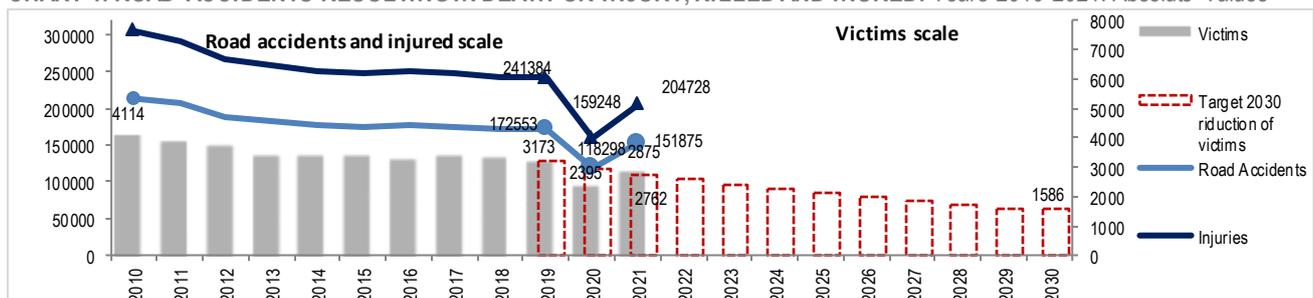


ROAD ACCIDENTS

Year 2021

- The pandemic situation and the measures of containing continue to influence the trend of road accidents and mobility in 2021. Compared to 2020, accidents and injuries decrease in January and February and increase substantially in March-June 2021, returning to levels very close to the pre-pandemic period in the second half of the year.
- In 2021, 2,875 people died in road accidents in Italy (+20.0% compared to the previous year), 204,728 were injured (+28.6%) and 151,875 is the road accidents number (+28.4%), all values increased in comparison to 2020, but still decreasing with reference to 2019 (victims: -9.4%, injured: -15.2% and road accidents: -11.8%). The number of victims within 24 hours is 2,397, while there are 478 fatalities (2-30 days after the event).
- The number of fatalities increased for all road users in comparison with 2020, except for trucks occupants, while there is a decrease compared to 2019. There are 169 fatalities for heavy goods vehicle users (+44.4 % and +23.4 % compared to 2020 and 2019), 695 for motorcyclists (+18.6 %; -0.4 %), 471 for pedestrians (+15.2 % and -11.8 %), 1,192 for occupants of passenger cars (+17.1 %; -15.5), 67 for moped drivers (+13.6 %; -23.9 %). Finally, for electric bicycles and electric scooters were recorded 229 fatalities (+30.1% compared to 2020 and -9.5% compared to 2019).
- With reference, specifically, to electric scooters, vehicles included in the statistical survey since 2020, the road accidents, spread in all Italian provinces, rose from 564 to 2,101, the injuries from 518 to 1,980, while there are 9 fatalities (within 30 days), plus 1 pedestrian dead.
- Road accidents, fatalities and injuries increase on all road categories but remain below pre-pandemic levels. The most significant percentage changes, compared with the previous year, are recorded on motorways, where the number of victims rose by 26.2 per cent (-20.6 in comparison with 2019), followed by rural roads (+19.8% and -10.9% compared with 2020 and 2019) and built-up area roads (+19.1% and -5.0%).
- In the EU27 too, the number of fatalities start to increase again in 2021 (+5.3% compared to the previous year), after the drastic reduction of the first year of pandemic (-17.1% out of 2019). Overall, there were 19,855 victims in 2021, compared to 18,861 in 2020 and 22,763 in 2019. For every million inhabitants, in 2021 there were 44.7 road deaths in the EU27 and 48.6 in our country, which dropped from 12th to 13th place in the European ranking.
- Among the most frequent driving mistake, there are distraction, failure to respect the rules and speeding. The three groups altogether account for 39.7% out of total cases (78,477), stable value through the time.
- Speeding is the most frequently fined incorrect behaviour, penalties for speeding represent, in fact, the 36% out of the total. Penalties for failure to wear seat belts, child restraint systems and for failure to wear a helmet decreased. The number of sanctions for improper use of devices in the car, particularly smartphones, remains high.
- The car market shows a slight recovery in 2021: first registrations of passenger cars increase of 5.4% compared to 2020, of motorbikes rose of 25%. On the motorway network, the yearly average vehicle mileage grow up of 23%, compared to 2020 and decrease of 11%, compared to 2019.

CHART 1. ROAD ACCIDENTS RESULTING IN DEATH OR INJURY, KILLED AND INURED. Years 2010-2021. Absolute values



Covid-19 effect on mobility still in 2021

In 2021, 151,875 road accidents resulting in death or injury¹ occurred in Italy; there were 2,875 fatalities and 204,728 injuries (Table 1). Compared with the previous year, road deaths increase significantly (+20%) as the number of road accidents and injuries (28.4% and 28.6%, respectively). The road death rate increases from 40.3 to 48.6 deaths per million inhabitants, between 2020 and 2021. It was 52.6 in 2019. Compared with 2019, the benchmark for the 2020-2030 decade, road fatalities decrease by 9.4 percent.

TABLE 1. ROAD ACCIDENTS, KILLED AND INJURED PERSONS. Years 2001, 2010-2021. Absolute values, deaths per million and percentage change

YEARS	Road accidents (a)	Killed	Injured	Deaths per million inhabitants (b)	Yearly % change	% change in respect to 2001 (b)	% change in respect to 2010 (b)
2001	263,100	7,096	373,286	124.5	-	-	-
2010	212,997	4,114	304,720	69.4	-2.9	-42.0	-
2011	205,638	3,860	292,019	65.0	-6.2	-45.6	-6.2
2012	188,228	3,753	266,864	63.0	-2.8	-47.1	-8.8
2013	181,660	3,401	258,093	56.2	-9.4	-52.1	-17.3
2014	177,031	3,381	251,147	55.6	-0.6	-52.4	-17.8
2015	174,539	3,428	246,920	56.3	+1.4	-51.7	-16.7
2016	175,791	3,283	249,175	54.2	-4.2	-53.7	-20.2
2017	174,933	3,378	246,750	55.8	+2.9	-52.4	-17.9
2018	172,553	3,334	242,919	55.2	-1.3	-53.0	-19.0
2019	172,183	3,173	241,384	52.6	-4.8	-55.3	-22.9
2020	118,298	2,395	159,249	40.3	-24.5	-66.2	-41.8
2021	151,875	2,875	204,728	48,6	+20,0	-59,5	-30,1

(a) Road accident resulting in deaths (within the 30th day) or injuries is defined as the event that involves at least a vehicle circulating on the national road network.

(b) Deaths out of resident population (per 1,000,000). (c) The percentage changes of the number of deaths is calculated as: $((M^t / M^{t-1} \circ 2001 \circ 2010) - 1) * 100$

The pandemic situation and the containing measure applied still continue to influence, during 2021, the traffic volumes and trends, the car market and the mobility profile of Italians².

