



MAIN FIGURES ON ROAD TRAFFIC ACCIDENTS SPAIN 2021



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INTRODUCTION

"Main figures on Road Traffic Accidents" began publication in 2004 with the aim of becoming the benchmark publication in Spain for analysing the trend in the number and characteristics of road traffic accidents as well as assessing the impact of major policies on road safety. We are confident that having reached its 18th edition means that such objective has been achieved.

In 2021, 1,533 people were killed in road traffic accidents in Spain, 222 fewer deaths than in 2019, which means a decrease by 13%. The fatality rate was at 32 deaths per million population, the seventh lowest rate in the European Union, just behind Malta (17), Sweden (18), Denmark (23), Ireland (27), The Netherlands (28) and Germany (31). The average rate in the European Union Member States was at 44.

The following is a summary of the main figures on road traffic accidents for the year 2021, paying attention to the most important fields and groups; the comparisons are made with respect to 2019:

- Vulnerable means: they represent 50% of road deaths (301 pedestrian fatalities; 63 cyclists; 395 motorcyclists and 9 PMV users), being the third year in a row that vulnerable means account for at least half of the death toll. One out of every four deaths is a motorcyclist.
- On interurban roads: the number of fatalities was 1,116, which means a reduction of 10%. The number decreased by 7% on dual carriageways and motorways and by 11% on conventional roads. 52% of all fatalities reported in road traffic accidents occur on conventional roads, with 800 fatalities in 2021, and 72% if we restrict to interurban roads. The only mode registering an increase in the number of people killed on interurban roads was in users of lorries up to 3,500 kg, with 9 more fatalities.
- Urban roads recorded 417 people killed in road traffic accidents, representing a decrease by 20%. Besides, 27% of fatalities occur on this type of road, and of them, 80% were using vulnerable means (183 pedestrians, 21 pedal cyclists, 8 PMV users and 123 motorcyclists). In addition, 64% of pedestrian fatalities are 65 years of age or over.
- People over 65 years of age account for 20% of the population although they have represented 23% of road fatalities; this means 37 people killed per million population, being the total fatality rate at 32.
- Young people aged 15 to 24 years: their fatality rate per million population is at 41, nine points higher than the total rate.

As regards risky behaviour, distraction was reported as the most common contributory factor in fatal accidents for the sixth consecutive year (it was present in 32%), followed by alcohol consumption (present in 31%) and speed (present in 22%).

This obliges us to redouble our efforts in the fields of training, awareness-raising and monitoring of risky behaviours.

As in previous years, we have received close collaboration from Autonomous Communities that have powers on traffic surveillance; 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.

Pere Navarro Olivella
Director-General for Traffic

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.

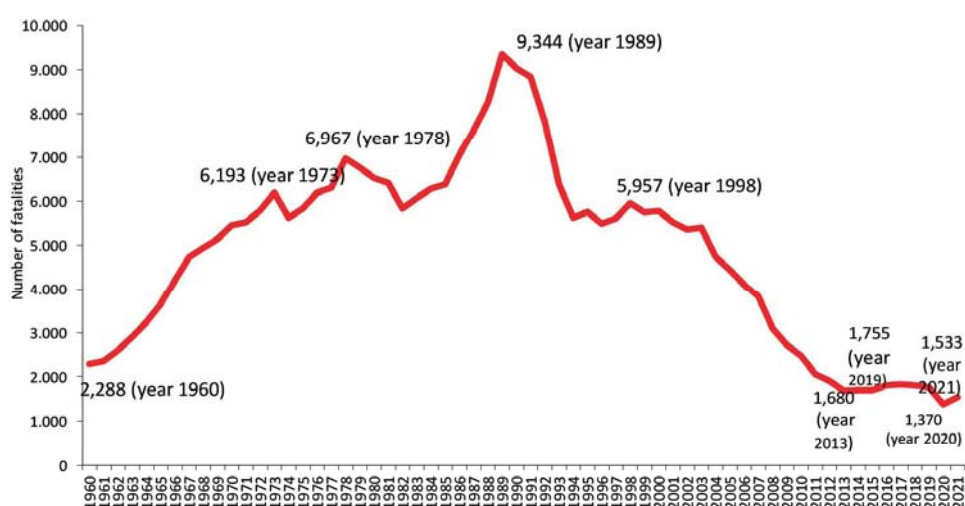
NOTE: Personal mobility vehicle (PMV): Vehicle with one or more wheels for a single user and exclusively propelled by electric motors with a maximum design speed between 6 and 25 km/h. They can only be equipped with a seat or saddle in case of self-balancing devices. Vehicles without self-balancing systems 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. As regards users of personal mobility vehicles (PMV), it should be noted that data on hospitalised and non-hospitalised injured casualties do not include those from Catalonia since they have not provided any data.

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ROAD TRAFFIC ACCIDENTS IN 2021 AND ITS RECENT EVOLUTION

In 2021, 1,533 fatalities were registered, a decrease of 13% compared with 2019.

Figure 1.- Evolution of persons killed in road traffic accidents. Spain, 1960-2021.

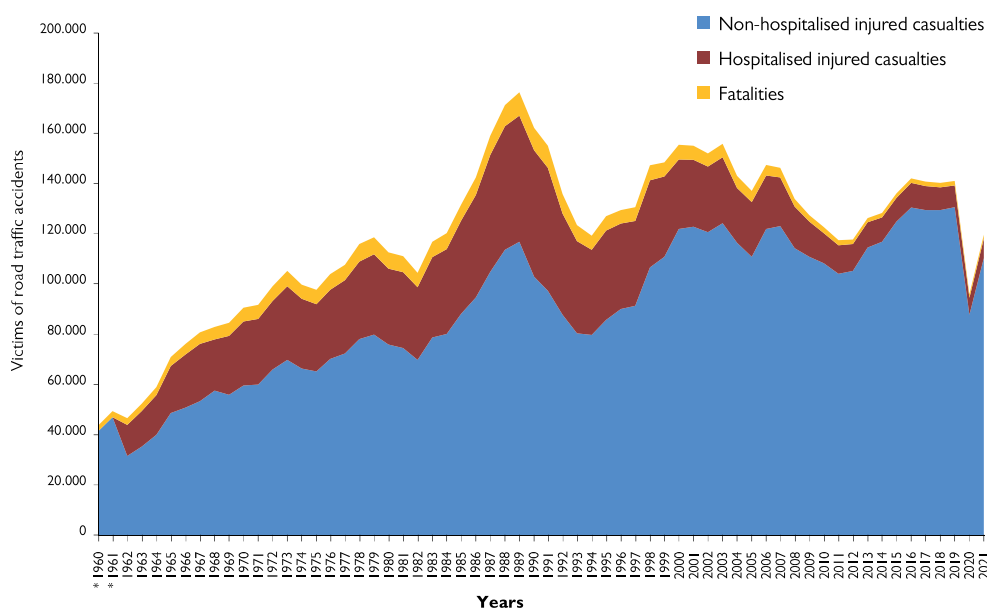


In the year 2021 the following was registered:

- A total of 1,533 deaths —222 fewer than in 2019 (-13%)—, 7,784 hospitalised injured casualties —829 fewer (-10%)—, and 110,378 non-hospitalised injured casualties (-16%).
- On interurban roads, a 10% decrease in the number of people killed (-11% on conventional roads, -7% on dual carriageways and motorways); on urban roads, a 20% decrease in the number of deaths.
- 50% of the people killed are vulnerable road users. On urban roads, 80%.

In Spain, the total of all road traffic victims was 119,695 in 2021, of them: fatalities represented 1%, hospitalised injured casualties were 7% and non-hospitalised injured casualties were 92%.

Figure 2.- Evolution of road traffic victims. Spain, 1960-2021.



The main indicators of accident rate for the year 2021, and its comparison with 2019 and 2012, are summarised in Table I:

Table I.- Evolution of the main indicators of accident rate and exposure to risk. Spain, 2019-2021 and 2012-2021.

Indicator	2012	2019	2021	Difference ¹ 2021/2019	Difference ¹ 2021/2012	Year-on-year variation 2012-2021
Road traffic accidents	83,115	104,080	89,862	-14%	8%	1%
Fatalities	1,903	1,755	1,533	-13%	-19%	-2%
Hospitalised injured casualties	10,444	8,613	7,784	-10%	-25%	-3%
Non-hospitalised injured casualties	105,446	130,745	110,378	-16%	5%	1%
Fatalities per M p.tion	41	37	32	-5	-8.6	-8.6
Hospitalised injured casualties per M p.tion	258	184	164	-11%	-26%	-3%
Daily average of fatalities	5	5	4	-1	-1	-1
Case fatality rate ²	1.6	1.2	1.3	0.1	-0.3	-0.3
Vehicle fleet	33.0	35.8	36.5	2%	11%	1%
Fatalities per million vehicles of the vehicle fleet	58	49	42	-7	-16	-16
Vehicle-km traffic 106 *	224,285	252,055	239,946	-5%	7%	1%

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.

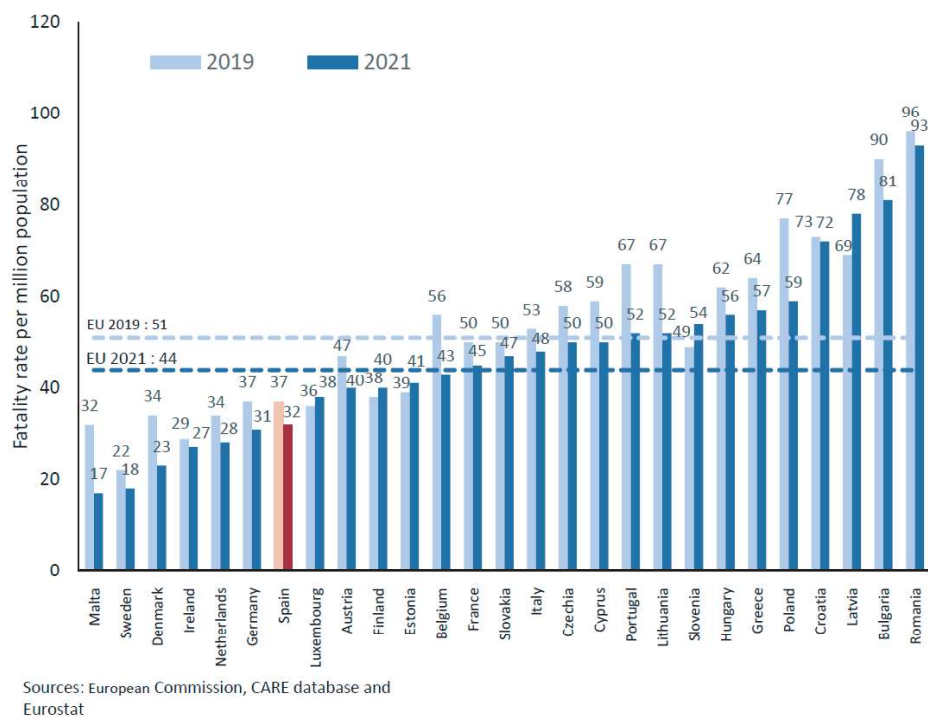
² Case fatality rate is defined as the number of people killed per 100 casualties.

* The source is the Yearbooks from the Ministry of Transport, Mobility and Urban Agenda. Data refer to interurban roads.

The following figure shows the evolution of fatality rates per million population in the European Union from 2019 to 2021 and, in the case of Spain:

- In 2019, the rate was at 37 people killed per million population (1,755 deaths), below the European average rate which was at 51.
- In 2021, the rate was at 32, below the European average rate that was at 44, ranking seventh among the countries with the lowest figures on accident rate.

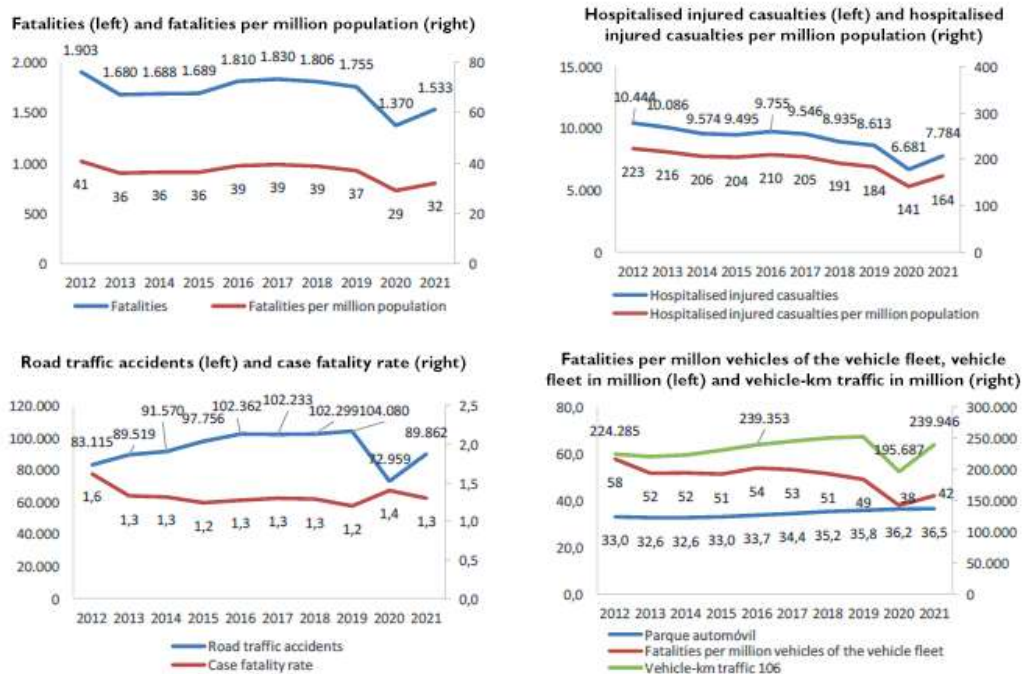
Figure 3.- Fatality rate per million population in the European Union. 2019, 2021



From 2012 to 2021:

- Road traffic deaths decreased by 2% year-on-year and hospitalised injured casualties by 3%, although the overall pattern of decrease in fatalities was interrupted between 2014 and 2017. In the last year, the number of people killed decreased by 13% and of hospitalised injured casualties by 10%.
- Fatality rate per million population fell from 44 to 32 (37 in the year 2019).
- The vehicle fleet and the traffic show a similar trend: decreases until 2013 and increases from 2014 to present.
- The daily average of people killed has gone from 5 to 4 deaths.

Figure 4.- Evolution of the main indicators of accident rate and exposure to risk*. Spain, 2012-2021



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

Table 2.- Number of road traffic accidents, fatalities, hospitalised and non-hospitalised injured casualties. Percentage difference compared with the previous year. Spain, 2021

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	2021										Variation ¹ 2021/2019		
	Road traffic accidents			Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties		Road traffic accidents	Fatalities	Hospitalised injured casualties	Non-hospitalised injured casualties
	Number	%	Number	%	Number	%	Number	%	Number				
Mode of transport⁴													
Pedestrian ³	10,461	12%	301	20%	20%	18%	9,446	9%		-23%	-21%	-17%	-23%
Bicycle	8,146	9%	63	4%	4%	9%	7,090	6%		4%	-17	10%	4%
PMV ⁶	2,412	3%	9	1%	1%	2%	2,062	2%					
Moped	5,511	6%	38	2%	2%	5%	5,373	5%		-21%	-11	-15%	-22%
Motorcycle	23,883	27%	357	23%	23%	31%	22,399	20%		-18%	-14%	-10%	-19%
Car	65,906	73%	611	40%	40%	27%	54,860	50%		-15%	-5%	-14%	-16%
Goods vehicle	12,899	14%	116	8%	8%	4%	4,911	4%		-20%	-18%	-11%	-27%
Bus or coach	1,796	2%	5	0%	0%	1%	1,757	2%		-25%	2	9	-24%
Type of user^{4,5}													
Driver	73,591	82%	1,022	67%	67%	67%	75,230	68%		-12%	-10%	-7%	-12%
Passenger	19,267	21%	210	14%	14%	15%	25,702	23%		-19%	-11%	-10%	-21%
Pedestrian ³	10,461	12%	301	20%	20%	18%	9,446	9%		-23%	-21%	-17%	-23%
Age^{4,5}													
0-14	4,196	5%	25	2%	2%	3%	4,636	4%		-25%	-7	-14%	-27%
15-24	17,743	20%	199	13%	13%	16%	19,956	18%		-8%	16%	0%	-9%
25-34	21,914	24%	196	13%	13%	16%	23,017	21%		-16%	-19%	-13%	-17%
35-44	20,436	23%	236	15%	15%	17%	20,660	19%		-19%	-8%	-14%	-21%
45-54	18,858	21%	276	18%	18%	18%	18,661	17%		-12%	-13%	-10%	-12%
55-64	12,021	13%	242	16%	16%	14%	11,553	10%		-11%	3%	-3%	-12%
65-74	5,716	6%	152	10%	10%	8%	5,424	5%		-19%	-17%	-15%	-21%
75-84	3,268	4%	141	9%	9%	5%	2,975	3%		-19%	-29%	-15%	-21%
85 and over	944	1%	56	4%	4%	2%	798	1%		-27%	-49%	-31%	-23%
Gender^{4,5}													
Male	62,259	69%	1,214	79%	79%	71%	66,009	60%		-14%	-12%	-10%	-15%
Female	38,586	43%	318	21%	21%	29%	44,039	40%		-15%	-14%	-8%	-17%

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 PMV are personal mobility vehicles.

2

INFRASTRUCTURE

Performance indicators: road traffic accidents and victims

Scene of the road traffic accident

In 2021, 65% 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 in a similar proportion on urban and on interurban roads.

Figure 5.- Distribution of the number of road traffic accidents, fatalities and hospitalised injured casualties by road type. Spain, 2021

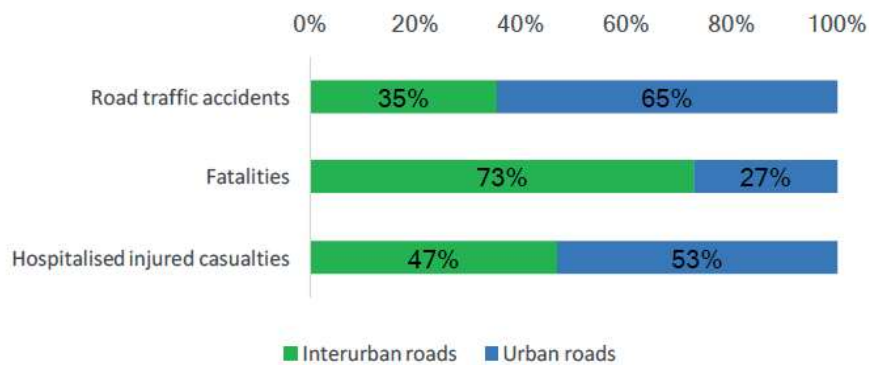
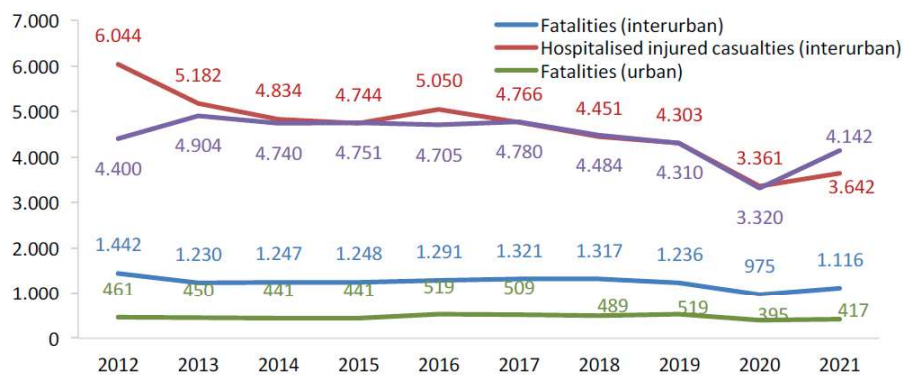


Figure 6.- Evolution of fatalities and hospitalised injured casualties on interurban and urban roads. Spain 2012-2021.



The number of fatalities and hospitalised injured casualties decreased on interurban roads until 2013 and in a similar way on urban roads. Between 2014 and 2018, the number of fatalities increased by 6% on interurban roads and by 11% 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 2021, compared to 2019, fatalities on interurban roads decreased by 10% and by 20% on urban roads.

Interurban roads

In 2021, there were 10% fewer fatalities on interurban roads compared to 2019 and hospitalised injured casualties decreased by 15%. Over the last ten years, the year over year reduction rate for fatalities was at 3%.

35% of road traffic accidents were registered on interurban roads. 73% of the fatalities (1,116 deaths) and 47% of the hospitalised injured casualties (3,642 injured) resulted from those accidents.

Figure 7.- Evolution of road traffic accidents, fatalities and injured casualties on interurban roads. Spain, 2012-2021.



By type of interurban road, in 2021:

- 800 people were killed on conventional roads, accounting for 72% of all fatalities on interurban roads; 2,917 injured casualties were hospitalised, which accounted for 80% of the total.
- 21% of the fatalities and 15% of the hospitalised injured casualties were registered on dual carriageways.
- 7% of the fatalities and 5% of the hospitalised injured casualties were registered on motorways.

Figure 8.- Road traffic accidents, fatalities, hospitalised and non-hospitalised injured casualties on interurban roads by road type. Spain, 2021.

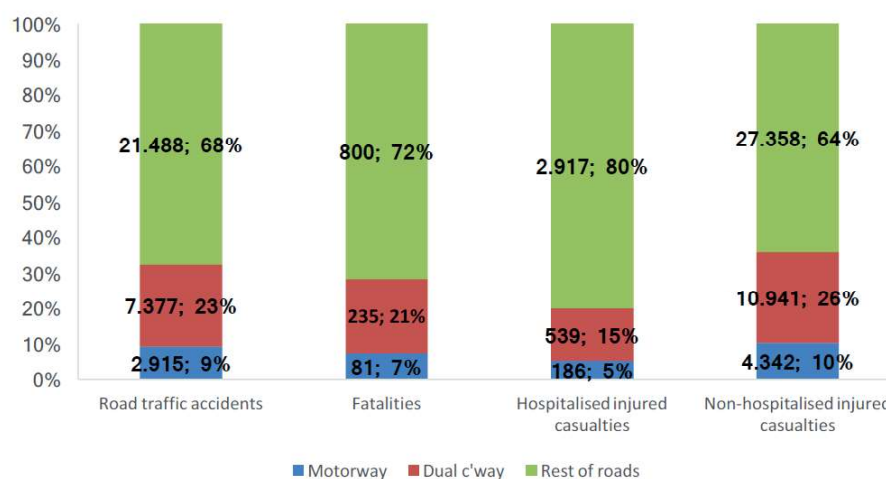


Table 3.- Evolution of road traffic accidents on interurban roads by road type. Spain, 2014-2021*

Road traffic accidents	2014	2015	2016	2017	2018	2019	2020	2021	Variation 2021/2019
Motorway	2,369	2,398	3,592	3,932	3,722	3,438	2,154	2,915	-15%
Dual c'way	8,411	8,431	8,641	8,608	9,388	9,086	5,741	7,377	-19%
Other roads	24,367	23,729	24,488	24,953	24,782	24,815	18,716	21,488	-13%
Total interurban	35,147	34,558	36,721	37,493	37,892	37,339	26,611	31,780	-15%

* In 2013 the road catalogue was updated to classify road traffic accidents occurring on Catalanian 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.

In 2021 there were 81 fatalities on motorways, 10 fewer fatalities than in 2019. On dual carriageways, 235 fatalities were registered, 14 fewer than in 2019, which means a 6% decrease; on the rest of roads, with 800 fatalities, we can observe a 11% decrease, 96 fewer fatalities than in 2019. Hospitalised injured casualties also decreased on motorways, dual carriageways and on the rest of roads in 2021 as compared with 2019 —by 27%, 17% and 14% respectively—.

Table 4.- Evolution of fatalities on interurban roads by road type. Spain, 2014-2021*

Road traffic accidents	2014	2015	2016	2017	2018	2019	2020	2021	Variation 2021/2019 ⁽¹⁾
Motorway	64	75	85	85	82	91	65	81	-10
Dual c'way	226	202	242	223	241	249	159	235	-6%
Other roads	957	971	964	1,013	994	896	751	800	-11%
Total interurban	1,247	1,248	1,291	1,321	1,317	1,236	975	1,116	-10%

* In 2013 the road catalogue was updated to classify road traffic accidents occurring on Catalanian 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.

(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.

