

ROAD SAFETY ANNUAL REPORT 2019

GREECE

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Greece recorded 700 road fatalities in 2018 – a 4.2% decrease on 2017, continuing its dramatic decrease in road deaths in this decade. The mortality rate stands at 6.5 traffic deaths per 100 000 inhabitants. The economic crisis during the recent years is the primary reason for the sharp decline in the number of road casualties as a result of decreased distances travelled and more economic, conservative use of motor vehicles, amongst other factors. The National Road Safety Strategic Plan extends until 2020 and has adopted a fatalities reduction target of 50% on a 2010 baseline. Greece is on track to achieve its target for 2020.

Trends

Greece registered an overall **decrease in the number of road deaths in 2018**. According to the latest preliminary data, 700 persons lost their lives in traffic crashes in Greece in 2018. This represents a 4.2% decline on 2017. In 2017, 731 road deaths were reported, itself an 11.3% decline on 2016.

The **longer-term trend for road deaths** in Greece has shown significant progress. Between 2000 and 2018, the number of annual road fatalities fell by 66%. This progress accelerated, in particular, during the second decade of the century: between 2010 and 2018 the number of annual road fatalities fell by 44%.

The number of **traffic deaths per 100 000 inhabitants** in Greece has fallen by 65% between 2000 and 2018. In 2018, **6.5 traffic deaths per 100 000 inhabitants** were recorded compared to 18.7 in 2000. By way of comparison, the average in the European Union is 4.9 deaths per 100 000 inhabitants in 2018.

Greece recorded 0.8 **road fatalities per 10 000 registered vehicles** in 2018. This represents a decrease of 79% compared to the year 2000, when the rate of deaths to registered vehicles stood at 4.0.

Country Profile

Population in 2018: 10.7 million

GDP per capita in 2018: 20 299 USD

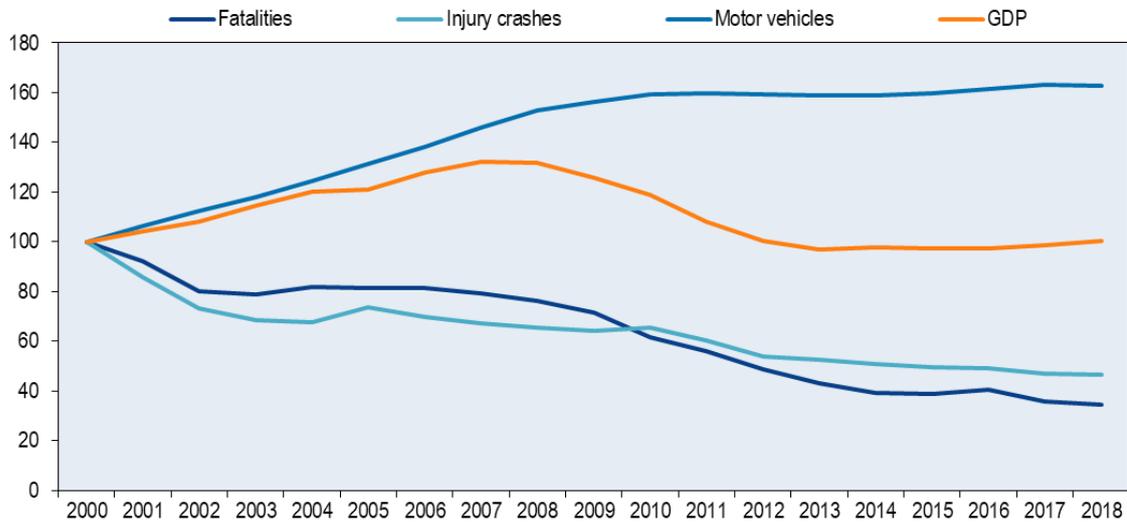
Cost of road crashes: 1.5% of GDP (2017)

Registered motor vehicles in 2018: 8.2 million
(cars 64%; goods vehicles 16%; motorcycles 19%)

Speed limits: 50 km/h on urban roads; 90 km/h on rural roads; 130 km/h on motorways

