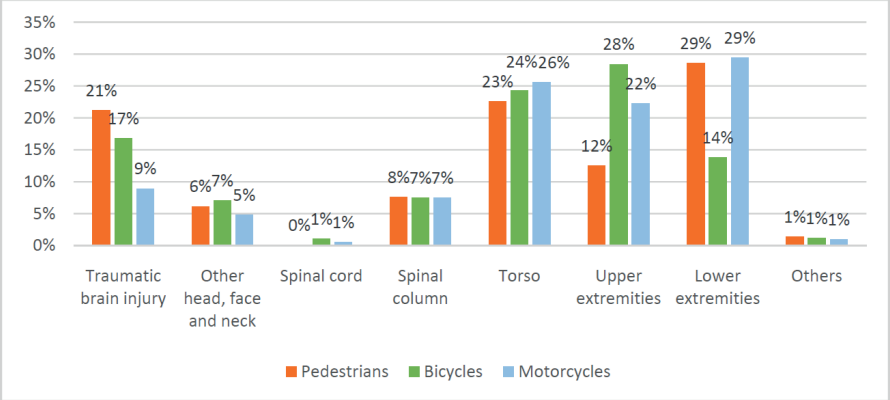
It is possible to identify in the MBDS database the mode of transport in which the injured casualties were travelling at the time of the accident according to ICD-10. Below are the results of the injury location classification according to IMD for vulnerable road users as pedestrians, cyclists and motorcyclists. When looking at these data, another point to bear in mind is that the percentage of registers without stating the mode of transport in the MBDS is 38% in 2021.

Table 73: Injury location classification to hospitalised non-fatally injured casualties using vulnerable means according to IMD Matrix*, ICD-10-CM Spain, 2021

	Pedestrians	Bicycles	Motorcycles
Traumatic brain injuries	1.085	917	1.351
Head, face and neck	314	386	730
Spinal cord injury	5	56	77
Cervical spine	387	406	1.131
Torso	1.158	1.328	3.870
Upper extremities	639	1,551	3.380
Lower extremities	1.460	752	4.467
Other	71	61	144
Total injuries	**5.119**	**5.457**	**15.150**
N of hospitalised non-fatally injured casualties(discharges)	1.671	2.444	5.053
Injuries by discharge	3.1	2.2	3.0

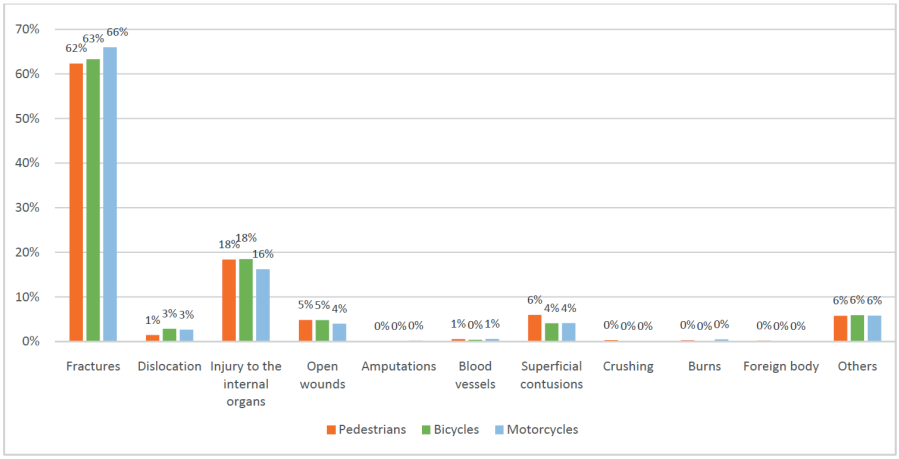
Observing the location of injuries sustained by non-fatally injured casualties in 2021, traumatic brain injuries are more common in pedestrians (21%) and pedal cyclists (17%) than in motorcyclists (9%). Upper extremities are more common in pedal cyclists (28%) and motorcyclists (22%) than in pedestrians (12%). Lower extremities are more common in pedestrians (29%) and motorcyclists (29%) than in pedal cyclists (14%).

Chart 96: Percentage distribution by injury location to hospitalised non-fatally injured casualties. Spain, 2021



As regards mechanism of injury, the distribution in pedestrians and pedal cyclists is quite similar: 62% and 63% are respectively fractures and 18% are injuries to internal organs. Motorcyclists show a different distribution: 66% are fractures and 16% are injuries to internal organs.