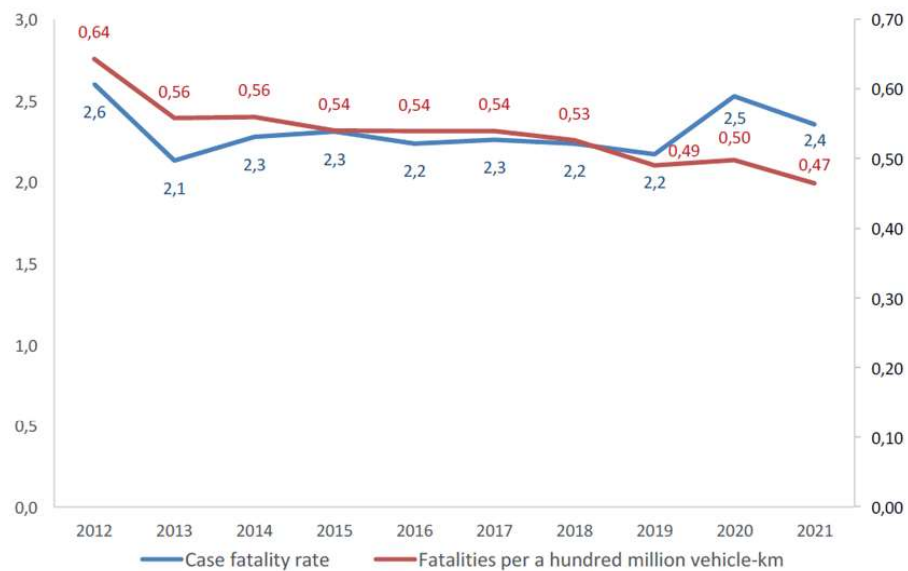
Table 5.- Evolution of hospitalised injured casualties on interurban roads by road type. Spain, 2014-2021*

Hospitalised injured casualties	2014	2015	2016	2017	2018	2019	2020	2021	Variation 2021/2019
Motorway	263	223	290	285	271	254	184	186	-27%
Dual c'way	758	741	830	728	741	650	468	539	-17%
Other roads	3,813	3,780	3,930	3,753	3,439	3,399	2,709	2,917	-14%
Total interurban	4,834	4,744	5,050	4,766	4,766	4,451	3,361	3,642	-18%

* In 2013 the road catalogue was updated to classify road traffic accidents occurring on Catalanian 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 fatality figure per a hundred million vehicle-km has been reduced from 0.64 to 0.47 between 2012 and 2021, whereas the case fatality rate (deaths per 100 casualties) has fallen from 2.6 to 2.4.

Figure 9.- Evolution of case fatality rate and fatality figure per a hundred million vehicle-km on interurban roads. Spain, 2012-2021



Source: The figure for million vehicle-kilometres of the year 2021 was unavailable at the time of writing this report.

Urban roads

In 2021, compared to 2019, there were 20% fewer fatalities on urban roads and hospitalised injured casualties decreased by 4%. Vulnerable road users account for 80% of people killed on urban roads. Over the last ten years, the year over year reduction rate for fatalities was at 1%.

65% of the road traffic accidents occurred on these roads, 27% of the fatalities, 417 deaths, and 53% of the hospitalised injured casualties, 4,142 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 2021, 34 people were killed on sections of road running through towns, 9 fatalities fewer than in 2019.

Figure 10.- Evolution of road traffic accidents on urban roads. Spain, 2012-2021

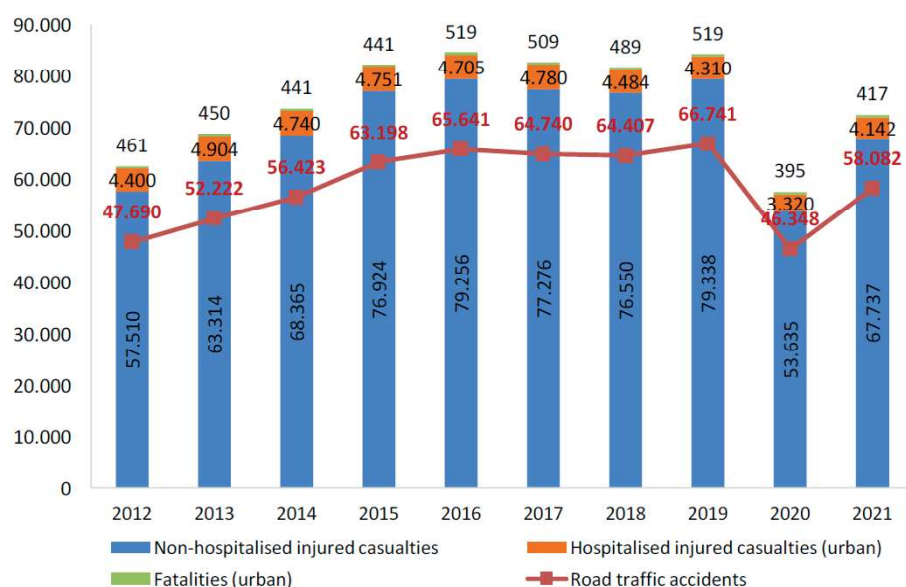


Table 6.- Evolution of road traffic accidents, fatalities, hospitalised and non-hospitalised injured casualties on sections of road running through towns and rest of urban roads. Spain, 2019-2021

Urban roads	Sections of road running through town			Others		
	2019	2021	Variation 2021/2019 ⁽¹⁾	2019	2021	Variation 2021/2019
Road traffic accidents	1,563	1,561	0%	65,089	56,521	-13%
Fatalities	43	34	-9	473	383	-20%
Hospitalised injured casualties	127	142	12%	4,180	4,000	-4%
Non-hospitalised injured casualties	1,840	1,894	3%	77,348	65,843	-15%

(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. Municipal data

Madrid and Barcelona, two cities with a population of over a million inhabitants, have recorded 14% of fatalities and of hospitalised injured casualties on urban roads. Cities with a population from 100,001 to 500,000 inhabitants - where 24% of the Spanish population is concentrated - have recorded the highest number of fatalities (27%) and hospitalised injured casualties (32%).

Figure 11.- Fatalities by size of the municipality. Spain, 2012, 2019 and 2021

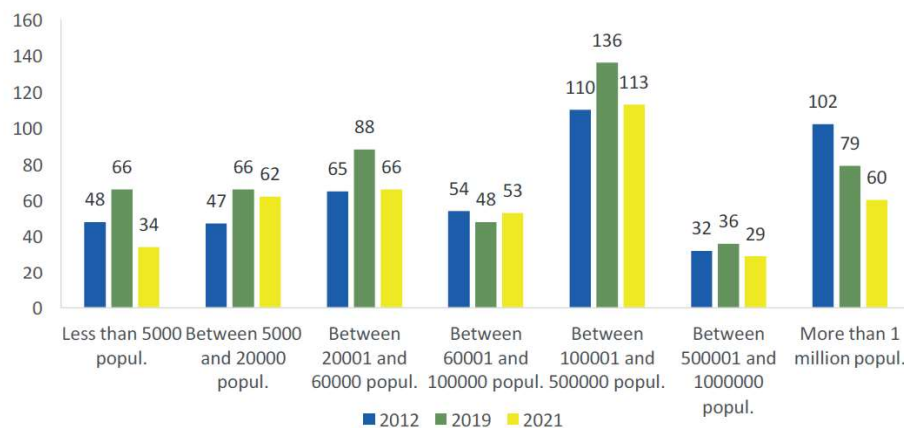
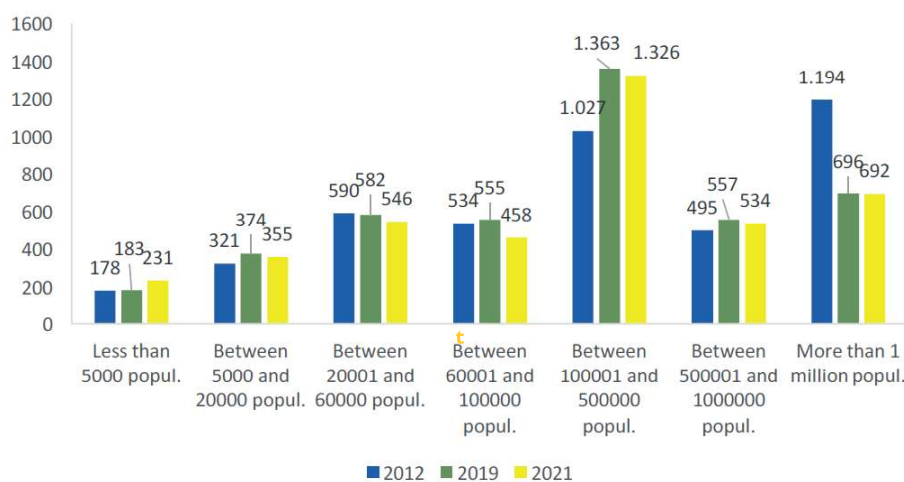


Figure 12.- Hospitalised injured casualties by size of the municipality. Spain, 2012, 2019 and 2021

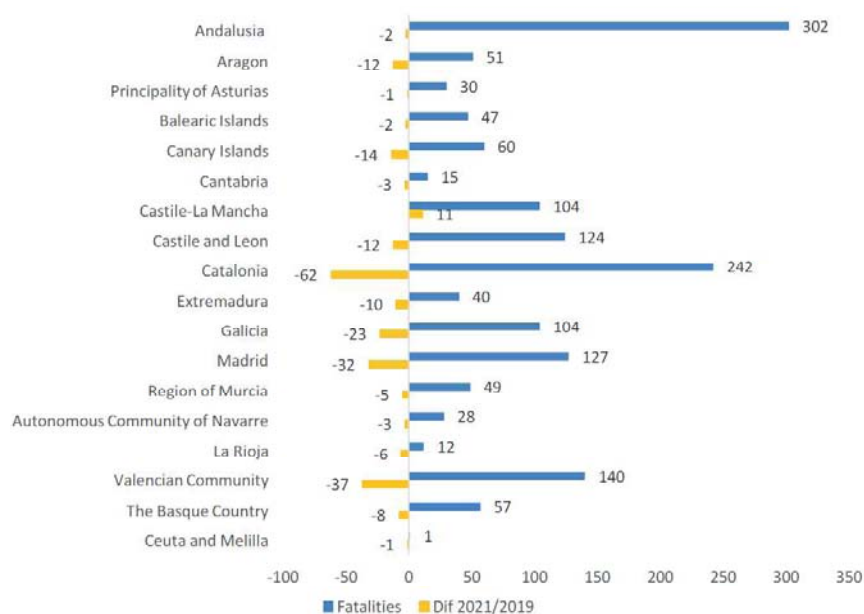


It should be emphasised that the level of communication in case of a non-fatal road traffic accident may vary in both the reporting time-frames and among municipalities, although it should be noted that the population coverage as regards information on the accident rates on urban roads (percentage of the population represented by municipalities reporting road traffic accidents) has significantly increased during the last few years, from 78% in 2009 to 94% in 2021.

Autonomous regions and provinces

By Autonomous Regions, in 2021 there was a decrease in the number of fatalities in all the regions, except in Castilla-La Mancha; the greatest percentage decreases in fatalities were registered in the Valencian Community, Madrid and Catalonia. However, Castilla-La Mancha registered 11 more fatalities as compared with 2019. The autonomous cities of Ceuta and Melilla recorded a total of 1 fatality, 1 fewer fatality than in 2019.

Figure 13.- Evolution of fatalities by Autonomous Regions. Spain, 2021 and differences 2021-2019



By provinces, compared with 2019, the number of fatalities increased in 16 provinces and decreased in 34 of them. In the autonomous city of Ceuta there was no fatality in 2021 whereas in Melilla there was 1 person killed. It should be taken into account that the fatality trend in figures at provincial level is subject to fluctuations as they are small figures.

Table 7.- Evolution of fatalities by provinces on interurban and urban roads. Spain, 2017-2021

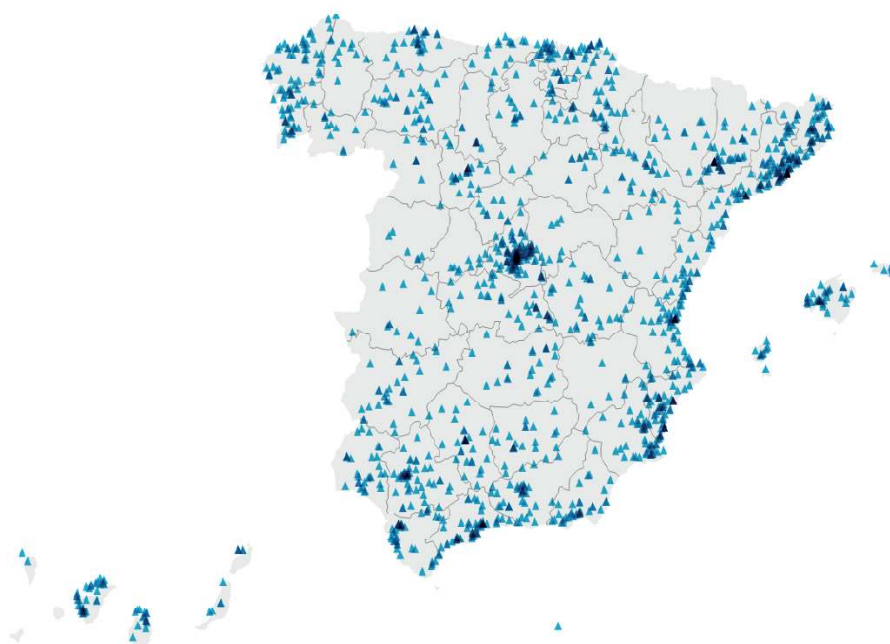
Provinces	2017	2018	2019	2020	2021	Variation 2021/2019 ⁽¹⁾	Variation 2021/2017 ⁽¹⁾
Araba/Álava	11	15	16	5	13	-3%	2%
Albacete	16	11	28	10	11	-17%	-5%
Alicante/Alacant	64	60	80	61	66	-14%	2%
Almería	22	27	35	38	34	-1%	12%
Ávila	11	16	11	10	9	-2%	-2%
Badajoz	36	32	34	25	28	-6%	-8%
Balearic Islands	68	53	49	37	47	-2%	-21%
Barcelona	145	163	171	115	117	-32%	-19%
Burgos	31	32	14	19	15	1%	-16%
Cáceres	26	19	16	15	12	-4%	-14%
Cádiz	34	36	36	22	41	5%	7%
Castellón/Castelló	39	35	25	17	27	2%	-12%
Ciudad Real	33	25	22	29	24	2%	-9%
Córdoba	37	34	38	14	30	-8%	-7%
Coruña, A	51	64	53	33	42	-11%	-9%
Cuenca	18	20	8	18	27	19%	9%
Girona	47	55	42	28	48	6%	1%
Granada	33	31	25	35	38	13%	5%
Guadalajara	12	10	6	12	6	0%	-6%
Gipuzkoa	27	13	23	20	22	-1%	-5%
Huelva	22	18	22	23	31	9%	9%
Huesca	25	27	29	20	13	-16%	-12%
Jaén	35	31	24	21	22	-2%	-13%

Provinces	2017	2018	2019	2020	2021	Variation 2021/2019 ⁽¹⁾	Variation 2021/2017 ⁽¹⁾
León	22	35	35	25	30	-5%	8%
Lleida	40	43	39	21	44	5%	4%
Rioja, La	26	10	18	16	12	-6%	-14%
Lugo	22	26	22	16	12	-10%	-10%
Madrid	125	114	159	105	127	-20%	2%
Málaga	67	39	56	51	58	2%	-9%
Murcia	85	66	54	39	49	-5%	-36%
Navarra	29	35	31	20	28	-3%	-1%
Ourense	13	19	15	16	13	-2%	0%
Asturias	37	43	31	22	30	-1%	-7%
Palencia	13	11	12	10	11	-1%	-2%
Palmas, Las	30	39	32	22	25	-7%	-5%
Pontevedra	31	35	37	38	37	0%	6%
Salamanca	15	14	13	20	6	-7%	-9%
Santa Cruz de Tenerife	37	29	42	28	35	-7%	-2%
Cantabria	22	23	18	16	15	-3%	-7%
Segovia	10	12	9	11	7	-2%	-3%
Sevilla	55	58	68	50	48	-20%	-7%
Soria	11	15	8	6	13	5%	2%
Tarragona	51	65	52	40	33	-19%	-18%
Teruel	18	10	7	10	10	3%	-8%
Toledo	50	34	29	27	36	7%	-14%
Valencia/València	73	88	72	51	47	-25%	-26%
Valladolid	27	23	18	13	24	6%	-3%
Bizkaia	13	21	26	17	22	-4%	9%
Zamora	24	18	16	12	9	-7%	-15%
Zaragoza	37	48	27	38	28	1%	-9%
Ceuta	2	3	2	2	0	-2%	-2%
Melilla	2	3	0	1	1	1%	-1%
National total	1,830	1,806	1,755	1,370	1,533	-13%	-16%

(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.

The average national fatality rate per million population over the last five years was at 37 (excluding 2020).

Figure 14.- Fatalities by the scene of the road traffic accident in 2021.



Exposure indicators

Road network

In 2019, of the 165,469 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, Mobility and Urban Agenda, 2% were toll motorways, 8% motorways and dual carriageways, 1% multilane roads and 89% were the rest of roads.

Table 8.- Length (km) of the interurban road network. Spain, 2009-2018

Type of road	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Increase in km 2019/2018
Toll motorway	2,991	3,022	3,025	3,026	3,020	3,040	3,039	3,039	2,957	2,997	40
Dual c'way and motorway	11,271	11,509	11,676	11,955	12,029	12,296	12,405	12,484	12,626	12,725	99
Multilane road	1,703	1,651	1,634	1,602	1,656	1,686	1,665	1,641	1,645	1,665	20
Other roads	149,822	149,703	149,260	148,778	149,579	148,981	148,374	148,522	148,396	148,082	-314
Total	165,787	165,88	165,595	165,361	166,284	166,003	165,483	165,686	165,624	165,469	-155

Source: Statistical Yearbooks from the Ministry of Transport, Mobility and Urban Agenda. The latest year available at the time of preparing this report was 2019.

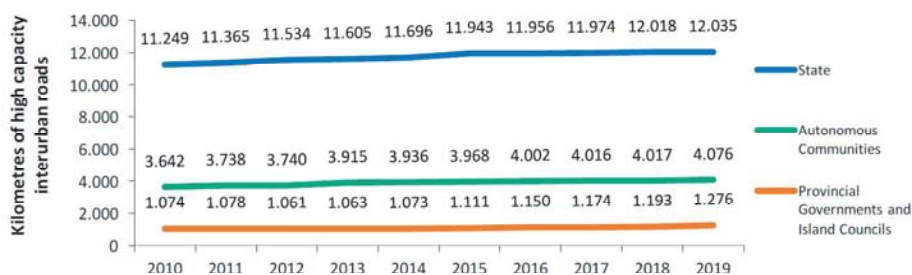
In 2019, the State Road Network was 26,467 kilometres, of which 45% were high capacity roads: motorways, dual carriageways and multilane roads. On the contrary, high capacity roads in the regional and provincial networks accounted only for 4% of the total.

Table 9.- Length (km) of the interurban road network by ownership and road type. Spain, 2019

Type of road	Central Administration	Autonomous Communities	Provincial Governments and Island Councils	Total
Toll motorway	2,380	368	249	2,997
Dual c'way and motorway	9,167	2,938	620	12,725
Multilane road	488	770	407	1,665
Other roads	14,432	67,134	66,516	148,082
Total	26,467	71,210	67,792	165,469

Source: Statistical Yearbooks from the Ministry of Transport, Mobility and Urban Agenda. The latest year available at the time of preparing this report was 2019.

Figure 15.- Length (km) of the high-capacity interurban roads. Spain, 2010-2019



Source: Statistical Yearbooks from the Ministry of Transport, Mobility and Urban Agenda. . The latest year available at the time of preparing this report was 2019.

Long distance journeys

According to mobility, the fatality figure has been reduced from 1,903 to 1,533 between 2012 and 2021, whereas the number of journeys has increased from 364,827,666 to 393,680,171.

Figure 16.- Evolution of long distance journeys and the number of people killed. Spain, 2012-2021



Volume of traffic on interurban roads

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

An analysis of the evolution of the volume of traffic—or exposure to risk—since 2011 shows a decrease until 2014 and it increased again as from 2015. In 2020 the volume of traffic fell due to the COVID-19 pandemic.

Table 10.- Evolution of volume of traffic on interurban roads. Spain, 2011-2020

Interurban roads	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Variation 2020/2019	Year-on-year variation 2011-2020
Vehicle-km traffic 10 ⁶ (1)	234,678	224,285	220,377	222,689	230,840	239,353	244,661	250,192	252,055	195,687	-22%	-2%

(1) Source: Statistical Yearbooks from the Ministry of Transport, Mobility and Urban Agenda. The latest year available at the time of preparing this report was 2020.

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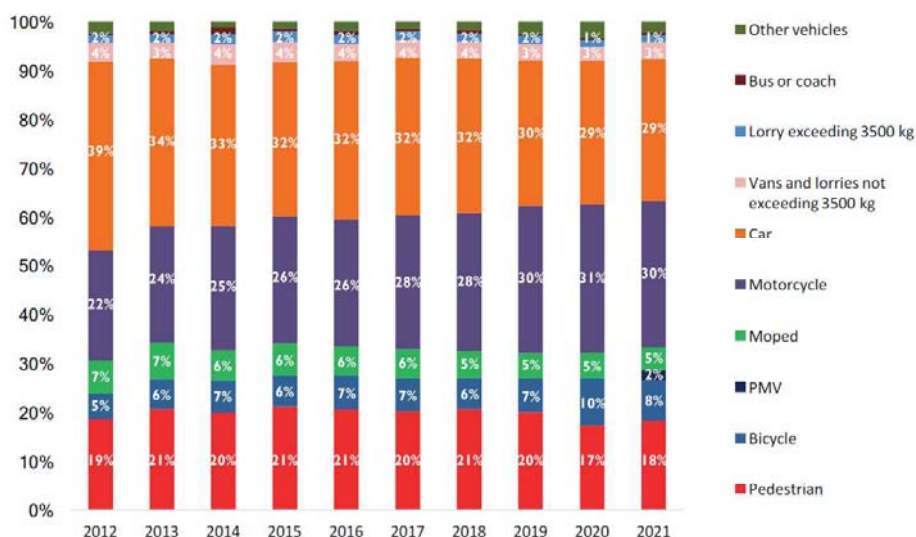
MEANS OF TRANSPORT

Performance indicators: road traffic accidents and victims

Mode of transport in road traffic accidents

Cars are the most commonly involved mode of transport in road traffic accidents: there is at least one car involved in 73% of road traffic accidents, this ratio has fluctuated between 72% and 80% over the last decade. However, in terms of the percentage of fatalities plus hospitalised injured casualties, the following figure shows that the evolution is positive for cars (from 39% in 2012 to 29% in 2021). The modes of transport which show a worse evolution in their accident rate are all vulnerable groups: motorcycle users in 2012 represented 22% of fatalities and hospitalised injured casualties and reached 30% in 2021; pedestrians, who have gone from 19% in 2012 to nearly 20%-21% between 2013 and 2019 (18% in 2021); bicycles, from 5% in 2012 to 8% in 2021; and PMV users, who accounted for 2% of fatalities and hospitalised injured casualties in 2021.

Figure 17.- Evolution of the distribution of fatalities and hospitalised injured casualties by mode of transport. Spain, 2012-2021



Note: PMVs have been included since 2020.

Compared with 2019, in 2021 there were decreases in the number of fatalities in all modes of transport, except in bus or coach (2 more fatalities), being remarkable the decline in fatality figures in: vans and lorries up to 3500 kg (22 fewer), motorcycles (14% less) and pedestrians (21% less). Car fatalities have decreased by 5%, a decline below the total number of fatalities (-13%).

Moreover, if we standardize to 100 the number of fatalities in 2012 (figure 18), the values in 2021 express the percentage change compared to 2012. In 2021, motorcycles are the mode of transport which show the worst evolution and at the opposite end are mopeds, lorries exceeding 3500 kg and cars.

