Deliverable D3.7b:

Road Safety Performance Indicators Country Profiles

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Transport

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Executive Summary

The EC 6th Framework Integrated Project SafetyNet aims to accelerate the availability and use of harmonised road safety data in Europe. Having such data available throughout Europe would be tremendously beneficial for road safety, since it would enable the evaluation of road safety measures, the comparison of road safety status within and between countries, and the accelerated sharing of best practice in road safety policy.

One of the macroscopic road safety related areas that SafetyNet focuses on concerns safety performance indicators (SPI). Such variables indicate road safety by looking at the operational state of the road traffic system. The indicator areas looked at by SafetyNet are: alcohol and drug use, speeding, protective systems, daytime running lights, vehicles (passive safety), roads, and trauma management. In an iterative manner, the SafetyNet SPI team has developed theoretically sound, yet practically feasible indicators, and has obtained the relevant data - or information about their availability - from the 27 cooperating countries (25 member states, Norway and Switzerland)]. Hakkert, Gitelman and Vis[1] (2007) present the theoretical framework and the developed safety performance indicators. The current report presents, for each country studied, the relevant available data. In a third report[2], the theory is applied to this data to obtain the indicator values and the different countries are compared to the extent possible.

[1] Hakkert, A.S., Gitelman, V., and Vis, M.A. (Eds.) (2007) *Safety Performance Indicators: Theory*. Deliverable D3.6 of the EU FP6 project SafetyNet.

[2] Vis, M.A., and Van Gent, A.L. (Eds.) (2007) *Safety Performance Indicators: Country Comparisons*. Deliverable D3.7a of the EU FP6 project SafetyNet.

Transport

Project co-financed by the European Commission, Directorate-General Transport and Energy

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Transport

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1 Introduction

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Acknowledgement

The authors would like to thank the National Experts of the 27 cooperating countries (25 member states, Norway and Switzerland) for providing the data and for giving feedback on concept versions of this report.

[3] Hakkert, A.S., Gitelman, V., and Vis, M.A. (Eds.) (2007) *Safety Performance Indicators: Theory*. Deliverable D3.6 of the EU FP6 project SafetyNet.

[4] Vis, M.A., and Van Gent, A.L. (Eds.) (2007) *Safety Performance Indicators: Country Comparisons*. Deliverable D3.7a of the EU FP6 project SafetyNet.

2 Belgium (BE)

2.1 Alcohol & Drugs

Data received from the country

- Number of road accident fatalities in 2002: 1263.
- Number of road accident fatalities in 2002 for which at least one driver involved was impaired by alcohol: 103.
- Number of road accident fatalities in 2002 for which at least one driver involved was impaired by drugs other than alcohol: 11 (under influence of medicine of drugs).
- Definition of alcohol impaired, i.e. blood alcohol concentration level: breath test positive (BAC>0.5) or breath test refused, or driver obviously under influence of alcohol.

Usability of the data for SPIs

The data can be used for both alcohol and drugs.

Quality of the data

Approximately 20 percent of drivers involved in fatal accidents are tested. This may explain the relatively low SPI.

SPIs used by policy makers

Unknown.

Illustration

Alcohol SPI 8.2%, SPI drugs 0.9%. If the estimation of 20% of drivers involved in fatal accidents are tested, the alcohol SPI would be 40.8%.

2.2 Speed

Background

Speed is monitored since 2003 on an annual basis by the IBSR (Belgian Institute for Road Safety) in order to have a nationally representative estimate of speed. IBSR is the owner of the data. Regional authorities also make their own systematic traffic and speed monitoring on motorways and regional roads, mainly for traffic management purposes but do not produce national indicators.

Data received from the country

Belgium provided a complete questionnaire response but no data with it. The main results of the 2003, 2004 and 2005 speed studies have now been validated. Although the results are included in no official publication yet, SafetyNet could get them quite easily. Indeed, IBSR, which is the organism responsible for the collection of Belgian speed data and is also involved in SafetyNet. Thus, main results of the 2003, 2004 and 2005 speed study are now in possession of SafetyNet.

Usability of the data for SPIs

IBSR data by individual vehicles are collected in 150 measurement locations during one week. This type of data allows both distinctions in time and by vehicle type (based on vehicle length). Also, individual data allow taking the traffic conditions into account. So much of the requirements to create a valid SPI are fulfilled. There are two limitations however. Firstly, the data are disaggregated by speed regime rather by road type. IBSR have information on all the sites were they measure speed and thus should be able to make correspondences with the SafetyNet road classification but it is a long

process requiring redoing all the analysis of the data. There is no published indicator for motorways at the moment but these indicators will be available from 2007. Secondly, the quality of the sampling procedure is still under discussion. The improvement of the sampling procedure (increasing the representativeness of the sample) is one of the priorities of the IBSR researchers.

More generally, thanks to the close links between IBSR and SafetyNet, the IBSR will be very receptive to the recommendations for constructing SPI. Data are already of good usefulness to construct SPI and will be improved in the future.

The following table summarise the characteristics of the Belgian speed data (2005).

All road types available	++
Regular assessment	++
Random and scientific sampling	++
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	+
Data split out for different vehicle types	+
Traffic conditions taken into account	++
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

+ Criteria partially fulfilled ++ Criteria fully fulfilled

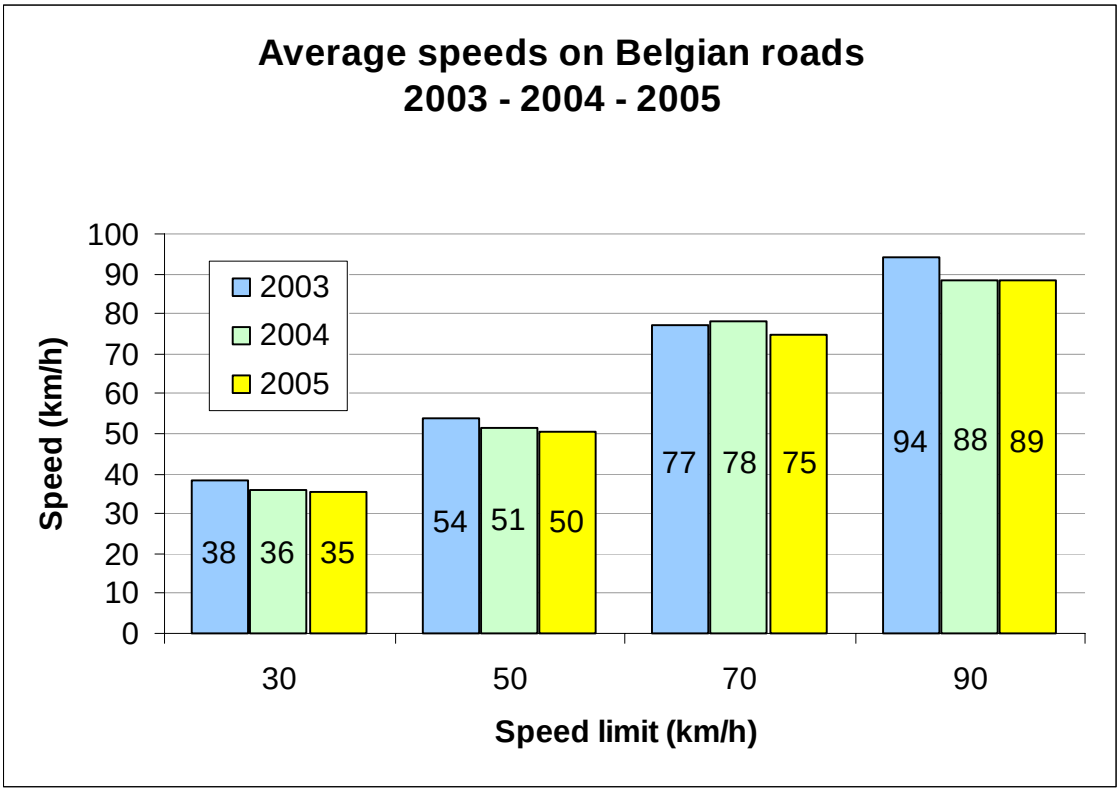
Quality of the data

The data in possession of SafetyNet corresponds to the best data available described above. All the indicators that we suggest as SPI were provided by Belgium on the national scale. No more data processing is thus required by the SafetyNet team in order to produce SPIs.

SPIs used by policy makers

In 2001, it was decided by the Belgian Council of Minister to create the States General for Road Safety, regrouping all the actors concerned by road safety (including authorities). This organism was made responsible for determining the major problems related with road safety in Belgium and for enouncing targets for the future. Excessive or inappropriate speed was identified as one of the major problems. Hence, it was decided that the evolution of different indicators related to speed had to be carefully followed in the future. These indicators are the average speed, the V85 and the percentage of vehicles exceeding the speed limit by more than 10 km/h. It is the reason for the launching of the speed monitoring campaigns of the IBSR in 2003.

Illustration



The above figure represents the evolution of average speed of (reasonably) free-flowing cars. The distinction of cars among other vehicles is based on their length. It is the only vehicle type for which the distinction is really reliable. Only cars whose speed is not constrained by traffic conditions are included. Selected cars are those whose distance gap with to the preceding vehicle is at least equal to (5 [s] * Speed limit [m/s]). The data for motorways are not reported due to issues of quality that should be resolved for 2006 measures. Similar data exist for Standard deviation, V85 and the percentage of vehicles over the limit.

2.3 Protective systems

Data received from the country

- Filled questionnaire (11/2004).
- Information on the data collection methodology.
- Information on data collected in road accidents.
- Recent data on SPI A (10/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level.

Use of protective systems

The use of chosen protective systems in road traffic has been monitored in the country only recently and irregularly by IBSR (Belgian institute for road safety). The data on the development of following indicators are available: A. The use of protective systems has

not been regularly monitored in accidents. The following table summarises information on proposed SPIs.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types*	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	71	72.6	67.6	Y	URM	Y	Y	2005	N				N

*Estimated by SafetyNet, U: 30 and 50 km/h, R: 70 and 90 km/h, M: 120 km/h, 77% in 2006.

Methodological criteria

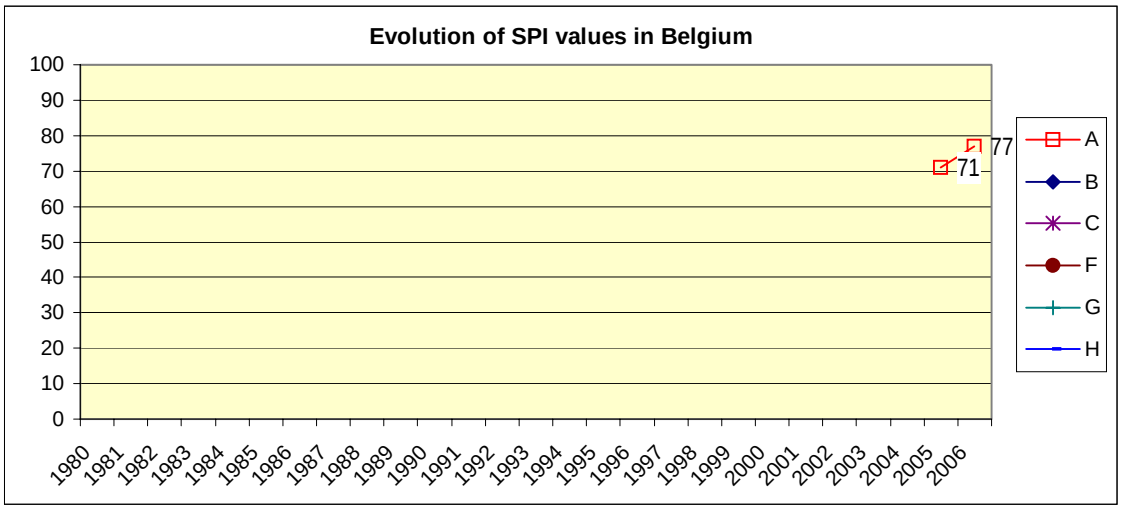
Criteria/Indicator	A
Regular road-side independent observation (periodicity in years)	1
Random sampling design of survey	Y
Precision requirements exist related to the sample size	N
Observation procedure is clearly defined for different situations in traffic	Y
All daylight hours for all working days of the week are considered	Y
Data stored, reported and measurements documented	Y

Sampling details/Indicator	A
Number of observation sites	150
Number of sites per road types	36 + 34 (30 + 50 km/h) 34 + 22 (70 + 90 km/h) 24 (120 km/h
Sample size at sampling site	1 hr / 0- 1500
Observed total	26,827*

* Different sampling procedure used in 2006 (observed total 20,398)

SPIs proceeding

It is possible to figure out the values of A indicator only (aggregation necessary – driver + front seat passenger). It can be recommended to reconsider survey procedure used in the country.



2.4 Daytime running lights

Data received from the country

Legislation

There is no law concerning the DRL use by cars. Use of DRL is compulsory only for motorcycles. No information of sanctions for non-use was provided. No legislation change is planned in the future. The DRL switches on automatically in some cars when starting the engine.

Other features

No information or incentive campaigns were carried out on the topic.

Surveys

Regular surveys on DRL use are not mandatory. No monitoring surveys were carried out. No monitoring surveys are planned in the near future. DRL usage rate is not known.

Usability of the data for SPIs

No interest to the topic can be recognized. The data will probably not be collected.

Quality of the data

Not applicable.

SPIs used by policy makers

None.

2.5 Vehicles (passive safety)

Data received from the country

- Full database detailing make, model and year manufacture of all vehicle types from 2003.
- The only country to provide data from 2000 – 2005, enabling possible future time series analysis.

Usability of the data for SPIs

The data can be used to calculate the vehicle crashworthiness and vehicle age SPI, and the compatibility SPI once the vehicle type categories have been established.

Quality of the data

The Belgian database is broken down into a large number of vehicle types. It is very detailed, but in order for direct country comparison for fleet composition and compatibility, the specified vehicle types need to be provided.

It has been possible to isolate the passenger cars and taxis for analysis and also the two-wheeled motor vehicles, however the goods vehicles are not clearly distinguishable. Data from Statistics Belgium has been used for vehicle types (http://statbel.fgov.be/figures/d37_fr.asp). However, it would have been preferable if the information could have been available in the specified categories in the original questionnaire response, to ensure that there have been no errors in interpretation.

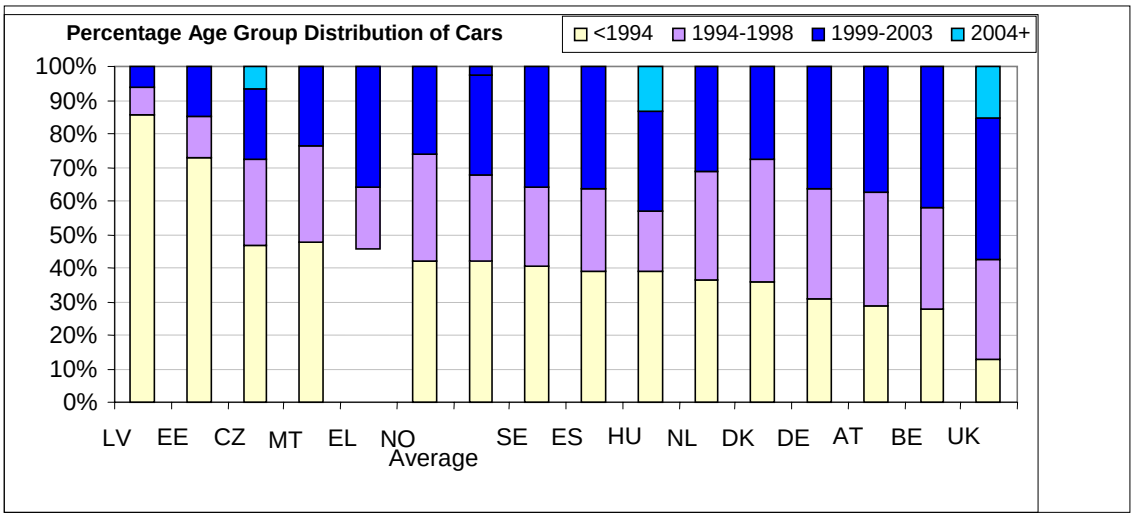
The year of manufacture has been provided, rather than the year of first registration If a car is brought into Belgium it requires a 'certificat d'immatriculation' which means that the year is it imported will be the year of first registration. Using year of manufacture means that the true age of the vehicle is known.

SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

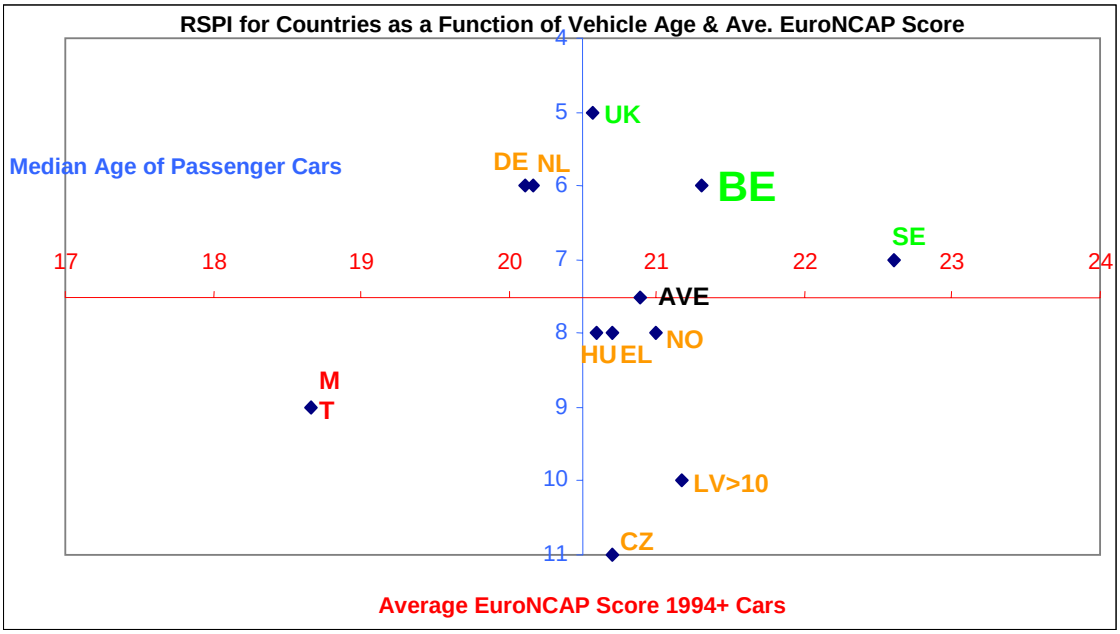
Illustration

Belgium (BE) has the 5th largest passenger car fleet of the 15 countries analysed.