Chart 97: Percentage distribution by mechanism of injury to hospitalised non-fatally injured casualties. Spain, 2021



** Sub-group: All hospitalised injured casualties as a result of a road traffic accident excluding fatalities. Source Specialised Health Care Registry-MBDS*

Regarding the evolution of the total numbers of injuries in the years 2019, 2020 and 2021, it is observed that the distribution of injuries based on their location and mechanism of injury have not experienced significant variations in the aforementioned period.

Table 74: Injury location classification to all hospitalised non-fatally injured casualties according to IMD Matrix*, ICD-10-CM, Spain, 2019, 2020 and 2021.

	Number			Percentage distribution		
	2019	2020	2021	2019	2020	2021
Traumatic brain injuries	8.080	6.047	7.065	13%	13%	13%
Head, face and neck	3.173	2.495	2.874	5%	5%	5%
Spinal cord injury	413	234	411	1%	0%	1%
Cervical spine	5.736	4.527	5.189	10%	10%	10%
Torso	16.205	12.800	14.860	27%	27%	27%
Upper extremities	11.693	9.569	10.712	19%	20%	20%
Lower extremities	14.191	10.757	12.534	24%	23%	23%
Other	711	773	898	1%	2%	2%
Total injuries	**60.202**	**47.202**	**54.543**	**100%**	**100%**	**100%**

Table 75: Mechanism of injury classification to all hospitalised non-fatally injured casualties according to IMD Matrix*, ICD-10-CM, Spain, 2019, 2020 and 2021.

	Number			Percentage distribution		
	2019	2020	2021	2019	2020	2021
Fracture	36.948	29.268	33.550	61%	62%	62%
Dislocation	1.349	1.147	1.254	2%	2%	2%
Injury to the internal organs	10.744	8.317	9.928	18%	18%	18%
Open wound	2.853	2.234	2.396	5%	5%	4%
Amputations	84	71	104	0%	0%	0%
Blood vessels	284	307	303	0%	1%	1%
Superficial contusion	3.359	2.415	2.666	6%	5%	5%
Crush	48	34	57	0%	0%	0%
Burns	363	205	224	1%	0%	0%
Foreign body	93	55	110	0%	0%	0%
Other effects from external causes	0	0	3	0%	0%	0%
Others specified	2.301	1.692	2.269	4%	4%	4%
Unspecified	1.776	1.457	1.679	3%	3%	3%
Total injuries	**60.202**	**47.202**	**54.543**	**100%**	**100%**	**100%**