Figure 18.- Evolution of fatalities by mode of transport. Spain, 2012-2021

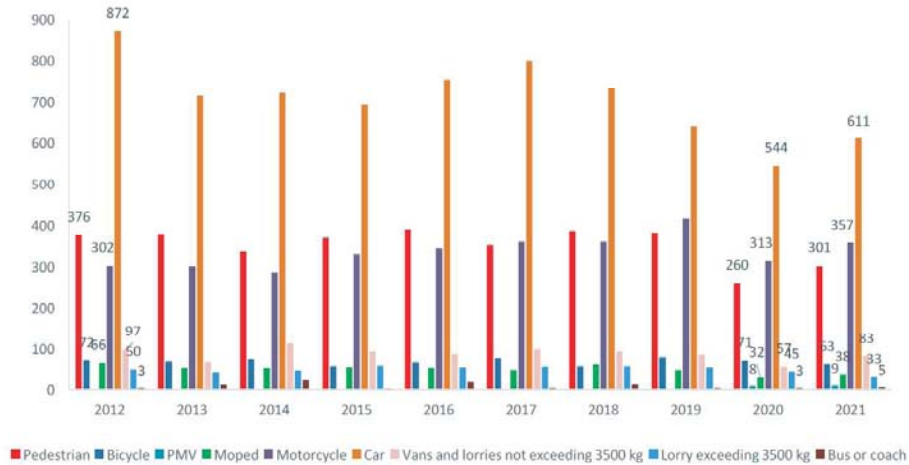
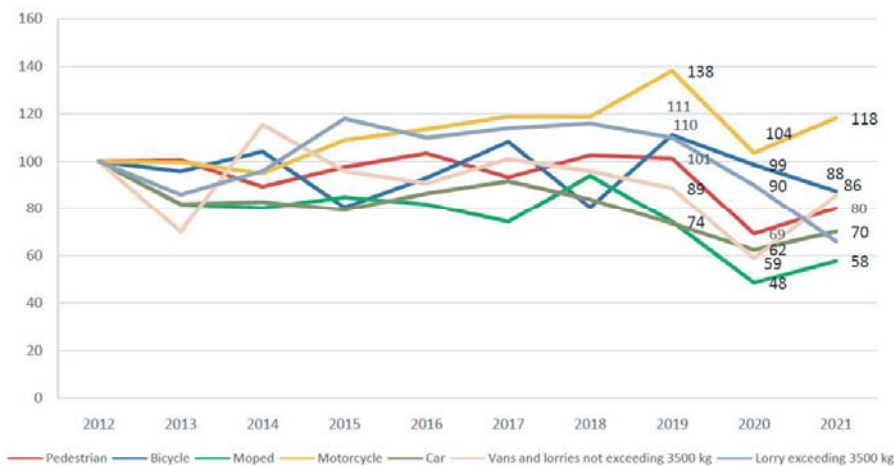


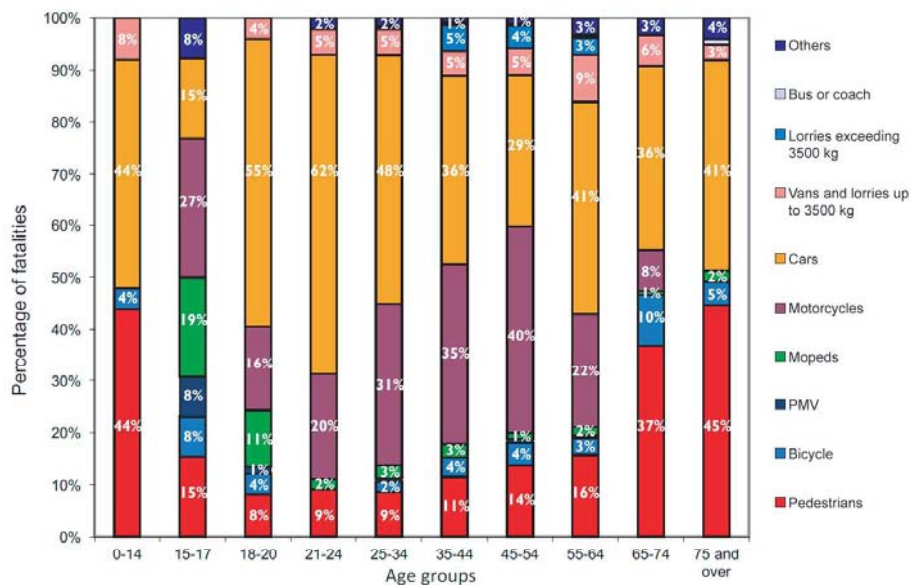
Figure 19.- Evolution of fatalities by mode of transport. Base 2012=100. Spain, 2012-2021



As regards the distribution by age and by mode of transport of the people killed in 2021:

- 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.

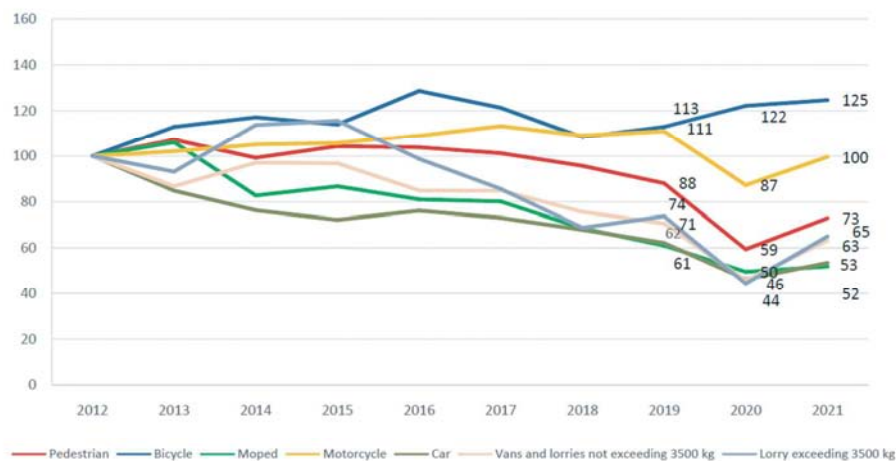
Figure 20.- Percentage distribution of the number of fatalities by mode of travel and age. Spain, 2021



If we focus on hospitalised injured casualties, in 2021 there has been an overall reduction in all modes of transport compared to 2019, with the exception of pedal cyclists (+10%) and bus or coach users (+9%). The greatest decreases were seen in pedestrians (-17%), mopeds (-15%) and cars (-14%).

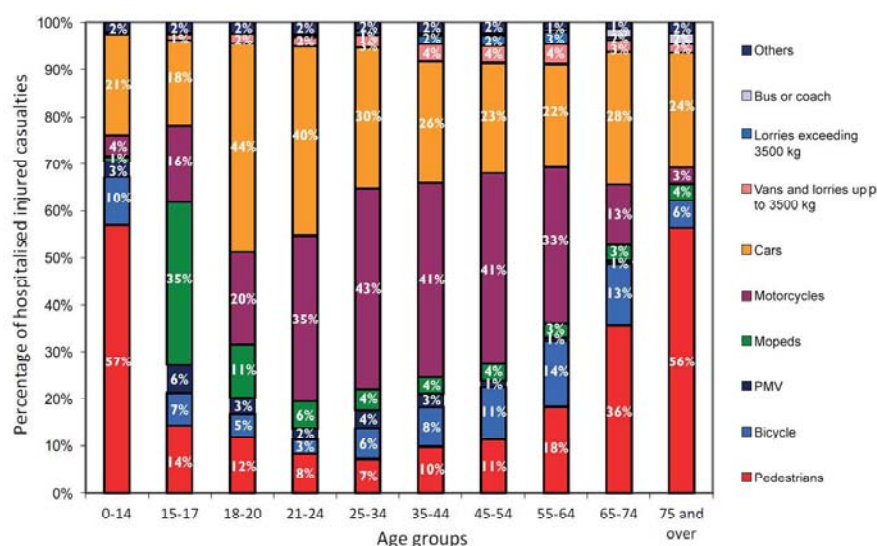
Moreover, if we standardize to 100 the number of hospitalised injured casualties in 2012 (figure 20), the values in 2021 express the percentage change compared to 2012. In 2021, bicycles are the mode of transport which show the worst evolution and at the opposite end are mopeds and cars.

Figure 21.- Evolution of hospitalised injured casualties by mode of transport. Base 2012=100. Spain, 2012-2021



As regards the distribution by age and by mode of transport of the hospitalised injured casualties:

Figure 22.- Percentage distribution of the number of hospitalised injured casualties by mode of transport and age. Spain, 2021

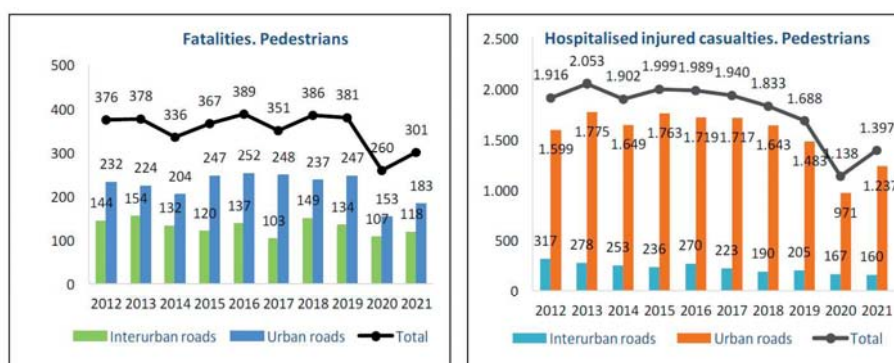


Pedestrians

In 2021, 301 pedestrians were killed, 20% of the total number of fatalities (22% in 2019). There were 80 fewer pedestrian fatalities (-21%) compared to 2019: 16 fewer pedestrians on interurban roads (-12%) and 64 fewer on urban roads (-26%).

Besides, 1,397 pedestrians were admitted to hospital and 9,446 were non-hospital injured casualties. Accidents involving pedestrians mainly occurred on urban roads (93%), roads that registered the highest percentage of pedestrians killed (61%) and of hospitalised injured casualties (95%).

Figure 23.- Evolution of pedestrians killed and hospitalised injured pedestrians on interurban and urban roads. Spain, 2012-2021



On urban roads, the number of pedestrians killed presented slightly higher figures between 2015-2019 than between 2011-2014; this figure was the second lowest value of the series in 2021. On interurban roads, this was the third best data.

Table 11.- Road traffic accidents involving a pedestrian on urban and interurban roads. Spain, 2021

Type of road	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	680	7%	118	39%	160	11%	467	5%
Urban roads	9,781	93%	183	61%	1,237	89%	8,979	95%
Total	10,461	100%	301	100%	1,397	100%	9,446	100%

Bicycles

In 2021, 63 pedal cyclists were killed, which meant 17 fewer pedal cyclist fatalities than in 2019; distributed as follows: 6 fewer pedal cyclists on interurban roads and 11 fewer on urban roads.

Besides, 713 pedal cyclists were admitted to hospital and 7,090 were non-hospital injured casualties. Most of the accidents occurred on urban roads (72%); however, the greatest number of pedal cyclist fatalities occurred on interurban roads - 42 deaths - as against 21 deaths on urban roads.

Figure 24.- Evolution of pedal cyclist fatalities and hospitalised injured casualties on interurban and urban roads. Spain, 2012-2021

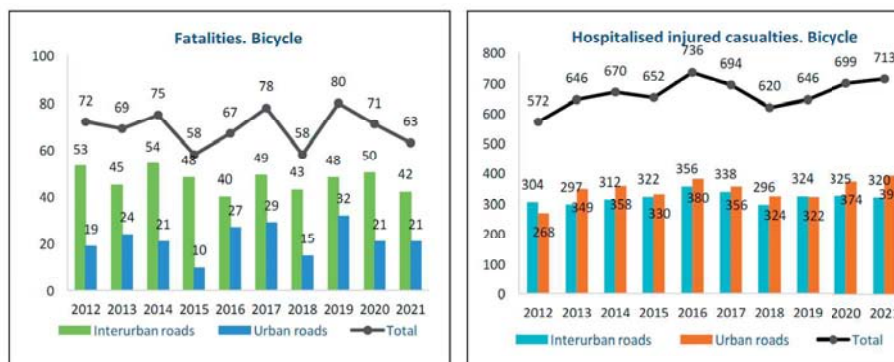


Table 12.- Road traffic accidents involving a pedal cycle on urban and interurban roads. Spain, 2021

Type of road	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number		Number	%	Number	%
Interurban roads	2,321	28%	42		320	45%	2,104	30%
Urban roads	5,825	72%	21		393	55%	4,986	70%
Total	8,146	100%	63		713	100%	7,090	100%

*The percentage distribution is not shown, as the total number of fatalities is below 100.

Personal mobility vehicles

In 2021, 9 users of personal mobility vehicles were killed, there were 172 hospitalised injured casualties and 2,062 non-hospitalised injured casualties. Most of the accidents occurred on urban roads (98%) where more casualties from PMV have been registered: 8 fatalities, 164 hospitalised and 2,017 non-hospitalised injured casualties.

Figure 25.- Evolution of fatalities and hospitalised injured casualties involving personal mobility vehicles on interurban and urban roads. Spain, 2020-2021

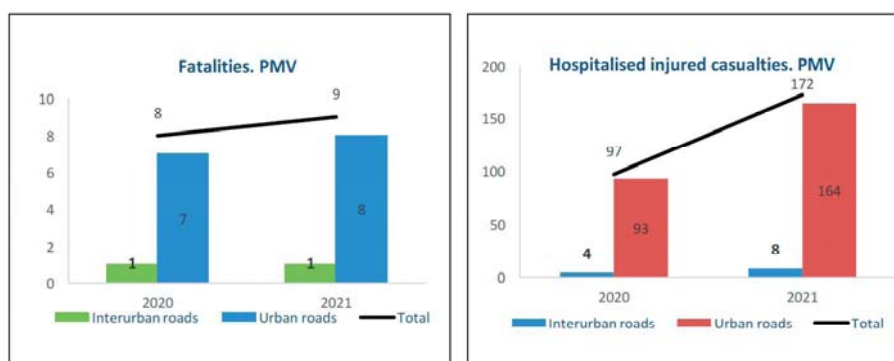


Table 13.- Road traffic accidents involving personal mobility vehicles on urban and interurban roads. Spain, 2021

Type of road	Road traffic accidents		Fatalities	Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	Number	%	Number	%
Interurban roads	53	2%	1	8	5%	45	2%
Urban roads	2,359	98%	8	164	95%	2,017	98%
Total	2,412	100%	9	172	100%	2,062	100%

*The percentage distribution is not shown, as the total number of fatalities is below 100.

Note: PMVs have been included since 2020

Moped users

In 2021 there were 38 moped fatalities, 11 fewer deaths than in 2019. The number of hospitalised injured casualties has decreased by 15%.

The number of road traffic accidents involving a moped was 5,511, accounting for 6% of the total, one percentage point above the figure corresponding to mopeds in the vehicle fleet for the year 2021.

The majority of accidents involving a moped occurs on urban roads (88%) 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 (21) than on interurban roads (17).

The evolution of the number of killed and hospitalised injured moped users shows a decreasing trend since 2012, stabilising in the current values from 2014 to 2019 and going down again in 2021, except in 2018, a year in which there was a slight increase in the fatality figure.

Figure 26.- Evolution of road fatalities and hospitalised injured casualties involving a moped on interurban and urban roads. Spain, 2012-2021



Table 14.- Road traffic accidents involving a moped on interurban and urban roads. Spain, 2021

Type of road	Road traffic accidents		Fatalities	Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	Number	%	Number	%
Interurban roads	657	12%	17	95	24%	620	12%
Urban roads	4854	88%	21	305	76%	4753	88%
Total	5,511	100%	38	400	100%	5,373	100%

* The percentage distribution is not shown, as the total number of fatalities is below 100.

Motorcycles

In 2021 there were 357 motorcycle fatalities, 14% less than in 2019. On interurban roads there was a decrease in the number of motorcyclists killed by 12% and in hospitalised injured casualties by 17%. On urban roads there was a decrease in the number of motorcyclists killed by 19% and in hospitalised injured casualties by 5%, as compared with 2019.

In 2021 motorcycle users represented 27% of the total road traffic accidents, i.e. they were involved in 23,883 accidents whereas the percentage of motorcycles on the vehicle fleet was 11%. 76% of the road traffic accidents involving motorcycles occurred on urban roads where 58% of hospitalised and 78% of non-hospitalised injured motorcyclists were registered. Meanwhile, fatal injuries occurred more frequently on interurban roads: 71% of motorcyclist fatalities occurred on this type of road.

The evolution of fatalities in urban area between 2012 and 2016 registered minimum levels. In interurban area, between 2014 and 2021, the trend is upwards, although fatalities reached a peak in 2019.

Figure 27.- Evolution of fatalities and hospitalised injured casualties involving a motorcycle on interurban and urban roads. Spain, 2012-2021

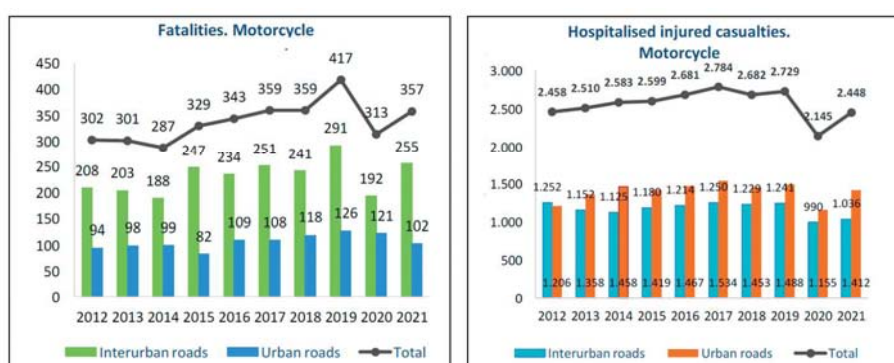


Table 15.- Road traffic accidents involving a motorcycle on interurban and urban roads. Spain, 2021

Type of road	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	5,652	24%	255	71%	1,036	42%	4,898	22%
Urban roads	18,231	76%	102	29%	1,412	58%	17,501	78%
Total	23,883	100%	357	100%	2,448	100%	22,399	100%

Cars

Of the 1,533 deaths as a result of a road traffic accident that occurred in 2021, 61% (544 individuals) were travelling in a car, either as drivers or passengers. Car fatalities have decreased by 6% on interurban roads in comparison with 2019. On urban roads, the number of fatalities has increased with 4 more deaths compared with 2019.

Car users were involved in 65,906 road traffic accidents, that is, in 73% of the road accidents registered in 2021; cars account for 68% in the Spanish vehicle fleet.

62% of the road traffic accidents involving at least one car occurred on urban roads; however, 89% (545 individuals) of car fatalities occurred on road accidents on interurban roads.

Since 2012, the evolution shows a generally downward trend both in the number of fatalities and in hospitalised injured car occupants, except in 2016 and 2017, years with a slight increase.

Figure 28.- Evolution of fatalities and hospitalised injured casualties involving a car on interurban and urban roads. Spain, 2012-2021

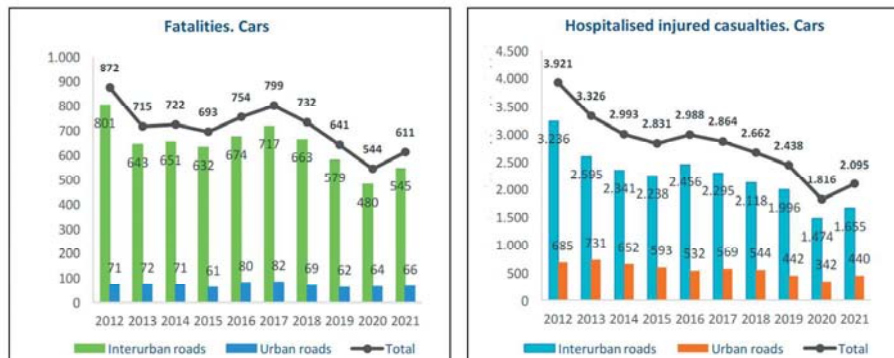


Table 16.- Road traffic accidents involving cars on interurban and urban roads. Spain, 2021

Type of road	Road traffic accidents		Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties	
	Number	%	Number	%	Number	%	Number	%
Interurban roads	24,775	38%	545	89%	1,655	79%	30,907	56%
Urban roads	41,131	62%	66	11%	440	21%	23,953	44%
Total	65,906	100%	611	100%	2,095	100%	54,860	100%

Vehicles for the transport of goods and passengers

Vans

32

In 2021 there were 13 fewer fatalities in vans than in 2019; this decrease was registered on interurban roads.

In 2021, 61 out of the 67 van fatalities were registered on interurban roads. As for third-party fatalities (occupants in other vehicles or pedestrians) involved in van accidents, 70 of the 103 fatalities occurred on interurban roads.

Figure 29.- Evolution of fatalities and hospitalised injured casualties involving a van on interurban and urban roads. Spain, 2012-2021



Table 17.- Road traffic accidents involving a van on interurban and urban roads. Spain, 2021

Type of road	Road traffic accidents		People killed. Total		Occupants killed		People killed. Third-party		Hospitalised injured occupants		Non-hospitalised injured occupants	
	Number	%	Number	%	Number	Number	%	(*)	Number	%	Number	%
Interurban roads	3,264	38%	131	77%	61	70	68	53%	162	84%	2,086	59%
Urban roads	5,375	62%	39	23%	6	33	32		30	16%	1,451	41%
Total	8,639	100%	170	100%	67	103	100	61%	192	100%	3,537	100%

* % of third-party fatalities involving at least a van over the total of people killed in road traffic accidents.

Lorries with a MAM not exceeding 3500 kg

In 2021 and compared to 2019, there were 9 more fatalities and 15 more hospitalised injured casualties on interurban roads; they were travelling as occupants in lorries with a MAM not exceeding 3500 kg. On urban roads and for this lorry category, in 2021 there were 1 more fatality and 4 more hospitalised injured casualties.

Lorries with a MAM not exceeding 3500 kg were involved in 1,644 road traffic accidents; its incidence was slightly higher on urban roads (55%) than on interurban roads (45%).

As regards fatalities, hospitalised and non-hospitalised injured occupants of lorries with a MAM not exceeding 3500 kg were most frequently reported in road traffic accidents occurring on interurban roads (15 fatalities, 39 hospitalised and 364 non-hospitalised injured casualties). On urban roads, 1 lorry occupant fatality was reported and there were 8 hospitalised injured occupant casualties. As regards third-party fatalities (occupants in other vehicles or pedestrians, in an accident in which a lorry of this category was involved), there were 34 fatalities on interurban roads and 11 on urban roads.

Figure 30.- Evolution of fatalities and hospitalised injured casualties involving lorries not exceeding 3500 kg on interurban and urban roads. Spain, 2012-2021

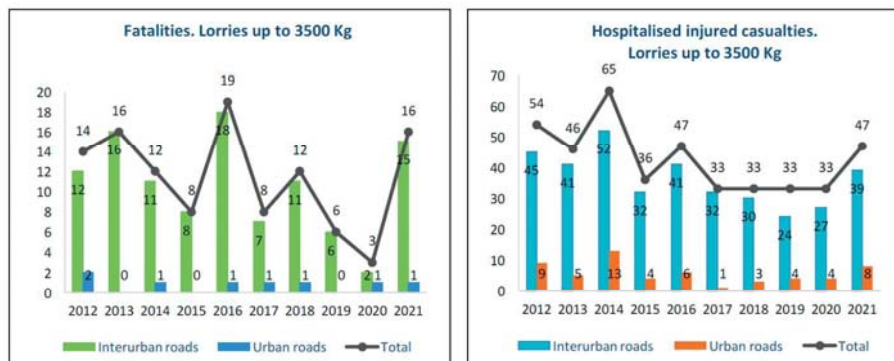


Table 18.- Road traffic accidents involving lorries with a MAM not exceeding 3500 kg on interurban and urban roads. Spain, 2021

Type of road	Road traffic accidents		People killed. Total *	Occupants killed *	People killed. Third-party *	Hospitalised injured occupants *	Non-hospitalised injured occupants	
	Number	%	Number	Number	Number	Number	Number	%
Interurban roads	746	45%	49	15	34	39	364	67%
Urban roads	898	55%	12	1	11	8	179	33%
Total	1,644	100%	61	16	45	47	543	100%

* The percentage distribution is not shown, as the total number of fatalities is below 100.

Lorries with a MAM exceeding 3500 kg

In 2021, there were 33 fewer occupants of lorries with MAM exceeding 3500 kg killed on interurban roads, 22 less than in 2019. On these roads, the number of occupants of these lorries requiring hospitalization decreased (12% less) as compared with 2019. On urban roads, there were no fatalities but two more people than in 2019 required hospitalization.

Lorries with a MAM exceeding 3500 kg were involved in 3,145 road traffic accidents, occurring mainly on interurban roads (76%).

As for occupant fatalities, third-party fatalities (occupants in other vehicles in an accident in which there was a lorry of this category involved), hospitalised and non-hospitalised injured occupants mainly occurred in accidents on interurban roads.

Figure 31.- Evolution of fatalities and hospitalised injured casualties involving lorries exceeding 3500 kg on interurban and urban roads. Spain, 2012-2021

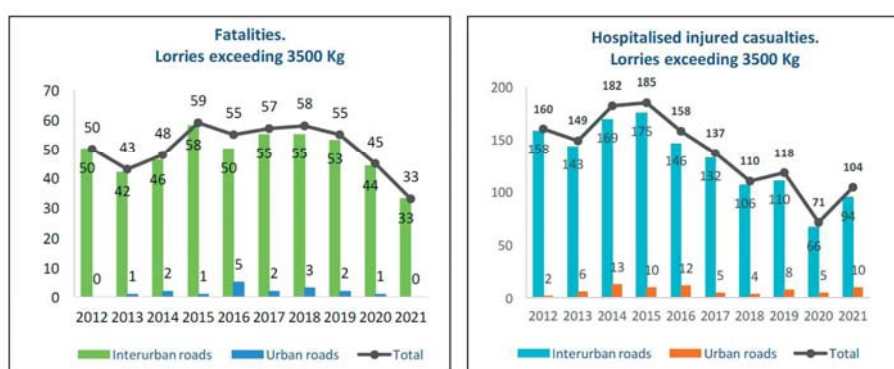


Table 19.- Road traffic accidents involving lorries with a MAM exceeding 3500 kg on interurban and urban roads. Spain, 2021

Type of road	Road traffic accidents		People killed. Total		Occupants killed *		People killed. Third-party		Hospitalised injured occupants		Non-hospitalised injured occupants	
	Number	%	Number	%	Number	Number	%	(*)	Number	%	Number	%
Interurban roads	2,382	76%	204	89%	33	171	87	84%	94	90%	736	89%
Urban roads	763	24%	26	11%	0	26	13		10	10%	95	11%
Total	3,145	100%	230	100%	33	197	100	86%	104	100%	831	100%

* The percentage distribution is not shown, as the total number of fatalities is below 100.

Buses or coaches

In 2021, on interurban roads, there were 5 bus or coach occupant fatalities, the same figure as in 2019, and 4 more hospitalised injured casualties; on urban roads, there were 4 occupant fatalities, two more than in 2019, and 5 more hospitalised injured occupant casualties than in 2019.

