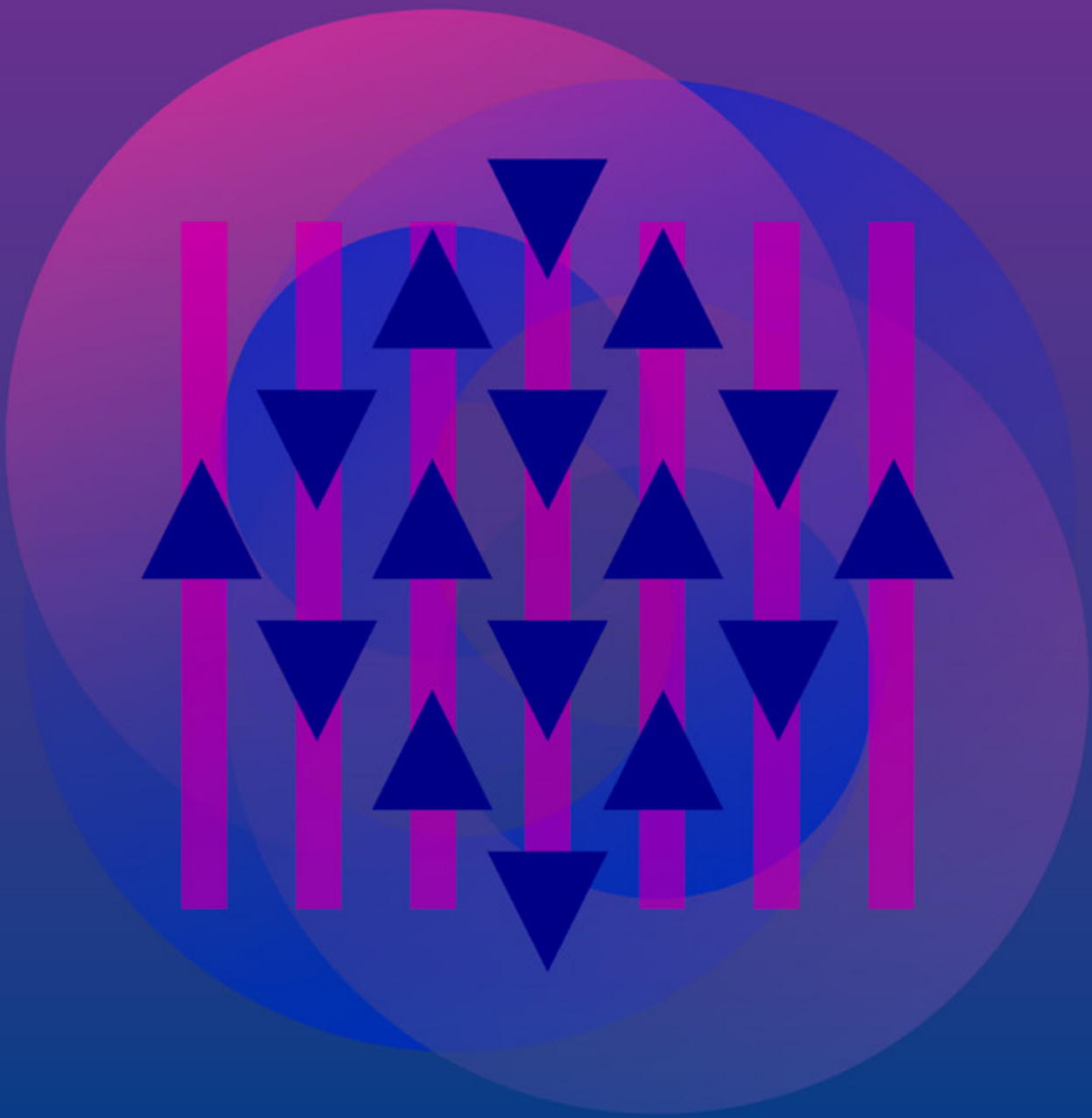
International Transport Forum

irtad Road Safety Data

Road Safety Country Profile

Korea 2023



Overview

In 2022, Korea recorded 2 735 road fatalities, down 6.2% from 2021. This is the tenth consecutive year of achieving a record-low annual fatalities total. This sustained reduction is partly due to the impact of Covid-19 on mobility but also to important measures recently adopted, such as the reduction of the maximum blood alcohol level to 0.3 g/l in 2019 and, in 2021, the reduction of the maximum speed limit in urban areas to 50 km/h for general roads and to 30 km/h in residential areas. Nevertheless, Korea still faces critical challenges. In particular, the safety of an ageing population is an increasing issue. To address these challenges, Korea adopted, in 2021, the 9th National Transport Safety Plan 2022-26, which is based on Vision Zero.

Quick facts: Korea (all data from 2022, unless otherwise stated)

Population	51.7 million				
GDP per capita	USD 32 255				
Road network	112 977 km (2021)				
Total number of motor vehicles	28.6 million				
	Cars	Motorcycles	Goods vehicles	Buses	
	71%	8%	13%	3%	
Volume of traffic	+72% (2000-21)				
Speed limits	Urban roads	Rural roads	Motorways		
	50 km/h, 30 km/h in residential areas	60 km/h on one-lane roads, 80 km/h on two or more lane roads	110 km/h (100 km/h in urban areas)		
Limits on blood alcohol content	0.3 grams/litre				
Road fatalities	2 735				
	Pedestrians	Cyclists	Car occupants	Motorised two-wheelers	Other and unknown
	35%	7%	17%	25%	16%
Road fatalities per 100 000 population	5.3				
Road fatalities per 10 000 vehicles	1.0				
Cost of road crashes	1.3% of GDP				

Short-term trends

Mobility and road safety in Korea were impacted by the Covid-19 pandemic that hit the world in 2020. Figure 1 illustrates the number of road deaths in 2020, 2021 and 2022 compared to the linear trend before the pandemic. However, it shows that already in 2019, death figures were below the trend. The reduction continued in 2020, 2021 and 2022.