The year 2021, in fact, is still strongly influenced by the restrictive measures due to the Covid-19 pandemic, it is enough to think to the prolonged use of smart working, that reduced the flow of workers in systematic travel between home and workplace, the periods of DAD, distance learning, carried out at local level depending to the health situation, the periods of traffic blocks, between 10 p.m. and 5 a.m., in the first six months of the year, implemented for confirmed needs. Even with the scenario outlined, however, 2021 looks to be a year of renewal of mobility in all its forms, after the significant forced decrease in 2020.

On the motorway network, the yearly vehicle travels average record an increase equal to 23% over 2020 but a percentage still 11% lower than in 2019. The percentage changes are higher for light vehicles than for the other vehicles (+26% over 2020 and a -14.5% over 2019), while for heavy vehicles, which ensured the transport of goods on the roads in 2020 too, increasing of 15% and 1% out of 2020 and 2019 are recorded.

The Index of Detected Mobility, calculated by Anas on the basis of monthly average daily traffic by vehicle class, is equal to -12%, for total traffic on national primary net roads (out of 2019) and about -1.5%, referring only to heavy vehicle traffic. Compared to 2020, the Detected Mobility Index increases by about 15%, when considering total traffic and 10%, with reference to heavy vehicles only.

Provisional economic data from Isfort's Audimob Observatory, which includes total mobility demand, including walking, bicycling, and public transportation, especially in urban areas, also confirm the consistent recovery of demand flows from April 2021, according with the period in which the vaccination campaign reached a large part of the population. Finally, between September and October, the mobility rate reached 77.2% (compared to 67.7% 2020 average) and the volume of travel increased by 22 percent compared to the first quarter of the year,

¹ The road accident is defined as "that event in which at least one vehicle is involved on the road network, occurring in the streets or squares open to traffic, which involves personal injuries (dead within 30 days and / or injured)" - (Convention of Vienna in 1968, UNECE, ITF and Eurostat 2019). Survey based on Memorandum of Understanding and Agreements with Istat. In 2020, Emilia-Romagna, Friuli-Venezia Giulia, Lombardy, Piedmont, Puglia, Tuscany, Veneto, Liguria, Calabria, Lazio and the autonomous provinces of Bolzano-Bozen and Trento joined. The proportion of road accidents recorded by Motorways Police in 2020 was 12.6%, by Carabinieri at 21.9%, by the Local Police and other bodies at 65.4%.

² Fonte: ACI, Aiscat, Anas, ANCOMA, Istat, Isfort

although it still remained at levels below the pre-Covid regime.

Then, in the context of 2021 mobility, new vehicles, for instance electric scooters and other devices not yet classified and normed in vehicle categories, such as monowheel, overboards, skateboards and other electric micro-mobility, spread the use, especially in urban areas. During 2021, a further growth in bicycle use is recorded, not only as an effect of the pandemic, but also fostered by the push to shift shares of urban traffic to more active forms of mobility, also with the aim of ridding cities of traffic and pollution. In fact, 1,975,000 bicycles, including e-bikes, were sold in 2021, an average decrease, however, of 2 percent from 2020.

There are more than 35,000 shared e-scooters, with mileage exceeding 7.4 million kilometres, and they are now widespread in all areas of the country. It should be pointed out, however, that a survey carried out by ACI in 2021³, showed that only 13% of users of electric scooters used to commute by car while most already travelled their routes on foot, by bicycle or by public transport (similar results were recorded in other European countries). Confirming this, Isfort's aforementioned Audimob Observatory notes, for the first half of 2021, a worrying recovery of car use shares, now comparable to pre-Covid levels, at the expense of soft mobility. Overall, thanks mainly to the big boost in walking, the rate of sustainable mobility had risen in 2020 to 38.2 percent from 35 percent in 2019, while falling about 2 percentage points in the January-June 2021 period.

The car market in 2021 showed a slight recovery: compared to 2020, first registrations of passenger cars increased by 5.4% and of motorcycles by 25%, also favoured by the preference to travel alone in own vehicle, rather than on public transportation, due to the fear of contagions.

To highlight that the passenger car market perform, during 2021, even worse in the rest of Europe, with a loss of 1.5% compared to 2020, this was also due to the "microchip crisis", during the second half of the year, which forced manufacturers to find alternative solutions for keeping production lines moving.

As regard the social cost of road accidents resulting in death or injury, detected by Highway Police, Local Police and Carabinieri, of which Istat and ACI⁴ updated the parameters, is equal, in 2021, to 16.4 billion euros (0.9 % of the national GDP, in 2021).

Victims increase on EU27 roads

The year 2021 too marks a new gradual growth in mobility on European road. The fatalities are 19,855, compared to 18,861 in 2020 and 22,763 in 2019, they were around 30,000 in 2010. The increase, in 2021, is +5.3%, compared to the previous year, while a decrease of -12.8% is detected, compared to 2019, after the drastic reduction in 2020, when the variation, compared to the pre-pandemic period, was -17.1%.

The increase in the number of victims in 2021 did not affect all countries, decreasing in the Netherlands (-4.6%), Germany (-5.5%), Sweden (-5.9%), Cyprus (-6.3%), Ireland (-6.8%), Lithuania (-7.7%), Estonia (-8.3%), Poland (-9.9%), Denmark (-12.9%), Latvia (-16.0%) and Malta (-25.0%).

The road mortality rate (deaths per million inhabitants) stands, in 2021, at 44.7 in the EU27 and 48.5 in Italy. Our country thus moves from twelfth to thirteenth place in the European ranking.

The European targets for the decade on road safety 2021-2030 predict the halving the number of victims and serious injuries by 2030, compared to the benchmark (set in 2019) and the monitoring of specific performance indicators, *Key Performance Indicators*⁵, which Italy is preparing to provide⁶ and which concern: speed, use of protection systems (helmets, seat belts and child seats), use of alcohol and drugs, safety level of the vehicle fleet and the national road network, driving distraction and efficiency of rescue systems in the event of an accident. For the future, in addition to the targets set for the next decade, the foundations have been laid for new and ambitious goals, in particular the Stockholm Declaration of February 2020 calls for a 'zero victims' vision for 2050 (Table 2 and Chart 2).

³ ACI: Scooter survey (2021) <https://www.aci.it/index.php?id=12159>

⁴ Istat and ACI, with the cooperation of the Ministry of Infrastructures and Sustainable Mobility, the Ministry of Health and the National Institute of Health, recalculated the parameters for the social costs of road accidents, updating the values, used until the last year and at constant 2010 prices. Specific costs for seriously injured was calculated too. The new values, which are the subject of an ad hoc publication currently being disseminated, are used preliminarily in this report to calculate the social costs of road accidents 2021.

⁵ The European Commission is in charge of coordinating the work of the EU27 countries for the production of the key performance indicators (8 different indicators on the topics: infrastructure, vehicles, road infrastructure, post-accident care). Each country will provide between one and eight national KPIs, comparable and with the minimum methodological requirements decreed by the European Commission (BASELINE project).