Limits on Blood Alcohol Content: 0.5 g/l for general drivers; 0.2 g/l for professional drivers and novice drivers

Figure 1. Road safety, vehicle stock and GDP trends
Index 2000 = 100

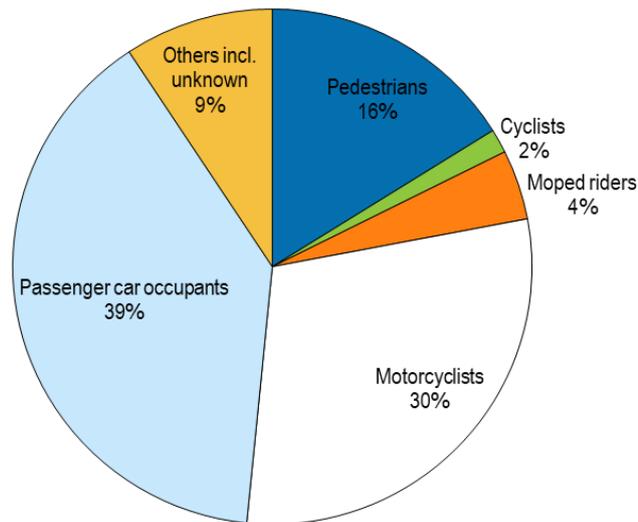


The graph for **fatalities by road user groups** shows that passenger car occupants continue to be the group most affected by road crashes. Motorcyclist fatalities also comprise a sizeable share of total road fatalities in Greece. In 2017, passenger car occupants accounted for the largest share of road deaths with 39% of the total. They were followed by motorcyclists (30%), pedestrians (16%) and moped riders (4%).

Moped riders suffered 7 more road deaths in 2017 than in 2016, making them the only group to register a year-on-year increase in fatalities according to data from 2017. Cyclists saw the largest proportional year-on-year decrease, with 7 fewer road fatalities in 2017 than the year prior (-38.9%). They were followed by pedestrians with 31 fewer (-20.8%), passenger car occupants with 54 fewer (-15.9%) and motorcyclists with 24 fewer (-10%).

The long-term trend shows that traffic in Greece has become safer for all road user groups. The strongest declines were registered among pedestrians, passenger car occupants and moped riders, who all experienced annual road fatality reductions of greater than 65% between 2000 and 2017.

The user group that has benefitted least from road safety improvements since 2000 are motorcyclists, who saw the number of annual crash deaths fall by 48%.

Figure 2. Road fatalities by road user group in percentage of total, 2017

Road deaths by age group in 2017 showed some changes compared to 2016. The number of road deaths decreased for the elderly above 65 (-18.6%) and 21-24 year olds (-30.1%). Conversely, 18-20 year olds experienced 14 more fatal casualties in 2017 (+50%) than the year prior.

Looking at the longer-term trend, since 2000, the number of road deaths decreased for all groups. The strongest fatality reductions over this period occurred among young people; every age category up to 25 years old saw fatalities fall by 70% or greater between 2000 and 2017. The oldest age range – those above 75 – benefitted the least from road safety improvements during this time as road fatalities for this age group decreased by 41%.

Despite recent improvements, young people continue to be the age group at highest risk in traffic with a mortality rate much above the average. Greek road users between 18-20 and 21-24 years of age suffered traffic fatalities at rates of 13 and 11.5 per 100 000 persons, respectively, in 2017 compared to a national average of 6.8 per 100 000. Elderly people are also at significant risk in road traffic; road users above 75 years of age registered a mortality rate of 9.2 fatalities per 100 000 persons.