Cost of road traffic accidents

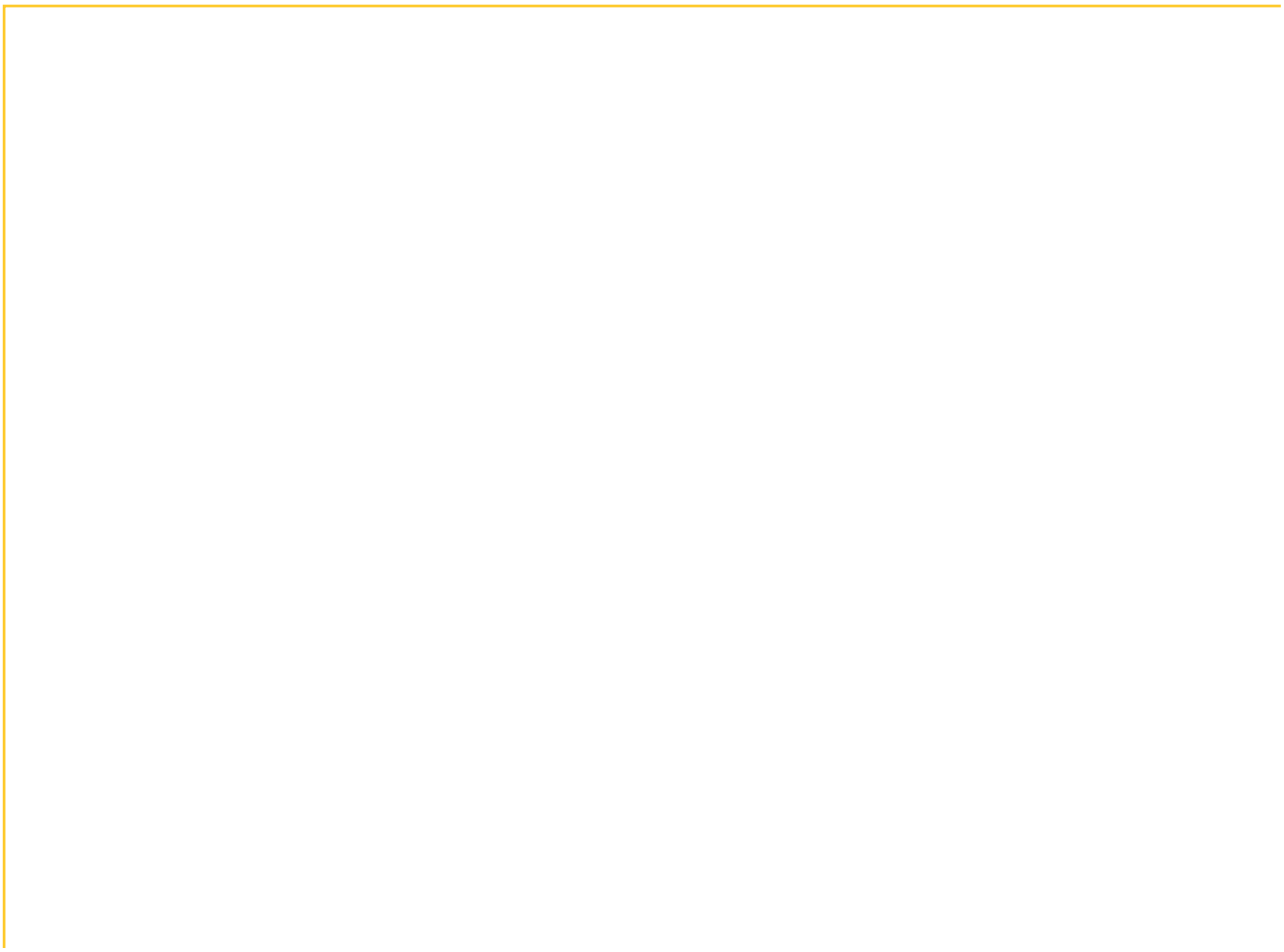
In 2023, the Directorate-General for Traffic, in collaboration with the University of Murcia, estimated the costs associated with road traffic accidents using the willingness-to-pay method. As a result, an individual killed would involve a cost of € 1.965.580, including direct and indirect costs (medical expenses, administrative expenses, etc.) and the fair actuarially price associated to the premium that society would be willing to pay to reduce the risk of being killed in a road traffic accident, known as the value of a statistical life. The costs associated to a hospitalised injured casualty, €385,480, and to a non-hospitalised injured casualty, €8,507, have been calculated in the same way.

By applying the above costs to the number of people killed, hospitalised and non-hospitalised injured casualties in road traffic accidents in 2022, we obtain that the costs associated to the victims are estimated at € 7,724 million at the very least, but if we explore other information systems the figure could reach € 13.445 million. Taking into account that the GDP at market prices on 01 January 2022 was € 1.346.377 million, the GDP percentage that these costs represent is as a minimum 0.57%, although it is reasonable to assume 1%, a percentage obtained by analysing jointly the information sources from the health and transport sectors.

Table 76: Calculation of the cost associated to road traffic accidents. Spain, 2022

Victims	Unit cost (€ 2023)	Victims		Total cost (€ 2023)	
		If only the victims recorded by the transport sector are counted[1]	If only the victims recorded by the transport and health sectors are counted[2]	If only the victims recorded by the transport sector are counted[1]	If only the victims recorded by the transport and health sectors are counted[2]
Fatalities	1.965.850	1.746	1.746	3.432.374.100	3.432.374.100
Hospitalised injured casualties	385.480	8.502	19.195	3.277.350.960	7.399.288.600
Non-hospitalised injured casualties	8.507	119.328	307.246	1.015.123.296	2.613.741.722
Total	**2.359.83**	**129.576**	**328.187**	**7.724.848.356**	**13.445.404.422**

[1] Figures for the number of casualties for the Transport Sector refer to 2022.
[2] Figures for fatalities refer to 2022, for hospitalised injured casualties to 2021 and for non-hospitalised injured casualties to 2020.



7

ANNEX I. METHODOLOGICAL NOTES

7.1 Databases used to prepare this report

a) National Register for Road Traffic Accident Victim

The National Register for Road Traffic Accident Victims (regulated by Order INT/2223/2014, of 27 October, governing the report of information to the National Register for Road Traffic Accident Victims) contains the data concerning road traffic casualty accidents, defined as those accidents in which at least one of the persons involved was injured. The definitions of the main indicators that must be used are detailed in the abovementioned Order.