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TABLE 2. KILLED PERSONS IN ROAD ACCIDENTS IN THE COUNTRIES OF THE EUROPEAN UNION (EU27)
 Years 2010, 2019, 2020 and 2021. Absolute values, percentage change and road mortality rate per 1,000,000 inhabitants (a)

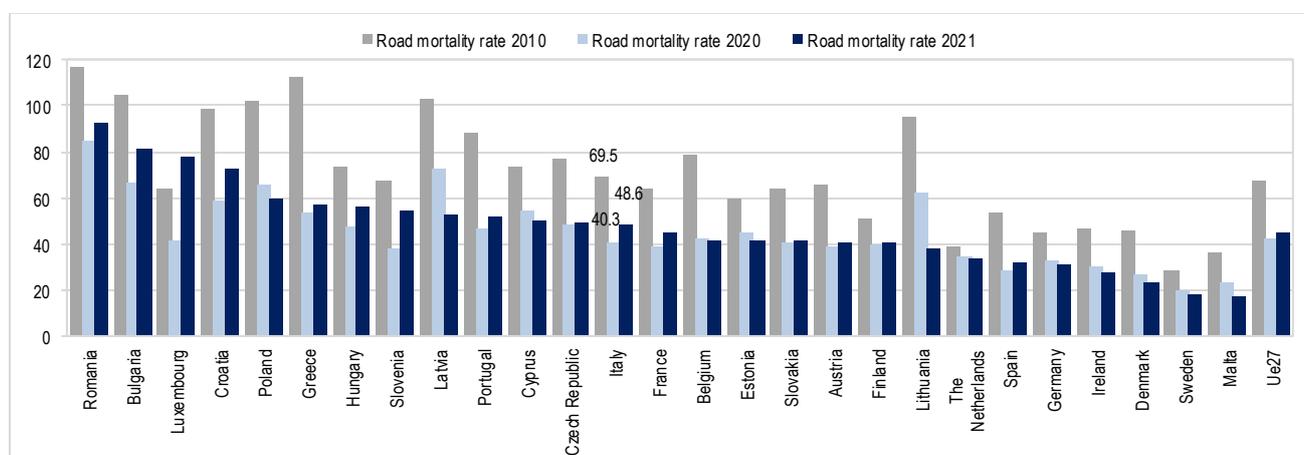
COUNTRIES EU27	Absolute values				Percentage change (b)			Road mortality rate		
	2010	2019	2020	2021	2021/2020*	2021/2019*	2021/2010 *	2010	2020	2021
Austria	552	416	344	362	+5.2	-13.0	-34.4	65.9	38.6	40.5
Belgium	850	646	484	484	-	-25.1	-43.1	78.4	42	41.8
Bulgaria	776	628	463	561	+21.2	-10.7	-27.7	104.6	66.6	81.1
Croatia	426	297	237	292	+23.2	-1.7	-31.5	99	58.4	72.3
Cyprus	60	52	48	45	-6.3	-13.5	-25.0	73.2	54.1	50.2
Czech Republic	802	617	517	531	+2.7	-13.9	-33.8	76.7	48.3	49.6
Denmark	255	199	155	135	-12.9	-32.2	-47.1	46.1	26.6	23.1
Estonia	79	52	60	55	-8.3	+5.8	-30.4	59.3	45.1	41.4
Finland	272	211	221	223	+0.9	+5.7	-18.0	50.8	40	40.3
France	3992	3244	2541	2947	+16.0	-9.2	-26.2	63.6	39	45
Germany	3651	3059	2719	2569	-5.5	-16.0	-29.6	44.6	32.8	30.9
Greece	1258	688	584	608	+4.1	-11.6	-51.7	112.5	54	56.9
Hungary	740	602	460	544	+18.3	-9.6	-26.5	73.9	47.5	55.9
Ireland	212	140	147	137	-6.8	-2.1	-35.4	46.6	30	27.4
Italy	4114	3173	2395	2875	+20.0	-9.4	-30.1	69.5	40.3	48.6
Latvia	218	132	175	147	-16.0	-21.0	-32.6	102.8	72.9	52.6
Lithuania	32	22	26	24	-7.7	+9.1	-25.0	95.2	62.6	37.8
Luxembourg	299	186	139	147	+5.8	+11.4	-50.8	63.7	41.5	77.6
Malta	15	16	12	9	-25.0	-43.8	-40.0	36.2	23.3	17.4
Poland	3907	2909	2491	2245	-9.9	-22.8	-42.5	102.4	65.6	59.3
Portugal	937	626	509	514	+1.0	-17.9	-45.1	88.6	46.5	52.1
Romania	2377	1864	1646	1779	+8.1	-4.6	-25.2	117.1	85.2	92.7
Slovakia	345	245	224	226	+0.9	-7.8	-34.5	64	41	41.4
Slovenia	138	102	80	114	+42.5	+11.8	-17.4	67.4	38.2	54.1
Spain	2478	1755	1370	1508	+10.1	-14.1	-39.1	53.3	28.9	31.8
Sweden	266	221	204	192	-5.9	-13.1	-27.8	28.5	19.8	18.5
The Netherlands	640	661	610	582	-4.6	-12.0	-9.1	38.6	35	33.3
Eu27	29691	22763	18861	19855	+5.3	-12.8	-33.1	67.6	42.3	44.7

* Preliminary estimate 2021 for Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Portugal, Spain, Sweden.

(a) Source: European Transport Safety Council, Annual PIN report. Year 2022 - <https://etsc.eu/16th-annual-road-safety-performance-index-pin-report/>
 European Commission 28/03/2022 - https://transport.ec.europa.eu/news/preliminary-2021-eu-road-safety-statistics-2022-03-28_en

(b) Le variazioni percentuali rispetto al 2010, al 2020 e al 2019 sono state calcolate come segue: $((M^{2021}/M^{2020} \circ 2019 \circ 2010) - 1) * 100$

CHART 2. ROAD MORTALITY RATE IN THE COUNTRIES OF THE EUROPEAN UNION (EU28) (a). Years 2010, 2020 and 2021



(a) Road mortality rate (deaths in road accidents per million inhabitants)

Source: European Transport Safety Council, Annual PIN report. Year 2022 - <https://etsc.eu/16th-annual-road-safety-performance-index-pin-report/>

Rising fatalities among young people and still persist a child alert

There were 2,875 road accident victims in 2021 (+20% compared to 2020 and -9.4% compared to 2019): 2,396 men (83.3%) and 479 women (16.7%). The proportion of men killed in road accidents is slightly higher in 2021 than in the usual percentage distribution (81% and 19%). The change in the distribution could be due to the change in mobility patterns during 2021, still influenced by the effects of the pandemic containment measures. There were 2,072 fatally injured drivers (1,870 men and 202 women), 332 passengers (196 men and 136 women) and 471 pedestrians (330 men and 141 women).

The peaks in the distribution of the victims are in the age groups 45-59 years and 20-24 years for men and 70-84 years and 20-24 years for women. The age groups for which there is the largest increase in the number of fatalities, compared to 2020, are the 15-19 (+41.7%) and 25-29 age groups (+34.9%), followed by the 40-49 age group (+31.5%), (Table 3).

Continuing to be a negative note is the high proportion of children aged 0 to 14 killed in traffic accidents (by the 30th day): there are 28 in 2021, of which 23 are aged 5 to 14 (18 in 2019 and as many as 29 in 2020).