Figure 3. Road fatality rates by age group, 2000-2017
Deaths per 100 000 population in a given age group

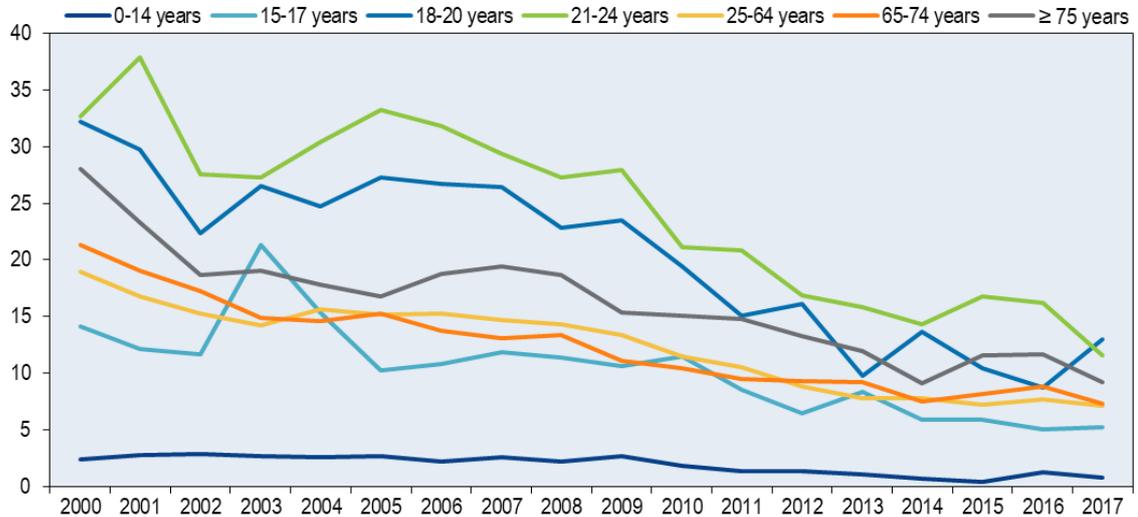
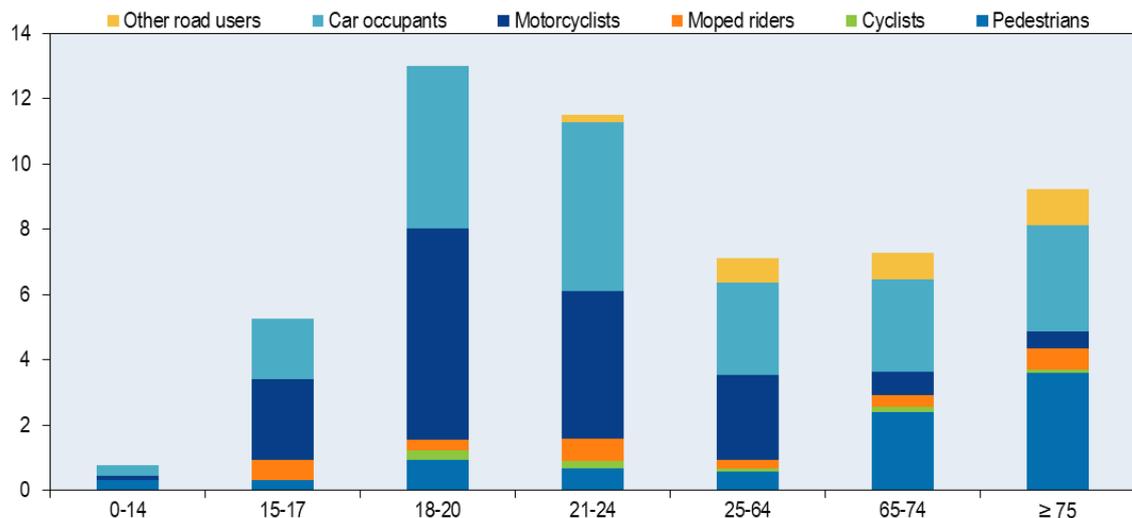


Figure 4. Road fatality rate by age and road user group, 2017
Fatalities per 100 000 population



Analysis of **fatalities by road type** shows that Greek rural and urban road networks were equally deadly in 2017. In 2017, 46% of deaths occurred on rural roads, 47% on urban roads and 7% on motorways. In the period 2000-2010, rural roads consistently claimed more victims than did roads in urban areas. Since 2010, however, this repartition has flipped. In the years since, roads in urban areas have generally been the setting for more road fatalities than rural roads.