Due to the impact of the Covid-19 pandemic on mobility and road crashes, the data for 2020 and 2021 represent a poor reference point for benchmarking. Therefore, for short-term trends, this report compares data for 2022 and 2021 with the average for 2017-19.

Korea reported 2 735 road deaths in 2022, a reduction of 27.5% compared to the average for 2017-19. This confirmed the marked reduction that started in 2012.

Table 1. Road fatalities in Korea, 2017-2022

	2017	2018	2019	Average 2017-19	2020	2021	2022	2022 compared with average 2017-19
January	353	304	296	318	277	197	193	-39.2%
February	280	275	203	253	222	203	161	-36.3%
March	295	310	252	286	239	209	183	-35.9%
April	293	303	286	294	213	212	216	-26.5%
May	366	309	305	327	254	255	235	-28.1%
June	315	266	279	287	254	227	231	-19.4%
July	357	315	241	304	240	254	241	-20.8%
August	353	357	253	321	295	247	242	-24.6%
September	419	348	287	351	301	246	257	-26.9%
October	420	373	337	377	309	312	285	-24.3%
November	379	298	297	325	261	285	257	-20.8%
December	355	323	313	330	216	269	234	-29.2%
Total	4 185	3 781	3 349	3 772	3 081	2 916	2 735	-27.5%

In 2022, the number of road deaths decreased by more than 10% for all road user categories compared to the average 2017-19, with the strongest reduction for pedestrians (-37.3%) and car occupants (-34.2%). The decrease was less for cyclists (-9.9%) and motorcyclists (-11.6%).

All age groups benefited from the reduction in the number of road deaths. In particular, road deaths fell by 53.7% among the 0-14 and 43.8% among 15-17 (Figure 2). The substantial reduction among young people is partly due to mobility restrictions following the Covid-19 pandemic.

In 2022, Korea had a mortality rate of 5.3 road deaths per 100 000 population, ranking Korea 23rd among OECD countries. Korea had 1.0 road deaths per 10 000 registered motor vehicles and a fatality risk of 8.2 road deaths per billion vehicles-kilometre (Figures 3, 4 and 5).

In 2022, pedestrians accounted for 35% of all road deaths, a high share compared to other OECD countries. Motorised two-wheelers accounted for 25% of road deaths and car occupants for 17% (Figure 6).

Half the fatalities occurred on urban roads, 41% on rural roads and 8% on motorways (Figure 7).

People aged 75 and above have a mortality rate nearly four times higher than the general population. They are particularly vulnerable as pedestrians (Figure 8). Unlike other OECD countries, young people have a lower than average mortality rate, but this is mainly due to the very high mortality rate among older people.

Figure 1. Road fatalities in Korea in 2020, 2021 and 2022 compared to the linear trend since 2012

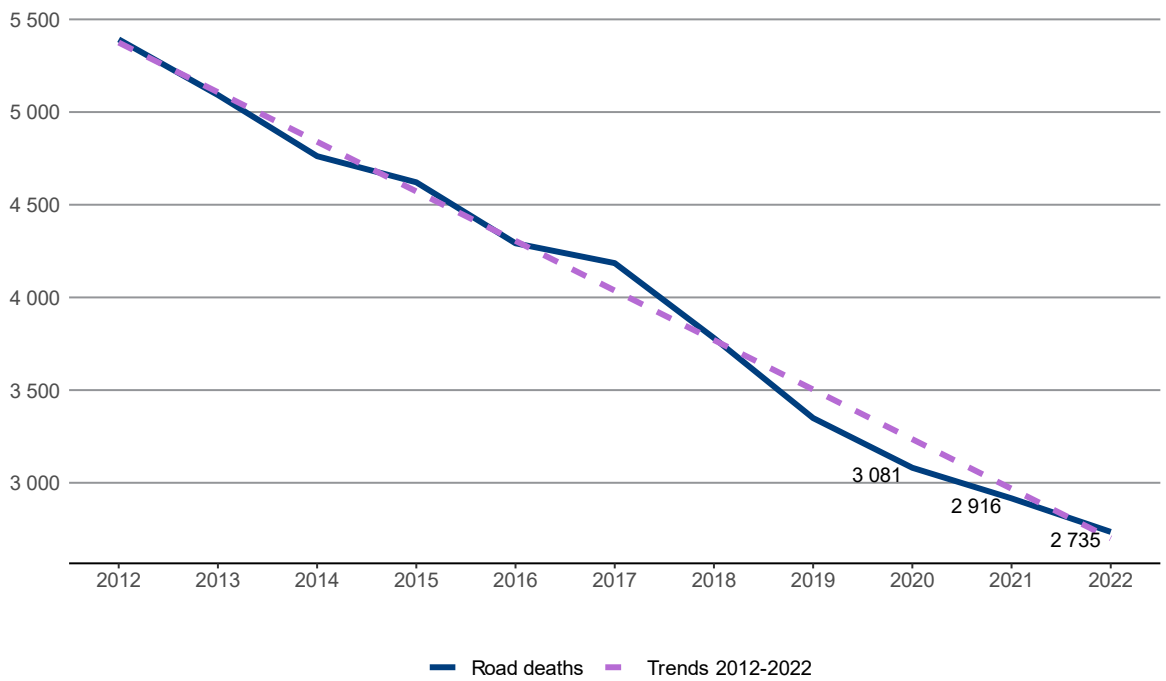


Figure 2. Evolution of road fatalities in Korea by user category, age group and road type, 2022 compared to the average 2017-19