The National Road Safety Plan (PNSS) 2030, in addition to envisaging actions aimed to achieve the general targets (halving the total number of deaths and serious injuries), also identifies priority actions for improving the road safety conditions of certain categories of users particularly at risk; among these categories, children and adolescents between 0 and 14 years of age are included. Children, in fact, are exposed to a high risk of accidents and vulnerability, but also have a high potential for improvement. However, the positive effects hoped, even following the actions implemented in recent years, are not yet tangible and the goal of 'zero fatalities' is still a long way off.

TABLE 3. KILLED AND INJURED IN ROAD ACCIDENTS BY GENDER AND AGE CLASS. Year 2021. Absolute values and % change 2021/2020 and 2021/2019 (a)

AGE CLASSES	Killed (within 30 days)			Injured			% change 2021/2019		% change 2021/2020	
	Males	Females	Total	Males	Females	Total	Victims	Injured	Victims	Injured
0 - 4	3	2	5	1,011	760	1,771	-70.6	-30.9	-37.5	31.6
5 - 9	4	2	6	1,344	985	2,329	50.0	-32.0	-40.0	26.9
10 -14	12	5	17	2,429	1,672	4,101	21.4	-19.6	-10.5	38.0
15 -19	122	24	146	12,667	5,474	18,141	-7.6	-3.4	41.7	48.4
20 -24	179	40	219	16,245	7,737	23,982	-11.7	-7.0	21.7	39.8
25 -29	162	39	201	13,254	6,696	19,950	-7.8	-13.6	34.9	32.2
30 - 34	158	19	177	11,303	5,783	17,086	4.1	-13.1	29.2	29.8
35 - 39	152	13	165	9,919	5,081	15,000	-9.8	-18.1	19.6	27.5
40 - 44	174	21	195	10,119	5,270	15,389	-3.9	-20.5	31.8	24.3
45 - 49	182	24	206	11,211	5,945	17,156	-12.3	-16.0	31.2	24.1
50 -54	191	31	222	10,684	5,857	16,541	-16.5	-15.7	24.0	23.5
55 -59	195	26	221	9,595	5,094	14,689	0.0	-12.1	14.5	23.5
60 -64	148	24	172	6,935	3,506	10,441	-11.3	-13.4	-1.1	24.0
65 -69	136	30	166	4,917	2,555	7,472	-8.3	-15.3	20.3	23.8
70 - 74	149	44	193	3,974	2,161	6,135	1.0	-23.0	20.6	15.7
75 - 79	118	37	155	3,024	1,779	4,803	-22.5	-25.0	14.0	14.0
80 - 84	138	49	187	2,498	1,363	3,861	-12.2	-24.0	6.3	12.9
85 - 89	94	32	126	1,196	588	1,784	-20.3	-21.4	14.5	12.6
90 +	38	5	43	345	172	517	-15.7	-18.8	19.4	16.4
Unknown	41	12	53	2,137	1,443	3,580	10.4	-32.4	20.5	27.9
Totale	2,396	479	2,875	134,807	69,921	204,728	-9.4	-15.2	20.0	28.6

(a) The age class variable, also includes the "unknown or not indicated" mode. For each accident, in fact, also the occupants of other vehicles involved over the third is counted too. For these individuals, of which we only know the number and the outcome, demographic characteristics, including the age, are not detected

As for those injured in road accidents, these are mainly young people between the ages of 15 and 29 (30.3 out of the total) with increasing of more than 40%, compared to 2020. Smaller declines are detected in other age groups, compared to 2019. To concretely address this alarming situation, the new National Road Safety Plan 2030 also focuses on improvements in road and vehicle design, strengthening of laws and their enforcement, and timely and effective assistance to the injured.

The age and gender structure of fatalities in 2021 and 2010 (considered as a year of comparison to detect differences in the shape of the distribution) shows how the proportions of adult and elderly victims, for both sexes, are increasing over the time, partly related to the aging of the population.

The distribution of road fatality rates by age, out of the resident population, confirms the disadvantage of the youngest age groups (20-34 years) and the over 70: the highest specific mortality rates are for the 85-89 age group (90.1 per million population) and for the 20-24 age group (74.0 per million population) (Charts 3 and 4).

CHART 3. KILLED IN ROAD ACCIDENTS. AGE PYRAMID BY AGE CLASS. Year 2010-2021. Percentage values

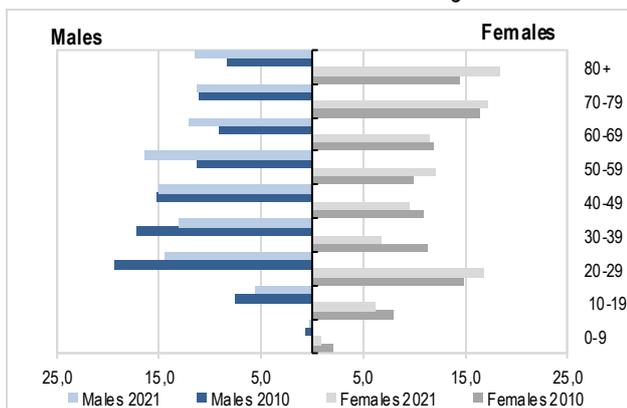
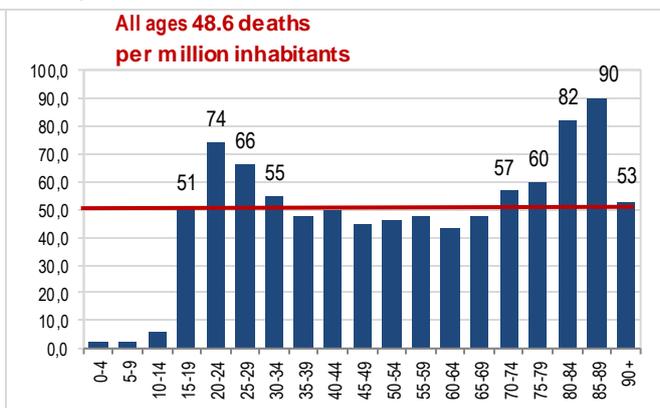


CHART 4. ROAD MORTALITY RATE BY AGE CLASS. Year 2021, per million inhabitants



Victims: increasing for occupants of heavy goods vehicles, bicycles and electric scooters

One of the new elements is undoubtedly the increasingly widespread circulation of new means of electric micro-mobility, used by many road users, who are also encouraged to use green and sustainable means.

Electric scooters, in particular, definitively assume the status of 'vehicle' with Budget Law No. 160 of 27 December 2019, which also assimilates them to bicycles in terms of traffic regulations. Through the Infrastructure Decree (Decree Law 121/2021), moreover, changes were introduced to the Highway Code, incorporating changes to the traffic rules for electric scooters.

In order to document the accident rate of these new vehicles as well, as of May 2020, Istat has included the new electric scooter and electric bicycle vehicles among the survey variables.

In 2021, there were 2,101 road accidents with personal injuries involving at least one electric scooter, there were 564 in 2020 (surveyed as of May 2020), with 9 fatalities, plus 1 pedestrian hit and killed. The first fatality was in 2020 in Budrio, near Bologna. The number of injured drivers and passengers on scooters amounted to 1980 (1903 drivers and 77 passengers), the number of uninjured drivers to 202, and the number of injured pedestrians to 127.