The above graph shows the percentage distribution of passenger car age in Belgium, compared with the other countries that provided data and against the average. Belgium

performs very well in this area with one of the lowest number of vehicles over 10 years old.



Belgium performs above average when looking at crashworthiness and vehicle age and is in the green 'best practice' category of countries with a fleet that is being renewed often and containing vehicles with a higher EuroNCAP score.

2.6 Roads

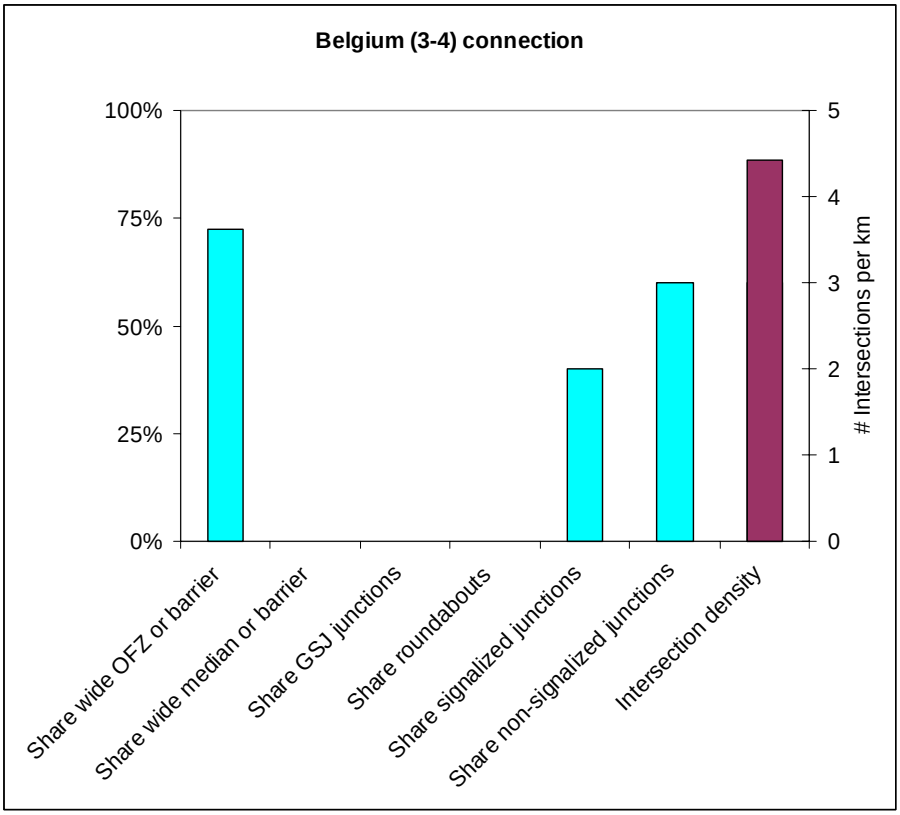
Data received from the country

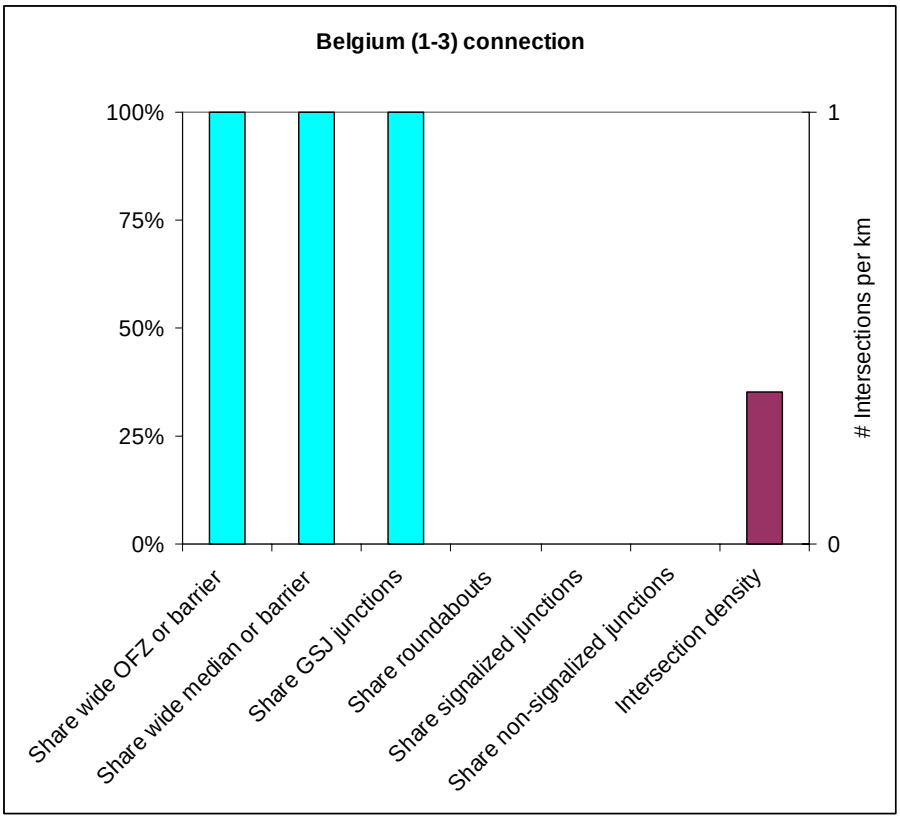
Complete data are received from a certain region in the country, with data from 2003. Complete means data on all SPIs. The data comprises several connection types. The data can be used for the calculation of SPIs. The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs in use

It is not known which SPIs are used by policymakers in this country.

Illustration





The (1-3) connection has a wide obstacle-free zone and wide median or barriers over its full length. Furthermore, all intersections are grade separated, which means that there are no other intersection types. An intersection density of 0.35 intersections per

kilometre is average for this road type. The higher connection types in the Belgian questionnaire have comparable characteristics to this connection.

The (3-4) connection has a relatively high share of wide obstacle-free zone or roadside barrier for this connection type. As expected there is no wide median or median barrier and there are only at-grade junctions. With more than 4 junctions per kilometre, the intersection density is high for this connection type.

2.7 Trauma management

Data received from the country (2003)

General data (2003)

Population, million	10,356
Road length - total, km	149,739
Road length - public, outside built-up areas, km	120,407
Vehicle-kilometres travelled, million	93,079

Data on Trauma management

(1) No of dispatching centres	16
(2) No of EMS stations	300
Number of EMS staff in service: (4a) No of physicians	1400
(4b) No of paramedics	0
(4c) No of nurses	450
(4d) No of medical technicians	7500
(4f) Total	9350
Number of EMS transportation units in service: (7a) No of BLSU	357
(7b) No of MICU*	100
(7d) No of helicopters/ planes	n.a.
(7e) Total	480
Comments	*Called MOG in the Flanders region and MSUR in the Waals region

(12) No of EMS calls annually	825955
(13) share of road accidents in EMS calls	7%
(16) No of EMS rides annually	273846
(17) share of road accidents in the EMS rides	7%

(19) The demand for EMS response time, min	15 min
(20) Percentage of EMS responses meeting the demand	100%*
(21) Average response time of EMS, min	6 min*
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	0
(22b) In trauma department of hospitals	356
(22d) Total	356
Comments	* based on local EMS service, region Antwerp

SPI values estimated for Belgium

(3a) EMS stations per 10000 citizens	0.29
(3b) EMS stations per 100 km of rural road length	0.25
(5a) Percentage of physicians out of EMS staff	15%
(5) Percentage of physicians + paramedics out of EMS staff	15%
(6) EMS medical staff per 10000 citizens	9.0
(8b) Percentage of MICU out of the total EMS units	21%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	95%
(9) EMS transportation units per 10000 citizens	0.46
(11) EMS transportation units per 100 km of road length	0.32
(19) The demand for EMS response time, min	15 min
(20) Percentage of EMS responses meeting the demand	100%*
(21) Average response time of EMS, min	6 min*
Comments	* based on local EMS service, region Antwerp

(14) Road accident emergency calls per 10000 citizens	54
(15) Road accident emergency calls per million vehicle-km travelled	0.60
(18) Road accident emergency rides per 10000 citizens	18

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	100%
(25) Number of the total trauma care beds per 10000 citizens	0.34

3 Czech Republic (CZ)

3.1 Alcohol & Drugs

Data received from the country

1. Number of road accident fatalities (people killed in road accidents): 1382 (2004), 1286 (2005.)
2. Number of road accident fatalities for which at least one driver involved was impaired by alcohol: 67 (2004), approximately the same number as in 2005.
3. Number of road accident fatalities for which at least one driver involved was impaired by drugs other than alcohol: probably no more than 1 - 2 fatalities in the year.
4. For alcohol impaired drivers, the definition of alcohol impaired, i.e. blood alcohol concentration level: Acceptable blood alcohol concentration level in The Czech Republic is 0.0‰, i.e. every amount >0.0 counts as impaired.

The national experts confirm that all drivers involved in fatal accidents are tested for alcohol.

Usability of the data for SPIs

For both alcohol and drugs the data can be used to calculate the SPIs, though the number of fatalities with a driver impaired by drugs seems very small.

Quality of the data

Both SPIs seem so small that there is reason to ask whether the figures for impaired drivers are complete. Considering the fact that the alcohol legal limit is 0.0, the percentage should in principle be reduced to be compared to countries with a higher limit.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol 4.8%; SPI drugs 0.1%.

3.2 Speed

Background

The speed data have been gathered since 1998 for road safety research and policy-making purposes by the CDV (Transport Research Centre), who is also the owner of them. Since early 2006, the country has been slightly modifying the methodology and extending the scope of measuring of speed related data for the use in the National Road Safety Observatory being recently built by the CDV for the Ministry of Transport.

Data received from the country

The Czech Republic delivered a large set of data together with the complete questionnaire responses. The fact that the CDV (Transport Research Centre), one of the partners in the development of the SPIs related to speed, is a unique provider and owner of speed related data at national scale, facilitates delivery, validation and transformation of national data for the use in SafetyNet. The complete survey methodology with some result examples was provided by CDV for the use in the development of SPIs for speed as well.

Usability of Czech data for SPIs

Since 1998 up to 2004, the speed data were collected exclusively by CDV at some 25 locations by mobile radars. All major road types (with their proper speed limit) were involved in the sample. However, the road profiles were not distributed equally through the whole country. Individual measurements were accomplished in accordance with the internal guidelines, such as independent, unobtrusive measurement done by qualified staff with calibrated devices at typical working weekdays, etc.. For each measurement, the error check is done and individual data are archived for future use. Despite it is theoretically possible to figure out any of desired indicators (since the individual speed data and their distribution are available), the following indicators are explicitly available: Average speed, V50, V85.

Since 2005, the speeding measurements are performed by the CDV and its partner at wide national scale for the purpose of the National Road Safety Observatory. There are altogether 91 road profiles defined for speeding measurements. Stratified sampling, where clusters correspond to the 14 regions (NUTS-3 regions) is applied. Among 91 road profiles, 26 are on I class roads, 26 on II class roads and 39 on urban roads (4 types depending on town size). For each region 7 profiles are picked up, whereas 4 of them are located out of urban areas and 3 in urban areas. Measurement is performed with automatic (speed loops, radars) or human operated (mobile radars) devices. All used devices must allow determining vehicle type, whether directly, or indirectly by recognizing the length of vehicles. Moreover, they should allow determining the distance between vehicles. The four vehicle types are recognized according to their length: I - up to 2100 mm II - 2100-6000, III - 6000-12000 and more than 12000 mm. The additional output indicators are: the percentage of vehicles over the limit and the percentage of vehicles keeping the safe distance from the vehicle running just in front of them.

In general, the Czech speed data are already of use by SafetyNet team and described as one of the most useful ones in international context. Thanks to the centralized way of data collection and storage and availability of individual vehicle data, the construction of all suggested SPIs is possible.

The following table summarise the characteristics of the Czech speed data (2006).

All road types available	++
Regular assessment	++
Random and scientific sampling	++
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	++
Data split out for different vehicle types	++
Traffic conditions taken into account	+
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

+ Criteria partially fulfilled ++ criteria fully fulfilled

Quality of the data collected by SafetyNet

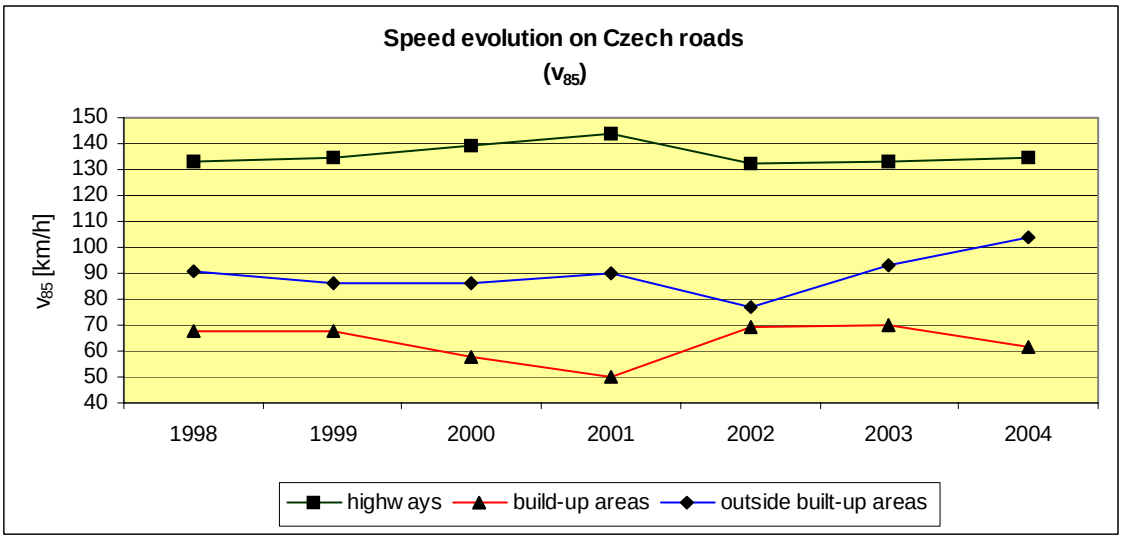
The data in possession of SafetyNet corresponds to the best data available described above. The country provided most of all indicators proposed by the SafetyNet SPI team (except standard deviation).

SPIs used by policy makers

The policy interest in respect to speed data is to monitor road users behaviour in respect to the legislation changes and enforcement practices. The key speed indicators

such as average speed, V85 and percentage of vehicles over the limit are monitored by the CDV at least annually for the use by the Ministry of Transport. Any official national document related to road safety, such as the National Road Safety Strategy (2004) does not contain targets regarding these indicators. The use of speed indicators stored in the built National Road Safety Observatory by policy makers at national level is not clearly defined yet.

Illustration



The above figure represents the evolution of V85 in the country of the speed of (reasonably) free-flowing cars. The distinction of cars among other vehicles is based on their length. It is the only vehicle type for which the distinction is really reliable. Only cars whose speed is not constrained by traffic conditions are included. The visible fluctuation of the values for some years may be caused by a limited number of observation sites and the developments in measuring methodology.

3.3 Protective systems

Data received from the country

- Filled questionnaire (02/2005).
- Information on the data collection methodology (report available).
- Information on data collected in road accidents.
- Recent data (10/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

No information is available regarding the presence of protective systems in vehicles at country level.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 1995 by CDV (Transport Research Centre). The data on the development of following indicators are available: A,B,C.

The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	72			Y	U,R,M	Y	Y	2005	Y	64	67	2004	62 (61/67)

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	41	Y	U,R,M	Y	2006	N		2004	53

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	49	0-12	-	-	-	S	Ir.	U,R	2005

D: Daytime use of seat belts on front seats of HGV and coaches	Not available
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	Y (<18 years old)	Y	Y

F: Daytime use of safety helmets by cyclists	Not available
G: Daytime use of safety helmets by moped riders	Not available
H: Daytime use of safety helmets by motorcyclists	Not available

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1	1			
Random sampling design of survey	Y	Y	Y			
Precision requirements exist related to the sample size	Y	Y	Y			
Observation procedure is clearly defined for different situations in traffic	Y	Y	Y			
All daylight hours for all working days of the week are considered	Y	Y	Y			
Data stored, reported and measurements documented	Y	Y	Y			

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	91	91				
Nr of sites per road types	39/52/X	39/52/X				
Sample size at sampling site	<250	<250				
Observed total						

SPIs proceeding

It is possible to figure out the values of the following indicators:

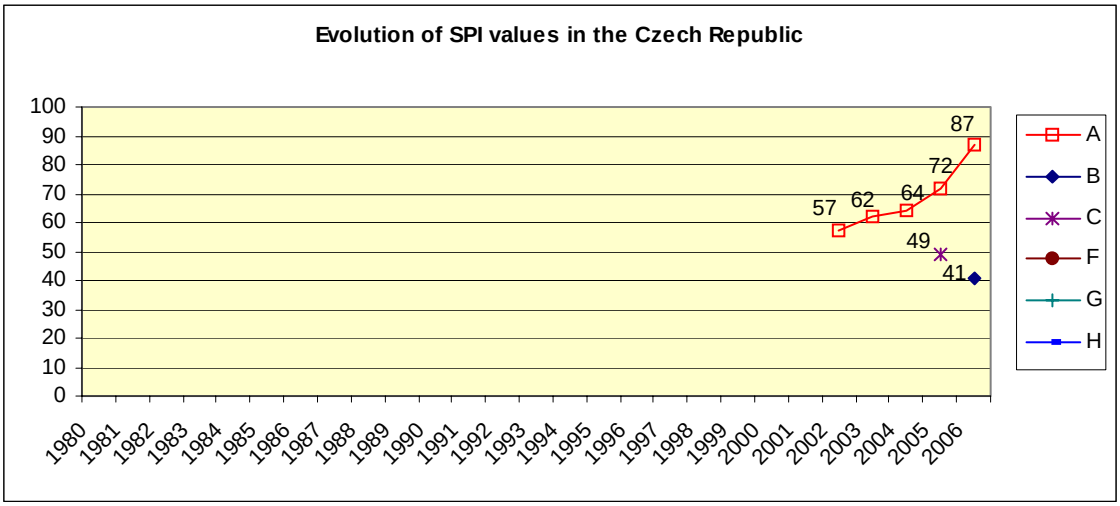
A (aggregation necessary driver+front seat passenger)

B (no objections)

C (aggregation for age group necessary)

For all available indicators, it can be recommended to reconsider the design of the survey.

SPIs presentation



3.4 Daytime running lights

Data received from the country

Legislation
Since July 1st 2006 there is a law on obligatory use of DRL for all vehicle types, on all road types, and all year long. Before, DRL was obligatory only for motorcycles and mopeds for the whole year, and for other vehicle types in wintertime only. Penalty for non-use is defined.