In 2017, in comparison to 2016, the number of road deaths decreased by 20.4% on urban roads, while road deaths decreased by 4.3% on rural roads. Motorways saw 9 additional road fatalities compared to 2016 for a year-on-year increase of 20%.

Since 2000, fatalities in urban areas decreased by 51%, on rural roads by 74% and on motorways by 12%. Since 2010, road fatalities in both urban areas and on rural roads decreased by about 40%, indicating that rural roads saw stronger road safety improvements in the first decade of the century.

Figure 5. Road fatalities by road type

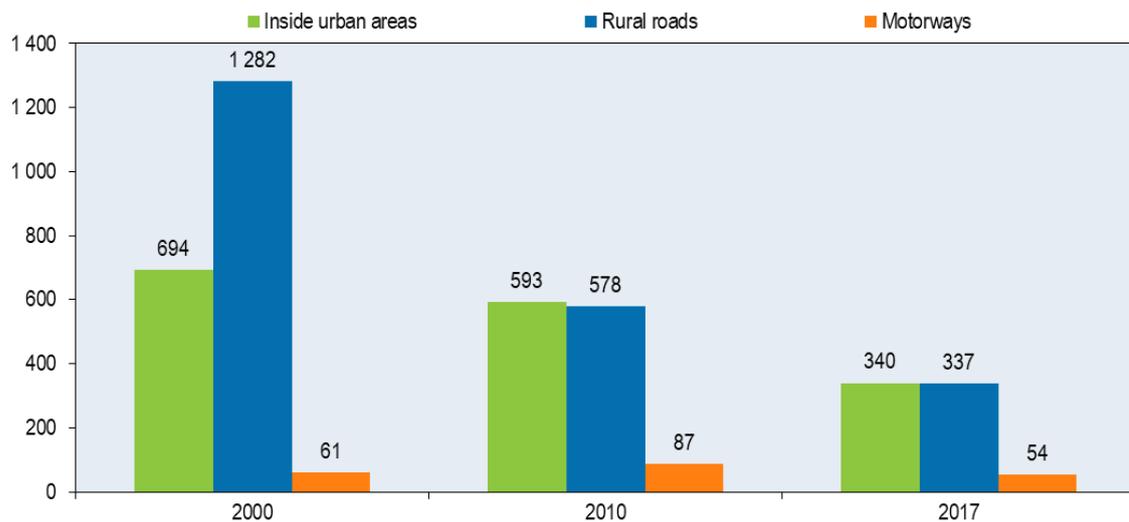
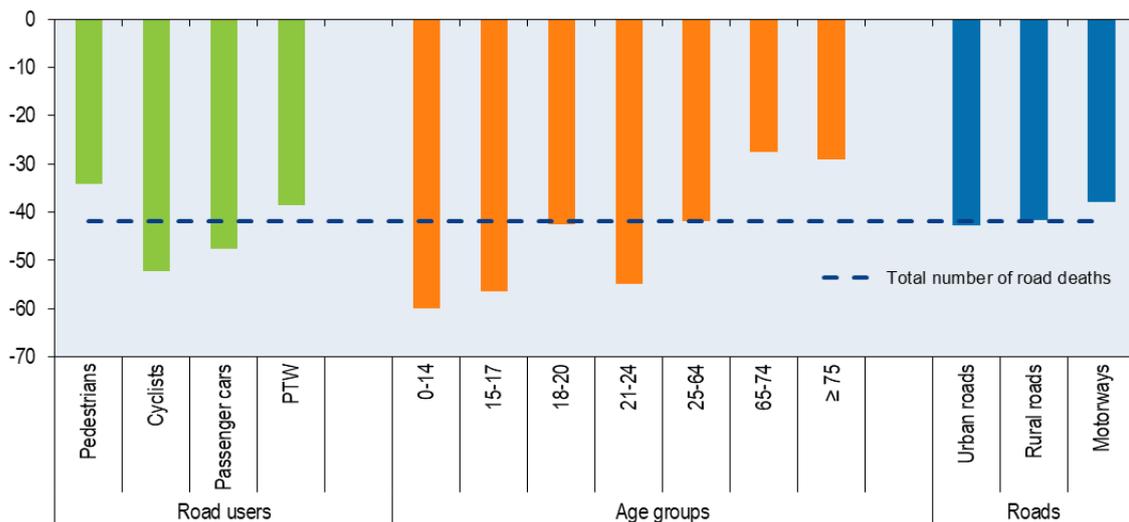