Electric bicycles were involved in 691 accidents, there were 240 in 2020, and accidents with 13 fatalities, there were 6 in 2020 and 671 injured and 43 uninjured drivers. In total, there were 16,448 accidents involving bicycles (electric and non-electric) and 2,101 involving scooters, with 229 fatalities and 18,037 injuries, in addition to 6 pedestrians run over and killed and 535 injured.

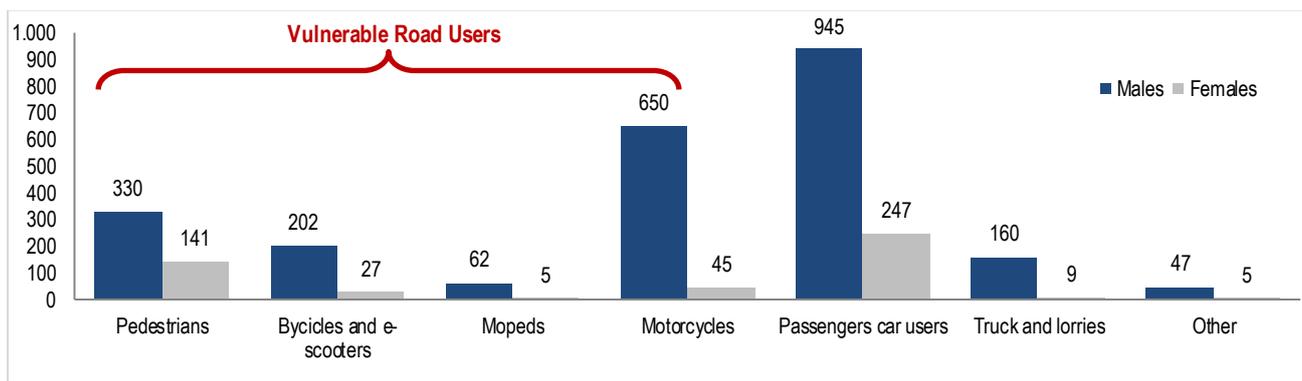
The fatalities increase for all road users compared to 2020, while there is a decrease compared to 2019, with the exception of truck occupants, which increase. There are 169 fatalities for truck occupants (+44.4% and +23.4% compared to 2020 and 2019), 695 for motorcyclists (+18.6%; -0.4%), 471 for pedestrians (+15.2% and -11.8%), 1.192 for occupants of passenger cars (+17.1%; -15.5), 67 for moped riders (+13.6%; -23.9%); finally, 229 fatalities were recorded for bicycles and electric scooters, with a change of +30.1% compared to 2020 and -9.5% compared to 2019.

The gender distribution of victims shows a distinctly male disadvantage, with more attenuated proportions for pedestrians, for whom frequencies are also high among women. Overall, the most vulnerable users account for 50.9 per cent of road deaths (51.4 per cent in 2020) (Figure 5).

The mortality and injury rates by road user category show higher risks for vulnerable users than for other modes of transport. The mortality index for pedestrians, at 3.0 per 100 pedestrian accidents, is 4.6 times that of car occupants (0.7). The mortality rate for motorcyclists is 2.6 times (1.7 deaths per 100 accidents), for drivers and passengers of bicycles, electric and non-electric bicycles and scooters it is almost double (1.2).



CHART 5. KILLED IN ROAD ACCIDENTS BY GENDER AND ROAD USER TYPE. Year 2021. Absolute values. Mortality and harmfulness index (a)



(a) Trucks and tractor units category includes: Trucks, Trucks with trailers, Lorries, Special vehicles, Road tractors or tractor units. Other road users category includes: Buses or trolleybuses in urban service or extra urban service, Passengers cars, Rural vehicles, Motorcycles and motor vans, Animal-drawn or arm-drawn vehicles, Hit and Run Vehicles, Minicar

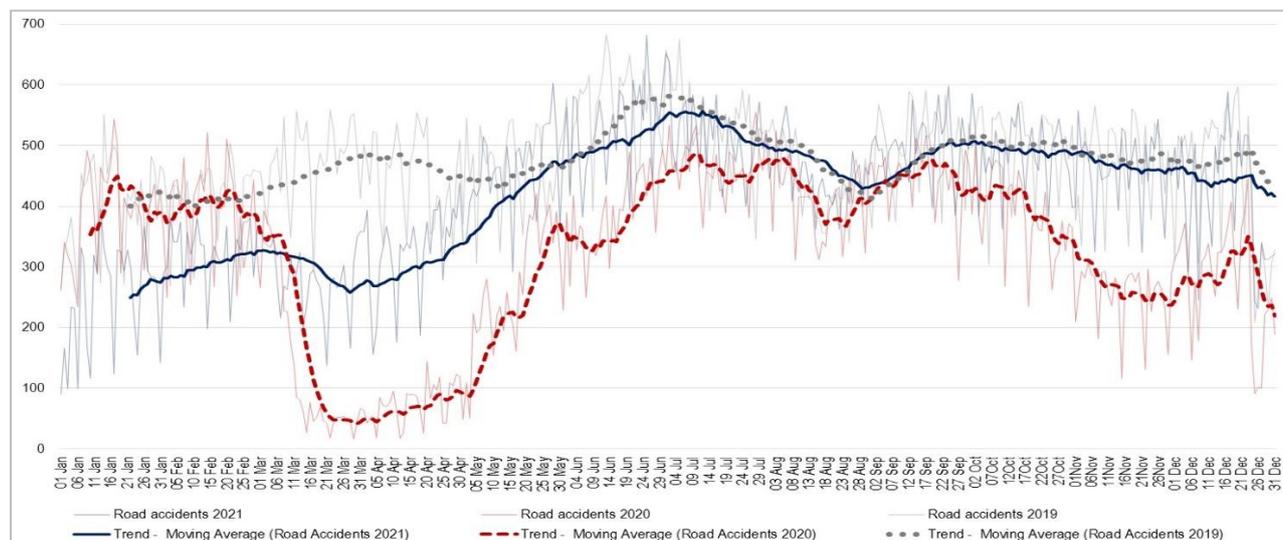
The 2011-2020 road safety decade, just finished, was followed by the 2030 Agenda, which calls for halving the number of fatalities and serious injuries by 2030, as well as monitoring performance indicators, the Key Performance Indicators. The year 2020 was an exceptional year, marked by the effects of the pandemic, and therefore it will not be used as a benchmark year to monitor progress in road safety over the next decade, so the reference year is 2019. Interesting analyses can be carried out by considering a comparison between 2021 and the benchmark years 2001, 2010, and 2019.

The categories with the smallest decreases were motorcyclists (-18.0% since 2001, -26.8% since 2010, -0.4% since 2019), bicyclists (-37.4% since 2001, -13.6% since 2010, -9.5% since 2019), and pedestrians (-54.4% since 2001, -24.2% since 2010, -11.8% since 2019). Moped and Passengers car's occupants register the greatest gains in mortality reduction over the past 20 years, probably due to a variety of factors, including awareness of helmet and safety device use and significant progresses in vehicle safety device technology. It remains to be noted that the number of mopeds on the road has declined sharply over time.