Other features
Information/ incentive campaigns take place occasionally.

Surveys
Regular DRL survey is not mandatory.

Monitoring DRL survey is performed annually, since 2004.

Counting is manual, from a civil car parked on a roadside.

Data
For the year 2004:

	DRL use (%)
motorway	100
rural	77
urban	86
DRL roads (total)	88

Usability of the data for SPIs

National DRL usage rate and the rates according to road types are estimated (see above).

Rates according to vehicle types are probably available but were not provided.

Quality of the data

Probably satisfactory. No further data adjustment is required.

SPIs used by policy makers

DRL usage rates are reported to the Traffic Safety Committee.

3.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year manufacture of passenger cars from 2005.

Data from 2004 giving vehicle types totals and year of first registration.

Usability of the data for SPIs

The 2005 passenger car data can be used to calculate vehicle crashworthiness and vehicle age SPIs. The Czech Republic database is obviously updated each year and when other countries produce a later release of their data from 2005, it will be directly comparable with this data.

The 2004 data could be used to make some comparisons between fleet composition, however the vehicle type definitions are not the ones specified in the questionnaire.

Quality of the data

The quality of the Czech Republic passenger car data is good enough to analyse. There are a small number of anomalies, but not enough to significantly affect the over SPI results. The data has been adjusted in some cases to compare with other country data from 2003.

The data for the fleet composition SPI needs to be broken down into the specific vehicle types specified in the questionnaire.

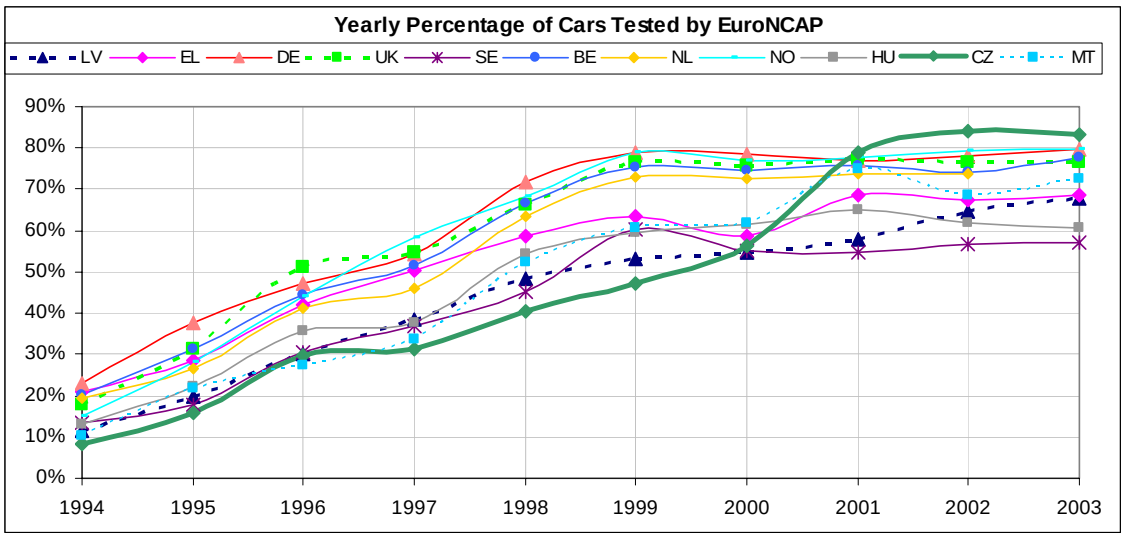
SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

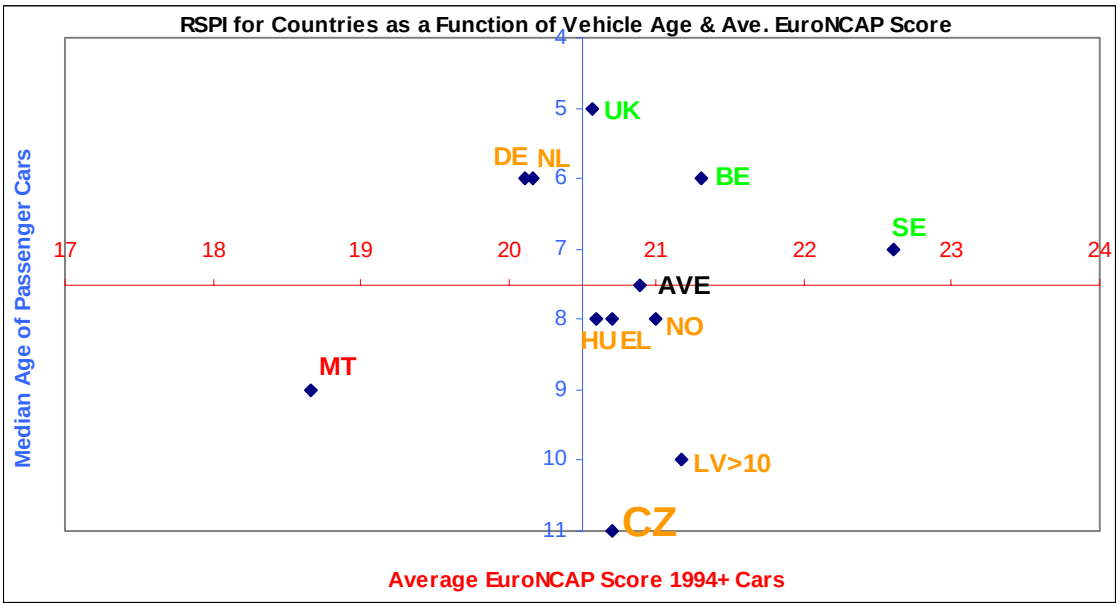
Illustration

CZ has one of the smallest passenger car fleets of the 15 countries analysed.

The number of pre-1994 cars in the Czech Republic compares fairly well with the other countries analysed.



The Czech Republic has the highest percentage of cars analysed by EuroNCAP first registered in 2001 onwards, after a noticeable jump from 55% to 80% from in 2001. This coincides with Skoda cars, a popular make in the Czech Republic, beginning to be built on the VAG Group platform. This resulted in a big increase in EuroNCAP ratings of Skoda cars. It also coincides with initial plans to make the Czech Republic a member of the EU.



The Czech Republic performs slightly below average when looking at crashworthiness based on EuroNCAP scores and is one of the two worst performing countries that were able to be analysed in terms of vehicle median age with the average vehicle over 10 years old. However there have been improvements in recent years and it would be interesting to monitor closely the SPIs for this country over the next few years.

3.6 Roads

Data received from the country

Complete data are received from a certain region in the country, with data from 2000. Complete means data on all SPIs. The data comprises several connection types.

Usability of the data for SPIs

The data can be used for the calculation of SPIs.

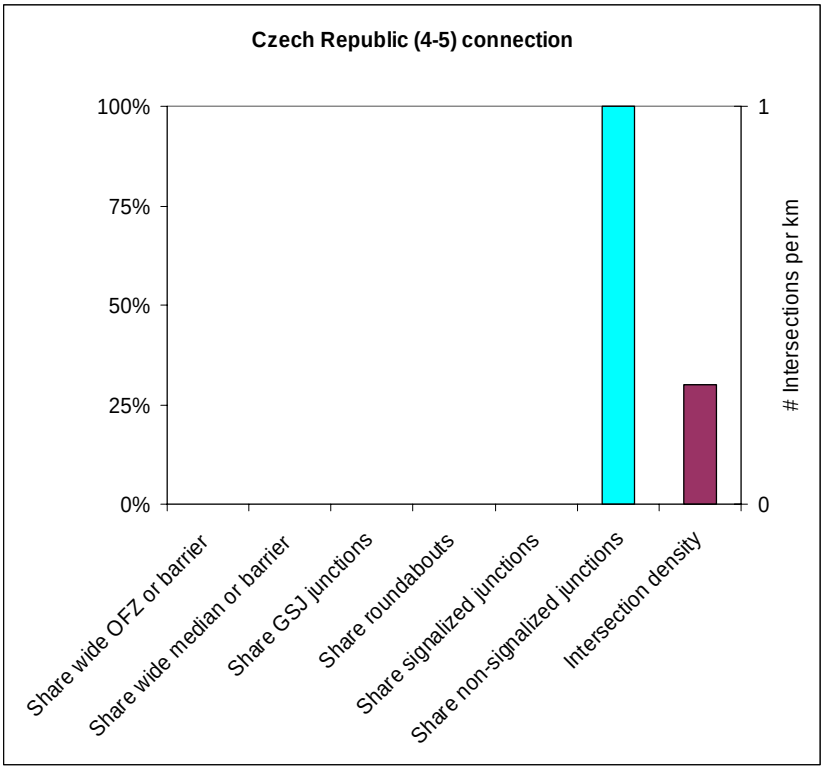
Quality of the data

The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration



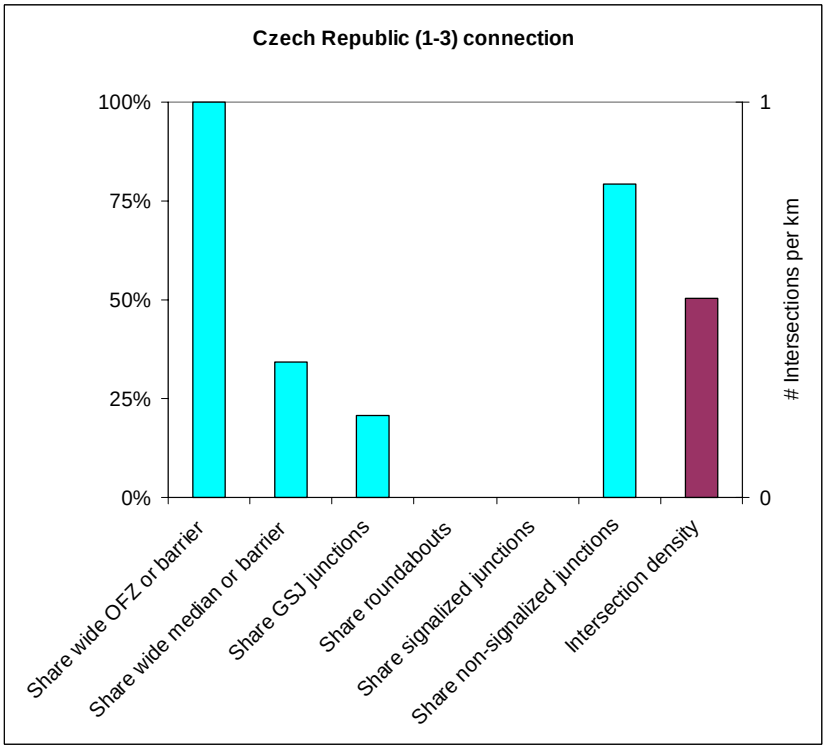


Figure 3.1. SPI results Czech Republic[5]

[5] OFZ = Obstacle-free zone, GSJ = Grade separated junction

The (1-3) connection has a wide obstacle-free zone or roadside barrier, but only a small part has a wide median or barrier. Furthermore, only 21% of the junctions is grade separated, the remaining share is at grade and non-signalised. An intersection density of 0.5 intersections per kilometre is average for this connection type.

The (4-5) connection has no wide obstacle-free zone or roadside barrier and no wide median or median barriers, as expected. There are only at grade and non-signalised junctions. The intersection density of 0.3 intersections per kilometre is low for this connection type.

3.7 Trauma management

Data received from the country (2005)

General data (2003)

Population, million	10.216 (2004)
Road length - total, km	55422
Road length - public, outside built-up areas, km	38727
Vehicle-kilometres travelled, million	45677

Data on Trauma management

(1) No of dispatching centres	14
(2) No of EMS stations (incl. Air Rescue Service)	191
Number of EMS staff in service (4a) No of physicians	558
(4b) No of paramedics	-
(4c) No of nurses	1150
(4d) No of medical technicians, incl. drivers	1983
(4f) Total	3691
Number of EMS transportation units in service: (7a) No of BLSU	251
(7b) No of MICU	365
(7d) No of helicopters/ planes	11
(7e) Total	627

(12) No of EMS calls annually	2466148
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	639959
(17) share of road accidents in the EMS rides	5.63% (2004)

(19) The demand for EMS response time, min	15 min
(20) Percentage of EMS responses meeting the demand	89.2%
(21) Average response time of EMS, min	Region Prague - 7.83 min, Region Brno - 8.5 min*
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	850
(22b) In trauma department of hospitals, incl. surgery departments of regular hospitals	9842
(22d) Total	10692
Comments	*Region Prague: 1.2 million inhabitants, Region Brno: 1.13 million inhabitants

SPI values estimated for Czech Republic

	Czech Rep.
(3a) EMS stations per 10000 citizens	0.19
(3b) EMS stations per 100 km of rural road length	0.49
(5a) Percentage of physicians out of EMS staff	15.1%
(5) Percentage of physicians + paramedics out of EMS staff	15.1%
(6) EMS medical staff per 10000 citizens	3.61
(8b) Percentage of MICU out of the total EMS units	58%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	100%
(9) EMS transportation units per 10000 citizens	0.61
(11) EMS transportation units per 100 km of road length	1.13
(19) The demand for EMS response time, min	15 min
(20) Percentage of EMS responses meeting the demand	89.2%
(21) Average response time of EMS, min	Region Prague - 7.83 min, Region Brno - 8.5 min

(14) Road accident emergency calls per 10000 citizens	Prague - 24, Brno - 115.8 CZ: n.a.
(15) Road accident emergency calls per million vehicle-km travelled	Prague - 0.4, Brno - 1.9 CZ: n.a.
(18) Road accident emergency rides per 10000 citizens	Prague - 30, Brno - 20.8 CZ: 35

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	100%
(25) Number of the total trauma care beds per 10000 citizens	10.47

4 Denmark (DK)

4.1 Alcohol & Drugs

Data received from the country

Regarding the questions about drug & alcohol the figures for the year 2005 were:

1. 53 killed in accidents where at least one driver of a vehicle where drivers license is required was impaired by alcohol. Information for earlier years are available in Denmark.
2. Concerning killed in accidents with drivers impaired by drugs there where none. Likely there should have been some, but drugs is seldom registered by the police because the test is very expensive.
3. The limit for alcohol is > 0.50‰ BAC.

Usability of the data for SPIs

For alcohol the data could be used to calculate the SPI values, for drugs they could not.

Quality of the data

No assessment of quality.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol 16.0%.

4.2 Speed

Background

The Danish Road Directorate of the Ministry of Transport and Energy makes permanent speed measurements on all types of Danish roads. Since 2002, a speed barometer is monthly updated for 7 types of roads. Complete reports about speed measurements for 1995-1998 and 1999-2002 were also published in 2000 and 2004 (Vejdirektoratet, 2004).

Data received from the country

Denmark delivered a complete questionnaire response and a database with speed data by individual roads for 2002 (2004 for motorways). They also gave the link to the last complete publication about the speed measurements in Denmark (Vejdirektoratet, 2004). Publications about speed measurements are only available in the Danish language.

Usability of the data for SPIs

Seven road types are covered by speed measurements for a total of 42 permanent measuring locations. The goal of these measurements is to follow the evolution of the speeds but not to have a set of locations that is representative for the whole country (The number of location is to low for that). Traffic counters are rather placed on highly trafficked roads.

For each measuring site, the data are detailed. The devices used are measurement loops (Golden River 660), allowing permanent monitoring of speed. Data can be split out by moment of the day, daytime versus night, days of the weeks and months of the

year. However, in the monthly speed barometer, only average speeds by one-month periods are included.

The loops allow a rough distinction between cars and heavy good vehicles based on vehicles length. From 0 to 5.8 m, vehicles are considered as cars and from 5.8 to 12.5 as trucks or coaches. If longer 'vehicles' are computed, it is considered that it is a group of following vehicles.

Traffic and weather conditions are taken into account: hour periods with unusual slow speed are removed from the indicators in order that they reflect road users' own speed-choice. A big effort was devoted to the creation of a method that makes it possible to sort out hour-periods when the road users' possibility of free speed-choice is strongly limited.

In conclusion, most requirements are fulfilled by Danish data to have good data by individual locations but the validity of the national scale indicators for comparison is questionable due to the small size and the lack of randomness of the sample of measuring locations.

The following table summarise the characteristics of the Danish speed data (2002).

All road types available	++
Regular assessment	++
Random and scientific sampling	
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	++
Data split out for different vehicle types	+
Traffic conditions taken into account	++
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

+ Criteria partially fulfilled ++ criteria fully fulfilled

Quality of the data

Data by individual road type provided by the national expert are not of use for us to compute SPIs because of the lack of information on how to aggregate them. The Data showed below are hence coming from the speed barometer published on the website of the Danish Road Directorate.

(See http://www.vejdirektoratet.dk/dokument.asp?page=document&objno=85599)

SPIs used by policy makers

Average speed is the only indicator reported in the speed barometer for sake of clarity and to allow a quick update of data.

The Road Directorate is part of the Danish ministry of Transport and Energy and aims to use the barometer figures for different purposes:

- Explanatory variable for research on accidents;
- Tool for the evaluation of campaigns;
- Evaluation of the effect of legislation changes (speed-limits, driving licence);
- Communication tool (to citizens, media, other authorities).

Illustration

The above table includes the average speeds of cars and light vans on 110km/h and 130 km/h speed limit motorways, as published in the Monthly speed barometer of the Danish road directorate. Missing data for 130 km/h motorways in 2003 are due to the fact that data were not available for at least 3 out of 5 measuring locations because of defective equipment of road works.

For the computation of average speeds, hours periods with slow driving (whether due to defective equipment or special traffic or weather conditions) are excluded.

	Motorways 110 km/h					Motorways 130 km/h				
Month	**2002**	**2003**	**2004**	**2005**	**2006**	**2002**	**2003**	**2004**	**2005**	**2006**
J	118.1	116.5	116.2	115.2	113.7	118.1	117.5	117.8	120	118.6
F	118.9	118.9	118.6	115.4	116.2	118.4	119.7	120.3	120	120.7
M	120.1	120.2	119.6	116.1	116.6	120.9	121.3	121.1	120.5	121.5
A	120.6	120.3	119.3	116.7	116.3	121.5	121.1	120.9	121.8	121.3
M	120.5	120.1	113.6	116.3	116.3	121.4	-	119.9	121.1	121
J	119.7	119.8	114.6	116.6	116.3	120.6	-	119.6	121.3	121.6
J	118.0	118.6	114.9	116.2	116.2	119.4	-	119.2	119.9	120.9
A	119.7	119.0	115.7	115.8	115.6	121	-	120.3	120.4	120.9
S	120.8	119.9	116.3	114.0	116.6	121.8	120.6	121.3	119.9	122.3
O	118.4	119.0	115.2	114.6	116.4	119.4	120.1	120.4	120.1	121.7
N	118.1	118.6	114.7	114.3	115.9	119.1	119.6	120	119.7	121.3
D	116.8	118.1	114.6	114.0	116.3	118.4	119.1	119.4	118.8	121.2

Source: Vejdirektoratet (2007)

References

Vejdirektoratet (2004). “Hastigheder 1999-2002”. Report 284, Copenhagen.