In 2021, there were 1,796 road traffic accidents in which a bus or coach was involved; 91% of them occurred on urban roads. On this type of road there were 1,631 road traffic accidents in which 20 people were killed (4 occupants), 36 bus or coach occupants required hospitalization and 1,636 injured occupants did not.

On interurban roads, there were 165 road traffic accidents in which a bus or coach was involved. Of them, 9 occupants required hospitalization and 121 did not.

Figure 32.- Evolution of fatalities and hospitalised injured casualties involving a bus or coach on interurban and urban roads. Spain, 2012-2021

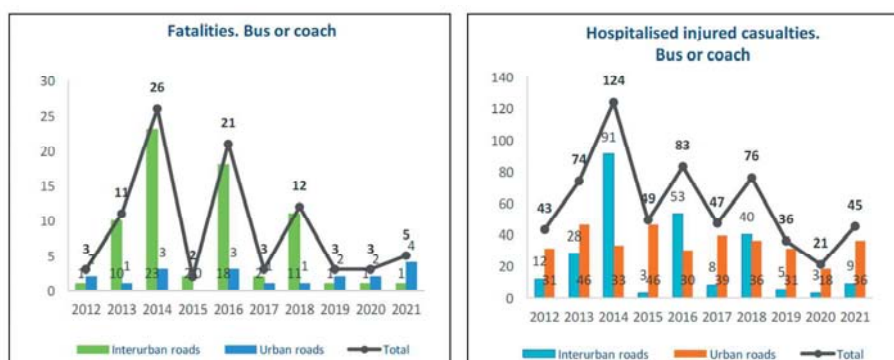


Table 20.- Road traffic accidents involving a bus or coach on interurban and urban roads. Spain, 2021

Type of road	Road traffic accidents		People killed. Total *	Occupants killed *	People killed. Third-party *	Hospitalised injured occupants *	Non-hospitalised injured occupants	
	Number	%	Number	Number	Number	Number	Number	%
Interurban roads	165	9%	15	1	14	9	121	7%
Urban roads	1,631	91%	20	4	16	36	1,636	93%
Total	1,796	100%	35	5	30	45	1,757	100%

* The percentage distribution is not shown, as the total number of fatalities is below 100.

The collision matrices

The collision matrix is an instrument that allows to analyse 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 47,399 casualties on interurban roads and the 72,296 casualties on urban roads reported in 2021 are analysed, the following conclusions are drawn:

- On interurban roads, car users represent 70% of the total casualties in 2021, followed by motorcycles which account for 13% of the total. 35% of the casualties have occurred in road traffic accidents in which no other vehicle or pedestrian were involved, 48% of them involved two vehicles or one vehicle and one pedestrian, and 17% involved two or more vehicles or one vehicle and two or more pedestrians.
- On urban roads, cars represented 34% of the total casualties in 2021, followed by motorcycles - 26% - and pedestrians - 14% -. 16% of the casualties have occurred in road traffic accidents in which no other vehicle or pedestrian were involved, 71% of them involved two vehicles or one vehicle and one pedestrian, and 14% involved two or more vehicles or one vehicle and two or more pedestrians.

Table 21.- Collision matrix on road traffic casualties. Interurban roads. Spain, 2021

Mode of transport involved in the road traffic accident other than the casualty's															
Number	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	181	0	0	13	0	12	17	402	55	13	23	2	27	745	
Bicycle	204	921	10	213	1	3	32	891	110	19	26	3	33	2,466	
PMV	0	12	0	1	0	0	0	39	0	0	0	0	2	54	
Moped	28	315	8	2	0	20	23	261	37	10	13	0	15	732	
Motorcycle	340	2,988	11	19	0	19	230	2,118	259	49	78	19	59	6,189	
Car	6,723	10,762	19	15	0	7	162	12,223	1,296	322	1,238	98	242	33,107	
Van	505	638	1	1	0	3	12	797	128	34	154	5	31	2,309	
Lorry up to 3500 kg	80	119	0	0	0	0	1	112	20	25	47	5	9	418	
Lorry exceeding 3500 kg	120	474	0	0	0	0	2	94	21	12	113	0	27	863	
Bus or coach	39	21	0	0	0	0	0	50	10	10	1	0	0	131	
Other vehicle	24	185	0	1	0	1	8	119	24	8	10	0	5	385	
Total	8,244	16,435	49	265	1	65	487	17,106	1,960	502	1,703	132	450	47,399	

Table 22.- Collision matrix on road traffic casualties. Urban roads. Spain, 2021

Mode of transport involved in the road traffic accident other than the casualty's															
Number	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	2,777	2	0	218	187	120	385	5,364	700	132	81	120	313	10,399	
Bicycle	210	1,530	78	252	40	25	184	2,573	258	36	30	33	151	5,400	
PMV	31	641	41	50	50	13	48	1,141	113	11	10	18	22	2,189	
Moped	210	1,333	51	28	7	73	168	2,769	265	48	37	24	66	5,079	
Motorcycle	1,210	3,868	218	174	43	153	737	10,639	1,238	170	118	110	337	19,015	
Car	4,538	2,822	80	39	9	102	375	13,885	1,401	287	339	273	309	24,459	
Van	308	137	8	3	0	3	32	754	146	20	25	23	28	1,487	
Lorry up to 3500 kg	29	35	1	0	0	1	0	94	4	11	5	5	3	188	
Lorry exceeding 3500 kg	21	37	0	1	0	0	2	27	5	1	4	5	2	105	
Bus or coach	53	726	38	24	2	12	33	619	86	15	22	32	14	1,676	
Other vehicle	113	688	13	71	1	11	106	1,008	110	23	11	16	128	2,299	
Total	9,500	11,819	528	860	339	513	2,070	38,873	4,326	754	682	659	1,373	72,296	

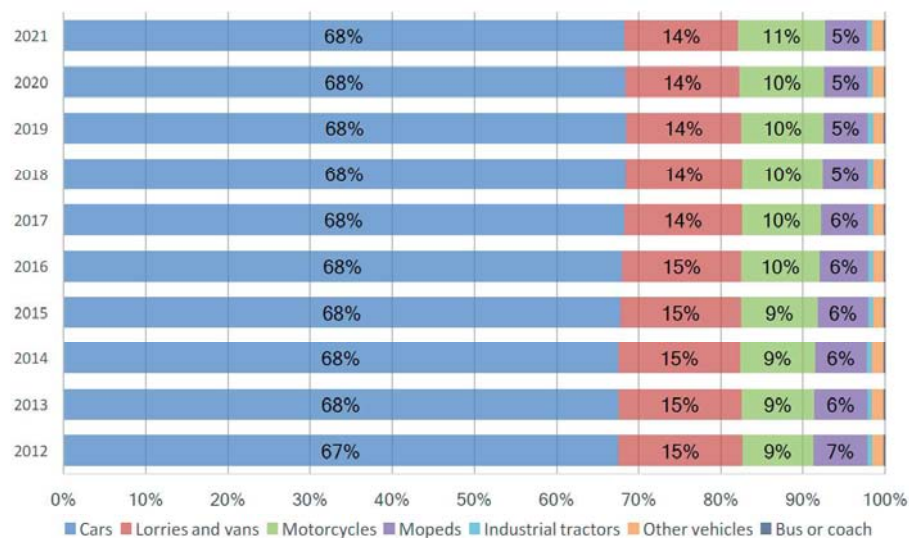
Exposure indicators

Vehicle fleet

The vehicle fleet has grown by more than two million units in the last decade. In 2021 there has been an increase by 1% (375,899 units) compared with the previous year and the greatest increase in absolute figures is for cars with a 1% increase.

The vehicle fleet is mainly made up by cars with more than 24 million units which represent 68% of the fleet; cars are followed by lorries and vans, 14% of the total vehicle fleet; and by motorcycles, 11%.

Figure 33.- Evolution of the vehicle fleet over the last ten years Spain, 2012-2021



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

Performance indicators

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.

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 86% of the total registered vehicles, the vehicles under 15 years of age represent 54% of the registered vehicles.

Table 23.- Basic statistical measures of the vehicle fleet (mopeds excluded) and their age by vehicle type. Spain, 2021

Age of the fleet	Measure	Lorries and vans	Buses or coaches	Cars	Motorcycles	Industrial Tractors	Other vehicles	Total without Mopeds
Complete	Total	5,050,416	64,447	24,940,969	3,866,220	238,456	505,800	34,666,308
	Average age (years)	17.4	15.0	14.7	16.9	11.2	17.1	15.4
	Dev. St.	11.7	14.0	11.4	14.3	10.0	9.8	11.8
	Coef. Variation	67.4	93.3	77.4	84.5	89.1	57.5	77.0
Less than 25 years	Total	4,060,073	55,442	22,034,000	3,010,557	219,516	427,386	29,806,974
	Average age (years)	12.9	10.2	11.5	10.5	9.0	14.0	11.6
	Dev. St.	7.0	6.2	6.7	6.4	6.4	6.5	6.7
	Coef. Variation	54.0	60.6	58.2	60.9	70.6	46.5	58.0
Less than 15 years	Total	2,179,450	41,648	1,080,453	2,171,087	172,982	183,828	18,829,448
	Average age (years)	8.1	7.5	7.6	7.9	6.5	9.3	7.7
	Dev. St.	4.7	4.4	4.5	4.7	4.1	5.3	4.5
	Coef. Variation	62.2	58.7	60.3	62.9	64.7	65.9	60.9

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 24.- Percentiles in years by type of vehicle of the vehicle fleet. Spain, 2021

Type of Vehicle/ Percentile	10	20	30	40	50	60	70	80	90
Lorries and vans	3.5	5.5	10.5	14.5	16.5	17.5	20.5	24.5	32.5
Buses or coaches	2.5	4.5	5.5	8.5	11.5	14.5	16.5	19.5	34.5
Cars	2.5	4.5	6.5	10.5	13.5	15.5	17.5	20.5	26.5
Motorcycles	2.5	4.5	7.5	11.5	13.5	15.5	17.5	28.5	37.5
Industrial Tractors	1.5	2.5	4.5	5.5	7.5	10.5	14.5	16.5	22.5
Other Vehicles ¹	2.5	6.5	13.5	15.5	16.5	17.5	18.5	21.5	28.5
Total interurban	2.5	4.5	7.5	11.5	14.5	15.5	17.5	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 have been excluded.

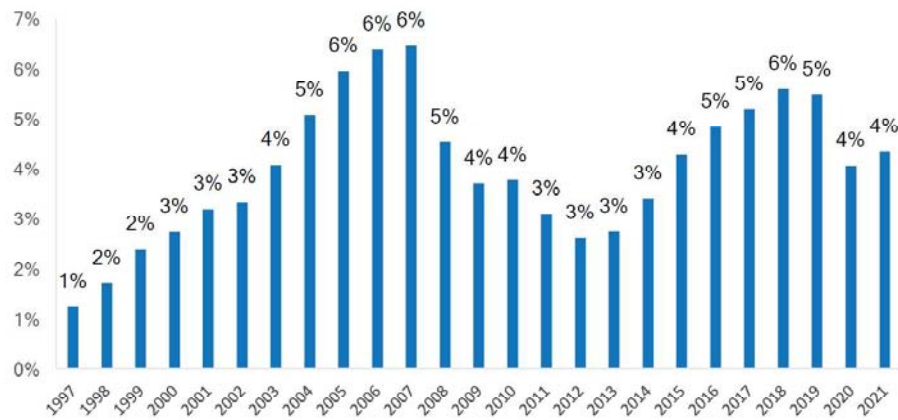
The average age of the vehicle fleet under 25 years ranges from 9 years for industrial tractors to 14.2 years for lorries with a MAM not exceeding 3500 kg. The average age of buses or coaches is 10.2 years. The average age of cars is 11.5 years, over the average age of motorcycles that is 10.5 years.

Table 25.- Age of the vehicle fleet*. Spain, 2012-2021.

Age of the fleet	Lorries ≤ 3,500kg	Lorries > 3,500kg	Industrial tractors	Vans	Buses or coaches	Cars	Motorcycles
2012	9.8	11.8	8.3	12	9.2	9.6	9
2021	14.2	14	9	10.5	10.2	11.5	10.5

* Only vehicles under 25 years of age are considered.

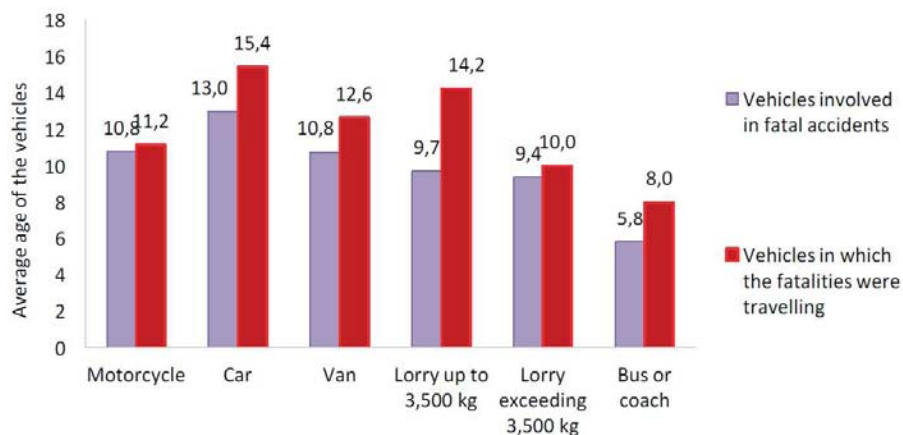
Figure 34.- Percentage distribution of the vehicle fleet under 25 years of age, without mopeds, by registration year. Spain, 2021



Age of the vehicles involved in fatal road traffic accidents

In 2021 on interurban roads, in the case of cars, vans and lorries 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. For cars, the average age of all the vehicles involved in fatal accidents was 13.0 years and 15.4 years when selecting those in which the fatalities were travelling; in the case of vans, the average age was 10.8 years and 12.6 years respectively.

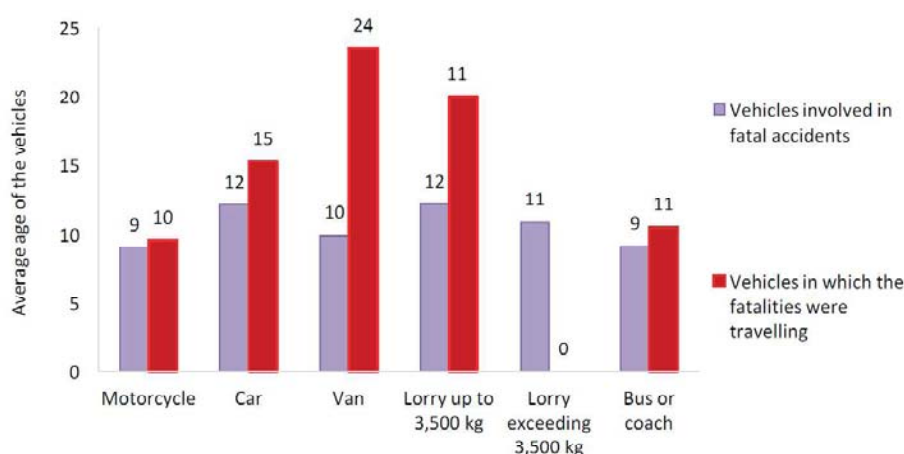
Figure 35.- Average age of the vehicles involved in fatal accidents and of the vehicles in which the fatalities were travelling. Interurban roads. Spain, 2021



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

In 2021, on urban roads, the average age of the cars involved in fatal accidents was 12.1 years, a figure lower than that of cars in which fatalities were travelling (15.3).

Figure 36.- Average age of the vehicles involved in fatal accidents and of the vehicles in which the fatalities were travelling. Urban roads. Spain, 2021



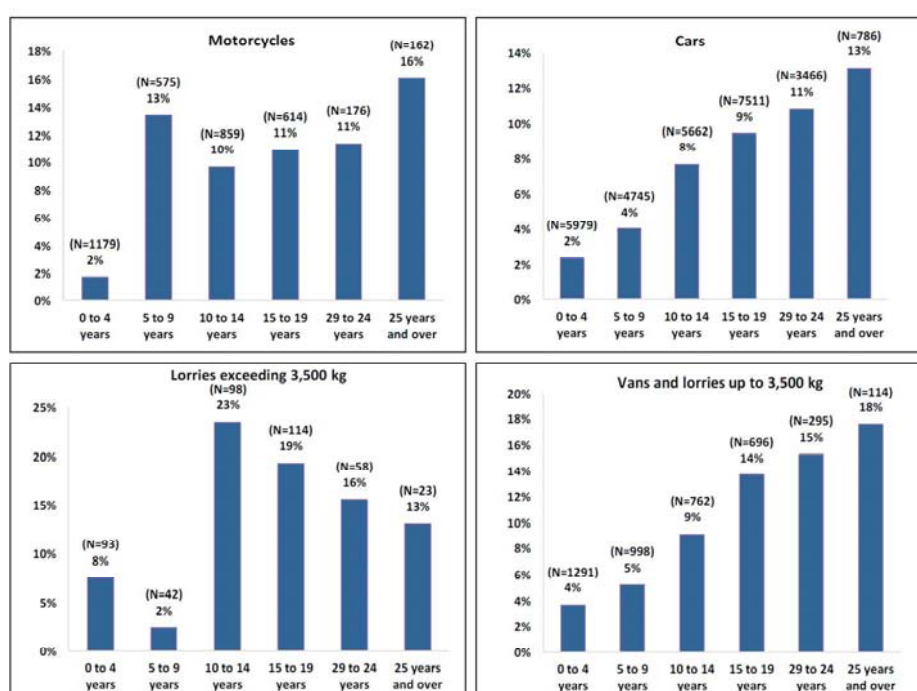
The average age of the vehicles is not shown when the number of units is below 10.

Roadworthiness tests for the vehicles involved in road traffic accidents

There is a link between the age of the vehicle involved in a road traffic accident and the result of its roadworthiness test, as may be noted from the data below. In the case of motorcycles, the percentage of vehicles with an expired roadworthiness test certificate went from 2% between 0 and 4 years to 10% from the age of 10 years. In the case of cars, the percentage went from 4% between 5 and 9 years to 9% 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 3% and 21%. In lorries exceeding 3500 kg the variation is between 2% and 23%.

Figure 37.- 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, 2021



* 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 brackets in each age group.

4

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Performance indicators: road traffic accidents and victims

Age and gender

- In 2021, males were killed 3.8 times more than females, the number of male fatalities was higher than female fatalities in all age groups. Males also register the greatest fatality rates per million population.
- Fatality rates per million population have decreased in all age groups as compared with 2019, except in the 15-24 age group.

Figure 38.- Fatalities by age groups and by gender. Spain, 2021.

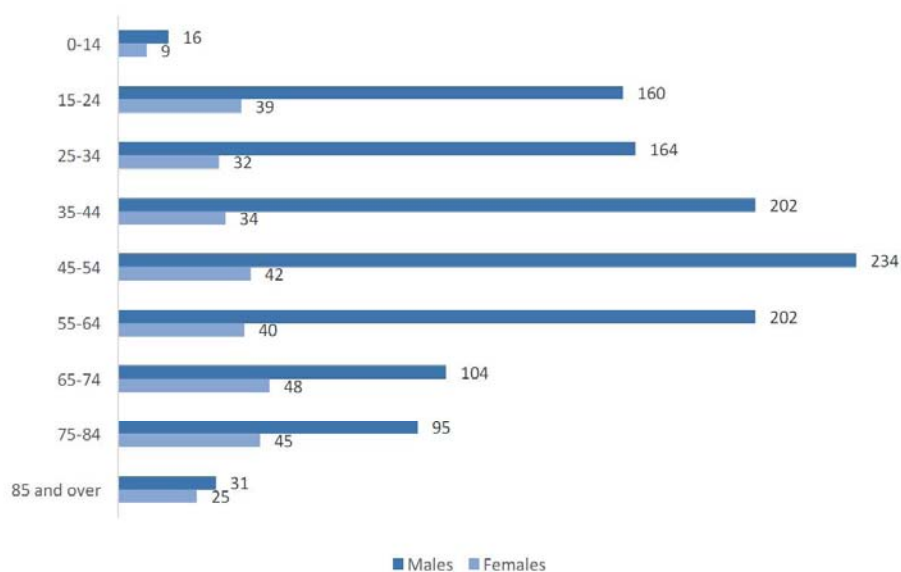
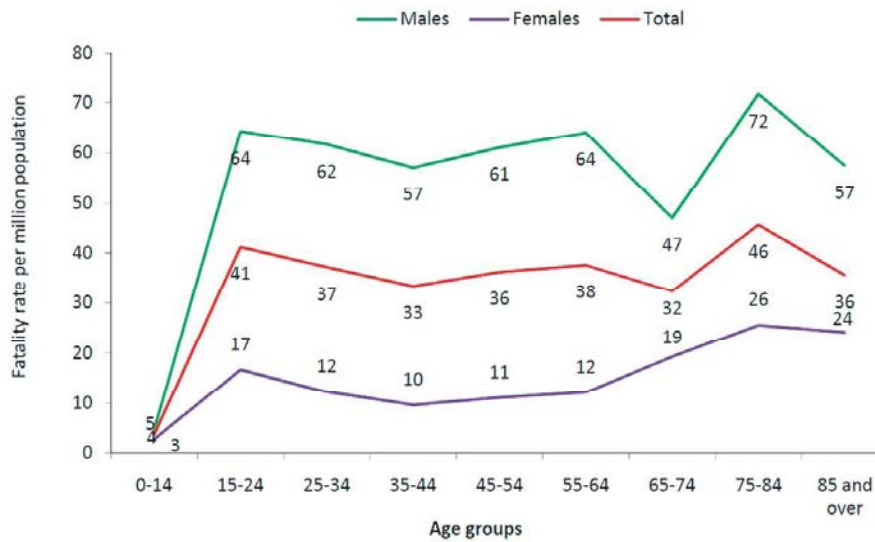
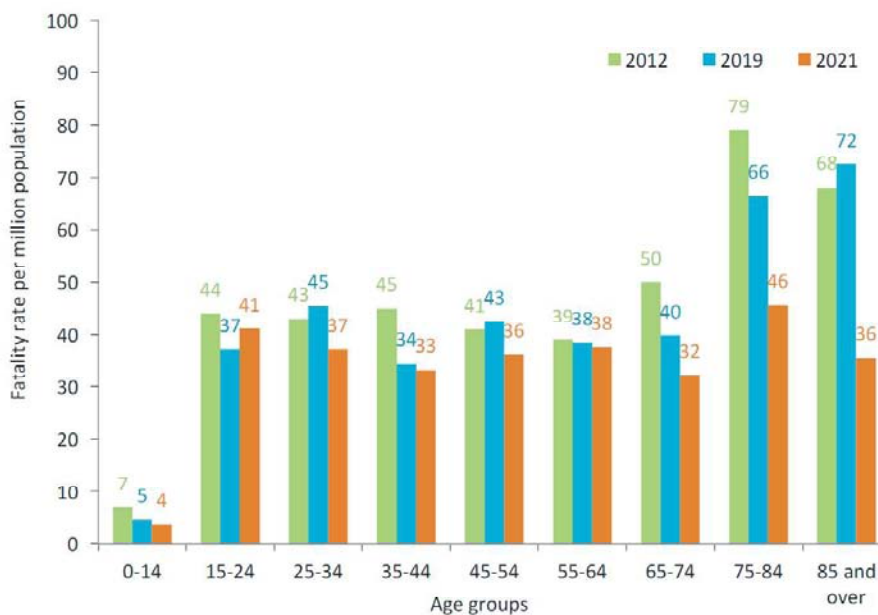


Figure 39.- Fatality rate by age and gender per million population. Spain, 2021.



As regards fatality rates per million population by age and by gender, males register the highest rate in all age groups, the biggest differences are with females in the 35-44 and 45-54 age groups.

Figure 40.- Evolution of fatality rates by age groups. Rates per million population. Spain, 2012, 2019 and 2021



People under 15 years of age

In 2021, 25 persons under 15 years of age were killed in a road traffic accident, representing 2% of all fatalities. The case fatality rate for people under 15 years of age was at 0.5, whereas it was at 1.3 for the rest of the age groups; the fatality rate per million population for people under 15 years of age was at 4, whereas for the complementary set of ages was at 37.

Table 26.- 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, 2021

	Under 15 years of age	% on the total of ages	Rest of ages
Fatalities	25	2%	1,508
Hospitalised injured casualties	248	3%	7,536
Non-hospitalised injured casualties	4,636	4%	105,742
Total casualties	4,909	4%	114,786
Case fatality rate	0.5		1.3
Fatality rate per million population	4		37
Hospitalised injured casualty rate per million population	37		185

The greatest number of people killed under 15 years of age was registered when they were passengers, 13 out of the 25 fatalities. Of the hospitalised injured casualties, the highest frequency occurred as pedestrians - 57% - and secondly as passengers - 28%.

Figure 41.- People killed and hospitalised under 15 years of age by type of user. Spain, 2021



Young people aged 15 to 24

In 2021, 199 young people aged 15 to 24 were killed in a road traffic accident, representing 13% of total fatalities. Overall, this age group accounts for 10.2% of the Spanish population and 6% of the registered drivers.