Day-to-day accidents: still pandemic effects on accident trends

The year 2021 is characterized by the gradual resumption of activities and traffic but still affected by light lockdown periods, implemented throughout the year and across the country. Daily analysis of accident data highlights sharp decreases for the months of January and February compared to both 2019 and 2020 and wide increases between March and June, compared to the same months of the previous year (when the country was in almost total lockdown), while in the second half of the year, levels return very close to 2019 levels.

CHART 6. ROAD ACCIDENTS RESULTING IN DEATH OR INJURY BY DAY AND MONTH IN 2019, 2020, 2021. Absolute values



Driving distraction is always the first cause of road accidents

Among the erroneous driving behaviours (excluding the residual group of causes of an unspecified nature), the most frequent are distraction, failure to respect precedence rules and speeding. The three groups together represent the 39.7% of cases (78,477). It should be noted that the survey, carried out by Istat includes only the ascertained or presumed circumstances for the drivers of the first two vehicles involved in the accident. Accidents involving three or more vehicles accounted for 8.8% out of the total, in 2021.

Among the other relevant causes, the irregular manoeuvre (15,534), the lack of safety distance (14,081), the lack of precedence to the pedestrians (5,954) and the incorrect behaviour of the pedestrian (5,402) represent respectively 7.1%, 3.0% and 2.7% of the total causes of accidents.

Tables and charts collection:

TABLE 4. KILLED AND INJURED IN ROAD ACCIDENTS BY GENDER AND AGE CLASS. Year 2021, absolute values and % change 2021/2020 and 2021/2019.

AGE CLASSES (a)	Killed			Injured			% change 2021/2020		% change 2021/2019	
	Males	Females	Total	Males	Females	Total	Killed	Injured	Killed	Injured
0 - 4	3	2	5	1,011	760	1,771	-70.6	-30.9	-37.5	+31.6
5 - 9	4	2	6	1,344	985	2,329	+50.0	-32.0	-40.0	+26.9
10 -14	12	5	17	2,429	1,672	4,101	+21.4	-19.6	-10.5	+38.0
15 -19	122	24	146	12,667	5,474	18,141	-7.6	-3.4	+41.7	+48.4
20 -24	179	40	219	16,245	7,737	23,982	-11.7	-7.0	+21.7	+39.8
25 -29	162	39	201	13,254	6,696	19,950	-7.8	-13.6	+34.9	+32.2
30 - 34	158	19	177	11,303	5,783	17,086	+4.1	-13.1	+29.2	+29.8
35 - 39	152	13	165	9,919	5,081	15,000	-9.8	-18.1	+19.6	+27.5
40 - 44	174	21	195	10,119	5,270	15,389	-3.9	-20.5	+31.8	+24.3
45 - 49	182	24	206	11,211	5,945	17,156	-12.3	-16.0	+31.2	+24.1
50 -54	191	31	222	10,684	5,857	16,541	-16.5	-15.7	+24.0	+23.5
55 -59	195	26	221	9,595	5,094	14,689	-	-12.1	+14.5	+23.5
60 -64	148	24	172	6,935	3,506	10,441	-11.3	-13.4	-1.1	+24.0
65 -69	136	30	166	4,917	2,555	7,472	-8.3	-15.3	+20.3	+23.8
70 - 74	149	44	193	3,974	2,161	6,135	+1.0	-23.0	+20.6	+15.7
75 - 79	118	37	155	3,024	1,779	4,803	-22.5	-25.0	+14.0	+14.0
80 - 84	138	49	187	2,498	1,363	3,861	-12.2	-24.0	+6.3	+12.9
85 - 89	94	32	126	1,196	588	1,784	-20.3	-21.4	+14.5	+12.6
90 +	38	5	43	345	172	517	-15.7	-18.8	+19.4	+16.4
Unknown	41	12	53	2,137	1,443	3,580	+10.4	-32.4	+20.5	+27.9
T total	2,396	479	2,875	134,807	69,921	204,728	-9.4	-15.2	+20.0	+28.6

a) The age class variable also includes the "unknown or not indicated" mode. For each accident, in fact, also the occupants of other vehicles involved over the third is counted too. For these individuals, of which we only know the number and the outcome. Demographic characteristics, including the age, are not detected

CHART 7. DRIVERS INVOLVED IN ACCIDENTS BY OUTCOME. Year 2021. Percentage values

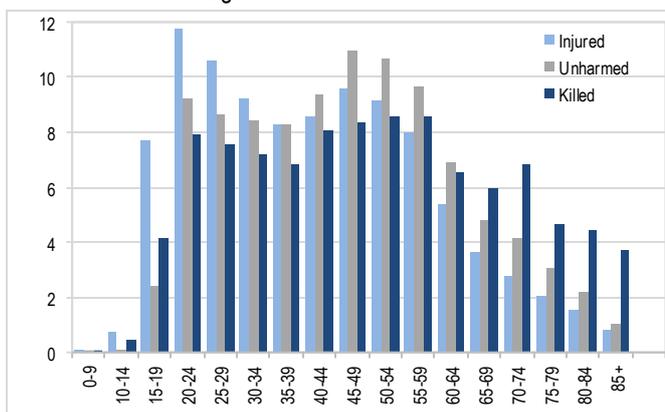


CHART 8. ROAD ACCIDENTS BY DAY, PERIOD AND MONTH Year 2021. Absolute values

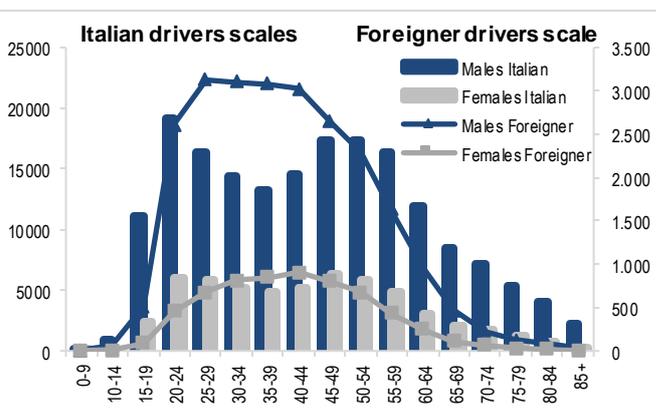
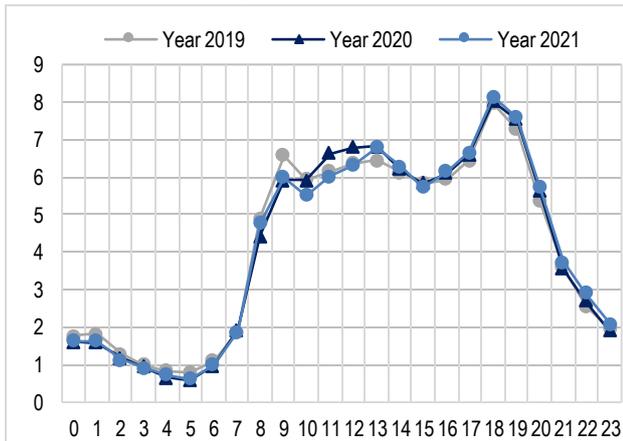


CHART 9. ROAD ACCIDENTS BY DAY HOURS. Years 2019, 2020 e 2021, percentage values (a)



(a) Rounded hour. (b) Conventional night period between 10,01 p.m and 6,00 a.m.