Vejdirektoratet (2007). Hastighedsbarometer of 12-01-2007.

4.3 Protective systems

Data received from the country

Filled questionnaire (01/2005)

Recent data from DFT web page (report in Danish)

Recent and time-series data together with methodological information (11/2006)

SPIs in use

Unknown.

Presence of protective systems in vehicles

No information on the presence of protective systems in vehicle available at country level.

Use of protective systems

Surveys for seat belts wearing for car drivers have been conducted since 1970 by DFT. Surveys for seat belts wearing for adult rear seat passengers have been conducted since 2001.

Denmark (DK)

SafetyNet D3.7b – Road Safety Performance Indicators: Country Profiles

The data on the development of following indicators are available: A, B. The use of protective systems in accidents has not been recorded. The following tables summarize information on proposed SPIs:

A: Daytime use of seat belts in light vehicles in front seats

Daytime use of seat belts in traffic								In accidents				By fatalities
Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
*82**	84/62	-	N	U,R,M	Y	Y	2003	N				Y

* if considered 0.9/0.1 proportion of cars/vans in terms of MVKMS in traffic (vans 62%)

B: Daytime use of seat belts in light vehicles in rear seats

Daytime use					In accidents			By fatalities
Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
64	N	U,R,M	Y	2003	N			Y

C: Daytime use of CRS in passenger cars

CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
NA								

D: Daytime use of seat belts on front seats of HGV and coaches	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets

Cyclists	Moped riders	Motorcyclists
N	Y	Y

F: Daytime use of safety helmets by cyclists	7% in 2003 national-wide value, disaggregated for gender and road type
G: Daytime use of safety helmets by moped riders	93% in 2003 national-wide value, disaggregated for gender and road type
H: Daytime use of safety helmets by motorcyclists	Not available

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	2	2				
Random sampling design of survey	Y	Y				
Precision requirements exist related to the sample size	Y	Y				
Observation procedure is clearly defined for different situations in traffic	Y	Y				
All daylight hours for all working days of the week are considered	Y*	Y*				
Data stored, reported and measurements documented	Y	Y				

*weekend days considered as well, showing same results as ordinary week days, slightly lower rates recorded in the afternoon compared to morning hours

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites						
Nr of sites per road types						
Sample size at sampling site						
Observed total						

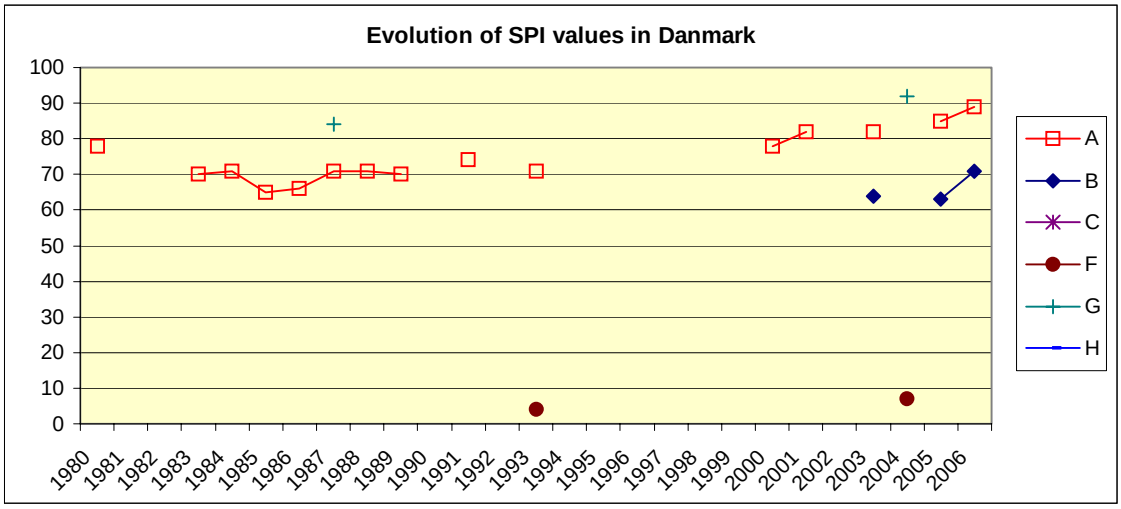
SPIs proceeding

It is possible to figure out the values of the following indicators:

A (aggregation cars+vans necessary)

B (no objections)

SPIs presentation



Comments: the value of SPI A only for car drivers, many changes in survey design over the time.

4.4 Daytime running lights

Data received from the country

Legislation

There is a law on obligatory DRL use: by all vehicle types, for the whole year, on all road types. Penalty for non-use is defined.

The DRL switched on automatically in most cars when starting the engine.

Other features

No information or incentive campaigns were carried out on the topic.

Surveys
Regular surveys on DRL use are not mandatory.

No monitoring surveys were carried out.

DRL usage rate is not known.

Data
In Denmark the automatic DRL use has been introduced long time ago. The rate of DRL users is almost 100%, and it will be retained on this level, because the usage is automatic (cannot be forgotten). Under such circumstances the surveys and enforcement are no more necessary.

Usability of the data for SPIs

Not applicable.

Quality of the data

Not applicable.

SPIs used by policy makers

Not in use.

4.5 Vehicles (passive safety)

Data received from the country

Data from 2003 giving year of first registration for cars and goods vehicles.

Usability of the data for SPIs

The data can only be used for the passenger car vehicle age SPI. If the other vehicle types were included, some analysis could be done on fleet composition and compatibility.

If the passenger car data could be broken into vehicle make and model then a crashworthiness SPI could be produced.

Quality of the data

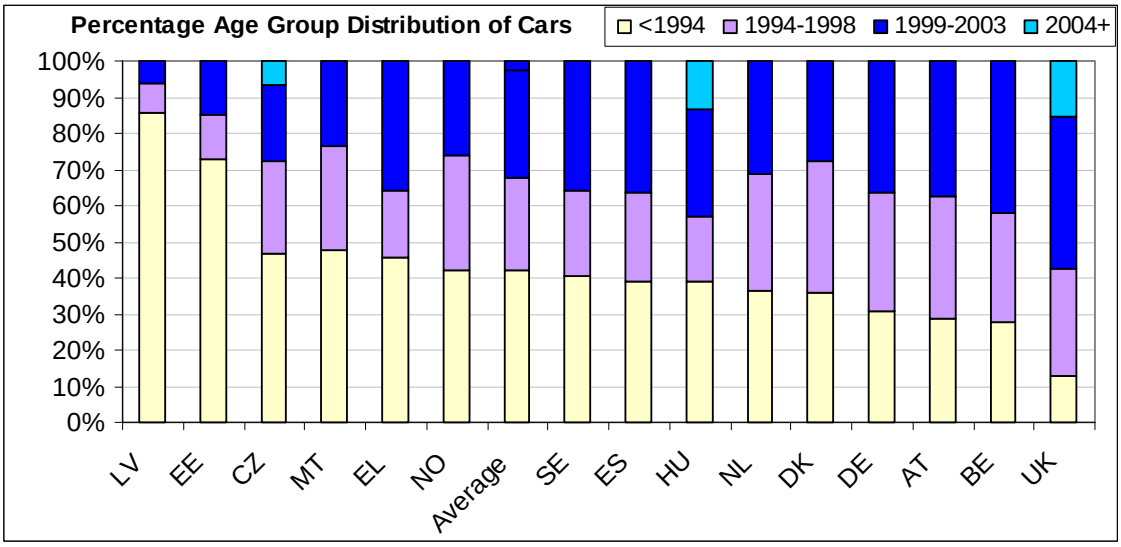
The quality of the data provided is good, it is unfortunately not complete enough for the analysis proposed here.

SPIs used by policy makers

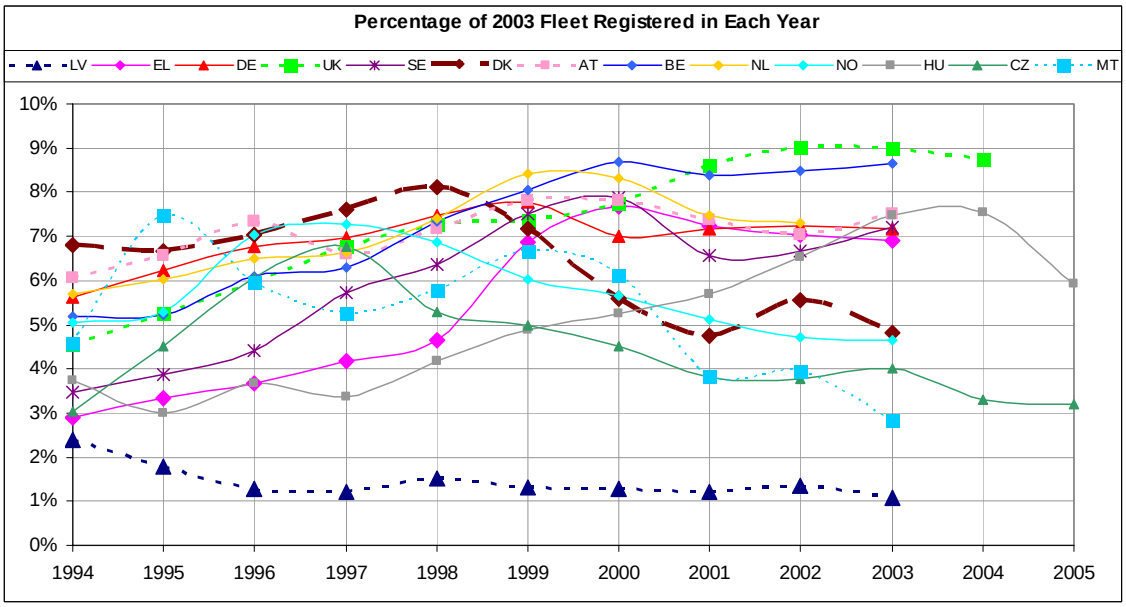
No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

Illustration

Denmark (DK) has one of the smallest passenger car fleets of the 15 countries analysed.



The above graph shows the percentage distribution of passenger car age in Denmark, compared with the other countries that provided data and against the average. Denmark has a very even distribution with a similar percentage of cars over 10 years old, from 1994-1998 and less than 5 years old. This raises compatibility issues, as collisions between very old poorly equipped vehicles and newer, heavier vehicles with a high level of equipment will pose a significant risk for the occupants of the older vehicle.



There is a fall in the number of vehicles registered in Denmark between 1998 and 2001 that are present in the 2003 fleet. It is likely this is also the result of fiscal changes relating to the duty on new cars, which made new car purchases less attractive to consumers.

4.6 Roads

Data received from the country

Incomplete data are received from a certain region in the country, with data from 2003. Incomplete means data on one or several SPIs is missing; there are no data on the SPIs 'presence of roadside barrier' and 'presence of wide obstacle-free zone. The data comprises several connection types.

Usability of the data for SPIs

The data can be used for the calculation of SPIs, except for the SPIs 'Roadside barrier' and 'obstacle-free zone'.

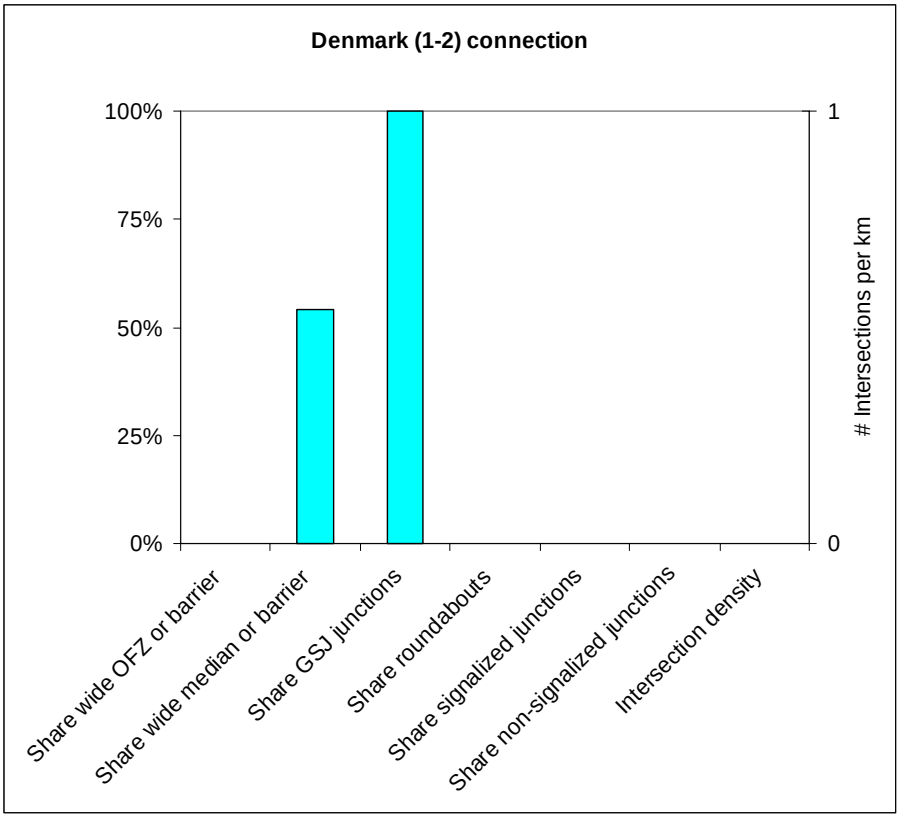
Quality of the data

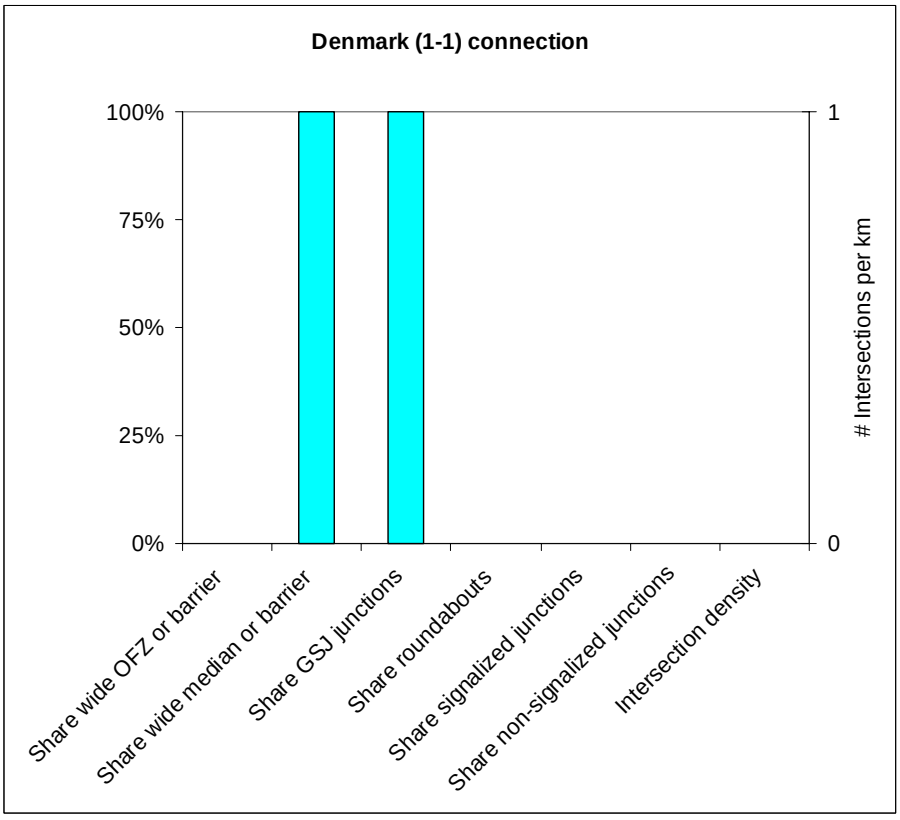
The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration





There are no data on a wide obstacle-free zone or roadside barrier on the (1-3) connection, but there is a wide median or barrier over the full length. Furthermore, all

junctions are grade separated. Both are expected on this connection type. There are no data on the intersection density.

The (1-2) connection has no wide obstacle-free zone or roadside barrier and only 54% has a wide median or a median barrier. This is low for this connection type. There are only grade-separated junctions; this does meet the expectations for a (1-2) connection type. There are no data on the intersection density.

4.7 Trauma management

Data received from the country (2003)

General data

Population, million	5.38
Road length - total, km	72074
Road length - public, outside built-up areas, km	n.a.
Vehicle-kilometres travelled, million	n.a.

Data on Trauma management

(1) No of dispatching centres	8
(2) No of EMS stations	140
Number of EMS staff in service: (4a) No of physicians	96
(4b) No of paramedics	12
(4c) No of nurses	30
(4d) No of medical technicians	1800
(4f) Total	1938
Number of EMS transportation units in service: (7a) No of BLSU	450
(7b) No of MICU	16
(7d) No of helicopters/ planes	3
(7e) Total	469

(12) No of EMS calls annually	143417
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	111231
(17) share of road accidents in the EMS rides	n.a.

(19) The demand for EMS response time, min	5-10 min*
(20) Percentage of EMS responses meeting the demand	100%
(21) Average response time of EMS, min	8.0 min**
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	n.a.
Comments	*varies in counties; ** outside Copenhagen; in: 3-4 min

SPI values estimated for Denmark

(3a) EMS stations per 10000 citizens	0.26
(3b) EMS stations per 100 km of rural road length	n.a.
(5a) Percentage of physicians out of EMS staff	5.0%
(5) Percentage of physicians + paramedics out of EMS staff	5.6%
(6) EMS medical staff per 10000 citizens	3.60
(8b) Percentage of MICU out of the total EMS units	3%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	100%
(9) EMS transportation units per 10000 citizens	0.87
(11) EMS transportation units per 100 km of road length	0.65
(19) The demand for EMS response time, min	5-10 min*
(20) Percentage of EMS responses meeting the demand	100%
(21) Average response time of EMS, min	8.0 min**
Comments	*varies in counties; ** outside Copenhagen; in: 3-4 min

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	n.a.

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	n.a.

5 Germany (DE)

5.1 Alcohol & Drugs

Data received from the country

5842 fatalities in total and 704 fatalities in “alkoholunfälle” (alcohol accidents). These are defined as “accidents in which at least one involved is under the influence of alcohol, the involved being all road users including pedestrians and bicycle riders. The BAC limit for “under the influence” is 0.3 g/l BAC in case of accident involvement.