Figure 6. Evolution of road deaths by user category, age group and road type, 2010-2017



Fatality data are essential to understand road safety issues but hardly sufficient. Information on **serious injuries from crashes** is also critically important. Yet, injury data are much more difficult to obtain, validate and - where available - compare. In 2017, Greece recorded 13 271 traffic related injuries and 706 serious injuries. Since

2010, injuries and serious injuries counts have fallen by 31% and 59%, respectively - a development consistent with the reduction in road fatalities during this time.

Economic costs of road crashes

Traffic crashes represent a significant cost for society, estimated in 2017 at around EUR 2.7 billion, representing almost 1.5% of Greece's GDP (Kourtis et al., 2018). This calculation uses a combination of the lost production methodology and the willingness-to-pay methodology.

The cost is almost tripled if the real numbers of injuries and of "material damage only" crashes are taken into account.

Table 1. Costs of road crashes, 2017

	Unit cost (EUR)	Total (EUR)
Fatalities	2 148 034	1.57 billion
Serious injuries	273 574	0.19 billion
Slight injuries	51 373	0.65 billion
Property damages costs	3 582	0.24 billion
Total		2.7 billion
Total as % of GDP (at constant prices)		1.5%

Behaviour

Speeding is perhaps the most critical factor for road crashes in Greece. In 2017, based on police reports, it was estimated that about 18% of fatalities were due to excessive or inappropriate speeds. However, the actual percentage of fatalities due to speeding could be higher. Speeding enforcement varied during the last decade, with a direct impact on the progress of road safety trends. The recent, important decline in road fatalities and speeding may be a result of the economic crisis, which served to encourage more ecological driving. Higher fuel prices due to the crisis had a direct impact on average speed reduction and, consequently, traffic safety improvement.

The table below summarises the main speed limits in Greece.

Table 2. Passenger car speed limits by road type, 2019

	General speed limit	Comments
Urban roads	50 km/h	
Rural roads	90 km/h	
Motorways	130 km/h	Variable speed limits are implemented when variable message signs are available

Driving under the influence of alcohol is another major cause of road crashes in Greece, as in most IRTAD countries. In 2016, it was estimated that almost 35% of road fatalities were attributed to drink driving. Compared to 2000, the percentage of fatalities related to drink driving in 2016 has decreased by 12%.

According to the Greek Highway Code, the maximum permissible blood alcohol content (BAC) is 0.5 g/l when measured by blood sample and 0.25 mg/l when measured by breath testing. Since 2007, a lower limit (0.2 g/l) has applied to professional drivers (heavy goods vehicles, school buses and coaches), novice drivers (holding the driving licence for less than two years), motorcycles and moped riders.

Driving under the **influence of drugs** is prohibited under Greece's Road Code. No data are available for drug-related crashes.

An increasing problem for traffic safety in Greece is **distraction**, for instance through the use of mobile phones while driving or crossing a street. In Greece, the use of a hand held phone while driving is forbidden, although it is allowed to drive while using a hand free device.

Seat-belt wearing has been compulsory in Greece since 1979 in front seats and from 1993 for rear seats. Children under the age of 12 must be seated in a rear seat and be adequately restrained, taking into account their height and weight. There has been no recent seat belt user survey. According to 2009 data, the seat belt use rate was 77% for drivers, 74% for a front seat passenger and 23% in rear seats.

In Greece, helmets have been compulsory for users of all powered-two wheelers since 1977. The helmet-wearing rate is 75% for drivers and 46% for passengers, suggesting that much progress stands to be made in this area.