The latest available information corresponds to 2022.

The National Register for Road Traffic Accident Victims database may be requested to the Directorate-General for Traffic via e-mail at the following address: observatorio@dgt.es.

The most significant micro-data and statistical tables may be accessed on the "Portal estadístico" of the Directorate-General for Traffic www.dgt.es.

b) Deceased records from the Registry Office

On the basis of the Under-Secretary's Resolution of 7 February 2005, publishing that the Secretariat of State for Justice entrusts the management tasks to the National Statistical Institute (INE) as regards the transfer of computerised data on the registration of births, marriages and deaths recorded at the Civil Registers, INE facilitates all data corresponding to each and every death recorded at Civil Registers in the whole Spanish territory. These data have been used to merge with data from road traffic accident registers, according to the methodology explained in this Annex.

c) Death statistics by cause of death

Drawn up by INE, it includes all deaths occurring on the national territory, regardless of the deceased's place of origin. The information must be completed by the physician certifying the death, who in addition fills in the statistical death bulletin, stating the immediate cause of death, the pre-existing condition and the underlying cause of death, being the latter the disease or injury that initiated the chain of pathological events that led directly to death or the circumstances of the accident or violence that produced the fatal injury. Every cause-of-death statement is coded according to the International Classification of Diseases (ICD) established by the World Health Organization (WHO), at present the ICD-10 classification is being used.

d) Información sobre red viaria y tráfico en la red interurbana.

The Ministry of Transport, Mobility and Urban Agenda publishes annually in its Statistical Yearbook (https://www.mitma.gob.es/informacion-para-el-ciudadano/informacion-estadistica/anuario-estadisticas-de-sintesis-y-boletin/anuario-estadistico), the road network, by ownership and road type, as well as the vehicle-kilometres, by road type and province. These indicators are developed on the basis of the Ministry's

—for the State Road Network—, the Autonomous Communities' and the Provincial and Island Councils' information.

7.2 Methodology used to estimate fatalities within 30 days

In the field of transport statistics, it is understood that the figures for fatalities due to a road traffic accident must be counted within the threshold of 30 days, as stated in the Glossary for Transport Statistics by UNECE-Eurostat-ITF.

In the case of Spain, the number of fatalities occurring within the first 24 hours is determined through the monitoring of all cases by law enforcement officers. The number of fatalities occurring within 30 days of the accident has been determined using correction factors deducted from the effective monitoring of a representative sample of hospitalised injured casualties. These correction factors were first applied in 1993 and reviewed on two occasions, in 1996 and in 2000; they were used until 2010.

From 2011 to 2015 the method of calculation was a two-phased process:

During the first phase, the DGT's road traffic accident registry is combined with the INE's death registry, so hospitalised injured casualties recorded in the road traffic accident registries can be searched in the latter registry, provided that the entries contain identifying information that allows such search. Those hospitalised injured casualties recorded as deceased in the INE's death registry are considered road traffic fatalities as long as the date of death is within the 30-day period following the accident.

During the second phase, the correction factor is calculated. This factor will be applied to those hospitalised injured casualties lacking enough identifying information to make the search in the INE's death registry. The calculation of the factor is based on the data obtained in the preceding phase and is as follows:

$$Correction\ \_\ factor\ = x = \frac{nr\ \_\ of\ \_\ linked\ \_\ records\ (only\ \_\ seriouly\ \_\ injured\ )}{nr\ \_\ of\ \_\ records\ \_\ of\ \_\ the\ \_\ first\ \_\ stratum\ (only\ \_\ seriously\ \_\ injured\ )}$$

As regards the identifying information concerning hospitalised injured casualties recorded in the road traffic accident registry, in 2011 there was enough information for 65% of the hospitalised injured casualties, this percentage rose to 80% in 2012, dropped to 76% in 2013 and rose again to 96% in 2014. In 2014 the correction factors were applied to the 438 hospitalised injured casualties lacking identifying information corresponding to the autonomous community of the Basque Country and to the City Council of San Cristóbal de La Laguna.

No correction factor has been applied since 2015 because the provision of identifying information concerning hospitalised injured casualties has significantly improved, which is added to the reporting of fatalities within 30 days following the accident by the autonomous regions with powers in traffic issues.

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