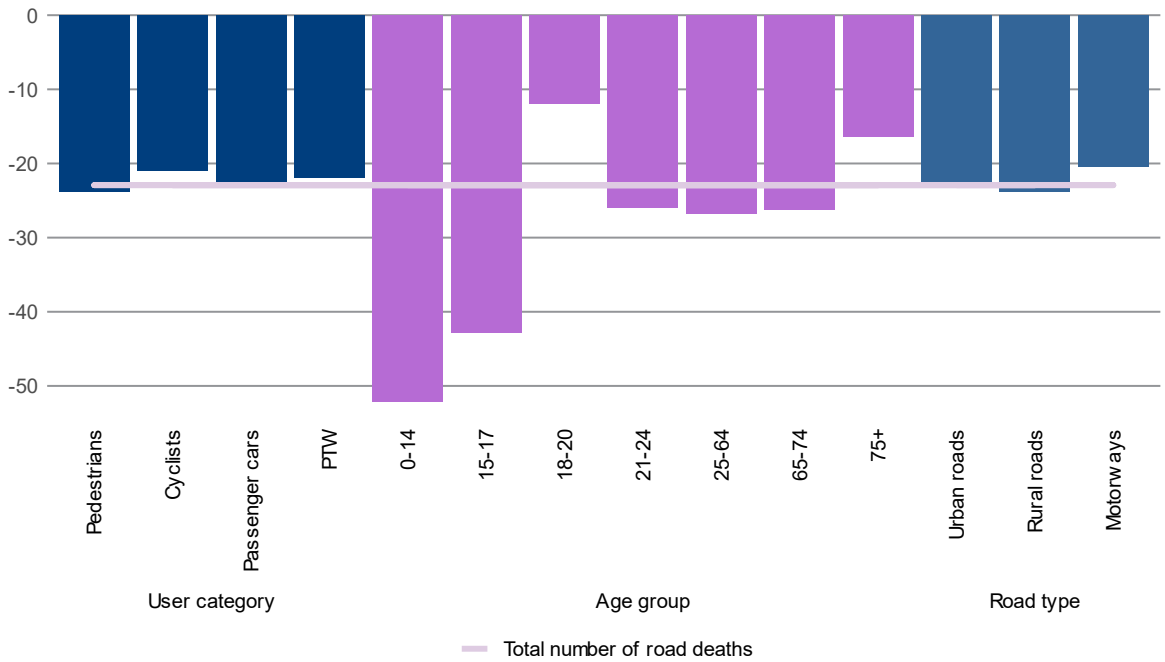


Figure 3. Road fatalities per 100 000 inhabitants in Korea compared to other IRTAD countries, 2022

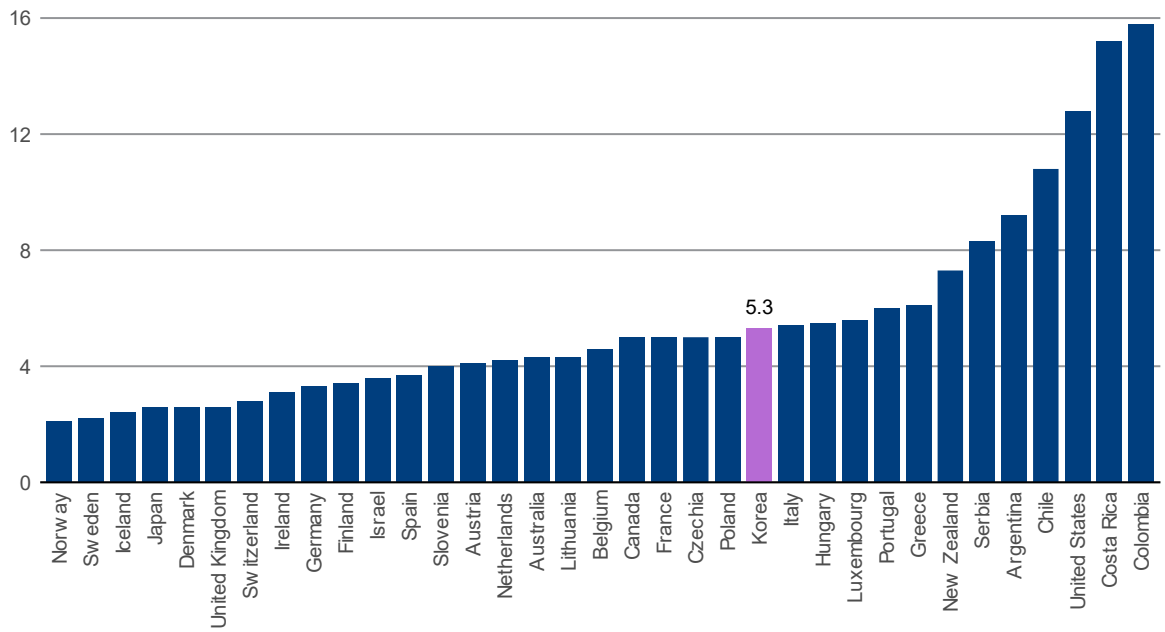
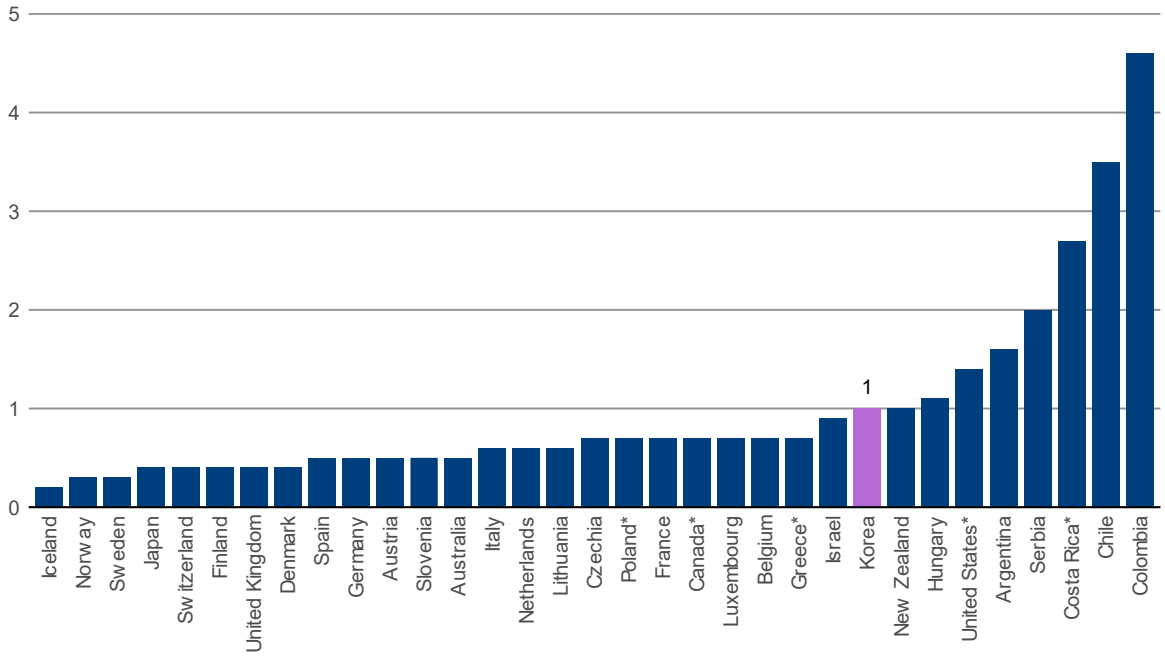