Germany cannot deliver similar data for drugs, as the data are not very reliable, according to the questionnaire.

Usability of the data for SPIs

The data can be used to calculate the SPI for alcohol, but not for drugs. See above – data for drugs is not reliable.

Quality of the data

Quality seems good for alcohol, but the data contains also impaired pedestrians and bicycle rider, which is what we would like to have, but Germany is the only country to have this kind of data. Moreover, Germany has a lower alcohol limit, 0.3 g/l BAC for accident involvement than for general driving. The number of drivers involved in fatal accidents and tested for alcohol is not available.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 12.1%.

5.2 Speed

Background

Speed data on federal trunk roads (Bundesfernstraßen) are not available at the moment. But the Federal Highway Institute (BASt) is planning a net of speed measurement points on federal motorways with the aim of yearly speed statistics.

For other roads, authorities that finance the road (Baulastträger) are responsible for traffic data collection and analysis. However, the SafetyNet SPI team could find no data on speeds from federal states or communities.

The information on speeding is only available at police or local authorities that are responsible for speed enforcement.

Data received from the country

Due to the decentralisation (and thus the lack of uniformity) in the collection of speed data, it was not possible for the German expert to respond to the questionnaire. He delivered a one-page document explaining the German situation and inviting to contact directly Federal States or communities that are responsible for the collection of data.

Usability of German data for SPIs

At the moment, no national indicator is produced in Germany. There is no progress in the BASt project that can raise expectations of availability of a national SPI in the near future.

5.3 Protective systems

Data received from the country

Filled questionnaire (11/2004).

Information on data collected in road accident.

Recent and time-series data (10/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

No data available.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 1991 (1986 in West Germany) by BAST (). The data on the development of following indicators are available in annual basis: A (since 1991), B (since 1991), C (since 1991), D (since 2003), F (since 1999), H (since 1992). The following tables summarize information on proposed SPIs.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	96*	96	96	N	U,R,M	Y	Y	2005	N				N

* Estimated by SafetyNet – weighting coefficients 0.65/0.35 (driver/frontal passenger), **Clifford&Chance

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	89	N	U,R,M	Y	2005	N			N

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	97	-	-	0-5/ 99	6-12/ 96	S	1	U,R	2005

D: Daytime use of seat belts on front seats of HGV and coaches	51% national-wide, aggregated for all road types (weighting coefficient highways=0.395, rural roads=0.395, urban roads=0.21)
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	Y (<18 years old)	Y	Y

F: Daytime use of safety helmets by cyclists	6% in 2005 national-wide value, measured in urban areas
G: Daytime use of safety helmets by moped riders	
H: Daytime use of safety helmets by motorcyclists	98% in 2005 national-wide value, measured in urban areas only for all motorized two wheelers together

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1	1	1		1
Random sampling design of survey	Y	Y	Y	Y		Y
Precision requirements exist related to the sample size						
Observation procedure is clearly defined for different situations in traffic	Y	Y	Y	Y		Y
All daylight hours for all working days of the week are considered	Y*	Y*	Y*	Y*		Y*
Data stored, reported and measurements documented	Y	Y	Y	Y		Y

* weekend days included

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	91	91				
Nr of sites per road types	39/52/X	39/52/X				
Sample size at sampling site	<250	<250				
Observed total	18600+5975	4306	5918	13845l		4739

SPIs proceeding

It is possible to figure out the values of the following indicators:

A (aggregation necessary)

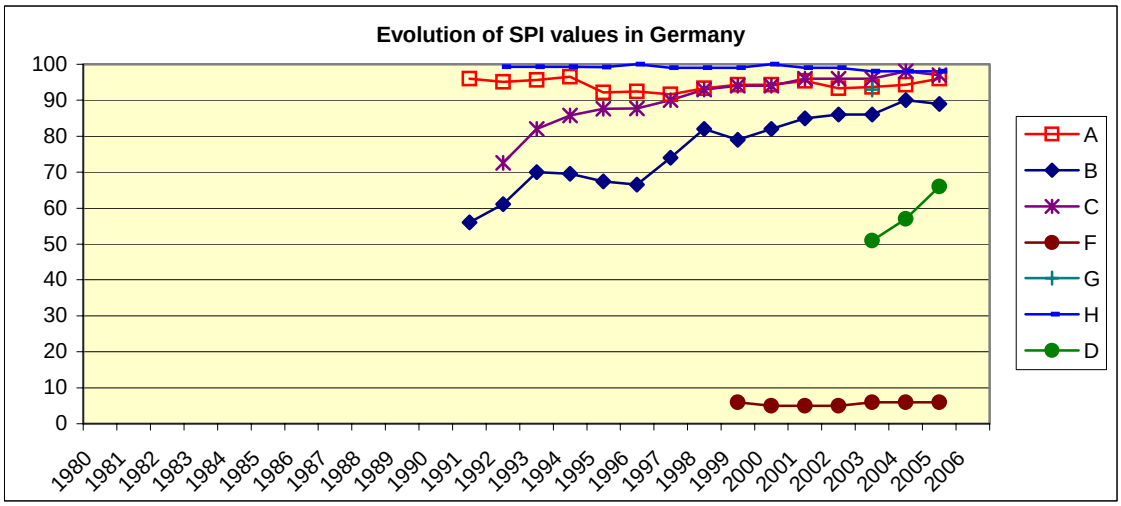
B (no objections)

C (aggregation for age group necessary)

D (not including bus drivers), F (no objections)

G (need to be disaggregated for moped and motorcyclists, not all road types considered)

SPIs presentation



Comments: Values for the years before 1991 aggregated (West + East) using IRTAD exposure figures. A aggregated (driver + front passenger), D does not include bus drivers, H includes both mopeds and motorcycles

The values for 2006 are usually available only in spring of the following year (BAST).

5.4 Daytime running lights

Data received from the country

Legislation
The use of dipped headlights during the day is mandatory for motorcycles at any time of year.

There is no rule for cars, but it is recommended by the Ministry of Transport.

Other features
There have been local campaigns, but no national campaigns have been carried out on DRL use.

Surveys
Regular surveys on DRL use are not mandatory.

There has been a survey recently (2006). The results have not been published yet.

DRL usage rate is not known.

Data
No data available.

Usability of the data for SPIs

Not applicable.

Quality of the data

Not applicable.

SPIs used by policy makers

Not in use.

5.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year manufacture of all vehicle types from 2003. The data are very detailed and are broken down into different model variants, which would enable further compatibility analysis such as looking at power and weight of vehicles.

Usability of the data for SPIs

The data can be used to calculate the vehicle crashworthiness and vehicle age SPI and the fleet composition and compatibility SPI

Quality of the data

The German data are of very good quality and no adjustments were necessary.

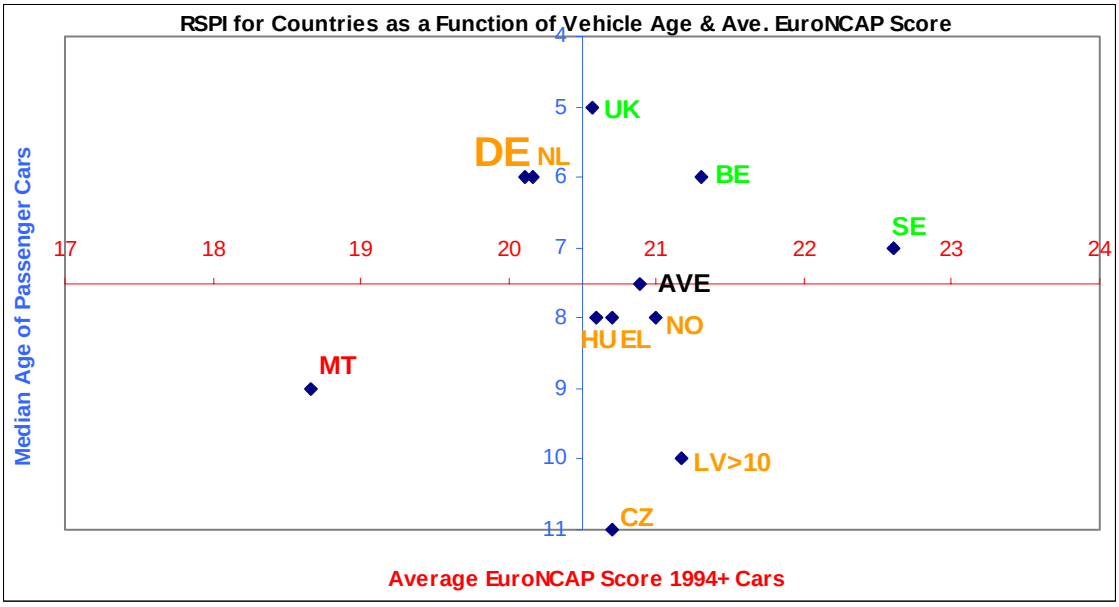
SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

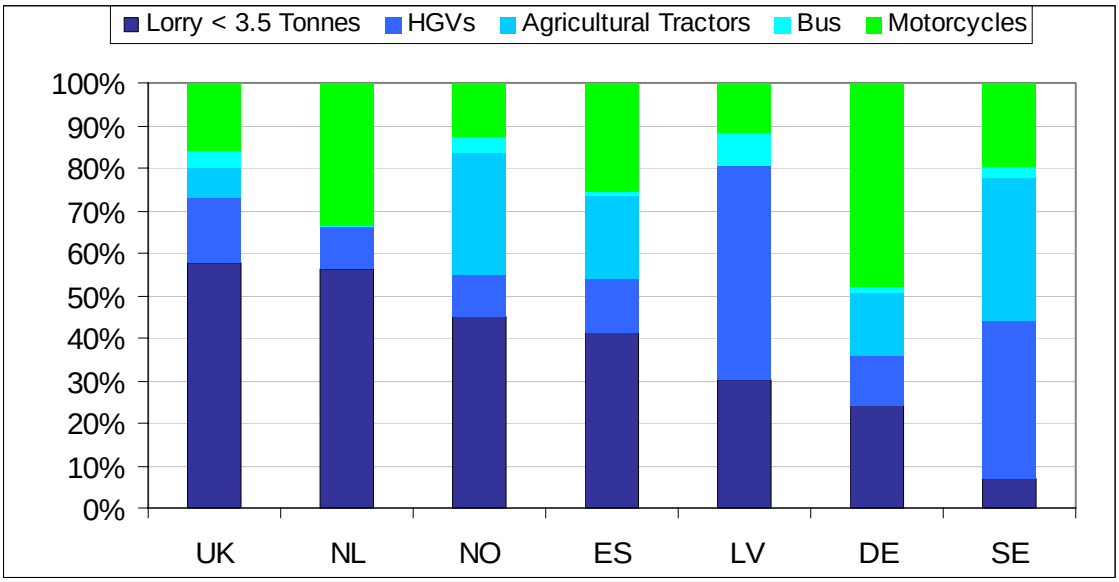
Illustration

Germany (DE) has by far the largest passenger car fleet of the 15 countries analysed making up a third of all the total vehicles analysed and more than a fifth of all the vehicles in the EU.

Interestingly this country, which is generally perceived across Europe to have a very new vehicle fleet actually has a very even distribution of vehicle age throughout the fleet.



Germany performs below average when looking at crashworthiness but well above average when looking at vehicle age with the median age at 6 years.



Passenger cars and taxis make up 83% of the vehicle fleet in Germany and of the rest, the chart above shows that Germany has a high proportion of motorcycles – the same percentage as that of large vehicles such as buses and HGVs. This could pose significant compatibility problems.

5.6 Roads

Data received from the country

Data were received, but these could not be used for calculating our SPIs.

Usability of the data for SPIs

The data are delivered in a completely different format, through which it is not possible to calculate any SPI for Germany.

Quality of the data

The data are delivered in a completely different format, through which it is not possible to calculate any SPI for Germany.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

5.7 Trauma management

Data received from the country (2003)

General data

Population, million	82.54
Road length - total, km	626981
Road length - public, outside built-up areas, km*	231500
Vehicle-kilometres travelled, million	682215.0
Comments	*classified roads including motorways, without small rural roads

Data on Trauma management

(1) No of dispatching centres	270
(2) No of EMS stations	1832
Number of EMS staff in service: (4a) No of physicians	17000
(4b) No of paramedics	22000
(4c) No of nurses*	0
(4d) No of medical technicians	8800
(4f) Total	53000
Number of EMS transportation units in service: (7a) No of BLSU	2673
(7b) No of MICU	3709
(7d) No of helicopters/ planes	91
(7e) Total	7600
Comments	*In general, nurses are not members of the EMS staff. EMS staff members are: medical technicians, paramedics, and physicians. In individual cases a nurse can work as a medical technician or a paramedic in an EMS-team. In these cases the nurse is counted among the medical technicians/ paramedics.

(12) No of EMS calls annually	n.a.
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	10300000
(17) share of road accidents in the EMS rides	2.7%

(19) The demand for EMS response time, min	15 min*
(20) Percentage of EMS responses meeting the demand	89.1%
(21) Average response time of EMS, min	7.8 min**
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres***	n.a.
(22b) In trauma department of hospitals	134815
(22d) Total	552680
Comments	* and to be met in 95% of all responses (general); differ in federal states; ** there are values for rural/ urban areas ***The term “certified trauma centres” is not common in Germany. Actually almost all big hospitals (e.g. hospitals of universities, hospitals in big cities) are centres, where *any* patient can be treated properly, not limited to injured patients. The number of these hospitals is not available.

SPI values estimated for Germany

(3a) EMS stations per 10000 citizens	0.22
(3b) EMS stations per 100 km of rural road length*	0.79
(5a) Percentage of physicians out of EMS staff	32.1%
(5) Percentage of physicians + paramedics out of EMS staff	73.6%
(6) EMS medical staff per 10000 citizens	6.42
(8b) Percentage of MICU out of the total EMS units	49%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	85%
(9) EMS transportation units per 10000 citizens	0.92
(11) EMS transportation units per 100 km of road length	1.21
(19) The demand for EMS response time, min	15 min
(20) Percentage of EMS responses meeting the demand	89.1%
(21) Average response time of EMS, min	7.8 min
Comments	*classified roads including motorways, without small rural roads

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	33.7

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	24.4%
(25) Number of the total trauma care beds per 10000 citizens	67

6 Estonia (EE)

6.1 Alcohol & Drugs

Data received from the country

Data apply only to fatalities in accidents with impaired drivers, rather than impaired road users. Impaired = BAC 0.2‰ or above.

Year	2003	2004	2005
Number of road accidents with fatalities	145	154	149
Number of road accident fatalities in them	164	170	168
Number of road accidents with fatalities			
involved by driver impaired by alcohol	34	30	32
Number of road accident fatalities in them	40	36	35

Definition: the legal alcohol limit for all drivers is 1 mg per litre of air or 0.2 part per thousand for blood concentration (BAC).

Usability of the data for SPIs

The data for alcohol can be used to calculate the SPI values.

Quality of the data

For alcohol the data quality seems good, but the legal limit is 0.2 BAC, which is low compared to most countries. There are no data available for drugs.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 23.5%. The relatively high figure may in part be due to a low legal limit, but may also indicate that the data are more complete for Estonia than for most other countries.

6.2 Speed

Background

The Road Administration (Maanteeamet) started a road user behaviour-monitoring programme in 2001. Since, the survey has been conducted annually with similar methodologies and samples. The latest published results are from 2004.

A part of the behaviour monitoring programme was devoted to field surveys, where speeding is one of the chosen measures. The aims of the system are (Antov and Rõivas, 2002):

- Get regular, relevant and comparable data of speeding behaviour on Estonian roads
- Monitoring the effects of seasonal speed limits on speeding and safety.
- Analyse the results of higher speed limits on road sections where the road conditions are following the technical demands
- Give recommendations for the ongoing or next season on the basis of speed behaviour and safety development.
- Developing the technical equipment and data processing opportunities.

Data received from the country

Estonia delivered a complete questionnaire response but no data.

Usability of data for SPIs

In 2004, a total of 68070 vehicles were surveyed on different types of rural roads. There is no motorway in Estonia. For urban roads, no systematic monitoring programme is implemented.

The locations of the measuring points are based on the total traffic expenditure in Estonia. Several (up to 6) measuring points are chosen on each surveyed main road but there are only 23 roads that are surveyed in total.

Measurements are carried out with automatic devices (mainly loops but also tubes or radars) during all periods of the year, but a distinction is made between two periods:

- Summer period with raised speed limits (normally between May and October)
- Winter period with dominating bad driving conditions (long darkness period of the day and poor visibility often, because of rain or snow)

The methodology allows splitting data by day, month and daytime versus night. However, no special attention is allocated to traffic conditions (rush hours). Based on vehicle length, a distinction between cars and heavy goods vehicles is possible.

The Estonian expert reported that average, median and percentage of vehicles 10 and 20 km/h over the speed limit are all reported. However, in the 2004 report of the road user behaviour-monitoring programme, only the percentage of vehicles over the limit for 90 and 110 km/h roads is displayed.

There is potential to produce valid SPIs for rural roads in Estonia. However, the network of measuring locations should be expanded and be made more representative. The potentiality of the devices in terms of splitting up in time should be exploited (not keep only one aggregated indicator for several months) and a special attention must be allocated to not aggregate over periods with different speed limits. For the purpose of international comparisons, indicators for the summer period are the only usable ones.

Interestingly, Estonia already makes comparisons of its indicators with those from Finland in its reports.

The following table summarise the characteristics of the Estonian speed data (2004).

All road types available	
Regular assessment	++
Random and scientific sampling	
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	++
Data split out for different vehicle types	+
Traffic conditions taken into account	
Measurements without visible police presence	++
Error check	+
National scale indicators reported	++

+ Criteria partially fulfilled ++ criteria fully fulfilled

Quality of the data collected by SafetyNet

The only data we have collected are coming from the report of the Road User Behaviour Monitoring 2004. Only two indicators about offenders during the winter period are reported.

SPIs used by policy makers

Estonian Road Administration (ERA) has set up targets for improvement of safety on roads but the only quantified target is in terms of fatalities (a decrease by half between 2000 and 2015). Speed is not mentioned as one of the 6 more main measures for road safety (Pedestrian and bicyclist safety, road safety of national road network, children and elderly road users safety, drinking and driving, driving education and enforcement, road safety at poor driving conditions).

So far, the main interest of speed indicators is to investigate the impact of raised speed limits on safety.

Illustration

The following table reports the percentage of drivers exceeding the legal speed during September, October and November 2004. It should be noted that in this period of the year, the weather conditions are likely to greatly influence speeds.

	2003	2004
Percentage over the limit on 90 km/h roads	20.1	24.6
Percentage over the limit on 110 km/h roads	3.6	2.8

Source: Road User Behaviour Monitoring 2004, Inseneribüroo Stratum 2004

References

Antov, D., Rõivas, T. (2002). “Speed behaviour monitoring in Estonia”. ICTCT workshop. Brno.