Road safety management and strategies

There are several **factors of influence on Greece's road safety performance** as captured by the above indicators. The number of fatalities peaked in 1995 with 2 411 road deaths and achieved a record-low in 2018 with 700 deaths. During the last decade, significant improvement was observed in road fatalities among young people, extra-urban areas and crashes involving heavy goods vehicles. There was less improvement for elderly road users, motorcyclists, foreign drivers and female drivers.

In the period 2010-2018, the number of annual fatalities decreased by 45%. This relatively strong performance is in large part associated with the economic recession, which markedly impacted traffic and travel patterns, in particular among the young population. During the last five years, Greek drivers have improved their driving behaviour, becoming less aggressive and reducing excessive speed as a consequence of personal budget limitations imposed by the economic crisis. This has resulted in significant safety improvements. Improved driving behaviour is expected to persist through the economic recovery despite subsequent potential increase in traffic volumes.

Road safety improvements are also related to the introduction of the new Highway Code as well as the construction of motorways, which serve to shift traffic away from high risk rural roads. Public campaigns, enforcement and training have also contributed to an attitude shift in favour of increased road safety.

The co-ordination of all ministries involved in road safety management is conducted by the **Inter-Ministry Committee on Road Safety**, chaired by the Minister of Citizen Protection. However, the minister's role remains limited as the corresponding co-ordination secretariat has never been fully operational. Some stakeholder consultation takes place at the National Road Safety Council. Regional and local authorities implement city mobility and road safety plans, mainly on road infrastructure and vehicle control, but often on campaigns as well. However, there is no process to integrate national and regional activities nor is there reporting from the regional to the national level.

Despite the three strategic plans adopted during the last decade, mobilisation of the authorities and society remains limited and road safety is still not a recognised policy area in practice. Furthermore, there is no identifiable budget for road safety.

The scientific community (NTUA, CERTH/HIT, Association of Greek Transportation Engineers) also intervenes systematically to influence public opinion for safer behaviour, safer infrastructure and mobility and safer vehicles. However, although road safety problems and solutions are well researched in Greece, implementation of measures is limited. Moreover, there is no official monitoring of road safety actions, no benchmarking and little evaluation of road safety interventions that are implemented.

The third National Road Safety Strategic Plan for the period 2011-20, developed by the NTUA, was approved by the Ministry of Infrastructure, Transport and Networks in September 2011. The aim of this strategic plan is the development of a strong road safety culture. The strategic plan is composed of six pillars: road safety education, road safety enforcement, safe road users, safe road infrastructure, safe vehicles and post-crash management.

The strategic plan adopts the European target of reducing the number of road fatalities by 50% between 2010 and 2020. Intermediate targets include a reduction of 80 road fatalities per year between 2010 and 2015, which has been achieved partly due to the economic crisis, and a reduction of 50 road fatalities per year between 2016 and 2020.

Specific actions by the central and regional governments have been identified as necessary to reach the target. A prerequisite is a strong political will and support at the highest political level. The Inter-Ministry Committee, re-established twice (in 2010 and in 2014 under the chairmanship of the Prime Minister), is expected to play a critical role.

Even though the strategy has clearly defined the targets, the programmes and the implementation framework, some important barriers remain such as the lack of systematic implementation of the measures and a lack of co-ordination and monitoring. The co-ordination instruments to support the Inter-Ministry Committee were never fully

operational and the necessary resources were never allocated to the related road safety actions.

With 700 road deaths in 2018, Greece's target of fewer than 629 road deaths by 2020 appears to be within reach.

Figure 7. Trends in road fatalities towards national target



Measures

The unprecedented economic crisis during the last eight years has resulted in a limited budget for road safety initiatives in Greece.

Some road safety measures are being implemented focusing on road safety police enforcement (for speeding, drink driving and use of seat belts and helmets) and through road safety education and information campaigns conducted mainly by private companies such as motorway concessionaires and NGOs. Greek universities and research institutes carry out many road safety research projects, thus supporting road safety actions in Greece.

Road safety management

- New legislation concerning road safety audits has been introduced, which in the future might result in more systematic audits of the road network.
- Following a new law, the Inter-Ministry Committee on Road Safety was re-established a first time in 2010 and a second time in 2014, this time under the chairmanship of the Prime Minister. However, this Inter-Ministry Committee met in 2018 for the first time since 2014.