Figure 4. Road fatalities per 10 000 vehicles in Korea compared to other IRTAD countries, 2022



Note: in Belgium, Denmark, Germany and Hungary, registered vehicles do not include mopeds. * 2021 data.

Figure 5. Road fatalities per billion vehicle-kilometres in Korea compared to other IRTAD countries, 2021

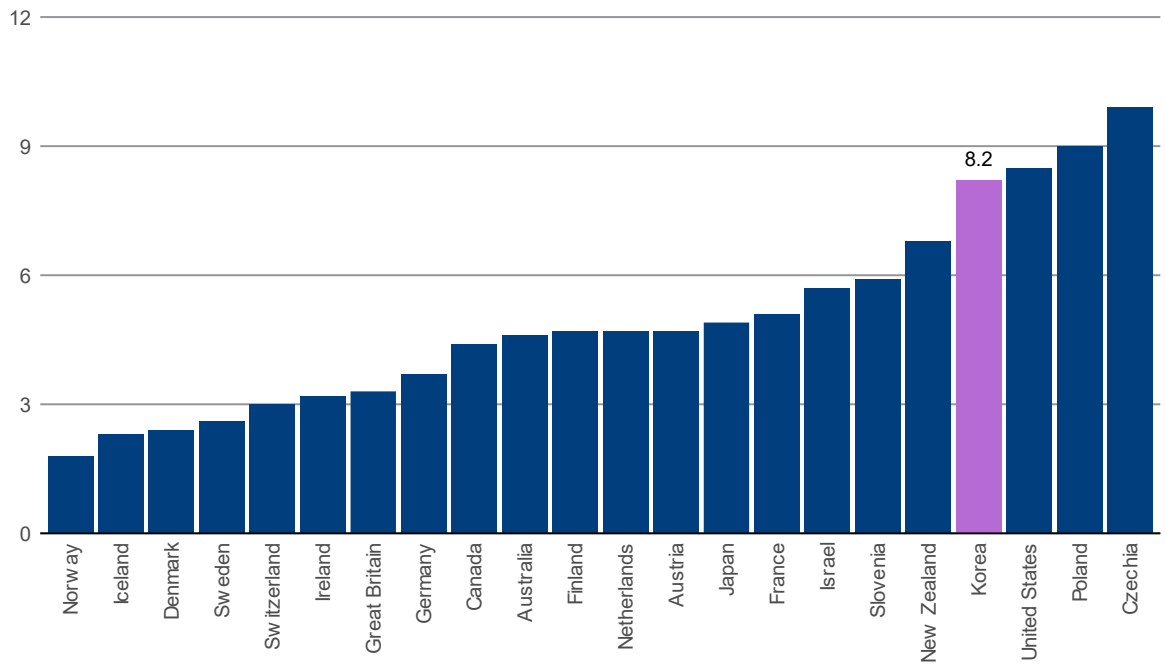


Figure 6. Road fatalities in Korea by user category, 2022

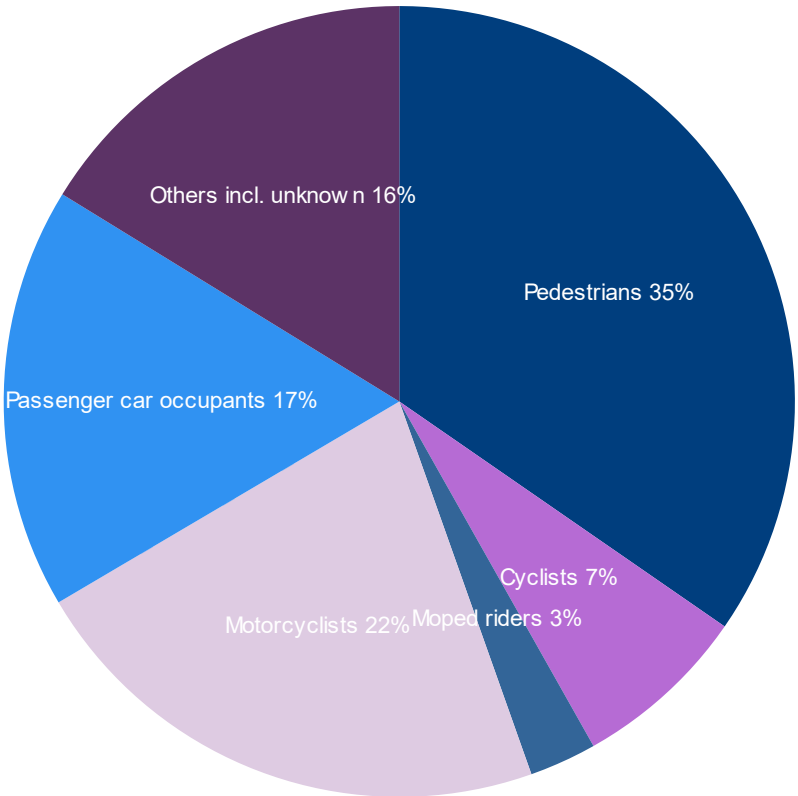


Figure 7. Road fatalities in Korea by road type, 2022

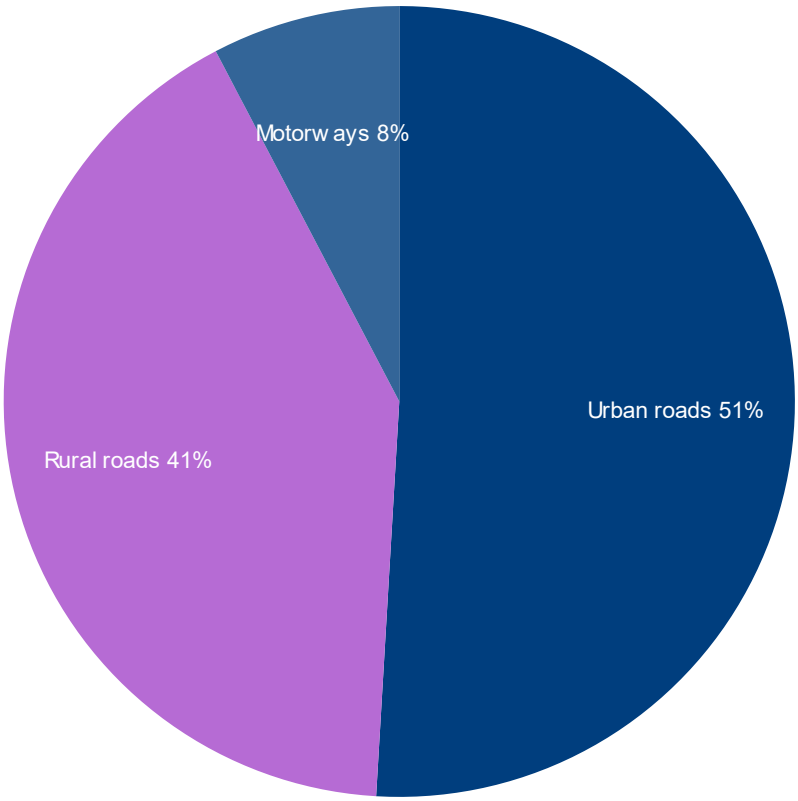
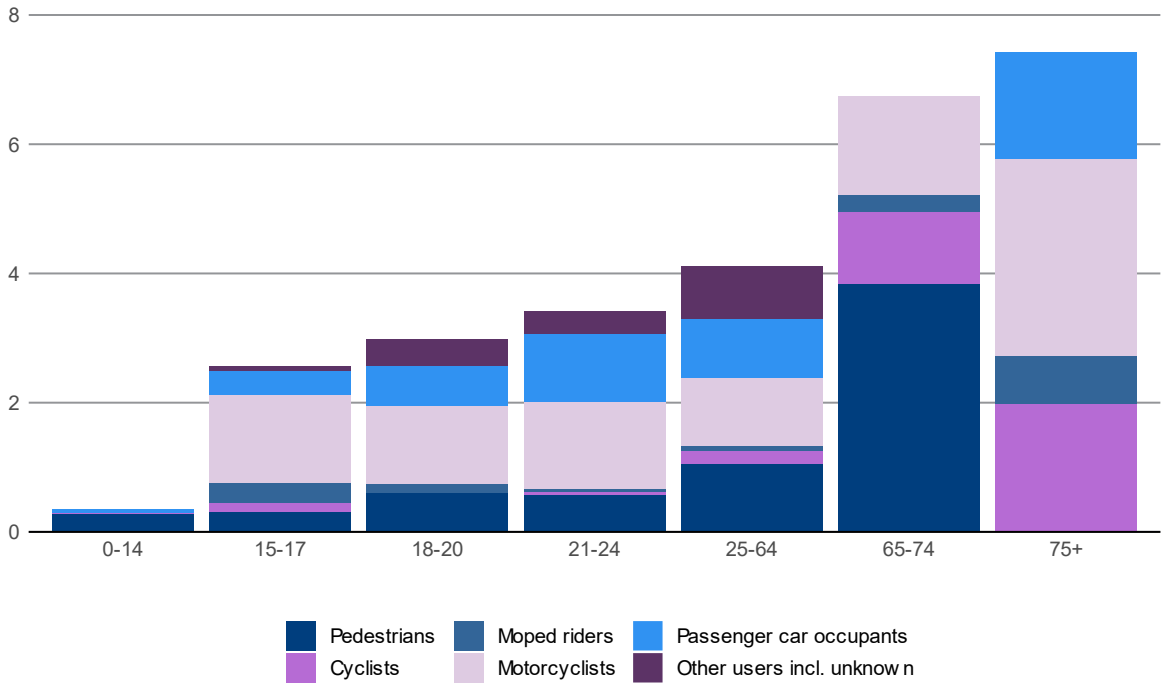


Figure 8. Road fatality rate in Korea by user category and age group, 2022

Rate per 100 000 population in the same age group



Road safety data 2012-22

Between 2012 and 2022, the number of road deaths halved. During the same period (2012-22), the number of registered motor vehicles increased by 30.5% and traffic volume (in vehicle-kilometres) by 27.6% (see Table 2 and Figure 9).

Road deaths more than halved for car occupants (-63.8%) and pedestrians (-54%). This is a significant achievement, as pedestrians account for a very high share of road fatalities. The decrease was 32.2% for cyclists and 29.9% for powered two-wheeler riders.

The number of road deaths decreased consistently for all age groups except for people aged 75 and above, for whom it fell by only 17.2%. Young people benefited the most from the reduction of road mortality. The number of road deaths among young people aged 0 to 14 decreased by 79.2%.