Inseneribüroo Stratum (2004). “Road user behaviour monitoring 2004”. Tallinn.

6.3 Protective systems

Data received from the country

Filled questionnaire (10/2004)

Recent and time-series data together with methodological information (10/2006)

SPIs in use

Unknown.

Presence of protective systems in vehicles

No data available on the presence of protective systems in vehicles.

Use of protective systems

The data on the development of following indicators are available: A, B, C. The surveys are performed by Stratum Ltd.. The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs:

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	74			Y	U,R	Y	Y	2005	Y				Y

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	30	Y	U,R	Y	2005	Y			Y

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	48				0-12	S	1	U,R	2005

D: Daytime use of seat belts on front seats of HGV and coaches	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	NA
G: Daytime use of safety helmets by moped riders	NA
H: Daytime use of safety helmets by motorcyclists	NA

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1	1			
Random sampling design of survey	N	N	N			
Precision requirements exist related to the sample size	Y	Y	Y			
Observation procedure is clearly defined for different situations in traffic	Y	Y	Y			
All daylight hours for all working days of the week are considered	Y	Y	Y			
Data stored, reported and measurements documented	Y	Y	Y			

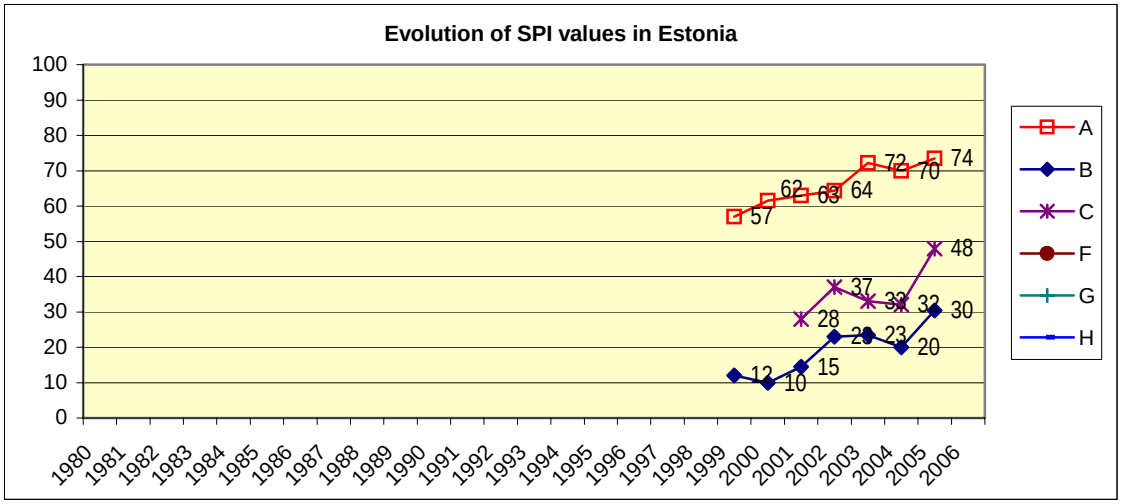
SPIs proceeding

It is possible to figure out the values of the following indicators:

A,B,C (no objections)

For all available indicators, it can be recommended to reconsider the design of the survey.

SPIs presentation



6.4 Daytime running lights

Data received from the country

Legislation

There is a regulation on obligatory use of DRL: for the whole year, all vehicle types, on all road types.

The DRL switched on automatically in most cars when starting the engine.

Penalty and notice for non-use are defined.

Other features
No information/ incentive campaigns on the topic take place.

Surveys
Regular DRL surveys are recommended.

Annual road traffic behaviour monitoring, including DRL surveys, is performed by Road administration since 2001.

The surveys are based on video recording of traffic flows, with a further manual counting of the vehicles.

Data
For the year 2004:

	DRL use (%)
motorway	99.31
rural	99.57
urban	98.96
DRL roads (total)	99.28

Usability of the data for SPIs

Total DRL usage rate and the rates according to road types are estimated (see above).

Rates according to vehicle types are probably available but were not provided.

Quality of the data

The estimation method and data quality seem satisfactory. No further data adjustment is required.

SPIs used by policy makers

DRL usage rates are probably in use as a systematic monitoring is performed.

6.5 Vehicles (passive safety)

Data received from the country

Data from 2003 with make and year of first registration for passenger cars and some other vehicles types.

Usability of the data for SPIs

The data can be used to calculate the vehicle age SPI and could be used for vehicle crashworthiness if it was broken down into specific models.

For accurate assessment of fleet composition further vehicle types need to be included.

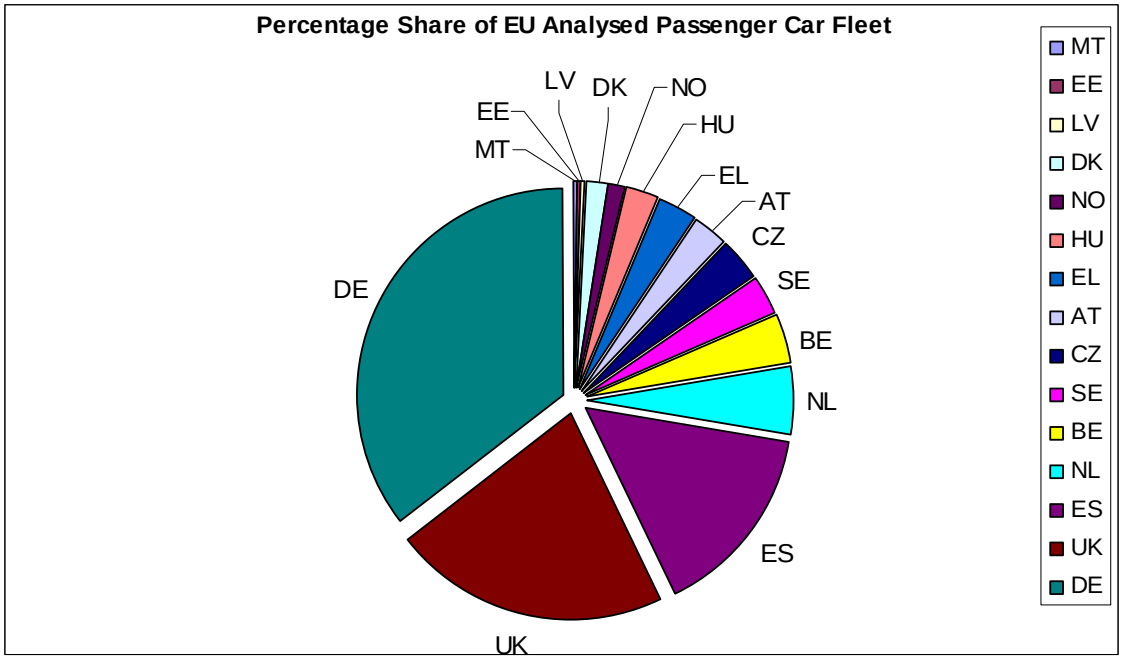
Quality of the data

The quality of the data provided is good and no adjustments were necessary.

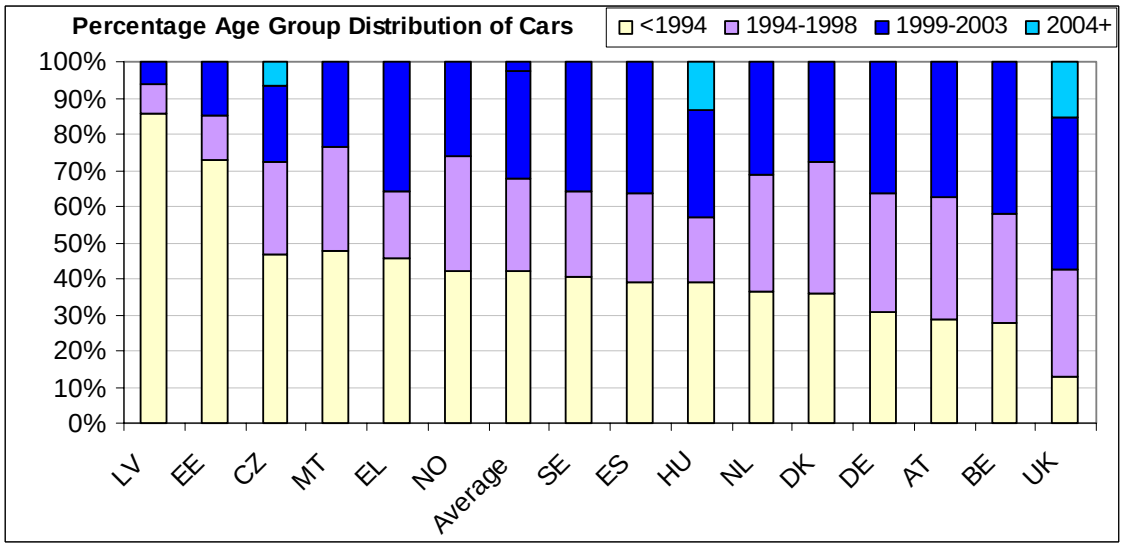
SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

Illustration



Estonia (EE) has the 2nd smallest passenger car fleet of the 15 countries analysed.



The above graph shows the percentage distribution of passenger car age. Estonia has a high percentage of cars older than 10 years – well below average with less than 15 percent of cars newer than 5 years.

6.6 Roads

Data received from the country

Complete data are received, with data from 2003. However, only for one route and it is not indicated what kind of connection type this route is. Therefore it is not possible to compare the SPIs of Estonia to other countries.

Usability of the data for SPIs

The data can be used for the calculation of SPIs, but data from only one route gives probably not an accurate image of the SPIs in Estonia or even a certain part of the country.

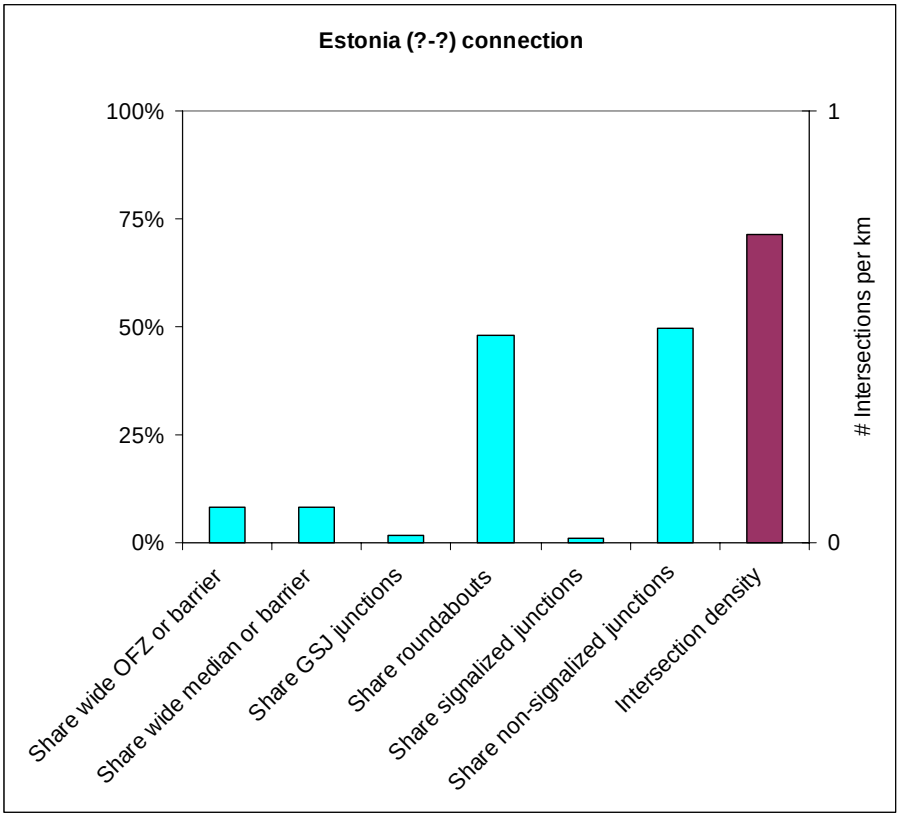
Quality of the data

The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration



As it is not indicated what connection type this is, it is not possible to draw any conclusions. On the basis of the outcomes of the SPIs; a connection with hardly median or roadside barriers or an obstacle-free zone, a high share of roundabouts and non-signalised junctions and an intersection density of 0.71 intersections per kilometre, it might be concluded that this is a connection type connecting two minor cities.

6.7 Trauma management

Data received from the country (2003)

General data

Population, million	1.36
Road length - total, km	n.a.
Road length - public, outside built-up areas, km	55952
Vehicle-kilometres travelled, million	n.a.

Data on Trauma management

(1) No of dispatching centres	4
(2) No of EMS stations	90
Number of EMS staff in service: (4a) No of physicians	235
(4b) No of paramedics	n.a.
(4c) No of nurses	513
(4d) No of medical technicians	n.a.
(4f) Total	750*
Number of EMS transportation units in service: (7a) No of BLSU	0
(7b) No of MICU	23
(7d) No of helicopters/ planes	2
(7e) Total	92**

(12) No of EMS calls annually	269008
(13) share of road accidents in EMS calls	1.1%
(16) No of EMS rides annually	n.a.
(17) share of road accidents in the EMS rides	n.a.

(19) The demand for EMS response time, min	30 min***
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	10.2 min
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	n.a.
Comments	* at least ** Incl. 67 nurse units *** in rural areas, 7 min in urban area (prio D)

SPI values estimated for Estonia

(3a) EMS stations per 10000 citizens	0.66
(3b) EMS stations per 100 km of rural road length	0.16
(5a) Percentage of physicians out of EMS staff	31%
(5) Percentage of physicians + paramedics out of EMS staff	31%*
(6) EMS medical staff per 10000 citizens	5.5*
(8b) Percentage of MICU out of the total EMS units	25%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	27%
(9) EMS transportation units per 10000 citizens	0.68
(11) EMS transportation units per 100 km of road length	n.a.
(19) The demand for EMS response time, min	30 min**
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	10.2 min
Comments	* at least ** in rural areas, 7 min in urban area (prio D)

(14) Road accident emergency calls per 10000 citizens	23
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	n.a.

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	n.a.

7 Greece (EL)

7.1 Alcohol & Drugs

Data received from the country

Greece has provided individual data from 1995-2003, i.e. more than 40,000 records for drivers involved in “injury road accident”. Data concerning injury severity is stated, but only for the driver, meaning that it is impossible to distinguish between fatal accidents and personal injury accidents. After a new request, the following information was received:

1. Number of road accident fatalities in Greece for 2004: 1670.
2. Number of road accident fatalities in Greece in accidents where at least one driver was impaired by alcohol (above the BAC limit) in 2004: 157.
3. Road accident fatalities per alcohol test results for 2004 in Greece are shown in the following Table. Please note that these data are not reliable, as not all alcohol test results are recorded by the Police. Furthermore, please note that the BAC limit for drivers in Greece is 0.5 gr/lt. Thus, the figures in bold font refer to road accident fatalities in accidents, where at least one of the driver involved was driving under the influence of alcohol (above the BAC limit).

Alcohol test results; road accident fatalities

Unknown	6
Negative	41
0.1-0.5 gr/lt	5
0.5-0.8 gr/lt	44
0.8-1.0 gr/lt	21
1.0-1.5 gr/lt	38
>1.5 gr/lt	56
No answer	10
Total	**221**

Usability of the data for SPIs

For alcohol, the available data are suitable for the calculation of SPIs. Data for drugs are not available.

Quality of the data

These data are not reliable, as not all alcohol test results are recorded by the Police.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 9.5%.

7.2 Speed

Greece delivered a file with a list of road sections but no value of indicator attached to them. No speed-monitoring programme aiming at producing national indicators exists in Greece.

7.3 Protective systems

Data received from the country

Filled questionnaire (03/2005).

SPIs in use

Unknown.

Presence of protective systems in vehicles

No data available at national level.

Use of protective systems

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	NA								Y	41.1	7.3	2001	N

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	NA					Y	12	2001	N

Data for seat belt wearing unreliable according to questionnaire respondent.

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	NA								

D: Daytime use of seat belts on front seats of HGV and coaches	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	Not available
G: Daytime use of safety helmets by moped riders	Not available
H: Daytime use of safety helmets by motorcyclists	Not available

SPIs proceeding

It is impossible to build any of proposed indicators at the moment due to lack of data.

7.4 Daytime running lights

Data received from the country

Legislation

There is no law on obligatory DRL use for cars. DRL is obligatory for motorcycles and mopeds, all year and on all road types. There are plans for a DRL law in Winter.

Other features

No information or incentive campaigns were carried out on the topic.

Surveys

Regular surveys on DRL use are not mandatory.

No monitoring surveys were carried out.

DRL usage rate is not known.

Data

Not available.

Usability of the data for SPIs

Not applicable.

Quality of the data

Not applicable.

SPIs used by policy makers

Not in use.

7.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year manufacture of all vehicle types from 2003. Database also provided detailing vehicles from before 1994.

Usability of the data for SPIs

The data can be used to calculate the vehicle crashworthiness and vehicle age SPI and the fleet composition and compatibility SPI although not all vehicle types are present.

Quality of the data

The quality of the data is good although there is no distinction between goods vehicles less than 3.5 tonnes and HGVs which are significantly different vehicles.

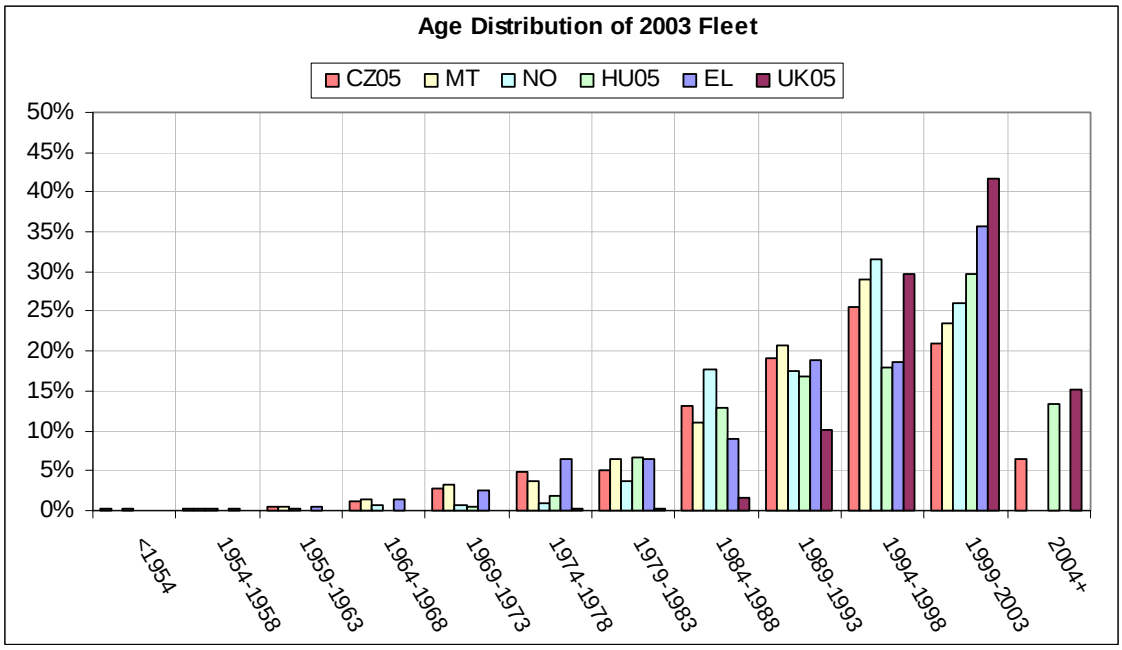
No adjustments were necessary to calculate the SPIs.