- Road safety management is the responsibility of both national and regional authorities. During the last decade, more and more regional and local authorities have established and implemented regional road safety plans, sometimes within their urban mobility plans, which are starting to bring results.

Road users

- The Highway Code was updated and has been in force since March 2018 without any speed limit changes. However, a new fines scheme for traffic infringements has been introduced based on driver income. Offenders that commit a high-risk infringement three times in the last five years stand to lose their licence for life.
- National, regional and local authorities regularly conduct campaigns and training on user behaviours such as speeding, impaired driving, seat belt and helmet misuse, etc. However, the impact of these efforts on traffic safety is unknown as no monitoring programme exists.
- Various NGOs (Road Safety Institute Panos Mylonas, EFTHYTA-Rhodes, etc.) and private companies (motorways concessions) continue various programmes of road safety campaigns and training.

Infrastructure

- Due to the difficult economic conditions, the budget for road maintenance and safety intervention has been significantly reduced. Nevertheless, the major motorway development programme totalling 2 500 km of toll motorways (including the construction of 1 300 km of new motorways) restarted in 2013 and is gradually delivering all motorway sections during 2017. 500 km of new motorways were delivered mid-2017.
- A new legislation for Road Safety Audits was introduced in 2017, which in the future might result in more systematic road safety audits of the road network.

Vehicles

- All European Union regulations on vehicles are properly transposed into Greek legislation resulting in higher safety standards for all new vehicles entering into circulation in Greece. Improved passive and active safety is one of the reasons for the significant reduction of persons killed and seriously injured in traffic crashes. It should be noted, however, that the vehicle fleet is renewed very slowly, resulting in an increase in the age of the vehicle fleet.

Definition, methodology, data collection

- Injury crash: any crash involving at least one road motor vehicle in motion on a public road or square to which the public has access (excluding yards, industrial sites or vehicle depots for public transport) resulting in at least one injured or killed person. Property damage only crashes are not included.
- Road fatality: any person killed immediately or dying within 30 days as a result of an injury crash. This national definition has applied since 1996. For the years prior to 1996 a conversion factor is applied to the fatality data in the International Road Traffic and Accident Database.
- Seriously injured person: any person who sustained an injury as result of an injury crash, such as brain damage, mutilation or other injuries that may result in lack of awareness or which are life-threatening. Hospital data have not been exploited yet and the identification of serious road injuries according to the Maximum Abbreviated Injury Scale (MAIS) definition is not possible.

From the early 1960s, the Hellenic Statistical Authority (EL.STAT) has maintained Greece's official road crash database. This contains disaggregated road crash data and detailed information concerning drivers, road crash casualties and the vehicles involved. Data is coded on the basis of the Road Accident Data Collection Form, which is filled in by traffic police for every road crash with casualties.

Traffic police respond to all crashes with casualties. Officers are responsible for filling in the Road Accident Data Collection Form and for finalising information concerning casualties within 30 days of the crash. Data are forwarded to EL.STAT and are also stored in the traffic police database. The EL.STAT database includes reliable and detailed information on road crashes, persons and vehicles as well as additional elements such as causes and conditions of the vehicles.

The Ministry of Infrastructure, Transport and Networks is responsible for vehicle registration and driver licensing. It maintains databases of registered vehicles and licensed drivers. The registered vehicles database includes disaggregated information on vehicle characteristics such as vehicle type and use, year of first registration, length, weight, engine size, fuel type, manufacturer, etc. This database does not include mopeds (data for the number of mopeds in operation come from the traffic police, who are responsible for moped registration and moped driver licensing). Scrapped vehicles are systematically removed from the database. The driver license database includes disaggregated information on driver characteristics such as license type and year, the related vehicle type, license renewal or modification, age, gender, etc. However, deceased drivers are not systematically removed from the database.

Data on the severity of injuries are not systematically collected by hospitals; only road fatalities are properly reported. Consequently, it is not currently possible to have data on serious injuries based on the Maximum Abbreviated Injury Scale (MAIS).