CHART 10. ROAD ACCIDENTS. Years 2021 e 2020, percentage values (b)

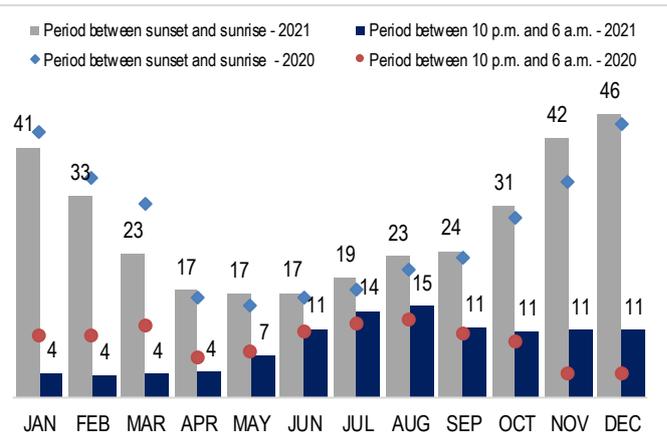
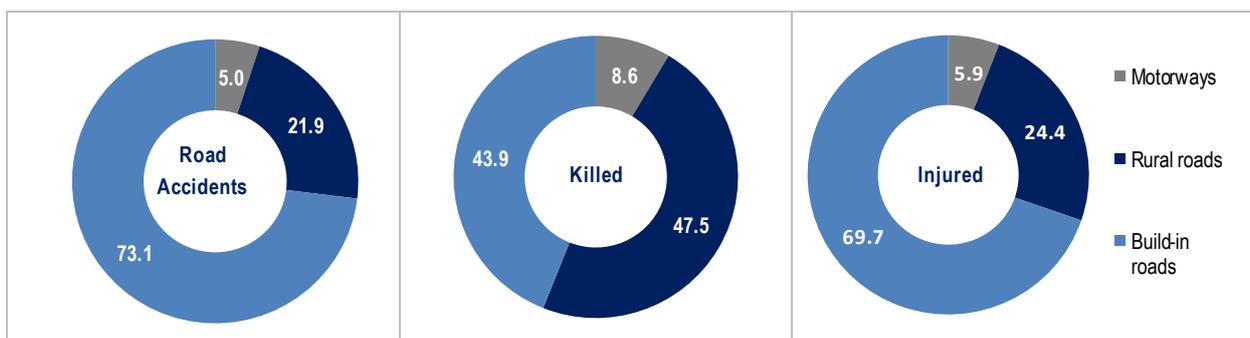


TABLE 5. ROAD ACCIDENTS RESULTING IN DEATH OR INJURY. KILLED AND INJURED BY ROAD TYPE. Years 2021, 2020 and 2019. Absolute values and percentage changes 2021/2020 and 2021/2019

ROAD CATEGORY	Road accidents 2021	Road accidents 2020	Road accidents 2019	Killed 2021	Killed 2020	Killed 2019	Injured 2021	Injured 2020	Injured 2019	% change accidents 2021/2020	% change killed 2021/2020	% change accidents 2021/2019	% change killed 2021/2019
Built up roads	110,952	86,682	127,000	1,264	1,061	1,331	142,729	111,532	168.7	+28.0	+19.1	-12.6	-5.0
Motorways	7631	5,451	9,076	246	195	310	12,023	8,465	15.00	+40.0	+26.2	-15.9	-20.6
Non built up roads (a)	33,292	26,165	36,107	1,365	1,139	1,532	49,976	39,251	57.58	+27.2	+19.8	-7.8	-10.9
Total	151,875	118,298	172,183	2,875	2,395	3,173	204,728	159,248	241.3	+28.4	+20.0	-11.8	-9.4

(a) Included rural or not built up roads called: Statali, Regionali and Provinciali, Comunalì out of urban area.

CHART 11. ROAD ACCIDENTS RESULTING IN DEATH OR INJURY. KILLED AND INJURED BY ROAD TYPE (a). Year 2021 percentage values



(a) Included rural or not built up roads called: Statali, Regionali and Provinciali, Comunalì out of urban area.

TABLE 7. ROAD ACCIDENTS RESULTING IN DEATH OR INJURY AND KILLED BY REGIONS. Years 2021, 2020 and 2019 (a). Absolute values. Road mortality rate per 100.000 inhabitants, percentage change 2021/2020, 2021/2019

REGIONS	Killed (absolute values)			% change 2021/2020 (a)	% change 2021/2019 (a)	Road Mortality 2021 (b)	Road Mortality 2020 (b)
	2021	2020	2019				
Piemonte	192	182	232	+5.5	-17.2	4.5	4.2
Valle d'Aosta/Vallée d'Aoste	1	0	4	-	-75.0	0.8	0.0
Lombardia	357	317	438	+12.6	-18.5	3.6	3.2
Bolzano/Bozen	24	31	46	-22.6	-47.8	4.5	5.8
Trento	25	25	25	-	-	4.6	4.6
Veneto	285	229	336	+24.5	-15.2	5.9	4.7
Friuli-Venezia Giulia	82	47	72	+74.5	+13.9	6.8	3.9
Liguria	64	59	64	+8.5	-	4.2	3.9
Emilia-Romagna	281	223	352	+26.0	-20.2	6.3	5.0
Toscana	190	152	209	+25.0	-9.1	5.2	4.1
Umbria	53	45	51	+17.8	+3.9	6.1	5.2
Marche	84	69	99	+21.7	-15.2	5.6	4.6
Lazio	288	261	295	+10.3	-2.4	5.0	4.5
Abruzzo	80	59	78	+35.6	+2.6	6.3	4.6
Molise	15	25	28	-40.0	-46.4	5.1	8.4
Campania	214	176	223	+21.6	-4.0	3.8	3.1
Puglia	203	160	207	+26.9	-1.9	5.2	4.1
Basilicata	36	18	29	+100.0	+24.1	6.6	3.3
Calabria	85	61	104	+39.3	-18.3	4.6	3.2
Sicilia	225	161	210	+39.8	+7.1	4.7	3.3
Sardegna	91	95	71	-4.2	+28.2	5.7	5.9
Italia	2,875	2,395	3,173	+20,0	-9,4	4,9	4,0

(a) Percentage change formula: $(M^{2021}/M^{2019 e 2020-1}) * 100$. (b) Rate for 100,000 inhabitants.