SPIs used by policy makers

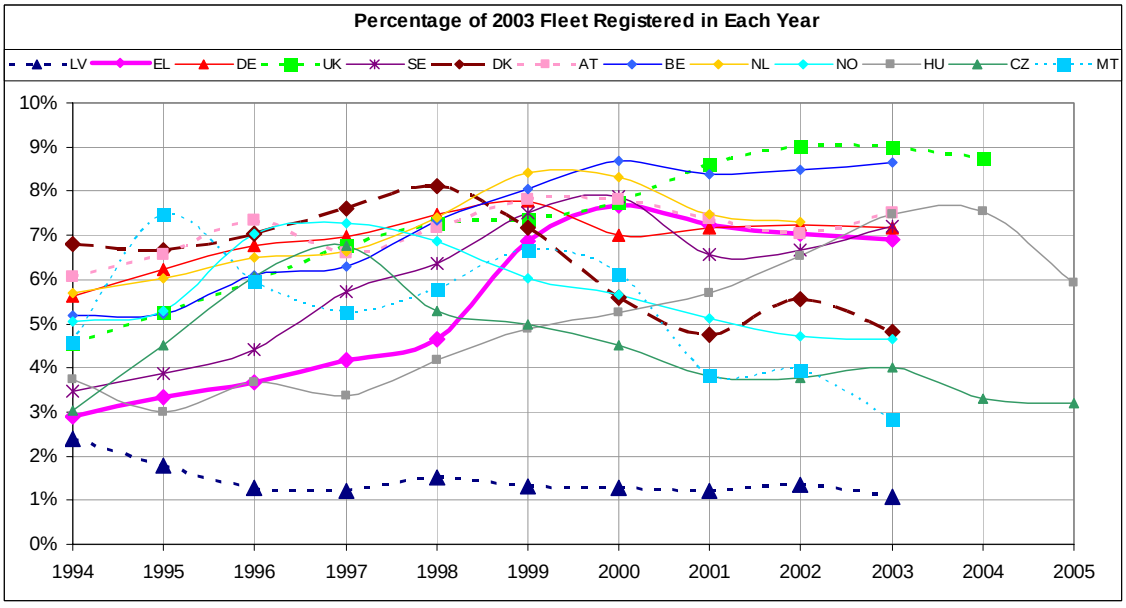
No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

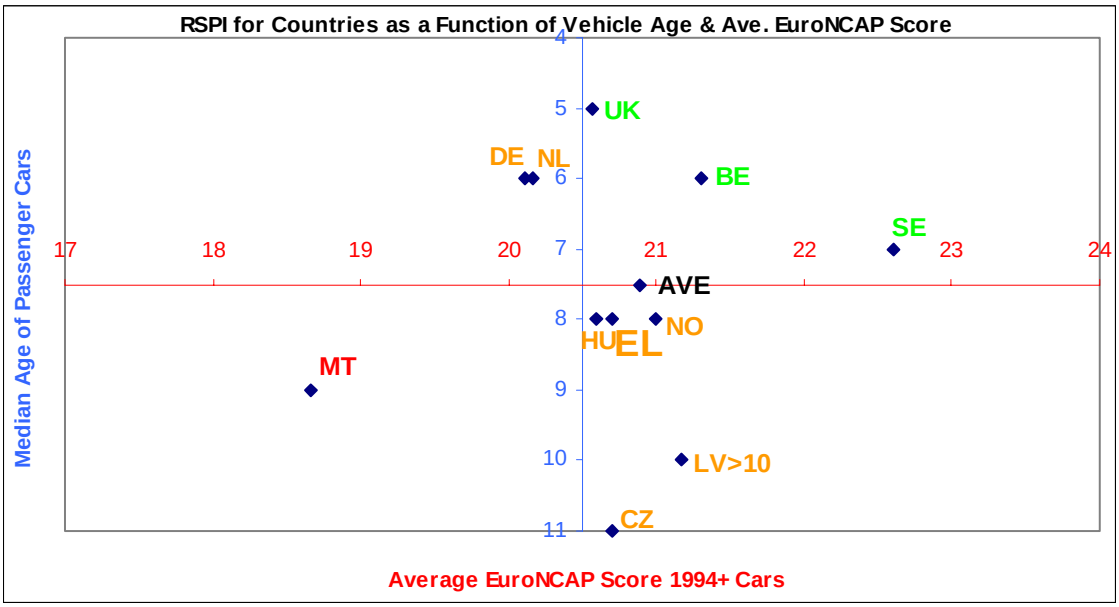
Illustration

Greece (EL) has one of the smaller passenger car fleets of the 15 countries analysed.

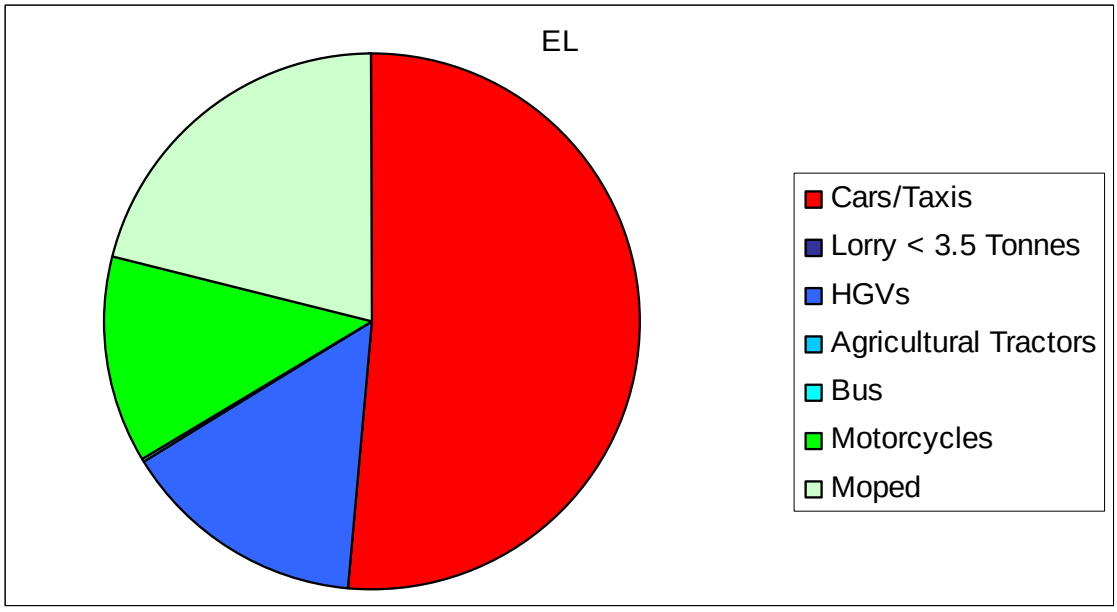


The above graph shows the percentage distribution of passenger car age in Greece back to 1954. Greece has a similar percentage of cars over 10 years and those under 5 years old with few from the intervening years. This is reinforced in the below graph showing a sudden rise in the percentage of cars registered in Greece in 1999 present in the 2003 fleet. It is likely that this can be attributed to a tax incentive introduced to encourage the replacement of older vehicles.





Greece performs slightly below average in both the vehicle age and the vehicle crashworthiness SPIs.



Greece has a high risk of compatibility problems as only just over half of its vehicle fleet is made up of passenger cars and taxis, while a third is made up of two-wheeled motor vehicles. The lack of occupant protection offered by these vehicles makes users vulnerable to injury in an accident. Greece has the highest number of mopeds of the countries that provided data, although in many countries, mopeds are not registered so totals are unknown.

7.6 Roads

Data received from the country

Complete data are received from a certain region in the country, with data from 2004. Complete means data on all SPIs. The data comprises several connection types, but only major roads.

Usability of the data for SPIs

The data can be used for the calculation of SPIs.

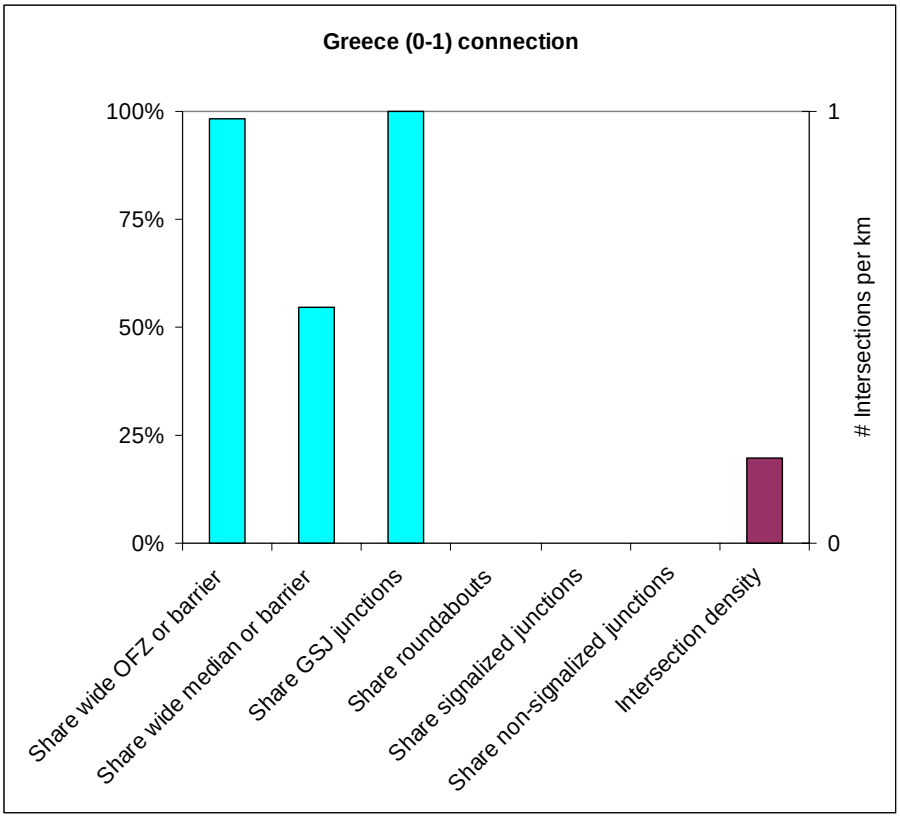
Quality of the data

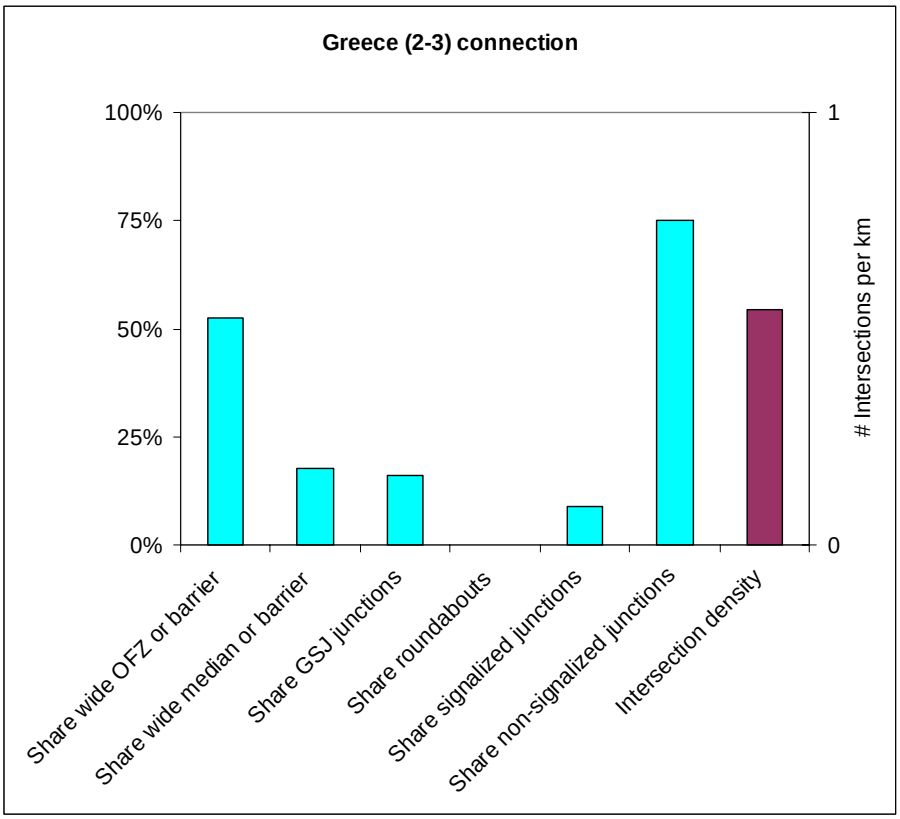
The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration





The (0-1) connection has a wide obstacle-free zone or roadside barrier, but only 54% has a wide median or barrier, this is low. Furthermore, all junctions are grade separated. The intersection density of 0.2 intersections per kilometre is low, as expected for this connection type.

The (2-3) connection has a share of 52% for wide obstacle-free zone or roadside barrier and wide median or median barriers; this is quite high for this connection type. There are mainly non-signalised junctions, only a small part is grade-separated, this is fairly low. The intersection density of 0.54 intersections per kilometre is not very high for this connection type.

7.7 Trauma management

Data received from the country (2003)

General data

Population, million	11.08
Road length - total, km	n.a.
Road length - public, outside built-up areas, km	39192
Vehicle-kilometres travelled, million	69700

Data on Trauma management

(1) No of dispatching centres	10
(2) No of EMS stations	12
Number of EMS staff in service: (4a) No of physicians	150
(4b) No of paramedics	2000
(4c) No of nurses	0
(4d) No of medical technicians	0
(4f) Total	2150
Number of EMS transportation units in service: (7a) No of BLSU	735
(7b) No of MICU	20
(7d) No of helicopters/ planes	3
(7e) Total	765

(12) No of EMS calls annually	2500000
(13) share of road accidents in EMS calls	3%
(16) No of EMS rides annually	365000
(17) share of road accidents in the EMS rides	20.0%

(19) The demand for EMS response time, min	n.a.
(20) Percentage of EMS responses meeting the demand	n.a. (no demand)
(21) Average response time of EMS, min	15 min
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	0
(22b) In trauma department of hospitals	0
(22d) Total	51500
Comments	--

SPI values estimated for Greece

(3a) EMS stations per 10000 citizens	0.011
(3b) EMS stations per 100 km of rural road length	0.031
(5a) Percentage of physicians out of EMS staff	7.0%
(5) Percentage of physicians + paramedics out of EMS staff	n.a.*
(6) EMS medical staff per 10000 citizens	1.94
(8b) Percentage of MICU out of the total EMS units	3%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	99%
(9) EMS transportation units per 10000 citizens	0.69
(11) EMS transportation units per 100 km of road length	n.a.
(19) The demand for EMS response time, min	n.a.
(20) Percentage of EMS responses meeting the demand	n.a. (no demand)
(21) Average response time of EMS, min	15 min
	*Comparing with other countries, 100% of physicians and paramedics out of the total EMS staff, does not seem reliable.

(14) Road accident emergency calls per 10000 citizens	67.7
(15) Road accident emergency calls per million vehicle-km travelled	1.1
(18) Road accident emergency rides per 10000 citizens	65.9

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	0%
(25) Number of the total trauma care beds per 10000 citizens	46.5

8 Spain (ES)

8.1 Alcohol & Drugs

Data received from the country

Year: 2004.

Drivers tested by medical doctors: 1349. Of these, 398 (29.5%) tested positive for alcohol. This figure applies to killed drivers rather than to all fatalities. Number of fatalities killed in accidents involving drivers impaired by alcohol or drugs is not available for Spain. The total number of fatalities was 4741 in 2004.

1. Number of fatalities in Spain. 4741 (Year 2004); 4442 (Year 2005). Figures within 30 days.
2. Number of road accident fatalities for which at least one driver involved was impaired by alcohol. 101 (Year 2004), 123 (Year 2005). Figures within 24 hours. Note: Data from road accident database. Data collected by the police at the spot of the accident. It is understood that as they are breath tests, the information refers to accidents where drivers have not died and are not very seriously injured. Remark: There is no link between Police and Health data.
3. Number of road accident fatalities for which at least one driver involved was impaired by drugs other than alcohol. 7 (Year 2004), 7 (Year 2005). Figures within 24 hours. Note: Data from road accident database. Data collected by the police at the spot of the accident. Remark: There is no link between Police and Health data.
4. Alcohol impaired drivers, positive: >= 0.5 g/l. In the case of professional and learning drivers >=0.3 g/l.

Usability of the data for SPIs

The data can partly be used for the calculation of SPIs for alcohol.

Quality of the data

SPI for alcohol is percentage of killed drivers impaired by alcohol rather than percentage of all fatalities killed in accidents involving drivers impaired by alcohol. This may produce a bias towards a higher figure. The number or percentage of fatalities killed in accidents involving drivers impaired by alcohol is not available.

SPIs used by policy makers

Alcohol testing as a result of an accident, an offence or for sampling comes from controls made by the traffic police on the roads. This information is used in the scorecard and as an activity indicator in the Strategic Road Safety Plan.

Illustration

SPI Alcohol: 29.5% of killed drivers positive for alcohol.

8.2 Speed

Background

Depending on the ownership of the road, the level of speed monitoring is different. Four classes of road are defined: State Road Network (Red de Carreteras del Estado, RCE), roads owned by autonomous communities, roads owned by provincial governments and other roads. Since 1960, the State Road Network is being measured every year. Results are published yearly on what is called the Traffic Map. As from 1984 and after Autonomous Communities were set up, the Road General Directorate, in order to

obtain the total figure of traffic flow, works together with the Autonomous Communities when carrying out and publishing the main data with respect to the Traffic data registers plans. It works in the same way with Provincial Governments and the Isles Governments.