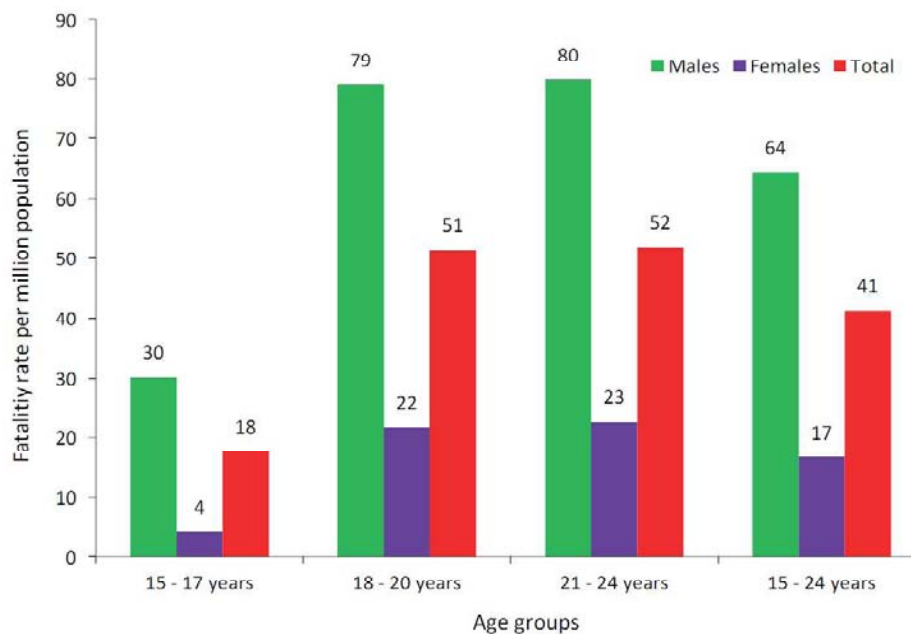
The case fatality rate for this age group was at 0.9 in 2021 and its fatality rate per million population was at 41.

There are substantial differences in the fatality rate per million population by gender: in males it is seven times as high as that among females in the 15-17 age group and almost four times in the 18-20 and 21-24 age groups.

Table 27.- Comparison of severity degree as a result of road traffic accidents in young people aged 15 to 24 and rest of population. Spain, 2021

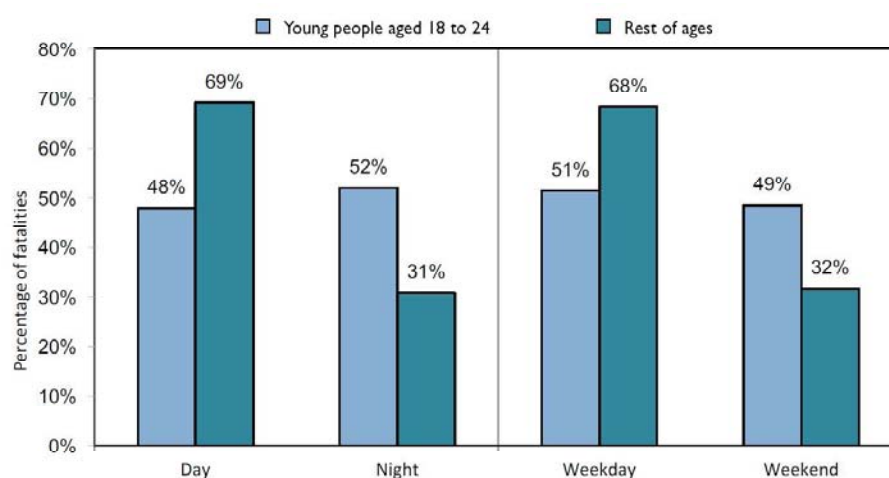
	15-24 age group	% on the total of ages	Rest of ages
Fatalities	199	13%	1,334
Hospitalised injured casualties	1,227	16%	6,557
Non-hospitalised injured casualties	19,956	18%	90,422
Total casualties	21,382	18%	98,313
Case fatality rate	0.9		1.4
Fatality rate per million population	41		31
Hospitalised injured casualty rate per million population	254		154

Figure 42.- Fatality rate in young people aged 15 to 24 per million population distributed by gender and by age groups. Spain, 2021



The weekend and the night present a risk to young people aged 18 to 24 if compared with the rest of the population. 52% of the deaths among young people between 18 and 24 years of age were registered during the night whereas for the rest of the population the percentage was 31%. During the weekend, the percentage of fatalities for young people was 49% and for the rest of the population was 32%.

Figure 43.- Percentage distribution of deaths among young people aged 18 to 24 and the rest of ages based on the day/night and weekend ⁽¹⁾ / not weekend parameters. Spain, 2021



(1) Weekend: weekend days start at 15:00 on Friday and end at 23:59 on Sunday.

Persons over the age of 64

In 2021, 349 persons over the age of 64 were killed, this means a decrease by 29% compared with 2019; even so, this age group represent 23% of all fatalities. Persons over the age of 64 account for 20% of the Spanish population and 17% of the registered drivers.

Fatality rate for persons over the age of 64 was at 3.3 in 2021. This rate increases as age increases, in such a way that for the 65-74 age group was at 2.4, for the 75-84 was at 4.0 and for the 85 and over age group was at 5.7.

Fatality rate per million population for persons over the age of 64 was at 37 whereas for the rest of age groups was at 31.

Table 28.- Comparison of severity degree as a result of road traffic accidents in persons over the age of 64 and rest of the population. Spain, 2021

	Persons over the age of 64	% on the total of ages	Rest of ages
Fatalities	349	23%	1,184
Hospitalised injured casualties	1,177	15%	6,607
Non-hospitalised injured casualties	9,197	8%	101,181
Total casualties	10,723	9%	108,972
Case fatality rate	3.3		1.1
Fatality rate per million population	37		31
Hospitalised injured casualty rate per million population	126		174

Accident pattern has been different according to the type of road: persons over the age of 64 were killed mainly as drivers on interurban roads and as pedestrians on urban roads.

Figure 44.- Persons over the age of 64 killed by area (urban or interurban) and type of user. Spain, 2021

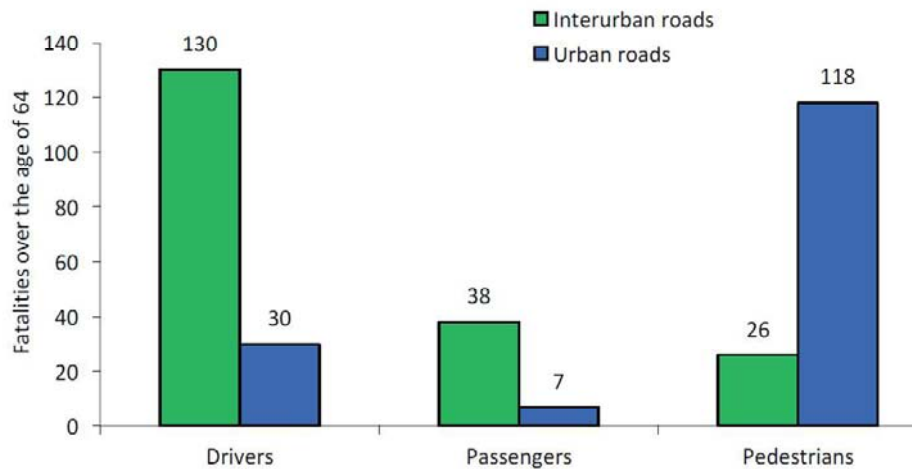


Figure 45.- Persons over the age of 64 killed by age group and type of user. Interurban roads. Spain, 2021

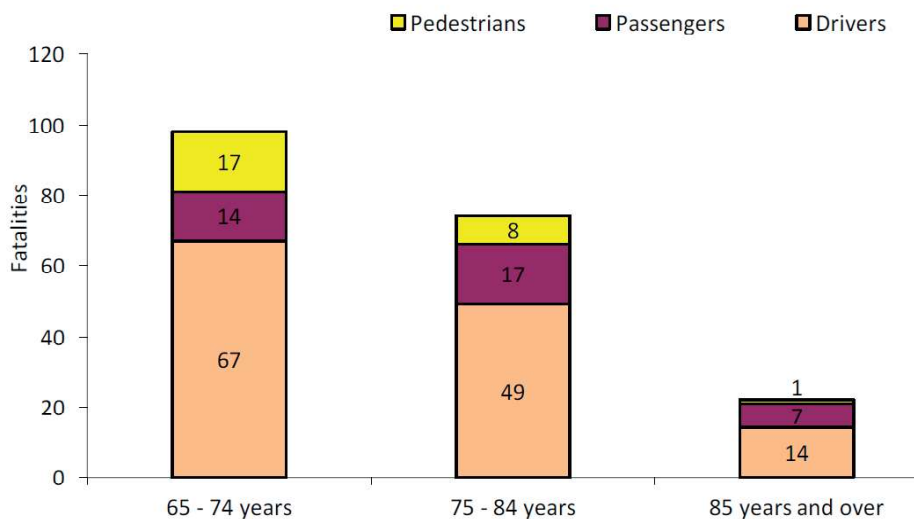
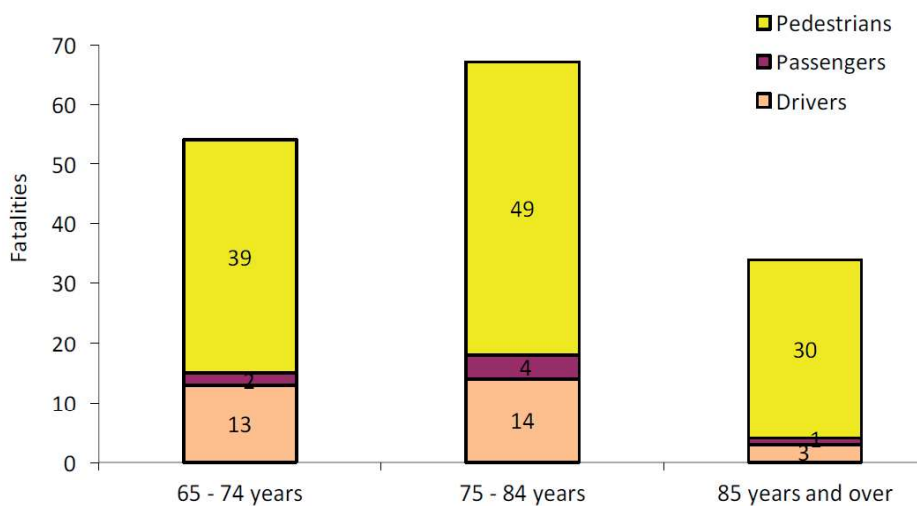


Figure 46.- Persons over the age of 64 killed by age group and type of user. Urban roads. Spain, 2021



Drivers

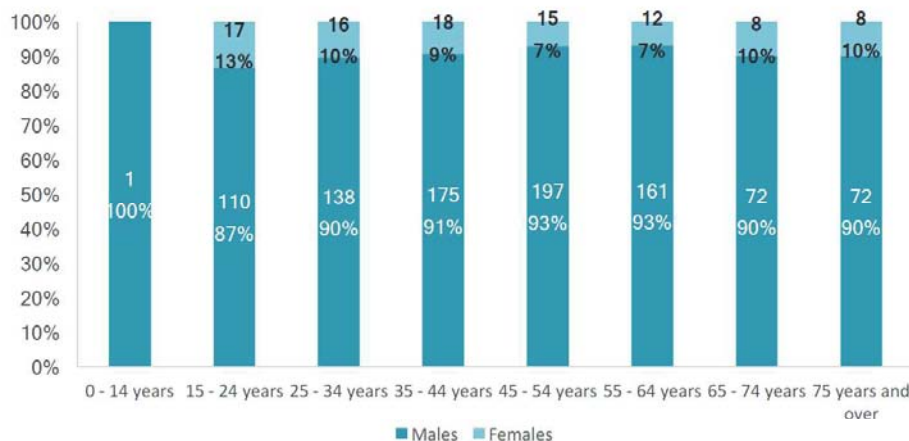
In 2021, 1,022 drivers were killed in road traffic accidents, 67% of total fatalities. 91% of the driver fatalities were males, 46% were below 45 years of age and 45% were driving a car. Besides, 76% of the drivers were killed as a result of a road traffic accident on an interurban road.

In 2021 there was a decrease by 13% in the number of road accident fatalities as compared with 2019 and in the case of fatally injured drivers the decrease was by 10%. The year-on-year variation has been -1% for total fatalities and 2% for driver fatalities over the past ten years. An analysis of the percentage of the drivers killed over the total fatalities indicates that it was 67% in 2021.

Figure 47.- Evolution of driver fatalities and of the total. Spain, 2012-2021

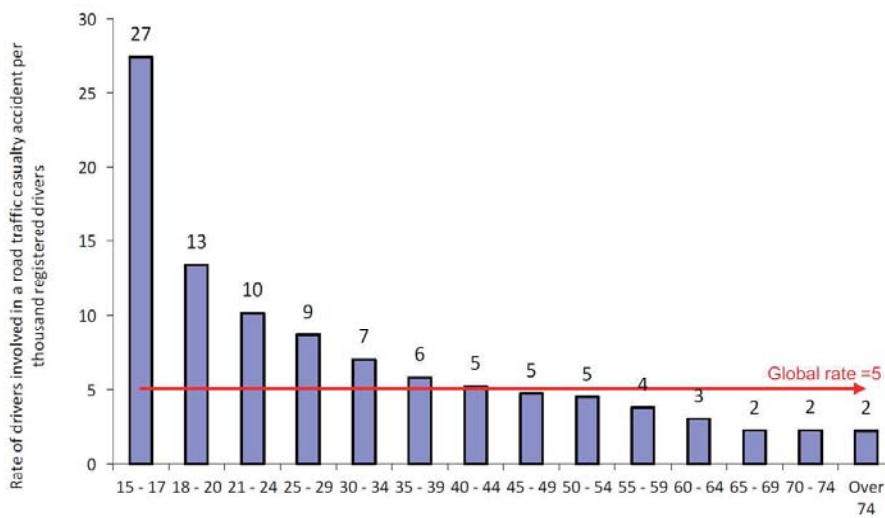


Figure 48.- Proportion of driver fatalities by age groups and by gender. Spain, 2021



The rate of drivers involved in a road traffic accident per thousand registered drivers was at 5 in 2021. This rate decreases with age, registering rates lower than global rates from the age of 55 years, and the minimum from the age of 60 years. The greatest rate is at 27, with drivers aged 15 - 17 years.

Figure 48.- Proportion of driver fatalities by age groups and by gender. Spain, 2021



Pedestrians

301 pedestrians were killed in road traffic accidents in 2021 which account for 20% of total fatalities.

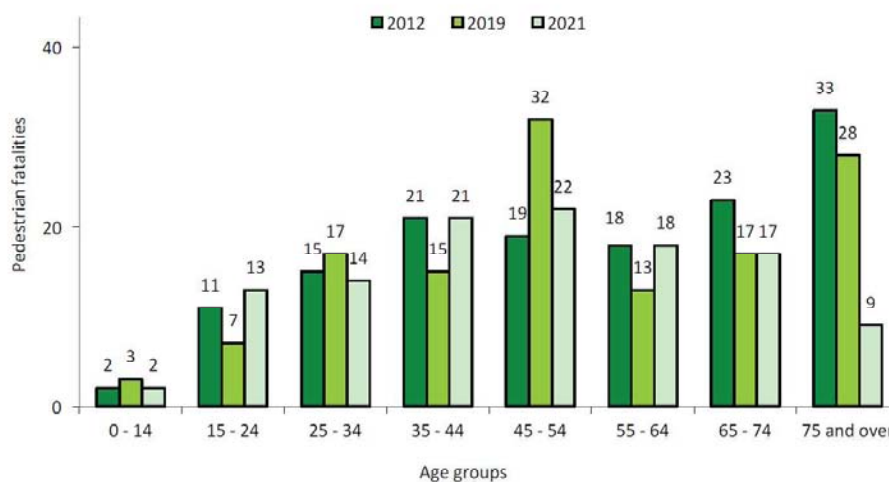
Table 29.- Pedestrian fatalities, hospitalised and non-hospitalised injured pedestrians and their case fatality rate. Interurban and urban roads. Spain, 2021

Type of road	Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties		Case fatality rate
	Number	%	Number	%	Number	%	
Interurban roads	118	39%	160	11%	467	5%	15.8
Urban roads	183	61%	1,237	89%	8,979	95%	1.8
Total	301	100%	1,397	100%	9,446	100%	2.7

In 2021, the number of pedestrians killed has decreased by 12% on interurban roads and by 26% on urban roads in comparison to 2019.

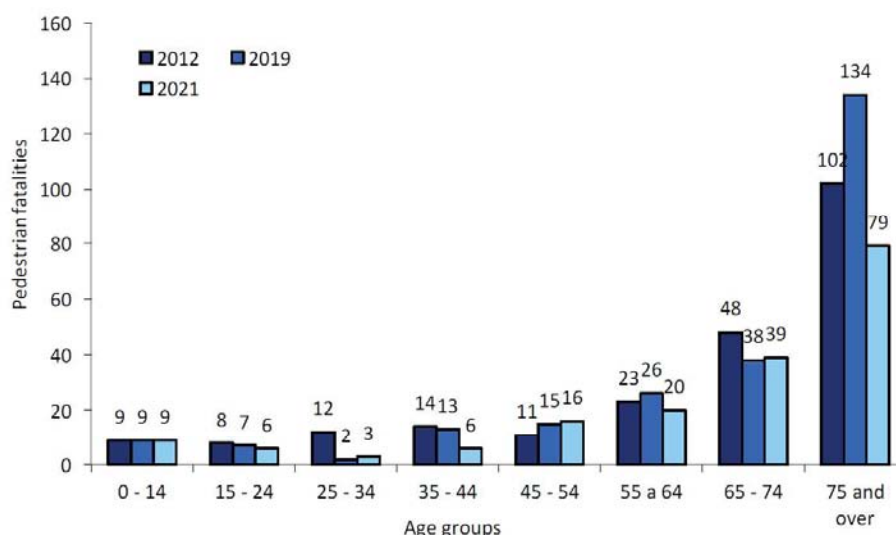
In the figure below, the evolution of the number of pedestrians killed on interurban roads by age group is shown and it can be seen, in comparison with 2019, a decrease in all age groups, except in the 15-24, 35-44 and 55-64 age groups.

Figure 50.- Number of pedestrians killed by age groups. Interurban roads. Spain, 2012, 2019 and 2021



There was a decrease in the number of pedestrians killed on urban roads in all age groups as compared with 2019, except in the 25-34, 45-54 and 65-74 age groups. The greatest variation concentrates on the 75 and over age group, with a decrease of 55 fatalities. On these roads, 67% of the pedestrians killed were 65 years of age or over.

Figure 51.- Number of pedestrians killed by age groups. Urban roads. Spain, 2012, 2019 and 2021



Passengers

210 passengers were killed in road traffic accidents in 2021 which account for 14% of total fatalities. 86% of passenger fatalities, 47% of hospitalised and 49% of non-hospitalised injured passengers occurred on road traffic accidents on interurban roads.

Table 30.- Passenger fatalities, hospitalised and non-hospitalised injured passengers and their case fatality rate. Interurban and urban roads. Spain, 2021

Type of road	Fatalities		Hospitalised injured casualties		Non-hospitalised injured casualties		Case fatality rate
	Number	%	Number	%	Number	%	
Interurban roads	181	86%	783	47%	12,617	49%	1.3
Urban roads	29	14%	870	53%	13,085	51%	0.2
Total	210	100%	1,653	100%	25,702	100%	0.8

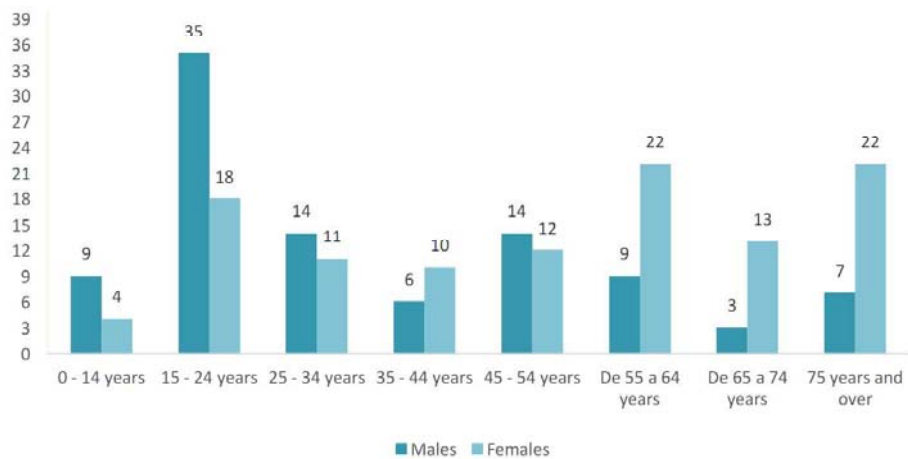
In 2021, the number of passenger fatalities has decreased by 11% in comparison with 2019. The year-on-year variation over the past ten years has been -2% for total fatalities and 6% for passenger fatalities.

Figure 52.- Evolution of passenger fatalities and of the total. Spain, 2012-2021



The following figure shows the number of passenger fatalities by age groups and gender, and it can be observed that the number of male fatalities is higher in the 15-24 age group. However, the number of female fatalities is higher in the 55-64 and 75 and over age groups.

Figure 53.- Number of passengers killed by age groups and gender. Spain, 2021



Users of vulnerable means

In 2021, 50% of the fatalities were pedestrians, cyclists, users of personal mobility vehicles and motorcyclists. It is the third year in a row in which fatalities from vulnerable means account for 50% or over of people killed as a result of a road traffic accident. This percentage is higher on urban roads, totalling 80% of fatalities on these roads in 2021 and 39% on interurban roads.

Figure 54.- Evolution of the number of fatalities and of the percentage of the total of people killed using vulnerable means by type of road. Spain, 2012-2021.

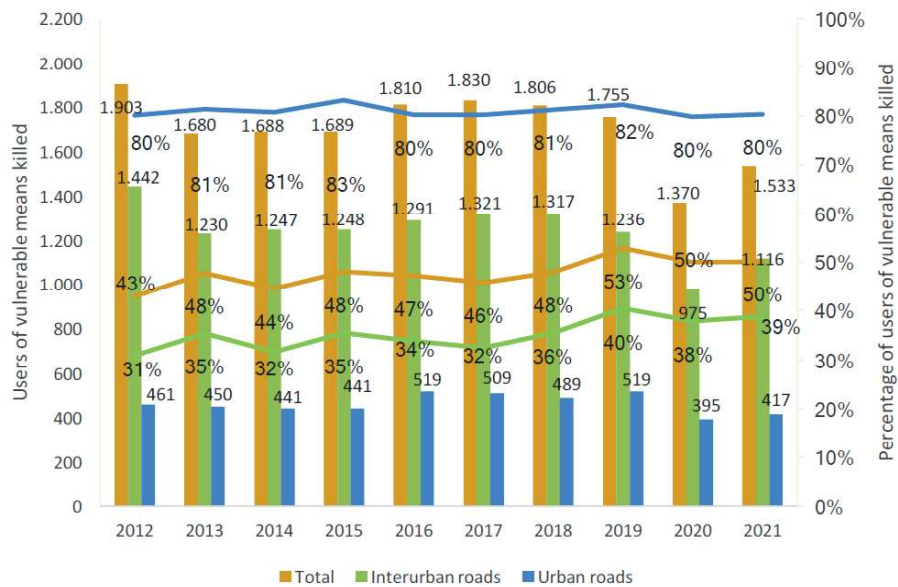
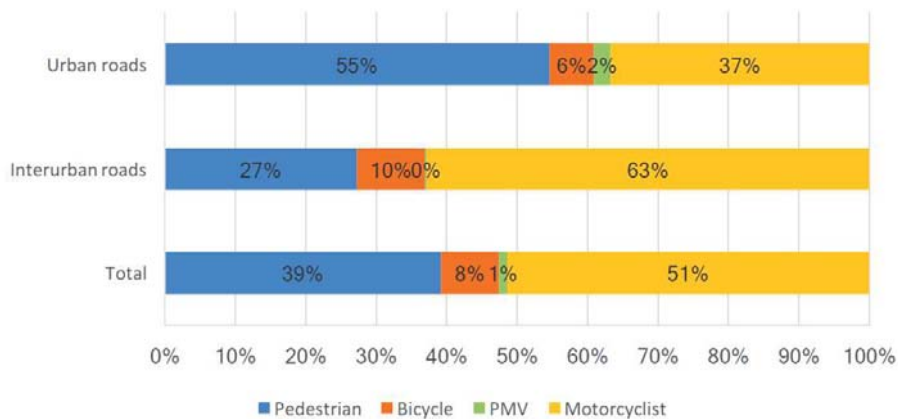
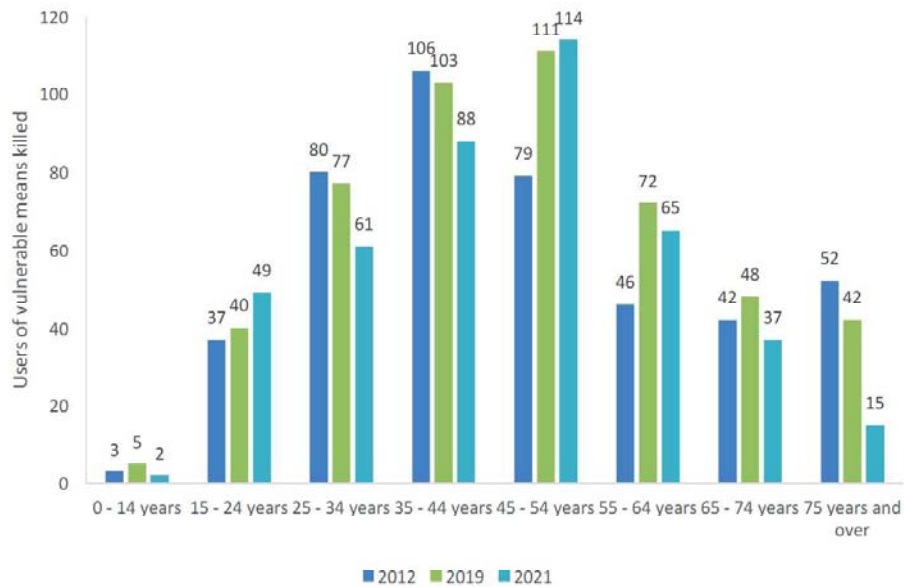


Figure 55.- Percentage of users of vulnerable means killed by mode of transport and by type of road. Spain, 2021.