Table 2. Crash, casualty and traffic data in Korea, 2012-22

	2012	2020	2021	2022	Evolution-22
Reported safety data					
Fatalities	5 392	3 081	2 916	2 735	-49.3%
Injury crashes	223 656	209 654	203 130	196 836	-12.0%
Deaths per 100 000 population	10.7	6.0	5.6	5.3	-50.7%
Deaths per 10 000 registered vehicles	2.5	1.1	1.0	1.0	-61.1%
Deaths per billion vehicle-kilometres	19.3	9.3	8.2	..	..
Fatalities by road user					
Pedestrians	2 027	1 093	1 018	933	-54.0%
Cyclists	286	198	181	194	-32.2%
Moped riders	360	74	62	74	-79.4%
Motorcyclists	588	620	606	591	0.5%
Passenger car occupants	1 283	589	539	465	-63.8%
Other road users	848	490	483	437	-48.5%
Fatalities by age group					
0-14 years	101	26	27	21	-79.2%
15-17 years	107	46	24	34	-68.2%
18-20 years	109	55	65	44	-59.6%
21-24 years	198	88	84	88	-55.6%
25-64 years	3 013	1 523	1 421	1 290	-57.2%
65-74 years	1 006	580	551	548	-45.5%
≥ 75 years	858	762	744	710	-17.2%
Fatalities by road type					
Urban roads	2 526	1 544	1 481	1 393	-44.9%
Rural roads	2 431	1 279	1 211	1 132	-53.4%
Motorways	435	258	224	210	-51.7%
Traffic data					
Vehicle kilometres (million)	279 373	332 024	356 372	..	..
Registered vehicles (thousands)	21 909	27 361	28 111	28 599	30.5%
Registered vehicles per 1 000 population	436.4	528.4	543.3	554.0	26.9%

Figure 9. Evolution of road fatalities, motorisation, traffic and GDP in Korea, 2012-22

Index 2012 = 100

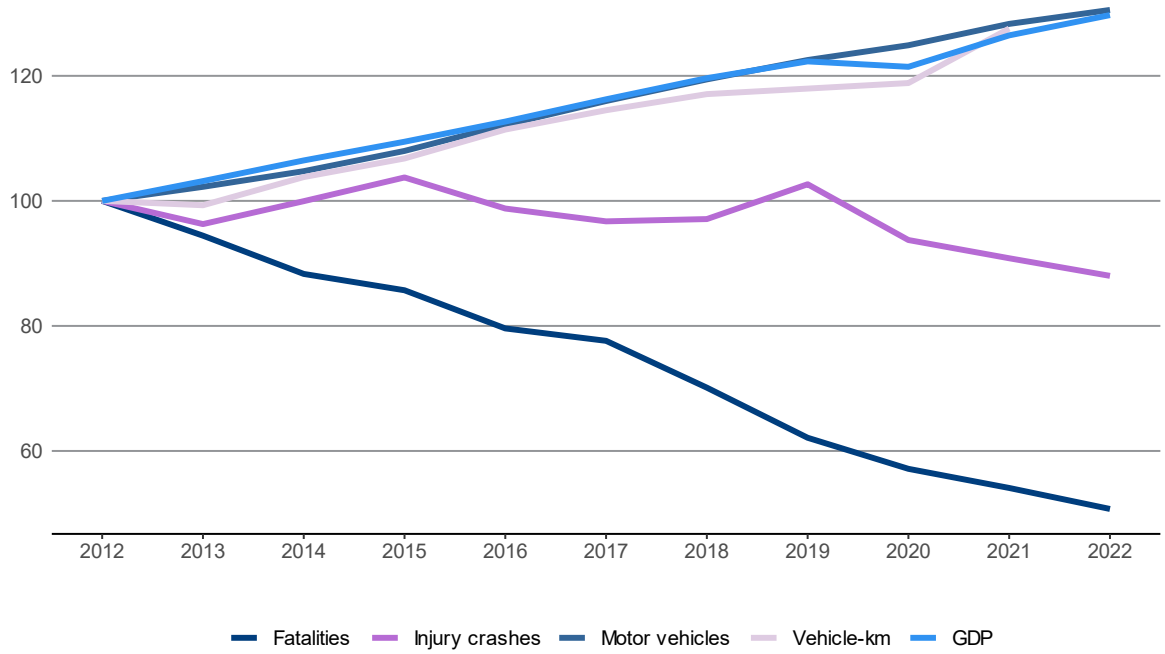
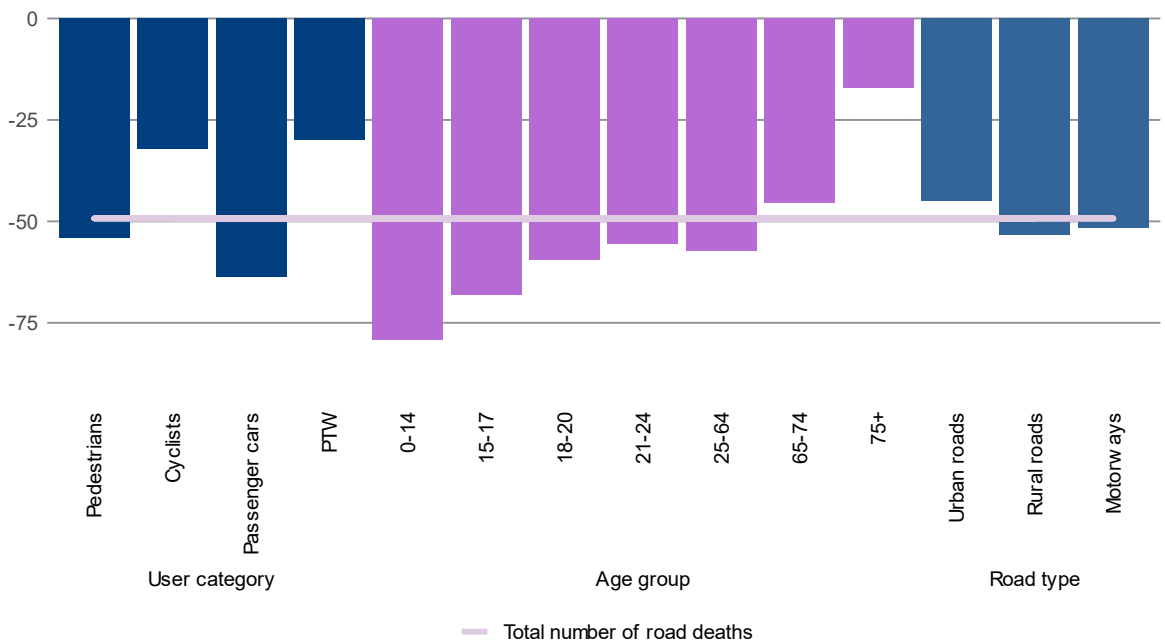