TABLE 8. ROAD ACCIDENTS RESULTING IN DEATH OR INJURY AND KILLED BY ROAD CATEGORY IN LARGE MUNICIPALITIES IN ITALY. Years 2020 and 2019 (a). Absolute values. Road mortality rate per 100.000 inhabitants. percentage change 2020/2010

MAIN CITIES	Built up roads				Not built up roads (b)				Road mortality rate 2021 (b)	Road mortality rate 2020(b)	% change killed 2021/2020 (c)	% change killed 2021/2019 (c)
	Road accidents 2021	Road accidents 2020	Killed 2021	Killed 2020	Road accidents 2021	Road accidents 2020	Killed 2021	Killed 2020				
Torino	2.751	2.059	15	14	40	29	0	0	1,8	1,6	+7,1	-42,3
Milano	7.231	4.726	31	26	233	130	3	2	2,5	2,0	+21,4	-
Verona	1.038	796	7	5	91	72	2	2	3,5	2,7	+28,6	-43,8
Venezia	438	369	4	5	152	107	0	3	1,6	3,1	-50,0	-
Trieste	764	569	4	2	63	56	0	1	2,0	1,5	+33,3	-50,0
Genova	3.375	2.724	14	23	209	116	0	1	2,5	4,3	-41,7	-39,1
Bologna	1.757	1.172	9	11	162	146	3	3	3,1	3,5	-14,3	-33,3
Firenze	1.965	1.456	13	7	63	37	0	0	3,6	1,9	+85,7	+116,7
Roma	9.891	7.276	100	78	1.240	956	21	26	4,4	3,7	+16,3	-7,6
Napoli	1.966	1.658	30	27	195	138	2	3	3,4	3,2	+6,7	+45,5
Bari	1.274	959	7	8	174	134	4	4	3,5	3,8	-8,3	-8,3
Palerm	1.586	1.332	19	18	21	27	0	1	3,0	2,9	-	-26,9
Messin	602	528	8	3	135	96	6	3	6,3	2,6	+133,3	+40,0
Catania	1.095	898	14	10	70	69	3	1	5,7	3,7	+54,5	+13,3
Totale	35.733	26.522	275	237	2.848	2.113	44	50	3,4	3,0	+11,1	-9,1

(a) Included rural or not built up roads called: Statali, Regionali and Provinciali, Comunalì out of urban area and motorways.

(b) Percentage change formula: $(M^{2021}/M^{2019 e 2020-1}) * 100$; the symbol "-" means "no changes". The percentage changes calculated on more contained values show greater fluctuations over time and therefore must be interpreted with due caution.

Glossary:

Bus: passenger-carrying vehicle, most commonly used for public transport. having more than 16 seats for passengers.

Deaths: the number of people involved in road accidents. who die immediately or within 30 days after the event occurred. This definition was adopted on 01st January 1999. while in the past (up until 31st December 1998) deaths were considered to include only deaths within seven days of the accident.

Goods vehicle: Motor vehicle used only for the transport of goods.

Injured: the road user was seriously or slightly injured (but not killed within 30 days) in the road accident.

Moped: two or three wheeled vehicle equipped with internal combustion engine. with size less than 50 cc and maximum speed that does not exceed 45 km/h (28mph).

Motorcycle: two or three wheeled motor vehicle, with engine size up to 125 cc. or maximum speed exceeding 45km/h (28 mph) or with engine size more than 125 cc.

Passenger car: motor vehicle with 3 or 4 wheels, mainly used to transport people. seating for no more than 8 occupants. Motor vehicles with these characteristics used as taxis as well as motor caravans are also included.

Pedal cycle: vehicle with at least 2 wheels. without engine. In some cases it can also use electric power.

Electric scooter: equivalent to pedal cycle. vehicle with maximum power 500 W and with speed limits 6 km / h or 30 km/h as the areas where they circulate vary (paragraph 75 of the Budget Law 2020 DL 160/2019).

Pedestrian: person on foot; person pushing or holding bicycle. Person who uses a wheel chair .a pram or a pushchair, leading or herding an animal, riding a toy cycle on the footway, person on roller skates. skateboard or skis. Does not include persons in the act of boarding or alighting from a vehicle.

Percentage change: the percentage change is calculated by means the difference between data at **t** time and data **t-1** (or t-x) time, divided by data at **t-1**(or t-x) time. per 100.

Public motor vehicle registry (PRA): the registry holding all public deeds relating to the transfer of property and rights of ownership. in addition to the records of loans and mortgages on all motor vehicles registered in Italy.

Road accident: the 1968 Vienna Convention defines a road accident as an event occurring on the roads or squares open to traffic involving standing or moving vehicles and which results in injury to people. For this reason. if the accident only involves damage to objects. it is excluded from the statistics. This definition therefore reserves attention exclusively for reported accidents involving injury to people.

Road accidents harmfulness index: the ratio of the number of injuries caused by road accidents and the number of collisions. per 100 accidents.

Road accidents mortality index: the ratio of the number of fatalities caused by road accidents and the number of collisions. per 100 accidents.

Road accidents seriousness index: the ratio of the number of fatalities caused by road accidents and the total number of deaths and injuries as a result of accidents. per 100 accidents.

Road tractor road motor vehicle designed, exclusively or primarily, to haul other road vehicles which are not power-driven (mainly semi-trailers).

Rural or non-built up roads: outside urban area. no motorway

Serious injuries: the serious injuries are identified by MAIS classification (Maximum Abbreviated Injury Scale). The severity level is measured by a 6-level scale. Serious injuries have a score of 3 or higher (MAIS3+).

Two wheel motor vehicle: motor vehicle moving on two wheels. Includes mopeds and motorcycles but not bicycles.

Urban or built up roads: inside urban area. no motorway.

Methodological note

Data flow and definitions

The survey on road accidents resulting in death (within 30 day) or injury carried out by the Italian National Institute of Statistics (Istat), with the cooperation of ACI (Automobile Club of Italy) and other local organisations, is an exhaustive and monthly based data collection (National Statistical Programme - PSN – 00142 code).

The survey collects all road accidents involving at least a vehicle circulating on the national road net, resulting in death or injury and documented by a Police authority.

The detection unit is the single road accident resulting in death or injury; all information is referred to the period when the accident occurred.

As regards the data flow, a flexible model was adopted by Istat, through the subscription of a Memorandum of understanding or special agreements signed with regions (NUTS2 level) and provinces (NUTS3 level), in order to facilitate the local authority information needs and to improve the timeliness and quality of data collected.

Main information collected:

- Date, time and location of the accident
- Type of road
- Road surface
- Signals
- Weather conditions
- Type of accident (collision, investment, etc.)
- Type of vehicles involved
- Consequences of the accident to people
- Causes of the accident

Timeliness and dissemination

The figures for every year $t-1$ are disseminated in July of the year t , approximately five months after the collection deadline.

European Union law of reference:

Reference: COUNCIL DECISION of 30 November 1993 on the creation of a Community database on the road accidents [Decision n. 704 of 1993](#)

Link to database and websites:

- Noi Italia: <http://noi-italia.istat.it/>
- DWH I.stat: <http://dati.istat.it/> (Health Statistics/Road Accidents)
- Time series: <http://seriestoriche.istat.it/>
- CARE - Community database on road accidents resulting in death or injury – DG-MOVE European Commission http://ec.europa.eu/transport/road_safety/specialist/statistics/index_en.htm

For technical and methodological information

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