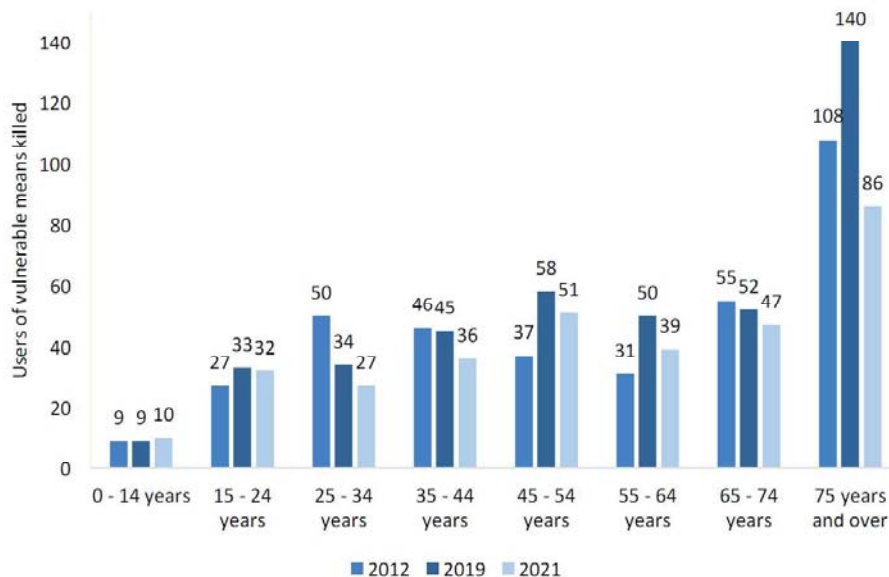
The following figure shows the evolution of the number of users of vulnerable means killed on interurban roads by age groups and in comparison with 2019 the number decreases in all age groups except in the 25-34 and 45-54 ones. In 2021, the age group resulting in the highest road death figure record was the 45-54 age group with 114 fatalities, followed by the 35-44, 55-64 and 25-34 age groups with 88, 65 and 61 fatalities respectively.

**Figure 56.- Number of users of vulnerable means killed by age groups.
Interurban roads. Spain, 2012, 2019 and 2021**



With regard to the evolution of the number of users of vulnerable means killed on urban roads by age groups, in comparison with 2019, it can be seen an increase in the 0-14 age group. The greatest variation concentrates on the 75 and over age group, with a decrease of 54 fatalities. On these roads, 40% of the users of vulnerable means killed were 65 years of age or over.

**Figure 57.- Number of users of vulnerable means killed by age groups.
Urban roads. Spain, 2012, 2019 and 2021**



Contributory factors

Contributory factors are all those factors related to individuals, vehicles and infrastructure which may have played a role in the occurrence of a road traffic accident or in aggravating its consequences. One or several contributory factors can be present in a road traffic accident, whose identification may, in many instances, depend on the thoroughness of the investigation conducted by law enforcement officers. At present, the classification of the contributory factors used by law enforcement officers is laid down in Order INT/2223/2014, of 27 October, which regulates the reporting of information to the National Register for Road Traffic Accident Victims.

The presence of the three main contributory factors —distraction, inappropriate speed and alcohol— to road traffic accidents resulting in fatalities and casualties occurring on interurban and urban roads is analysed below. Distraction appears as a contributory factor in 32% of fatal accidents; alcohol consumption in 31%; and speed in 22%.

Table 31.- Distribution of contributory factors in casualty and fatal accidents occurring on interurban and urban roads. Year 2021. (Catalonia and Basque Country excluded).

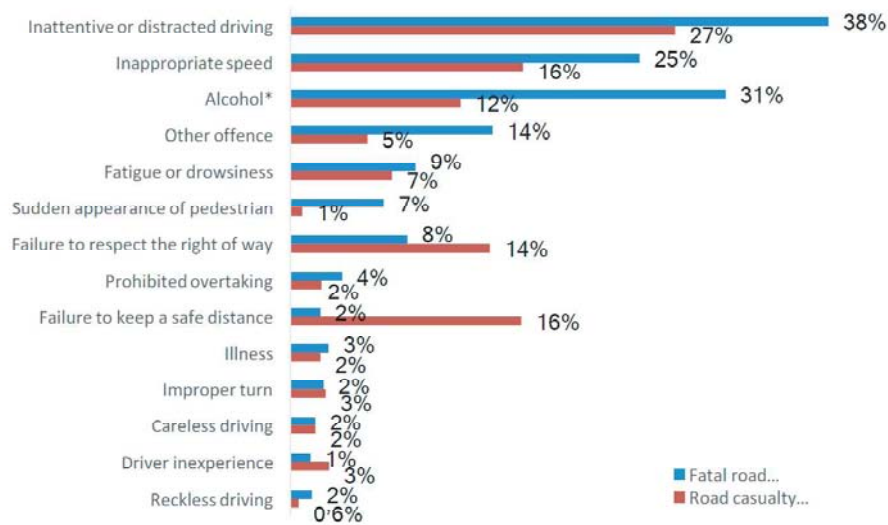
Contributory factor	Road traffic accidents		Fatal accidents	
	Cases	% over the total road	Cases	% over the total road
	traffic accidents		traffic accidents	
Inattentive or distracted driving	10,186	16%	364	32%
Alcohol	3,180 (out of 21,683)	15%	254 (out of 828)	31%
Inappropriate speed	5,034	8%	254	22%

Note: The actual total number of road traffic accidents is 63,508 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 21,683 road traffic accidents and a sample of 828 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.

On interurban roads it is possible to conduct a more detailed analysis of the contributory factors. As for road traffic accidents, the most common factors identified in police reports are distraction (27%), inappropriate speed (16%), failure to keep a safe distance (16%), failure to respect the right of way (14%) and alcohol consumption (12%). As regards fatal accidents, the most common factors are distraction (38%), alcohol (31%) and inappropriate speed (25%).

Figure 58.- Distribution of contributory factors in casualty and fatal accidents occurring on interurban roads. Year 2021. (Catalonia and Basque Country excluded).



Note: The actual total number of road traffic accidents is 22,877 and of fatal accidents is 845. Several factors may be present in a single road traffic accident.

*As regards alcohol, the sample considered is 16,059 road traffic accidents and a sample of 636 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.

Exposure indicators

56

Registered drivers

In 2021 there were 27,427,559 registered drivers, a figure which means a percentage increase by 0.4% compared with 2020. The registered driver rate per thousand driving age population was at 675. Between the age of 40 and 59, the rate exceeds 800 drivers per thousand population; for the 25-39 and 60-64 age groups the rate exceeds 700 drivers per thousand population; and, for the 21-24 and 65-69 age groups the rate exceeds the value 600.

Figure 59.- Evolution of the registered drivers. Number of holders with at least one permit or driving licence. Evolution of the rate of drivers per 1,000 population whose age authorises them to drive. Spain, 2012-2021

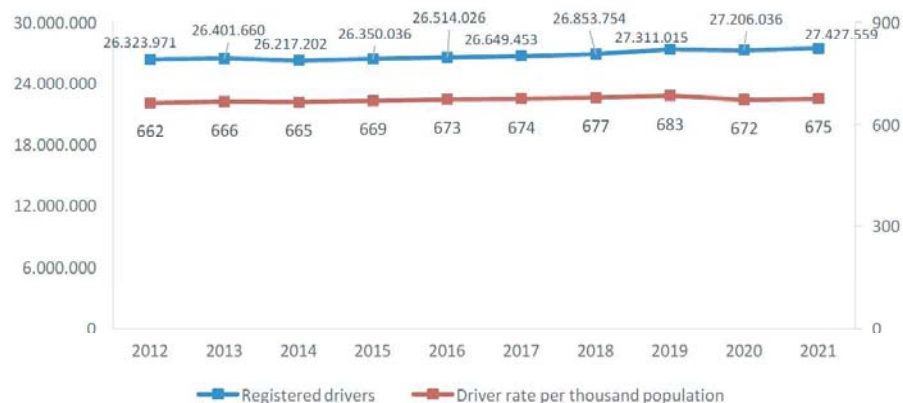
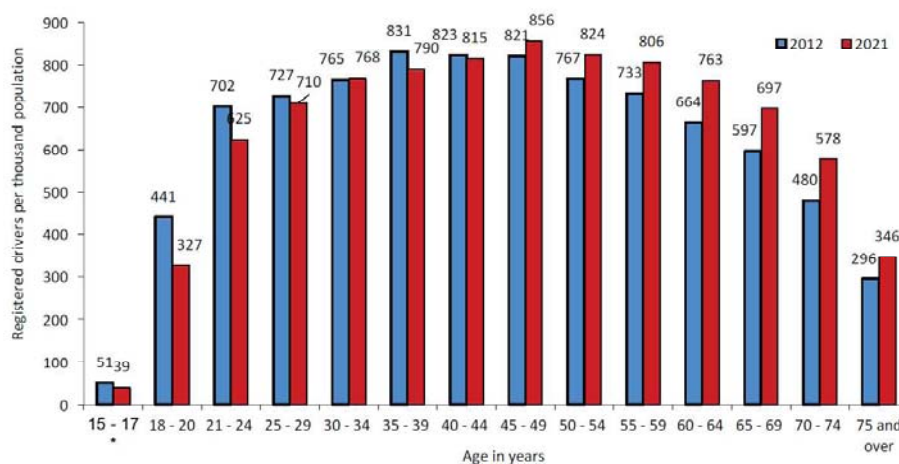


Figure 60.- Registered drivers per 1,000 population whose age authorises them to drive. Spain, 2012-2021



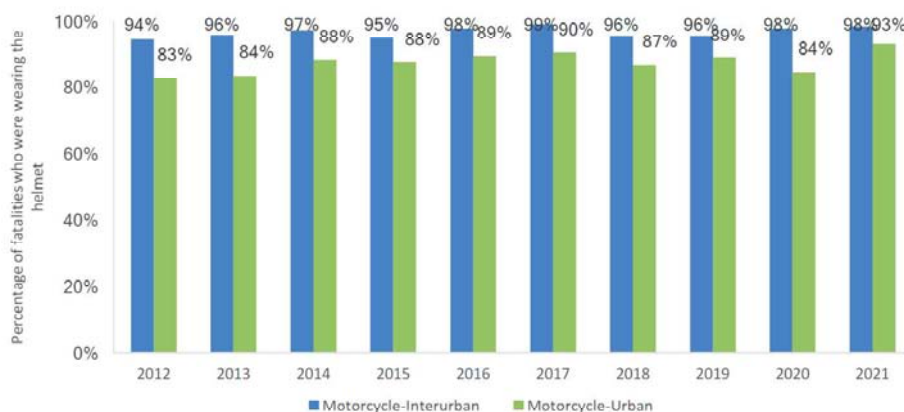
Performance indicators

Seat belt and helmet

98% of the motorcyclists killed on interurban roads in 2021 were wearing the helmet. On urban roads, 93% of fatally injured motorcyclists were wearing the safety helmet in 2021.

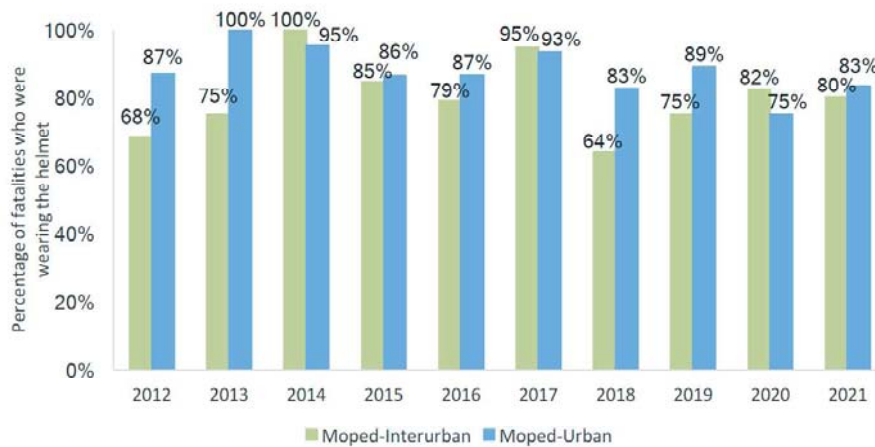
As regards moped fatalities, 80% wore the helmet on interurban roads and 83% did on urban roads.

Figure 61.- Motorcyclist fatalities regarding the use of the helmet. Spain, 2012-2021



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

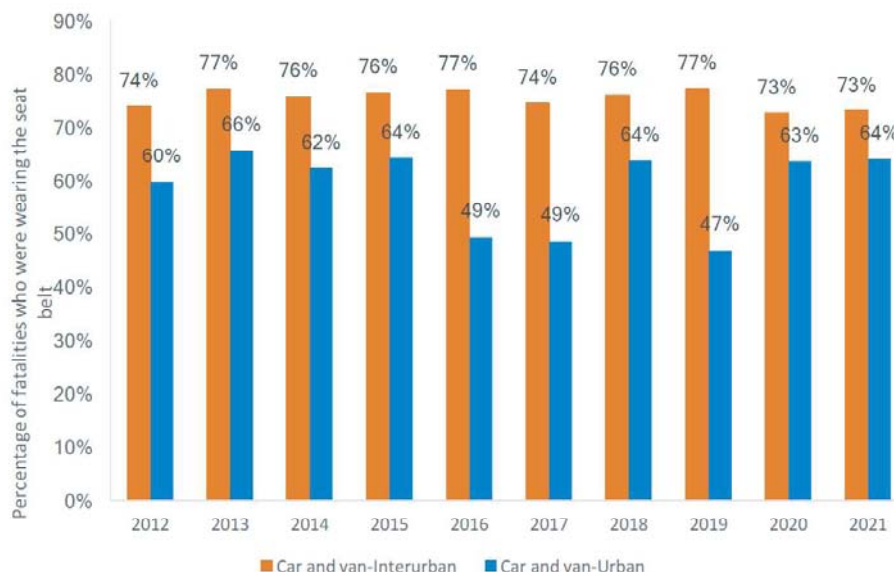
Figure 62.- Moped user fatalities regarding the use of the helmet. Spain, 2012-2021



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

In 2020, on interurban roads, 73% of car and van occupant fatalities aged 12 and over were wearing the seat belt, 64% on urban roads.

Figure 63.- Car and van occupant fatalities aged 12 and over by seat belt use. Spain, 2012-2021



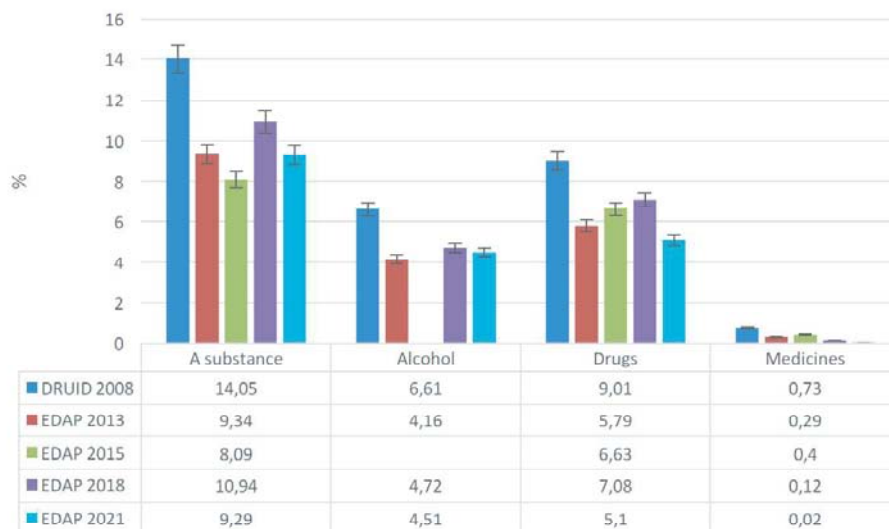
Note: The percentage of safety devices usage has been calculated considering only the cases in which such usage was known.

On interurban roads, in 2021, 2 of the 10 child fatalities under 12 years of age who were travelling in a car or van were not using any safety device — child restraint system or seat belt—. On urban roads, there was no fatality under the age of twelve as a car or van occupant.

Prevalence of psychoactive substances consumption in drivers

Since 2008, prevalence studies have been carried out on a regular basis to determine the consumption of psychoactive substances by drivers travelling on public roads. To date, five editions of the study have been completed: DRUID project (2008-2009), Study on the EDAP prevalence for 2013, 2015, 2018 and 2021.

Figure 64.- Evolution of the consumption of alcohol, drugs and medicines when driving (years 2008, 2013, 2015 and 2021).



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 and 2021

Presence of psychoactive substances in individuals involved in road traffic accidents ¹

Drivers

For the past six years DGT and the Spanish National Toxicology and Forensic Science Institute (INTCF) have been collaborating to connect the databases of the Road Traffic Accident Victims (RNVAT) which contains detailed information on people, vehicles, infrastructure and environment of road traffic accidents to the INTCF and the Institutes of Forensic Medicine and Science databases, which record the results of the alcohol and drug tests conducted on the samples taken from fatally injured drivers. This collaboration has enabled us to significantly enrich the quantity and quality of the available information on the role that alcohol and drugs play on road traffic accidents.

Since 2020, the INTCF has established collaboration mechanisms with all Institutes of Forensic Medicine and Science which have enabled to increase the number of fatally injured drivers for whom there is a blood test available. It should be recalled that it is compulsory to perform this test in all cases of death.

Besides, it should be taken into account that the Traffic Division of the Guardia Civil, the Chartered Police of Navarra and the various local police forces have performed, and recorded on RNVAT, alcohol tests to 40,752 non-fatally injured drivers.

1. The information from Catalonia and the Basque Country is not included.

In the analysis below, a positive alcohol test means those results exceeding the legal limit established in Article 20 of the General Regulations on Road Traffic ²: on a general basis, a blood alcohol content higher than 0.5 grams per litre or a breath alcohol content higher than 0.25 milligrams per litre; in the case of novice or professional drivers, a blood alcohol content higher than 0.3 grams per litre, or a breath alcohol content higher than 0.15 milligrams per litre ³.

In 2021, 107,468 drivers were involved in road traffic accidents on interurban and urban roads; there is evidence of having tested 39% of them for alcohol. In the case of fatally injured drivers - 814 in 2021 -, the percentage of tested drivers was 80%, of hospitalised injured drivers was 26%, of non-hospitalised injured drivers was 37% and of non-injured drivers was 42%.

On interurban roads, 79% of the drivers were submitted to test whereas the percentage was 15% on urban roads. Depending on the severity of the injury and of the location major differences can be observed: on interurban roads 82% of driver fatalities were tested, as well as 39% of hospitalised injured drivers, 75% of non-hospitalised injured drivers and 92% of non-injured drivers; on urban roads, 69% of driver fatalities were tested, as well as 11% of hospitalised injured drivers, 11% of non-hospitalised injured drivers and 19% of non-injured drivers.

As regards the results of the tests: 34% of fatally injured drivers tested positive for alcohol, as well as 14% of hospitalised injured drivers, 10% of non-hospitalised injured drivers and 9% of non-injured drivers. In comparison with 2019, the percentage of fatally injured drivers testing positive increased from 29% to 34%, covering 68% of the cases in 2019 and 80% in 2021.

2. Royal Decree 1428/2003 of 21 November approving the General Regulations on Road Traffic for applying and implementing the articulated text on the Law on Road Traffic, Motor Vehicles and Road Safety, approved by Royal Legislative Decree 339/1990 of 2 March 1990.

3. The Spanish National Toxicology and Forensic Science Institute, in its road traffic fatality records, identifies as positive those cases with a blood alcohol content higher than 0.3g/l.

Table 32.- Results of alcohol testing in drivers involved in casualty accidents. Total, interurban and urban roads. Year 2021, 2019 values in red and in brackets. (Catalonia and Basque Country excluded).

Total	Total drivers	Drivers with proof of testing	% proof of testing	Drivers testing positive	% alcohol positive
Fatalities	814	648	80% (68%)	220	34% (29%)
Hospitalised injured casualties	3,966	1,015	26% (26%)	145	14% (15%)
Non-hospitalised injured casualties	52,599	19,390	37% (36%)	1,880	10% (9%)
No healthcare required	48,132	20,109	42% (42%)	1,726	9% (7%)
People with unassigned harmfulness	1,957	238	12% (14%)	17	7% (5%)
Total	107,468	41,400	39% (38%)	3,988	10% (9%)

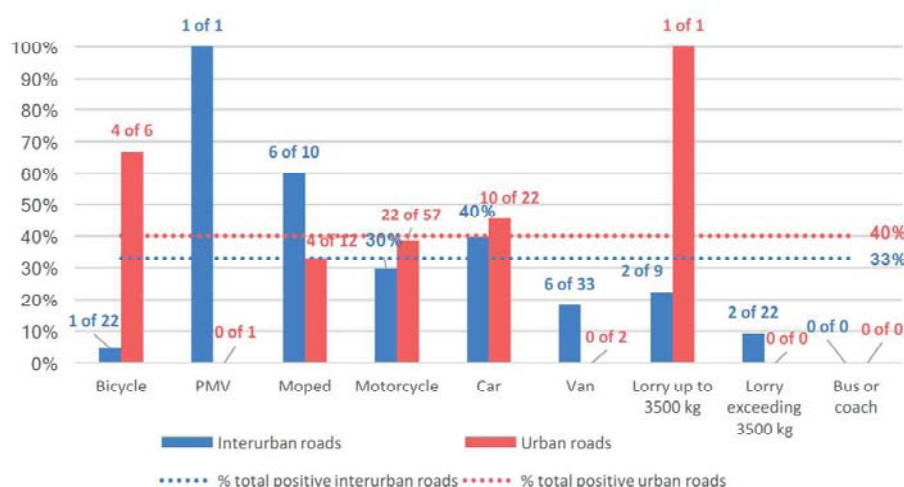
Interurban roads	Total drivers	Drivers with proof of testing	% proof of testing	Drivers testing positive	% alcohol positive
Fatalities	665	545	82% (69%)	179	33% (28%)
Hospitalised injured casualties	2,077	800	39% (38%)	84	11% (11%)
Non-hospitalised injured casualties	21,019	15,773	75% (75%)	1,186	8% (7%)
No healthcare required	14,802	13,628	92% (91%)	676	5% (4%)
People with unassigned harmfulness	351	130	37% (42%)	2	2% (2%)
Total	38,914	30,876	79% (79%)	2,127	7% (6%)

Urban roads	Total drivers	Drivers with proof of testing	% proof of testing	Drivers testing positive	% alcohol positive
Fatalities	149	103	69% (62%)	41	40% (41%)
Hospitalised injured casualties	1,889	215	11% (10%)	61	28% (35%)
Non-hospitalised injured casualties	31,580	3,617	11% (10%)	694	19% (20%)
No healthcare required	33,330	6,481	19% (18%)	1050	16% (13%)
People with unassigned harmfulness	1,606	108	7% (7%)	15	14% (11%)
Total	68,554	10,524	15% (14%)	1,861	18% (16%)

Taking into account the coverage of alcohol testing for drivers involved in a road traffic accident, especially in built-up area, the analysis in detail by type of vehicle and by alcohol content that are shown below are performed only to fatally injured drivers.