Figure 10. Evolution of road fatalities in Korea by user category, age group and road type, 2012-2022



Safety performance indicators

Speed

Based on police reports, in 2021, excessive speed was a primary contributing factor in 10% of all road fatalities.

In 2012, the speed limit in urban areas was reduced from 80 km/h to 60 km/h for two-lane roads. In 2015, as part of a pilot project, the speed limit was lowered from 60 km/h to 50 km/h or 40 km/h in around 118 residential and shopping areas. In 2021, the speed limit has been lowered to 50 km/h for general roads in urban areas and 30 km/h for roads such as residential streets.

Table 3 summarises the main speed limits for passenger cars in Korea.

Table 3. Passenger car speed limits by road type in Korea, 2023

	General speed limit
Urban roads	
Main roads	50 km/h
Residential streets	30 km/h
Rural roads	
One-lane roads	60 km/h
Two or more lanes roads	80 km/h
Motorways	110 km/h (100 km/h in urban areas)

Drink driving

Driving under the influence of alcohol is another major cause of road crashes in Korea, as in most IRTAD countries. In 2021, it was estimated that 7% of fatal crashes were alcohol-related.

The maximum authorised blood alcohol content (BAC) is 0.3 g/l. A crash is categorised as alcohol-related when at least one crash-related casualty has a BAC above the legal limit.

Drugs and driving

Drugs and driving are likely to be a problem in Korea. However, there is no data to assess the prevalence of drugs and driving and their impact on crash occurrence. Drugs and driving are not classified in police forms as a possible cause of a crash.

Use of mobile phones while driving

An increasing problem for traffic safety in Korea is distraction, for instance, through mobile phone use while driving or crossing a street. There is no official data on the prevalence of distraction in crashes, as distraction is not classified as a possible cause of a crash in police forms. However,

according to the Traffic Culture Index Survey undertaken in 2017 by KOTSA, 14% of pedestrians use their smartphones while crossing a road, and 42% of drivers use a mobile phone while driving.

Since 2008, using hand-held mobile phones while driving has been prohibited. However, enforcing it remains challenging, as it depends on the driver's statement.

Fatigue

The share of sleepiness and fatigue as a causal factor in crashes is especially challenging to detect.

The Korea Expressway Corporation installed 290 rest areas on the motorway network to prevent driver fatigue and sleepiness.

Seat belt and helmet use

Seat belt wearing has been compulsory since 1990 in front seats. Rear seat belts were made mandatory on motorways in 2008, but they were not made mandatory on other roads. Since September 2018, seat belt use has become compulsory for all car occupants and on all types of roads. The 2021 Traffic Culture Index Survey shows that 86% of front and 32% of rear passengers wear seatbelts. Improving the usage of seat belts in rear seats is necessary.

Children under six must be seated in a dedicated child seat. In 2021, the wearing rate was 65% on motorways and 53% on urban roads.

Helmet use is mandatory for all users of mopeds and motorcycles. In 2021, the wearing rate was 93%.

A bicycle helmet law entered into force in September 2018.

Table 4. Seat belt and helmet wearing rates in Korea

Percentages

	2010	2020	2022
Front seats			
Driver	73	96	85
Passenger	79	86	86
Rear seats			
General	..	37	32
Helmet			
Motorcyclists	..	91	94

Cost of road crashes

Traffic crashes represent a high cost for Korean society. A 2021 study estimated total costs to be around USD 21 billion (1.3% of GDP). The costs are based on police crash data and information from insurance companies. These costs do not consider the indirect costs of suffering and pain.

Since 1992, KoROAD has calculated the economic cost of road crashes using the Gross Loss of Output approach. The most recently published estimation of road crash cost is based on 2021 crash data.

Table 5. Cost of road crashes in Korea, 2021

	Unit cost (USD)	Total (USD)
Fatalities	434 745	1.26 billion
Severe injuries	57 116	4.16 billion
Slight injuries	4 081	3.41 billion
Injuries less than 3 days treatment	2 050	2.00 billion
Total		20.81 billion
Total as % of GDP		1.3%

Source: KOROAD.

Road safety management and strategy

Evolution in road safety

Fatalities peaked in 1991 at 13 429. Since road deaths have decreased (with some fluctuations) and were halved by 2004. In 2013, for the first time in 37 years, the number of road deaths was below 5 000. In 2022, Korea marked its tenth consecutive year of achieving a record-low annual fatalities total. This good record of reductions is due in part to the following measures:

- compulsory wearing of front seat belts (1990)
- drink driving enforcement (1998)
- installation of median barriers on national roads
- speed enforcement by the police, including automatic speed camera enforcement since 2008
- lower speed limits on urban roads in residential areas (ongoing pilot project since 2014)
- compulsory wearing of rear seat belts (2018)
- reduction of BAC level to 0.3 g/l (2019)
- lower default speed limits on urban roads from 60 to 50 km/h and 30 km/h for all residential streets (2021).

In 2020 and 2021, the Covid-19 pandemic also significantly impacted mobility and decreased road deaths.