Resources

Recent research

Road safety research is constantly progressing in Greece, with several interesting results published in Greece and worldwide. Several of these research results are available at: <http://www.nrso.ntua.gr/>

Papadimitriou, E., A. Argyropoulou, D. Tselentis and G. Yannis (2019), *Analysis of driver behaviour through smartphone data: The case of mobile phone use while driving*, Safety Science, <https://doi.org/10.1016/j.ssci.2019.05.059>

Websites

Hellenic Statistical Authority: <http://www.statistics.gr/>

Ministry of Infrastructure, Transport and Networks: <http://www.yme.gr>

Road Safety Observatory of the National Technical University of Athens: <https://www.nrso.ntua.gr/>

The Centre for Research and Technology Hellas: <https://www.certh.gr/>

Road Safety Institute Panos Mylonas: <https://www.ioas.gr/>

EFTHITA-Rhodes: <http://efthita-rodos.blogspot.com/>

References

Kourtis, M., Ziakopoulos, A. and Yannis, G. (2018), *Modelling the economic impact of road accidents in Greece*, Diploma Thesis, NTUA, School of Civil Engineering, Athens, July 2018.

Road safety and traffic data

	1990	2000	2010	2016	2017	2018	2017 % change over			
							2016	2010	2000	1990
Reported safety data										
Fatalities	2 050	2 037	1 258	824	731	700	-11.3%	-41.9%	-64.1%	-64.3%
Injury crashes	19 609	23 001	15 032	11 318	10 848	10 743	-4.2%	-27.8%	-52.8%	-44.7%
Deaths per 100,000 population	20.3	18.7	11.2	7.6	6.8	6.5	-11.2%	-39.7%	-63.7%	-66.5%
Deaths per 10,000 registered vehicles	7.4	4.0	1.6	1.0	0.9	0.8	-12.3%	-43.3%	-78.0%	-88.0%
Fatalities by road user										
Pedestrians	524	375	179	149	118	..	-20.8%	-34.1%	-68.5%	-77.5%
Cyclists	26	22	23	18	11	..	-38.9%	-52.2%	-50.0%	-57.7%
Moped riders	192	90	36	25	32	..	28.0%	-11.1%	-64.4%	-83.3%
Motorcyclists	274	412	367	240	216	..	-10.0%	-41.1%	-47.6%	-21.2%
Passenger car occupants	712	891	546	340	286	..	-15.9%	-47.6%	-67.9%	-59.8%
Other road users	322	247	107	52	68	..	30.8%	-36.4%	-72.5%	-78.9%
Fatalities by age group										
0-14 years	96	40	30	19	12	..	-36.8%	-60.0%	-70.0%	-87.5%
15-17 years	76	60	39	16	17	..	6.3%	-56.4%	-71.7%	-77.6%
18-20 years	183	156	73	28	42	..	50.0%	-42.5%	-73.1%	-77.0%
21-24 years	249	219	113	73	51	..	-30.1%	-54.9%	-76.7%	-79.5%
25-64 years	1 051	1 107	711	447	414	..	-7.4%	-41.8%	-62.6%	-60.6%
65-74 years	..	241	113	98	82	..	-16.3%	-27.4%	-66.0%	..
≥ 75 years	..	187	155	138	110	..	-20.3%	-29.0%	-41.2%	..
Fatalities by road type										
Urban roads	..	694	593	427	340	..	-20.4%	-42.7%	-51.0%	..
Rural roads	..	1 282	578	352	337	..	-4.3%	-41.7%	-73.7%	..
Motorways	..	61	87	45	54	..	20.0%	-37.9%	-11.5%	..
Traffic data										
Registered vehicles (thousands)	2 780	5 061	8 062	8 173	8 263	8 237	1.1%	2.5%	63.3%	197.2%
Registered vehicles per 1,000 population	274.7	464.2	720.9	757.9	767.4	766.9	1.2%	6.4%	65.3%	179.4%

Note: registered vehicles do not include mopeds.