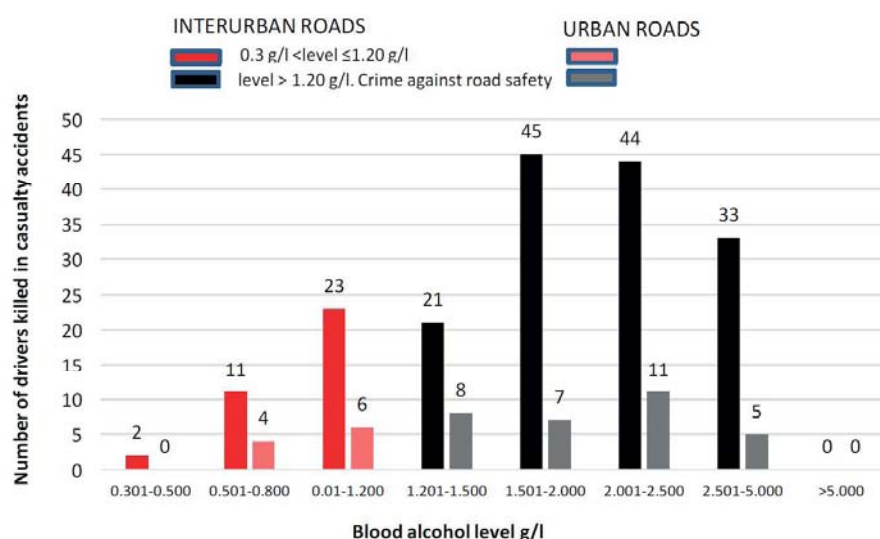
By the mode of transport and the location of the accident, it can be observed that the percentage of fatally injured drivers testing positive is very heterogeneous: on interurban roads, the highest presence is observed for PMVs, mopeds and cars and the lowest, below 10%, for pedal cycles, lorries exceeding 3500 kg and bus and coach; on urban roads, the highest presence is observed for lorries not exceeding 3500 kg, pedal cycles, cars, motorcycles and mopeds, whereas for the rest of vehicles their presence is less than 1%.

Figure 65.- 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 2021 (Catalonia and Basque Country excluded).



As regards alcohol content, the most remarkable fact is that, in 2021, 66% of the fatally injured drivers who tested positive for alcohol showed a concentration three times higher than the legal limit established in the General Regulations on Road Traffic, that is, an alcohol content above 1.5 g/l. On interurban roads, that percentage was 68% and on urban roads it was 56%. Meanwhile, the percentage of fatally injured drivers exceeding the 1.2 g/l content in relation to those testing positive was 80% on interurban roads and 76% on urban roads.

Figure 66.- Blood alcohol concentration in drivers killed in road traffic accidents who tested positive. Interurban and urban roads. Year 2021. (Catalonia and Basque Country excluded).



Next, the total amount of people killed in road traffic accidents when one of the drivers involved tested positive for alcohol is calculated. It should be noted that a fatal accident with alcohol test is the accident in which all the drivers involved have been tested for alcohol or one of the drivers tested positive for alcohol. Fatalities resulting from a road traffic accident in which the driver tests positive for alcohol are the individuals who were fatally injured in the fatal road traffic accidents previously defined.

In 2021, 273 people were killed on interurban and urban roads in a fatal road traffic accident in which the driver tested positive for alcohol, this means 16% more than in 2019. On interurban roads, there were 210 fatalities - 21% more than in 2019 - and on urban roads there were 63 fatalities - 2 more than in 2019.

Table 33.- People killed in road traffic accidents in which at least one driver involved tested positive for alcohol. Years 2016, 2017, 2018, 2019, 2020 and 2021. (Catalonia, Basque Country excluded).

Total	2016	2017	2018	2019	2020	2021	Diff 2021/2019
People killed in road traffic accidents in which a driver tested positive for alcohol	228	254	195	235	191	273	16%
% fatal road traffic accidents with test over the total fatal road traffic accidents	65%	68%	65%	67%	61%	72%	5

Interurban roads	2016	2017	2018	2019	2020	2021	Diff 2021/2019
People killed in road traffic accidents in which a driver tested positive for alcohol	168	200	152	174	138	210	21%
% fatal road traffic accidents with test over the total fatal road traffic accidents	68%	69%	66%	68%	62%	75%	7

Urban roads	2016	2017	2018	2019	2020	2021	Diff 2021/2019
People killed in road traffic accidents in which a driver tested positive for alcohol	60	54	43	61	53	63	2
% fatal road traffic accidents with test over the total fatal road traffic accidents	59%	64%	63%	64%	60%	62%	-2

As regards the consumption of illegal drugs ⁴, there is evidence of having tested 78% of fatally injured drivers, of whom 22% tested positive. The percentage of fatally injured drivers submitted to test was 80% on interurban roads and 68% on urban roads, of whom 21% tested positive on interurban roads and 29% on urban roads.

Table 34.- People killed in road traffic accidents in which at least one driver involved tested positive for alcohol. Years 2016, 2017, 2018, 2019, 2020 and 2021. (Catalonia, Basque Country excluded).

	Total driver fatalities	Fatally injured drivers with proof of testing	% proof of testing	Fatally injured drivers testing positive	Drug positive percentage
Interurban roads	665	535	80% (70%)	114	21% (18%)
Urban roads	149	101	68% (63%)	29	29% (25%)
Total	814	636	78% (69%)	143	22% (20%)

The most common substances on fatally injured drivers testing positive for drugs are cocaine (63%) and cannabis (50%). Opioids and amphetamines are less common (0% and 7% respectively).

Table 35.- Substances tested for in drug testing performed on fatally injured drivers with a positive result. Interurban and urban roads. Year 2021, 2019 values in red and in brackets. (Catalonia, Basque Country excluded).

Substance	Fatally injured drivers testing positive	Drug positive percentage
Cocaine	90	63% (55%)
Opioids	0	0% (1%)
Amphetamine	10	7% (6%)
Cannabis	72	50% (56%)
Fatally injured drivers testing positive for drugs	143	100% (100%)

The percentage of fatally injured drivers testing positive for alcohol and/or drugs was 44% in 2021.

Table 36.- Fatally injured drivers submitted to alcohol and/or drug testing and results. Interurban and urban roads. Year 2021, 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	648	245	44% (39%)

Pedestrians

In 2021, 244 pedestrians were killed (Catalonia and the Basque Country are excluded) and 140 of them were submitted to alcohol testing, i.e. 57%. 33 pedestrians registered an alcohol content above 0.5 g/l, that is, 24% of the tested fatalities.

On interurban roads, 78 out of 103 pedestrian fatalities were submitted to test - 76% - and on urban roads, 62 out of 141 pedestrian fatalities were tested - 44%. 23 out of the 78 tested pedestrians on interurban roads registered a level of alcohol above 0.5 g/l as well as 10 out of the 62 tested pedestrians on urban roads.

4. The following substances have been considered: amphetamines, cocaine, cannabis and opioids. The annual reports of the Spanish National Toxicology and Forensic Science Institute include an analysis of the presence of psychotropic drugs in fatally injured drivers.

Table 37.- Pedestrian fatalities, alcohol testing performed and results of the tests. Year 2021, 2019 values in red and in brackets. (Catalonia and Basque Country excluded).

Total	Total	Tested pedestrians	% of tested pedestrians	Pedestrians result > 0.5 g/l	% alcohol > 0.5 g/l
Pedestrian fatalities	244	140	57% (46%)	33	24% (22%)

Interurban roads	Total	Tested pedestrians	% of tested pedestrians	Pedestrians result > 0.5 g/l	% alcohol > 0.5 g/l
Pedestrian fatalities	103	78	76% (59%)	23	23 out of 78 (21 out of 66)

Urban roads	Total	Tested pedestrians	% of tested pedestrians	Pedestrians result > 0.5 g/l	% alcohol > 0.5 g/l
Pedestrian fatalities	141	62	44% (38%)	10	10 out of 62 (9 out of 72)

Activity indicators

Controls performed by the Traffic Division of the Guardia Civil (ATGC) ⁵

Alcohol

In 2021 the Traffic Division of the Guardia Civil performed 4,552,163 breath alcohol tests within the framework of their competences, which means 42% more as compared to the tests conducted in 2020. Of the 3,617,582 preventive control tests performed, 1.18% were positive for alcohol (above the legal limits).

Drugs

In the context of the duties performed by the Traffic Division of the Guardia Civil, 123,211 drug tests were performed in 2021, as against the 48,194 tests carried out in 2020, which means an increase by 156%. Of the 95,463 preventive control tests performed, 41% were positive.

Speed

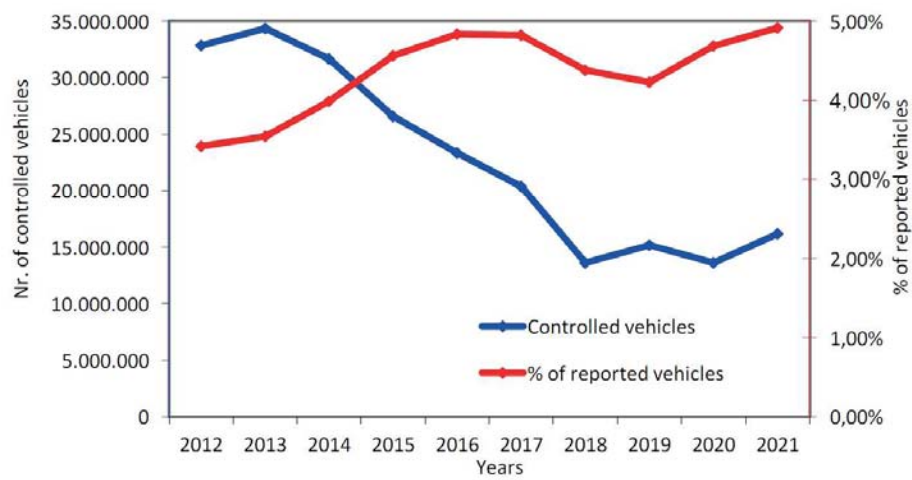
In 2021, DGT reported a total of 3,056,532 traffic offences. Of them, 62% were speed-related. These traffic offences were detected by the Traffic Division of the Guardia Civil and by fixed safety and point-to-point speed cameras and helicopters.

In 2021, the Traffic Division of the Guardia Civil ⁶ performed speed controls to 16.2 million vehicles, with an outcome of 794,206 vehicles being reported. As compared with 2020, around 2.6 million more vehicles have been controlled and the percentage of reported vehicles has been 4.9%

5. Their scope excludes public roads on the Basque Country and Catalonia as well as Municipalities with their own local police forces.

6. Whose activity excludes public roads on the Basque Country and Catalonia as well as Municipalities with their own local police force.

Figure 67.- Controls performed by the Traffic Division of the Guardia Civil. Years 2012-2021



5

OTHERS

Type of the road traffic accident

Running off the road was the most commonly reported type of fatal road traffic accident in 2021, with 35% of all deaths, followed by accidents involving a pedestrian (18%) and head-on collisions (14%).

Table 38.- Fatalities by type of road traffic accident. Spain, 2012-2021

Lorem	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Variation (1) 2021/2020	Year-on- year variation 2012-2021	Distribution % 2021
Run-off-road collision	663	508	548	522	601	601	582	573	485	532	-7%	-2%	35%
Head-on collision	250	222	225	209	277	327	290	284	209	219	-23%	-5%	14%
Side and T-bone collision	282	246	204	190	253	259	243	228	186	217	-5%	-6%	14%
Rear and multiple collision	165	153	145	169	145	144	140	146	106	135	-8%	-6%	9%
Pedestrian collision*	355	349	310	306	386	338	378	373	243	282	-24%	-4%	18%
Overturning	47	30	17	16	22	20	26	32	25	27	-5	-22	2%
Other type of road traffic accident	141	172	239	277	126	141	147	119	116	121	2%	-2%	8%
Total	1,903	1,680	1,688	1,689	1,810	1,830	1,806	1,755	1,370	1,533	-13%	-4%	100%

* 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 accident is made according to the first manoeuvre and not to its harmful outcome.

(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.

On interurban roads, the type of road traffic accident registering more fatalities was running off the road (40%) and on urban roads pedestrians struck by a vehicle (42%).

Table 39.- Fatalities by type of road traffic accident. Interurban roads. Spain, 2012-2021

Lorem	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Variation (1) 2021/2020	Year-on- year variation 2012-2021	Distribution % 2021
Run-off-road collision	594	441	476	464	524	519	506	482	406	445	-8%	-3%	40%
Head-on collision	232	214	208	195	254	306	282	263	192	205	-22%	-1%	18%
Side and T-bone collision	223	184	153	140	183	179	173	152	126	146	-4%	-5%	13%
Rear and multiple collision	136	132	122	136	114	126	109	125	91	123	-2%	-1%	11%
Pedestrian collision*	132	135	118	97	133	99	146	128	97	105	-18%	-3%	9%
Overturning	30	26	11	12	17	16	19	23	13	18	-5	-12	2%
Other type of road traffic accident	95	98	159	204	66	76	82	63	50	74	11%	-21%	7%
Total	1,442	1,230	1,247	1,248	1,291	1,321	1,317	1,236	975	1,116	-10%	-3%	100%

* 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 accident is made according to the first manoeuvre and not to its harmful outcome.

(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.

Table 40.- Fatalities by type of road traffic accident. Urban roads. Spain, 2012-2021

Lorem	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Variation (1) 2021/2020	Year-on- year variation 2012-2021	Distribution % 2021
Run-off-road collision	69	67	72	58	77	82	76	91	79	87	-4%	18%	21%
Head-on collision	18	8	17	14	23	21	8	21	17	14	-7%	-4%	3%
Side and T-bone collision	59	62	51	50	70	80	70	76	60	71	-5%	12%	17%
Rear and multiple collision	29	21	23	33	31	18	31	21	15	12	-9%	-17%	3%
Pedestrian collision*	223	214	192	209	253	239	232	245	146	177	-28%	-3%	42%
Overturning	17	4	6	4	5	4	7	9	12	9	0	-8	2%
Other type of road traffic accident	46	74	80	73	60	65	65	56	66	47	-9%	1%	11%
Total	461	450	441	441	519	509	489	519	395	417	-20%	-1%	100%

* 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 accident is made according to the first manoeuvre and not to its harmful outcome.

(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.

The time component in road traffic accidents

By periods of the year

It is worth showing accident rate by periods of the year 2021 in comparison with 2019 because of mobility restrictions as a consequence of the COVID-19 pandemic.

Table 41.- People killed by periods. Spain, 2019-2021

Periods	2019 Fatalities	2021 Fatalities	Var. % fatalities 2021/2019
January-April	544	401	-26%
May-June	258	305	18%
July-August	345	288	-17%
September-December	608	539	-11%
Total	1,755	1,533	-13%

The number of people killed from January to April showed a downward trend: -26% compared to the same period of 2019. However, from May to June, there was an 18% increase in the number of people killed. In summer, there was a decrease of 17% in the number of fatalities as compared with the summer of 2019. In the last quarter of the year, there was again a decrease of 11% in the number of fatalities as compared with the same period of 2019.

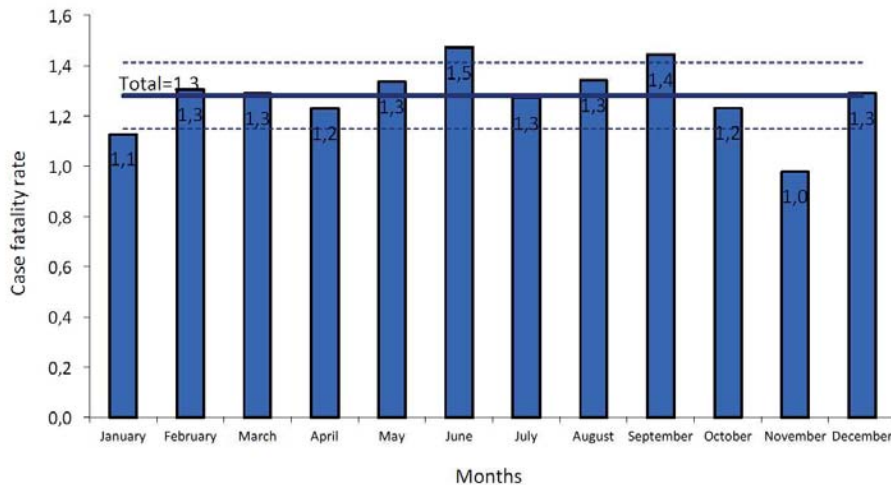
Months of the year

In 2021, an average of 128 people a month were killed in road traffic accidents. The maximum figures are registered in June and September, 21% of the annual total fatalities. June is the month with the greatest fatality rate (1.5) and November with the lowest (1.0).

Figure 68.- Distribution of fatalities by months. Spain, 2012-2021



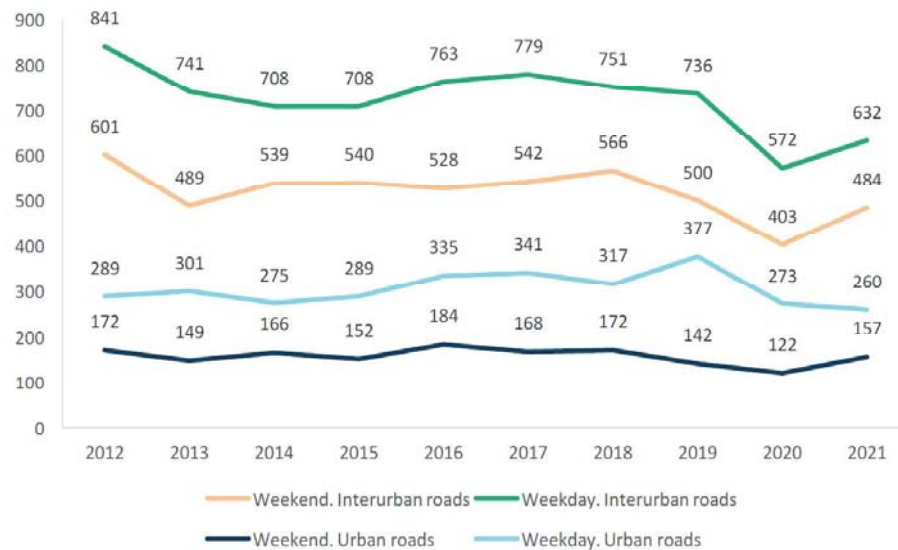
Figure 69.- Case fatality rate by months. Spain, 2021.



Days of the week

66% of the road fatalities in 2021 occurred in accidents happening from Monday to Friday. Notwithstanding the above, Tuesdays and Wednesdays were the days of the week recording fewer accumulated fatalities throughout the year (177 and 171 respectively).

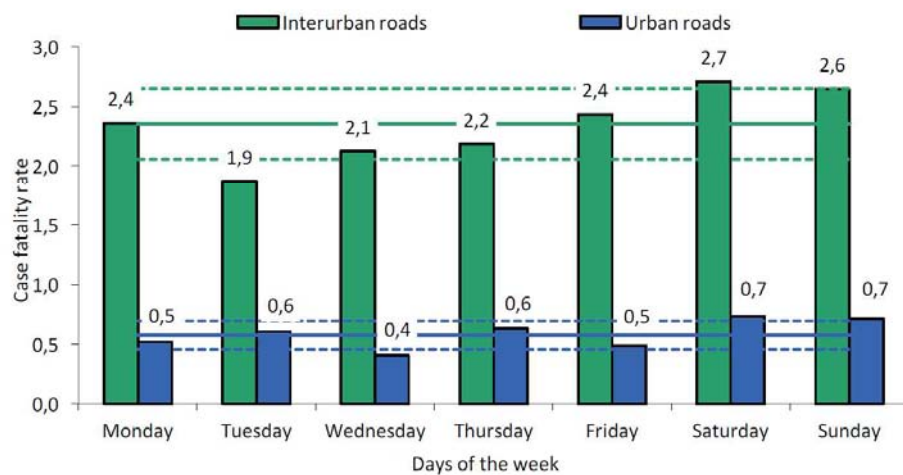
Figure 70.- Fatalities by time of the accident, at weekends or not, on interurban and urban roads. Spain, 2021.



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

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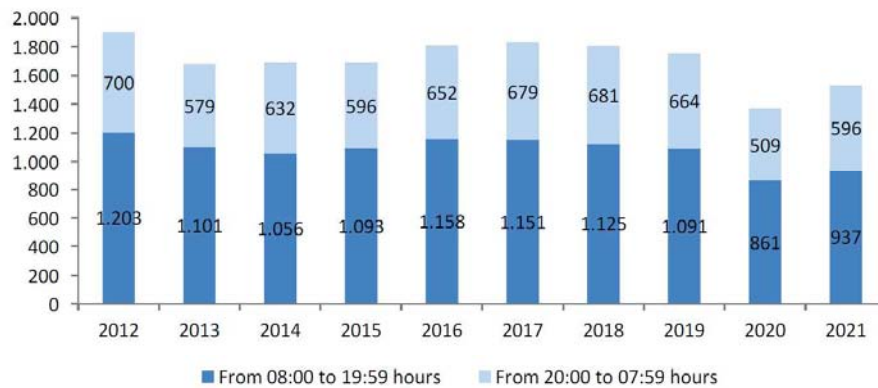
Figure 71.- Case fatality rate by days of the week, on interurban and urban roads. Spain, 2021.



Times of the day

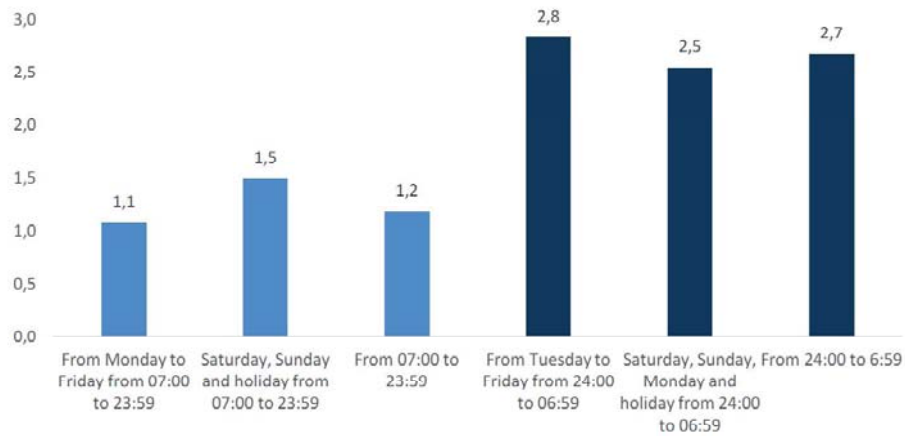
In 2021, 61% of the reported road fatalities occurred within the time frame between 08.00 and 19.59 hours. As compared with 2019, the number of people killed in a road traffic accident occurring during the slot 08.00 - 19.59 decreased by 14%.

Figure 72.- Fatalities by time slot. Spain, 2012-2021



If the combination of time slot and day of the week is analysed, the case fatality rate is higher on Saturdays, Sundays and public holidays than during the week, being fatality rate higher from 24:00 to 6:59 hours.

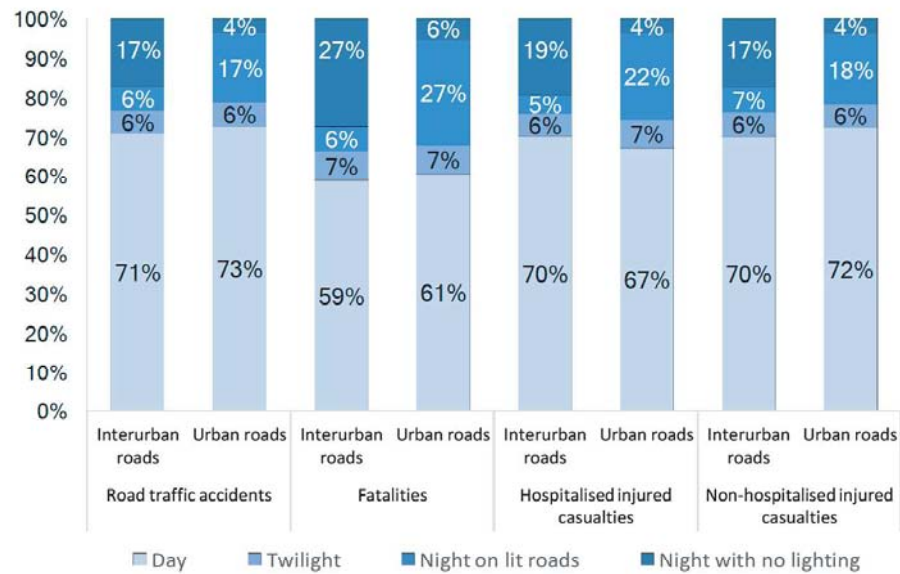
Figure 73.- Case fatality rate by time slot and day of the week. Spain, 2021



Brightness

In 2021, 71% of road traffic accidents, 59% of fatalities and 70% of hospitalised and 70% of non-hospitalised injured casualties on interurban roads occurred during the day. The highest concentration of road traffic accidents and casualties occurs on urban roads during the day.

Figure 74.- Road traffic accidents, fatalities, hospitalised and non-hospitalised injured casualties by brightness. Interurban and urban roads. Spain, 2021



6

THE COST OF ROAD TRAFFIC ACCIDENTS

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 injured 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 case definition, 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 from 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, the maximum value is taken for each case, obtaining the classification MAIS 3+.

In 2020, 4,793 hospitalised casualties scored 3 or higher on MAIS 3+, being the prevalence rate at 10.1 per 100,000 population. The above figures represent a decrease of 22% in the absolute value and of 23% in the prevalence rate compared to 2019. These declines were affected by restrictions on mobility 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-MAIS 3+ is on the 45-54 age group - 17% -: the lowest proportion is found on the 85 and over age group, 3%. 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 - 15.1 -, followed by the 25-34 age group - 13.6 - and by the 55-64 age group - 11.5. The lowest rate is observed among children under one year of age group - 0.6 - followed by the 1-14 age group - 2.6. Males showed a prevalence of 16.2 and females of 4.3; the rate for males is almost four times as high as that among females.