However, Korea still faces several challenges and reports fatality rates above the average for OECD countries. Reasons for the elevated levels of deaths and serious injuries on roads include high alcohol consumption, wide junctions, a lack of sidewalks on rural roads, and the low priority of road safety by the local government. Also, Korea's older population (above 65) has a very high

traffic risk compared to other OECD countries. This is a serious concern as the share of the senior population is increasing steadily.

Governance of road safety

Responsibility for road safety in Korea is shared among various ministries and agencies:

- The Ministry of Land, Infrastructure and Transport (MOLIT) is responsible for the national trunk road network of motorways and highways. It also manages vehicle safety and runs the New Car Assessment Program.
- The Ministry of Public Safety and Security oversees road safety for local governments. It contributes to safety strategies for provincial, municipal and county roads.
- The National Police Agency is mainly responsible for traffic enforcement and crash investigation. It also operates traffic signals, crossings and speed enforcement cameras.
- The Korea Transportation Safety Authority (KOTSA) is a government agency mainly responsible for vehicle safety that supports the Ministry of Land, Infrastructure and Transport.
- The Korea Road Traffic Authority (KoROAD) is a government agency supporting the National Police Agency and is responsible for road traffic management and car crash statistics. The agency oversees traffic monitoring, driver licence examinations and management, training and education.

The National Transport Safety Committee, an interministerial body, co-ordinates road safety policy. The Minister of Land, Infrastructure and Transport chairs the committee. Private professionals can participate in the committee, but the committee does not often convene in practice. The committee's role is to review road safety policies and measures the various agencies implement. However, it does not have a monitoring function, budget or budget allocation power.

National road safety strategy

The Ministry of Land, Infrastructure and Transport has approved Korea’s 9th National Transport Safety Plan 2022-2026. The Plan is based on Vision Zero. The plan identifies several vulnerable focus groups (including pedestrians, older people and motorcyclists). It sets out targets and action plans for these groups and focuses specifically on:

- speed management
- facilities to protect pedestrians
- improvement of vehicle safety standards
- road safety education
- improvement of post-crash response.

The main target is to reach less than 1 800 road deaths by 2027, i.e. a 38% reduction compared to 2021. The target aligns with the United Nations` target of halving road deaths by 2030.

Latest road safety measures

The responsibility for developing road safety measures is being progressively transferred from the National Police Agency to local governments, with the creation of local autonomous police agencies. Local governments manage and promote traffic crash-reducing measures by creating police organisations.

The default speed limit in urban areas was reduced from 60 km/h to 50 km/h; the speed limit was reduced to 30 km/h in residential and shopping areas (2021).

In 2019, the government set new limits regarding the amount of blood alcohol allowed for drivers. Drivers with a BAC of 0.3 g/l or higher have their licenses suspended. Drivers with a BAC level of 0.8 g/l or higher can no longer drive.

Since September 2018, seat belt wearing has been made compulsory for all car occupants on all types of roads (until then, seat belts for rear-seat passengers were only mandatory on motorways).

A bicycle helmet law entered into force in September 2018.

Several measures are being implemented to make infrastructure safer: the construction of additional roundabouts, designation of Silver Zones near facilities for older people, construction of other rest areas along highways, construction of additional pedestrian crossings limited to less than 200 metres distance between two crossings and installation of safety fences to prevent jaywalking.

Research and resources

Websites

Ministry of Land, Infrastructure and Transport: http://www.molit.go.kr/english/intro.do

Road Traffic Authority: www.koroad.or.kr

Traffic safety information management complex system: https://tmacs.kotsa.or.kr/

Korea Transport Institute (KOTI): https://english.koti.re.kr/

Traffic Accident Analysis System (TAAS): https://taas.koroad.or.kr/web/shp/ine/initTaas.do

Definition, methodology, data collection

Term	Definition
Road death	Any person killed immediately or dying within 30 days due to a road crash.
Person seriously injured	Any injured person requiring medical treatment for more than three weeks.
Person slightly injured	Any injured person requiring medical treatment for less than three weeks.

Any road crash resulting in at least one person killed must be reported to the police. The police investigate the crash, fill out a form, and enter the information into the police Traffic Accident Management System database. The police refer to the medical diagnosis to classify the injuries by severity.

To complete police-reported crash data, KoROAD developed an integrated road crash database, the Traffic Accident Analysis System (TAAS). This contains not only police data but also inputs from car insurance companies and mutual aid associations. The TAAS data are collected regularly from these sources and are refined to eliminate duplicated information.

About the IRTAD Database

The IRTAD Database includes road safety data, aggregated by country and year from 1970 onwards. It provides an empirical basis for international comparisons and more effective road safety policies.

The IRTAD Group validates data for quality before inclusion in the database. At present, the database includes validated data from 35 countries: Argentina, Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, Czechia, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Lithuania, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, Serbia, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the United States.

The data is provided in a common format based on definitions developed and agreed by the IRTAD Group. Selected data is available for free; full online access requires IRTAD membership.

Access the IRTAD Database via the OECD statistics portal:

https://stats.oecd.org/Index.aspx?DataSetCode=IRTAD_CASUAL_BY_AGE

About the International Transport Forum

The International Transport Forum (ITF) is an intergovernmental organisation with 66 member countries that organises global dialogue for better transport. It acts as a think tank for transport policy and hosts the Annual Summit of transport ministers. The ITF is the only global body that covers all transport modes. The ITF is administratively integrated with the OECD, yet politically autonomous.

www.itf-oecd.org

About the IRTAD Group

The International Traffic Safety Data and Analysis (IRTAD) Group is the ITF's permanent working group for road safety. It brings together road safety experts from national road administrations, road safety research institutes, international organisations, automobile associations, insurance companies, car manufacturers, etc. With 80 members and observers from more than 40 countries, the IRTAD Group is a central force in promoting international co-operation on road-crash data and its analysis.

www.itf-oecd.org/irtad

Disclaimer

Data in this country profile have been provided by countries to the database of the International Traffic Safety Data and Analysis (IRTAD) Group. Where data has not been independently validated by IRTAD, this is indicated.

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https://www.itf-oecd.org/road-safety-annual-report-2023

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