Compared to the rates for 2019, there are decreases in all age groups especially in the age groups: 75-84 - from 16.3 in 2019 to 10.8 in 2020 - and 84 and over - from 13.1 in 2019 to 8.4 in 2020. As regards gender, the rates are also lower than in 2019; males have decreased from 20.1 to 16.4 and females from 6.4 to 4.3. As stated before, these decreases were affected by restrictions on mobility due to COVID-19.

Table 42.- Seriously injured casualties (MAIS 3+) by age groups, prevalence rate per 100,000 population. Spain, 2020

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	2	0%	0.6
1 to 14 y	169	4%	2.6
15 to 24 y	718	15%	15.1
25 to 34 y	722	15%	13.6
35 to 44 y	728	15%	10.0
45 to 54 y	838	17%	11.1
55 to 64 y	721	15%	11.5
65 to 74 y	433	9%	9.3
75 to 84 y	330	7%	10.8
Over 84 y	132	3%	8.4
Total	4,793	100%	10.1

Figure 75.- Seriously injured casualties (MAIS 3+) per 100,000 population by age groups. Spain, 2019, 2020

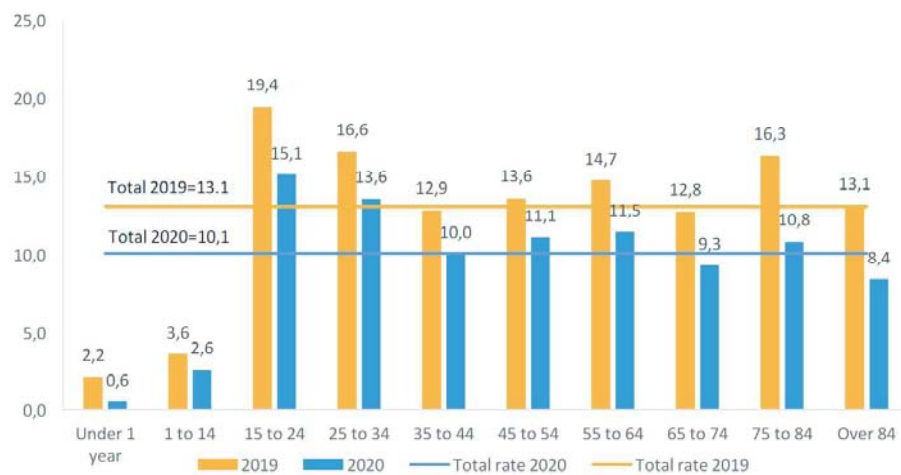


Table 43.- Seriously injured casualties (MAIS 3+) by gender. Spain, 2020

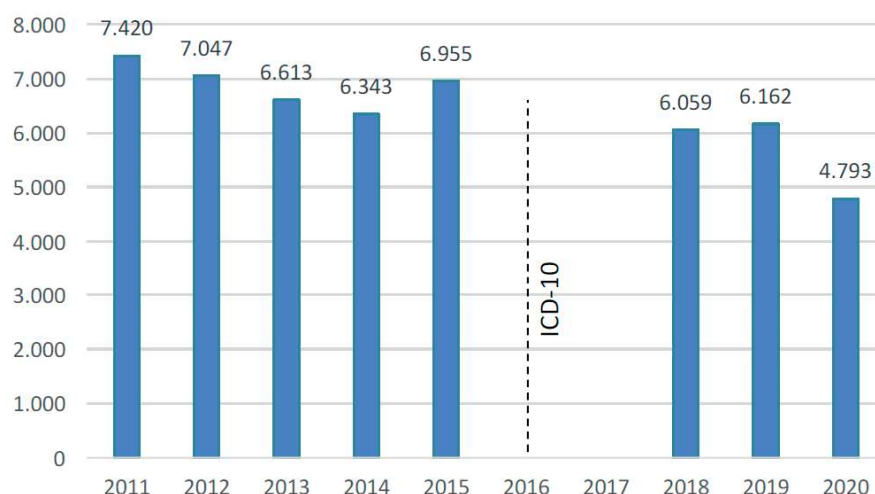
Gender	Seriously injured casualties (MAIS 3+)	% Seriously injured casualties (MAIS 3+)	Prevalence rate MAIS 3+ per 100,000 population
Male	3748	78%	16.2
Female	1,045	22%	4.3
Unknown			
Total	4,793	100%	10.1

Figure 76.- Prevalence rate in seriously injured casualties (MAIS 3+) per 100,000 population by gender. Spain, 2019,2020



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 there was a 10% increase in comparison with 2014. 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 MAIS 3+ casualties was 6059 in 2018, 6162 in 2019 and 4793 in 2020, being the figure for 2020 22% lower than that for 2019. As indicated earlier, the decrease in road traffic figures for 2020 was affected by the restrictions on mobility due to COVID-19.

Figure 77.- Evolution of the number of seriously injured road casualties (MAIS 3+). Spain, 2011-2020



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.

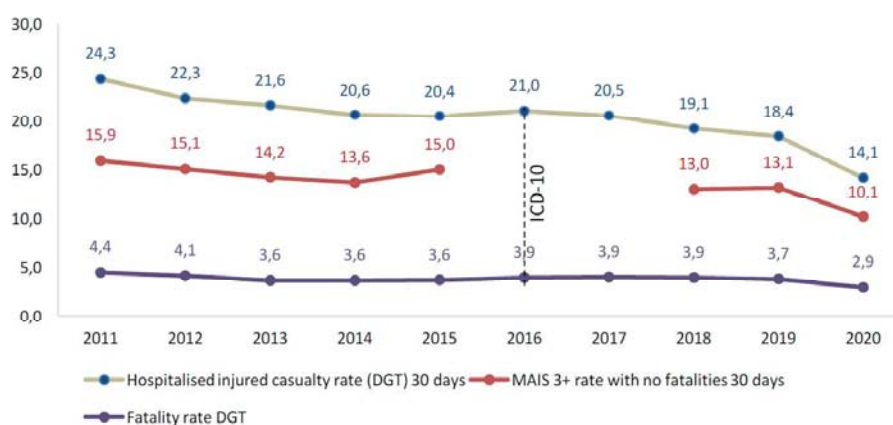
The evolution of the number of MAIS 3+ injured casualties shows a downward trend from 2011 to 2020. The hospitalised injured casualties obtained from police records also show a downward trend in that period of time. That trend is also observed when the prevalence rate per 100,000 population is estimated 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 2020, highlighting the importance of collecting the MAIS 3+ indicator, since injury severity of casualties with MAIS 3+ implies a longer stay at hospital, greater after-effects and, in certain cases, disabilities.

Figure 78.- Evolution of seriously injured road casualties (MAIS 3+) and of hospitalised injured casualties from police records. Spain, 2011-2020



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.

Figure 79.- Evolution of the rates of seriously injured road casualties (MAIS 3+), hospitalised injured casualties from police records and fatalities per 100,000 population. Spain, 2011-2020



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.

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 ⁷.

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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.

16,849 individuals with road traffic injuries were discharged from Spanish hospitals, both public and private (being death the reason for hospital discharge) in 2020. If patients dying at a hospital are excluded from the analysis, the number of hospital discharges was 16,457 with 47,202 injuries, i.e. 2,9 injuries per individual.

Deaths due to road accidents occurring in hospital centres were 392 individuals and the number of injuries they sustained was 2,394, that is 6.1 injuries per individual, a figure above that published for injured survivors.

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

As for fatalities, 33% 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, 33% 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: 7% injuries to the lower extremities, 6% to the upper extremities and 13% to the spinal column.

Table 45.- IMD Matrix*, ICD-10-CM, percentage distribution of injuries by road accident. Spain, 2020 (16,457 discharges and 47,202 injuries)

Location of injury		Mechanism of injury											
		Fracture	Dislocation the internal organs	Open wound	Amputation	Blood vessels	Superficial contusion	Crushing	Burns	Foreign body	Others specified	Unspecified	Total
Head and neck	Traumatic brain injuries	2.9%	0.0%	6.9%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.6%	12.8%
	Other to the head	3.4%	0.1%	0.0%	0.1%	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%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.5%
Spinal cord and spinal column	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%
	Spinal cord	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
	Cervical spine	8.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	9.6%
Torso	Chest	9.6%	0.0%	6.2%	0.0%	0.1%	0.6%	0.0%	0.0%	0.0%	0.1%	0.4%	17.1%
	Abdomen	0.0%	0.0%	3.1%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	3.7%
	Pelvis and dorso-lumbar spine	4.1%	0.1%	0.9%	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%	0.1%	0.0%	0.0%	0.0%	0.1%	0.3%	0.5%
	Other to the torso	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
	Upper extremities	15.9%	1.4%	0.0%	0.7%	0.1%	0.9%	0.0%	0.1%	0.0%	1.0%	0.1%	20.3%
Extremities	Hip	1.4%	0.2%	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%	1.4%	0.1%	1.3%	0.1%	0.2%	0.0%	1.6%	0.1%	21.0%
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%	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%
Unspecified	Not specified	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.4%	0.5%
	Total	62.0%	2.4%	17.6%	4.7%	0.2%	0.7%	5.1%	0.1%	0.4%	3.6%	3.1%	100%

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

Table 46.- IMD Matrix*, ICD-10-CM, distribution of injuries sustained by road facilities. Spain, 2020 (392 facilities and 2,394 injured)

Location of injury		Mechanism of injury												
		Fracture	Dislocation the internal organs	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	245	0	488	41	0	0	0	0	0	0	1	10	785
	Other to the head	119	0	0	1	0	0	12	0	0	0	5	2	139
	Neck	2	0	0	3	0	5	0	0	0	1	1	0	12
Spinal cord and spinal column	Head, neck and other	0	0	0	0	0	0	0	0	0	0	0	0	0
	Spinal cord	0	0	23	0	0	0	0	0	0	0	0	0	23
	Cervical spine	289	6	0	0	0	7	0	0	0	0	1	0	303
Torso	Chest	234	0	237	0	0	5	4	0	0	6	0	11	497
	Abdomen	0	0	105	4	0	7	10	0	0	0	0	0	126
	Pelvis and dorso-lumbar spine	109	4	20	1	0	7	7	0	0	0	0	0	148
	Abdomen, dorso-lumbar spine and pelvis	0	0	0	0	0	2	0	1	0	0	4	5	12
	Other to the torso	0	0	0	0	0	0	0	0	0	16	0	0	16
Extremities	Upper extremities	132	4	0	7	0	2	4	1	2	0	2	0	154
	Hip	14	3	0	0	0	0	0	0	0	0	0	0	17
Not classified in a region	Lower extremities	110	4	0	12	1	3	8	0	0	0	1	0	139
	Multiple regions of the body	0	0	0	0	0	0	0	0	0	0	0	18	18
	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	4	4
Total		1,254	21	873	69	1	38	45	2	2	23	16	50	2,394

*Sub-group: Deaths in hospital as a result of a road traffic accident. Source: Specialised Health Care Registry-MBDS

Table 47.- IMD Matrix*, ICD-10-CM, percentage distribution of injuries sustained by road fatalities. Spain, 2020 (392 facilities and 2,394 injured)

Location of injury		Mechanism of injury												
		Fracture	Dislocation	Injury to the internal organs	Open wound	Amputation	Blood vessels	Superficial contusion	Crushing	Burns	Foreign body	Others specified	Unspecified	Total
Head and neck	Traumatic brain injuries	10.2%	0.0%	20.4%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	32.8%
	Other to the head	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.2%	0.1%	5.8%
	Neck	0.1%	0.0%	0.0%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
Spinal cord and spinal column	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	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%
	Cervical spine	12.1%	0.3%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.7%
Torso	Chest	9.8%	0.0%	9.9%	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%	0.3%	0.0%	0.5%	20.8%
	Abdomen	0.0%	0.0%	4.4%	0.2%	0.0%	0.3%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%
	Pelvis and dorso-lumbar spine	4.6%	0.2%	0.8%	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	6.2%
	Abdomen, dorso-lumbar spine and pelvis	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	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%	0.7%	0.0%	0.0%	0.7%
	Upper extremities	5.5%	0.2%	0.0%	0.3%	0.0%	0.1%	0.2%	0.0%	0.1%	0.0%	0.1%	0.0%	6.4%
	Hip	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%
Extremities	Lower extremities	4.6%	0.2%	0.0%	0.5%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	5.8%
	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%	0.8%	0.8%
	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%
Not classified in a region	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	52.4%	0.9%	36.5%	2.9%	0.0%	1.6%	1.9%	0.1%	0.1%	1.0%	0.7%	2.1%	100%

*Sub-group: Deaths in hospital as a result of a road traffic accident. Source: Specialised Health Care Registry-MBDS

Figure 80.- Percentage distribution by injury location and mechanism of injury to hospitalised injured casualties. Spain, 2020 (47,202 injuries)

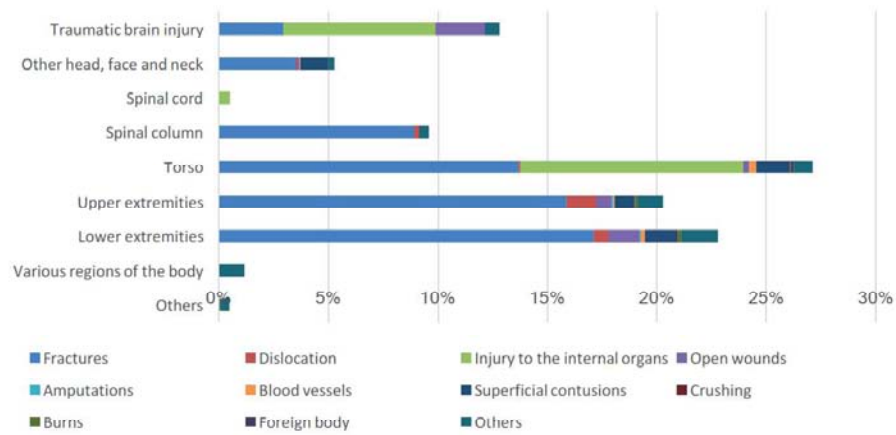


Figure 81.- Percentage distribution by injury location and mechanism of injury to people who die at hospital. Spain, 2020. (2,394 injuries)

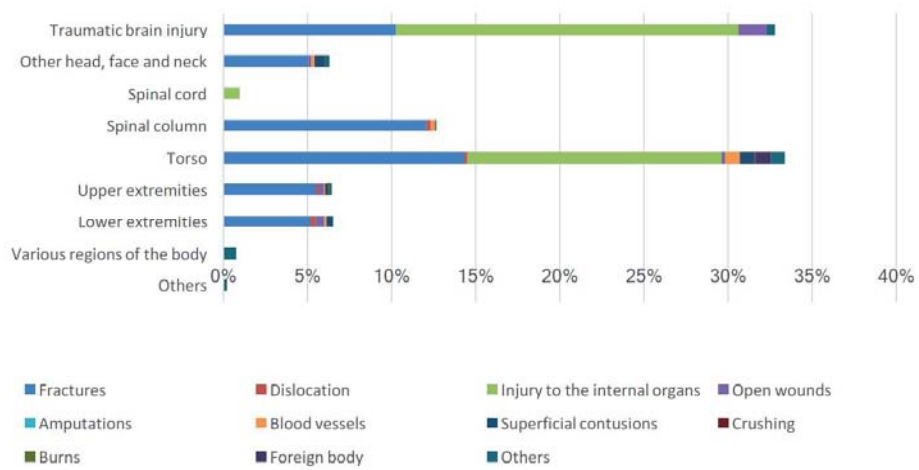
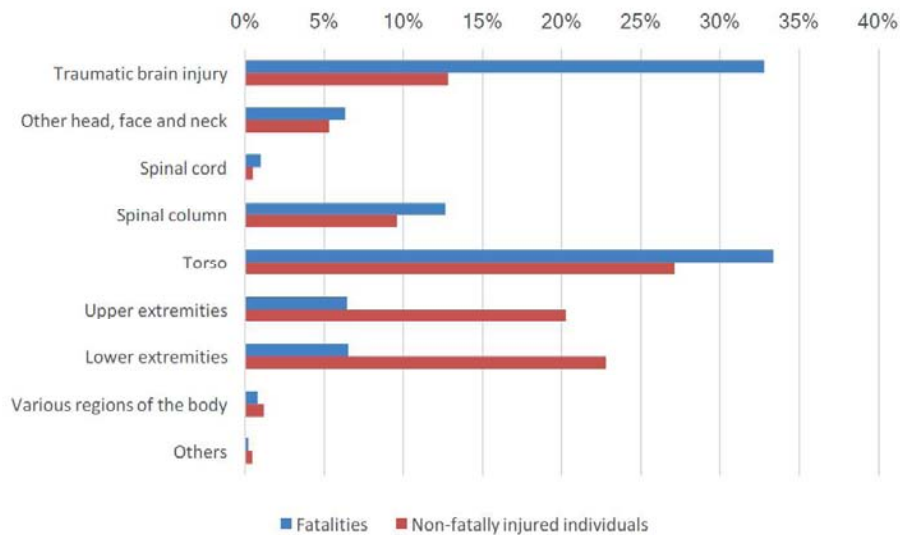


Figure 82.- Percentage distribution by injury location and mechanism of injury to hospitalised non-fatally injured casualties and to deaths in hospital. Spain, 2020 (47,202 injuries sustained by non-fatally injured casualties and 2,394 injuries sustained by fatalities)



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 was 35% in 2020.

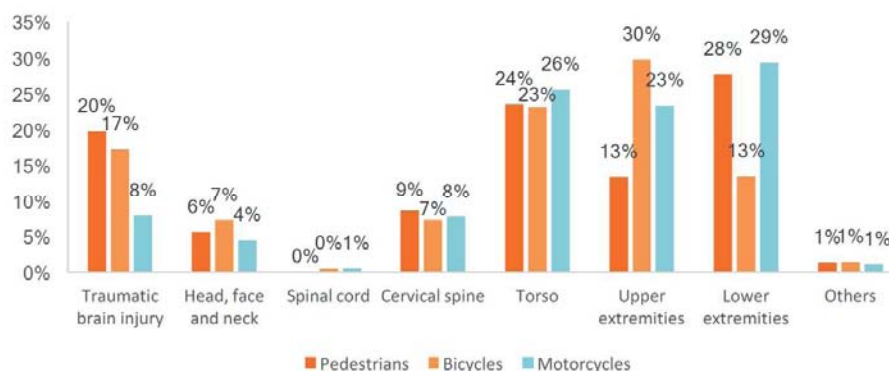
Table 48.- Injury location classification in vulnerable road users according to IMD Matrix*, ICD-10-CM, Spain, 2020.

	Pedestrians	Bicycles	Motorcycles
Traumatic brain injuries	1,051	879	1,053
Head, face and neck	296	372	594
Spinal cord injury	6	24	71
Cervical spine	459	370	1,035
Torso	1,256	1,177	3,393
Upper extremities	713	1,515	3,100
Lower extremities	1,477	686	3,901
Others	72	73	144
Total injuries	5,330	5,096	13,291
Nr of hospitalised non-fatally injured casualties	1,710	2,266	4,403
Injuries by discharge	3.1	2.2	3.0

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

Observing the location of injuries sustained by non-fatally injured casualties in 2020, traumatic brain injuries are more common in pedestrians (20%) and pedal cyclists (17%) than in motorcyclists (8%). Upper extremities are more common in pedal cyclists (30%) and motorcyclists (23%) than in pedestrians (13%). Lower extremities are more common in pedestrians (28%) and motorcyclists (29%) than in pedal cyclists (13%).

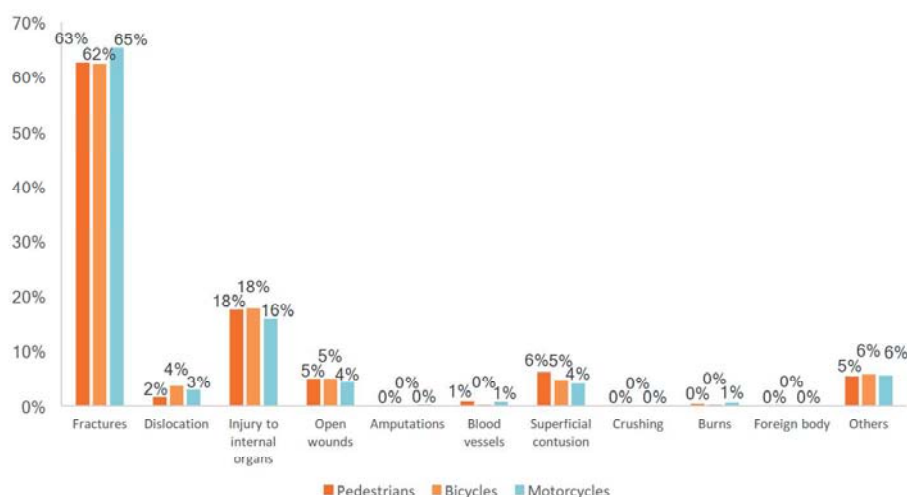
Figure 83.- Percentage distribution by injury location to hospitalised non-fatally injured casualties. Spain, 2020



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

As regards mechanism of injury, the distribution in pedestrians and pedal cyclists is quite similar: 63% and 62% are respectively fractures and 18% are injuries to internal organs. Motorcyclists show a different distribution: 65% are fractures and 16% are injuries to internal organs.

Figure 84.- Percentage distribution by mechanism of injury to hospitalised non-fatally injured casualties. Spain, 2020



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

With respect to the evolution of the total number of injuries for the years 2018, 2019 and 2020, it has been observed that the distribution of injuries according to the location and mechanism of injury has not shown significant variation in the above-mentioned period.

Table 49.-Injury location classification to non-fatally injured casualties according to IMD Matrix*, ICD-10-CM, Spain, 2018, 2019 and 2020.

	Number			Percentage distribution		
	2018	2019	2020	2018	2019	2020
Traumatic brain injuries	7925	8080	6047	13%	13%	13%
Head, face and neck	3270	3173	2495	5%	5%	5%
Spinal cord	383	413	234	1%	1%	0%
Cervical spine	5658	5736	4527	9%	10%	10%
Torso	15,815	16205	12800	26%	27%	27%
Upper extremities	11706	11693	9569	20%	19%	20%
Lower extremities	14079	14191	10757	23%	24%	23%
Others	1161	711	773	2%	1%	2%
Total injuries	59997	60202	47202	100%	100%	100%

Tabla 50.-Mechanism of injury classification to non-fatally injured casualties according to IMD Matrix*, ICD-10-CM, Spain, 2018, 2019 and 2020.

	Number			Percentage distribution		
	2018	2019	2020	2018	2019	2020
Fracture	36068	36948	29268	60%	61%	62%
Dislocation	1358	1349	1147	2%	2%	2%
Injury to the internal organs	10297	10744	8317	17%	18%	18%
Open wounds	3212	2853	2234	5%	5%	5%
Amputations	107	84	71	0%	0%	0%
Blood vessels	326	284	307	1%	0%	1%
Superficial contusion	3589	3359	2415	6%	6%	5%
Crushing	79	48	34	0%	0%	0%
Burns	290	363	205	0%	1%	0%
Foreign body	74	93	55	0%	0%	0%
Otros efectos de causas externas	4	0	0	0%	0%	0%
Others specified	2420	2301	1692	4%	4%	4%
Not specified	2173	1776	1457	4%	3%	3%
Total injuries	59997	60202	47202	100%	100%	100%

The cost of casualty accidents

In 2011, 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, a fatality would involve a cost of € 1.4 million, including direct and indirect costs (medical expenses, administrative expenses, etc.) and the fair actuarially price associated to the premium that society would 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, €219,000, and to a non-hospitalised injured casualty, €6,100, have been calculated in the same way. These estimates have been updated to 1 January 2020, taking as reference the nominal variation of the Gross Domestic Product per capita, so that a fatality generated a cost of €1,448,227, a hospitalised injured casualty a cost of €226,544 and a non-hospitalised injured casualty a cost of €6,310.

By applying the above costs to the number of people killed, hospitalised and non-hospitalised injured casualties in road traffic accidents in 2020, we obtain that the costs associated to the victims are estimated at around € 4,052 million, but if we explore other information systems they could reach € 9,648 million. Taking into account that the GDP at market prices on 01 January 2020⁸ was € 1,121,948 million, the GDP percentage that these costs represent is as a minimum 0.36%, although it is reasonable to assume 0.86%, a percentage obtained by analysing jointly the information sources from the health and transport sectors.

Table 51.- Calculation of the cost associated to road traffic accidents. Spain, 2020

Victims	Unit cost (€ 2020)	Victims		Percentage distribution	
		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	1,448,227	1,370	1,370	1,984,071,516	1,984,071,516
Hospitalised injured casualties	226,544	6,681	20,542	1,513,541,404	4,653,669,740
Non-hospitalised injured casualties	6,310	87,881	477,022	554,540,851	3,010,072,551
Total injuries				4,052,153,771	9,647,813,806

1. Figures for the number of casualties for the Transport Sector refer to 2020.

2. Figures for fatalities refer to 2020, for hospitalised injured casualties to 2015 and for non-hospitalised injured casualties to 2014.

ANNEX I.- METHODOLOGICAL NOTES

Databases used to prepare this report

a) National Register for Road Traffic Accident Victims

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 2021.

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 website 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) Information on the road network and traffic on the interurban network.

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.

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:

$$\text{Correction_factor} = x = \frac{\text{nr_of_linked_records(only_seriously_injured)}}{\text{nr_of_records_of_the_first_stratum(only_seriously_injured)}}$$

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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