Data received from the country

Spain provided a complete questionnaire response as well as a massive file with measures of annual average travel speed for 3837 road segments. For all the road segments, information about the corresponding SafetyNet road class was provided but no aggregated indicator by road type was present. No dataset was delivered about spot speed measurements that are nonetheless conducted in Spain.

Usability of Spanish data for SPIs

Speed is monitored on all the states roads in Spain. These roads represent less then five percent of the outside built-up areas network in terms of length but 50% in terms of traffic flow. Speed monitoring is also carried out by autonomous communities and provincial governments. So the entire network of roads with a high traffic flow is covered by traffic counters. The Spanish Road General Directorate works on the centralisation of the information coming from the different state levels. Reports are published annually. The traffic counters measure spot speed and allow a disaggregation by periods of 1 hour. Congestion is taken into account since 2006. With the exception of the percentage of offenders, all other indicators suggested by the SafetyNet team are computed in Spain. However, it is unclear how data are aggregated from the road section to the national level.

The most problematic thing order to develop SPIs for Spain is the way measuring locations are selected. Motorways and A-roads often have a high traffic flow and hence are covered by Spanish data. Having an SPI for these types of roads should be possible. It would be harder for other class of roads. The fact that different organisations are responsible for speed measurements raises concerns about the coherence of the national indicators. The way Spain deals with congestion need also to be investigated.

The following table summarise the characteristics of the Spanish speed data (2006).

All road types available	+
Regular assessment	++
Random and scientific sampling	
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	++
Data split out for different vehicle types	++
Traffic conditions taken into account	+
Measurements without visible police presence	++
Error check	++
National scale indicators reported	+

+ Criteria partially fulfilled ++ criteria fully fulfilled

Quality of the data collected by SafetyNet

At this stage, we cannot use the Spanish data to construct SPI. Indeed, Spain provided us with travel speed data while we chose to use spot speed data for the speed SPIs.

8.3 Protective systems

Data received from the country

Filled questionnaire (02/2005)

Recent, time-series data and methodological information (11/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

No data available.

Use of protective systems

The data on the development of following indicators are available: A, B, C.

The use of protective systems has been also monitored in accidents for all injured car occupants, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs:

A: Daytime use of seat belts in light vehicles in front seats

Daytime use of seat belts in traffic								In accidents				By fatalities
Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
*74**	74	75	Y	U,R	Y	Y	2005	Y	72	75	2005	Y

* Estimated by SafetyNet, using coefficients 0.65 and 0.35

B: Daytime use of seat belts in light vehicles in rear seats

Daytime use					In accidents			By fatalities
Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
50	Y	U,R	Y	2005	Y	69	2003	Y

C: Daytime use of CRS in passenger cars

CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
NA					P,R	O	C	2005

D: Daytime use of seat belts on front seats of HGV and coaches	Not available
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	Y	Y	Y

F: Daytime use of safety helmets by cyclists	NA
G: Daytime use of safety helmets by moped riders	93% in 2005 national-wide value, available also for gender 63/62
H: Daytime use of safety helmets by motorcyclists	98% in 2005 national-wide value, available also for gender 85/79

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	Y	Y			Y	Y
Random sampling design of survey	Y	Y			Y	Y
Precision requirements exist related to the sample size	Y	Y			Y	Y
Observation procedure is clearly defined for different situations in traffic	Y	Y			Y	Y
All daylight hours for all working days of the week are considered	Y	Y			Y	Y
Data stored, reported and measurements documented	Y	Y			Y	Y

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites					275	275
Nr of sites per road types						
Sample size at sampling site						
Observed total	1972*	1972*	na		18069*	14179*

* vehicles

SPIs proceeding

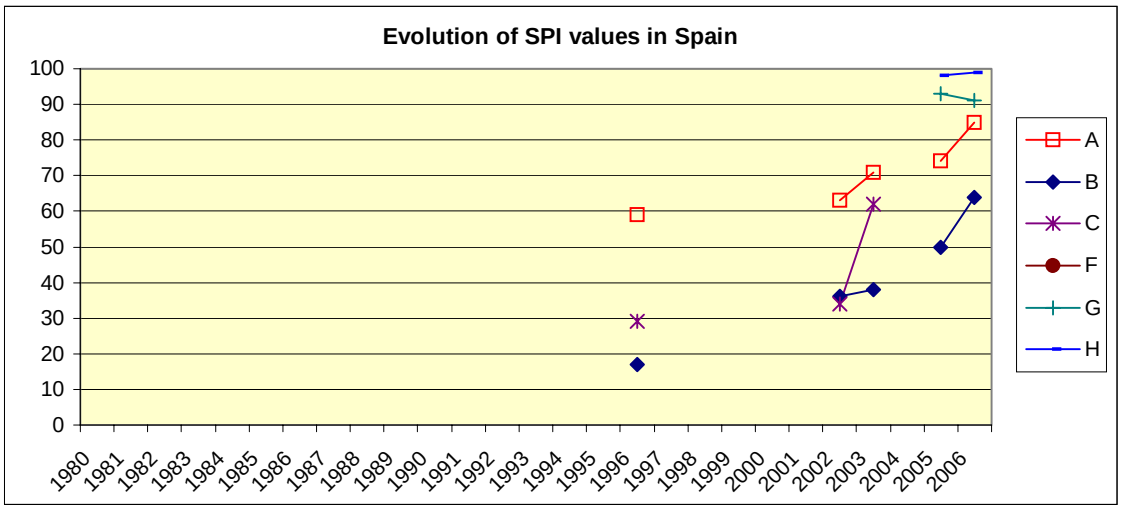
It is possible to figure out the values of the following indicators:

A,B (no objections)

G,H

For all available indicators, it can be recommended to reconsider the design of the survey.

SPIs presentation



Note: Data prior 2005 invalid (obtained by interview).

8.4 Daytime running lights

Data received from the country

Legislation

There are special suppositions for using DRL: there is a legal obligation to use the lighting under adverse weather conditions as fog, hard rain, snowfall, smoke or dist clouds, or under similar conditions.

There is a difference between motorcycles and other vehicle types: motorcycles and mopeds have to use DRL all day long, inside and outside urban areas; other vehicles only have to use DRL under special circumstances, e.g. when driving on reversible lanes, on the lanes which were exceptionally opened for traffic in opposite direction, etc.

No rule for obligatory DRL use for cars exists.

No information on sanctions was provided.

Other features

No information on information/ incentive campaigns was provided.

Surveys

No information on DRL surveys was provided.

DRL usage rate is not known.

Data

Not available.

Usability of the data for SPIs

Not applicable.

Quality of the data

Not applicable.

SPIs used by policy makers

Not in use.

8.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year manufacture of all vehicle types from 2003.

Usability of the data for SPIs

The data cannot be used to calculate the vehicle crashworthiness SPI as there are some problems with the data. The vehicle age SPI and the fleet composition and compatibility SPIs can be calculated.

Quality of the data

The Spanish data are not of good quality. There are errors that can clearly be identified such as mistyping of make and model names. It was decided that this database could not be used to calculate the crashworthiness SPI as many model names could not be identified.

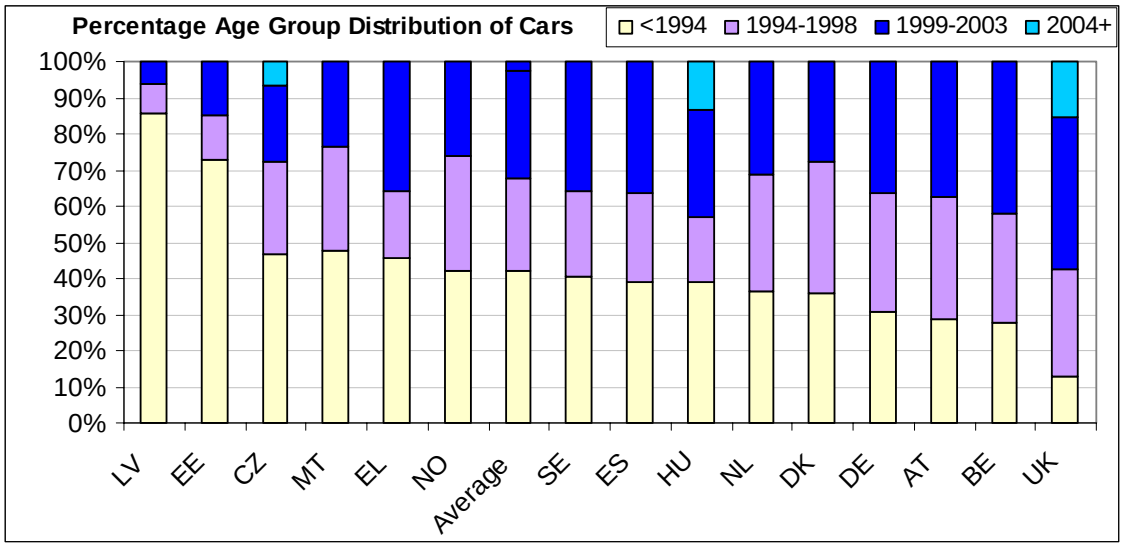
The quality of the data for calculating the vehicle age and composition SPI appears to be good. Thorough checks have been carried out and the data were deemed good enough to perform these calculations. The data are broken down into the correct vehicle types for composition analysis.

SPIs used by policy makers

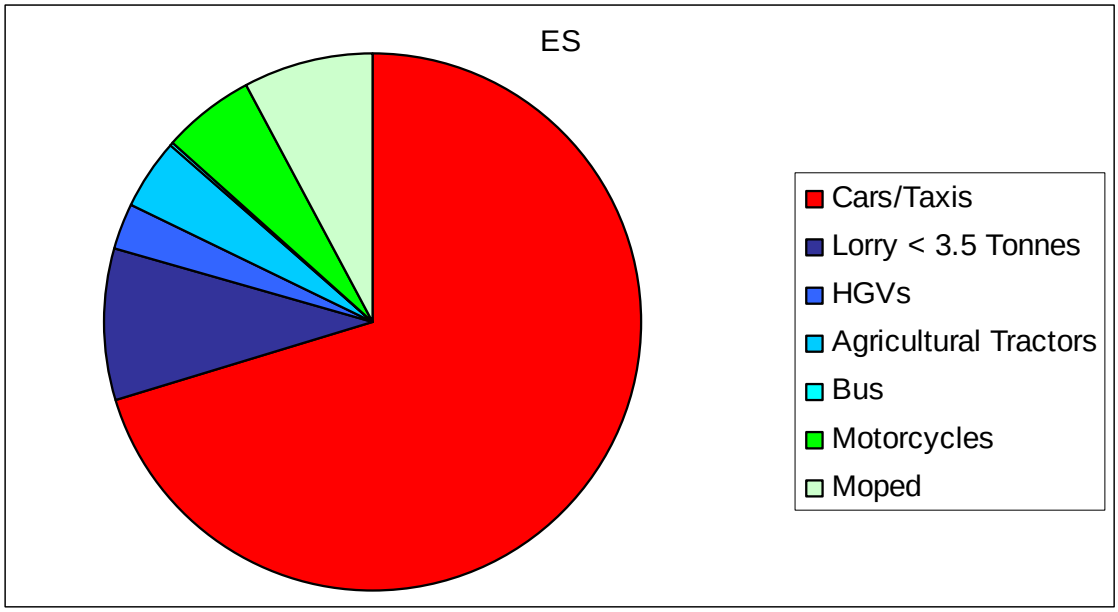
It is believed that an SPI based on the number of vehicles older than a given age is used in Spain, though no details are known about how this SPI is calculated or used.

Illustration

Spain (ES) has the 3rd largest passenger car fleet of the 15 countries analysed.



The above graph shows the percentage distribution of passenger car age in Spain it has a similar percentage of cars that are more than 10 years old and less than 5 years old and fewer from the years in between.



The graph above shows the composition of the vehicle fleet in Spain. Just over two thirds of the fleet is made up of passenger cars and taxis. Spain has a relatively high number of mopeds, which are very vulnerable road users.

8.6 Roads

Data received from the country and their usability for SPIs

Data were received, but these could not be used for calculating our SPIs.

Quality of the data

Unknown.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

8.7 Trauma management

Data received from the country (2003)

General data

Population, million	43
Road length - total, km	n.a.
Road length - public, outside built-up areas, km	n.a.
Vehicle-kilometres travelled, million	n.a.

Data on Trauma management:
Not available.

SPI values estimated for Spain

Not applicable, since the data were not available.

With the Trauma management questionnaire's response, no data on TM were provided for this country. Therefore, no SPI values could be estimated.

The national expert indicated that the data for the whole country are unavailable and that different policies/ practices are applied in different parts of the country. Following the national experts' meeting in Brussels in February 2006, it was suggested for the countries where different organizations of trauma care exist in different regions (e.g. Länder, cantons, counties), to collect the data for two representative areas, e.g. for one highly-populated and one scarcely-populated area.

Then, it was suggested for Spain to fill in the requested TM data *for two representative sub-areas of the country, and accompany them by General data for these areas*.

So far, no data on TM are available for the country.

9 France (FR)

9.1 Alcohol & Drugs

Data received from the country

Alcohol

Road accident fatalities

	2000*	2001*	2002*	2003*	2004*	2005**
Number of road accident fatalities in France	6811	6920	6549	5168	4766	4857
Road accident fatalities for which the blood alcohol concentration level is known	4428	4326	3899	2990	2693	4287***
Road accident fatalities for which at least one driver was impaired by alcohol	1341	1349	1158	929	827	1203
Percentage	30.3%	31.2%	29.7%	31.1%	30.7%	28.1%

* Killed people at 6 days
** Killed people at 30 days
*** Rather great difference between 2004 and 2005 is due to change of definition from killed within 6 days to killed within 30 days, according to Jean-Paul Repussard, DGTREN.

Killed people

	2000*	2001*	2002*	2003*	2004*	2005**
In France	7643	7720	7242	5731	5232	5318
In road accident fatalities for which the blood alcohol concentration level is known	4939	4799	4289	3313	2952	4697
In road accident fatalities for which at least one driver was impaired by alcohol	1512	1554	1300	1050	926	1355
Percentage	30.6%	32.4%	30.3%	31.7%	31.4%	28.8%

* Killed people at 6 days
** Killed people at 30 days

Blood alcohol concentration level:

The authorized alcohol level is 0.5 g/l of blood. It is 0.2 g/l for drivers of public transports.

Drugs

We have no data about the number of road accident fatalities for which at least one driver involved was impaired by drugs other than alcohol.

Usability of the data for SPIs

For alcohol the available data allows the calculation of SPIs, for drugs they do not.

Quality of the data

The SPI is calculated as a percentage of the fatalities for which the BAC level is known. However, the BAC level is known for some 88% of the fatalities.

SPIs used by policy makers

Unknown.

Illustration

SPI Alcohol: 28.8% (% of fatalities for which at least one driver was alcohol-impaired/fatalities for which drivers' BAC is known)

9.2 Speed

Background

The National Interministerial Observatory for Road Safety organizes the speed measurements in France for many years and publishes a report every four months.

Data received from the country

France produced a complete questionnaire response but did not provide data to SafetyNet. They gave the reference of a publication containing the main methodology for speed measurement.

Usability of French data for SPIs

Speed is measured on 362 locations spread on all the road types. Speed is only measured for a few hours at each location but the sample is constructed so that every types of day and every periods of day between 9h30-16h30 and 22h00-02h00 are covered by measurements. Every night measurements and almost every day measurements are made outside rush ours. The same sites are periodically re-measured. Altogether, it represents about 2000 observation sessions and 200000 individual observations per year. Data are collected by a human staff with radar devices but there is a project (SIDERO) to create automatic stations.

Splitting out by vehicle type (Cars, Heavy goods vehicles and motorcycles) and in time is possible with the data. The Observatory even produce results by vehicle type for day and night periods separately and for 8 different road types. These road types are defined according to the morphology of the roads, the speed limit and the administrative status of the road. The correspondence with the SafetyNet road classification is good.

The way the locations of the measuring points are selected is not explicitly explained in the reports although the aim is to produce nationally representative indicators (mean speeds and the percentage of offenders by different margins are reported).

In a whole, the data are very good and offer the possibility to calculate all the suggested SPIs. The periodicity and the rapidity of data assessment are major qualities of French data. Reports are published every four months, and only approximately two months after the end of related speed measurements.

The following table summarise the characteristics of the French speed data (2006).

All road types available	++
Regular assessment	++
Random and scientific sampling	+
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	++
Data split out for different vehicle types	++
Traffic conditions taken into account	++
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

+ Criteria partially fulfilled ++ criteria fully fulfilled

Quality of the data collected by SafetyNet

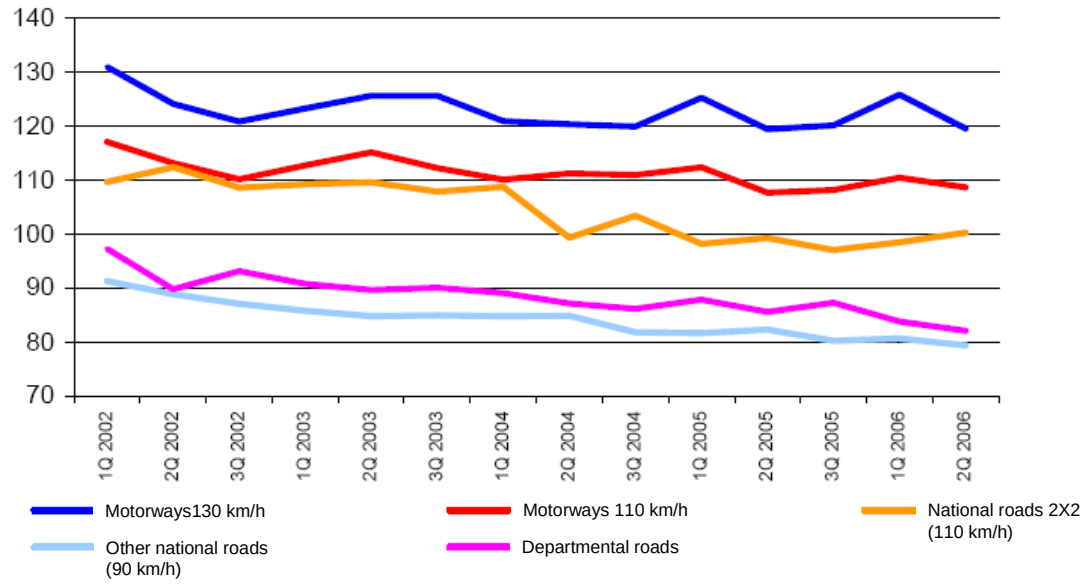
Data are coming from the publications of the Observatory for Road Safety. Time series concerning average speed and the percentage of offenders are directly available in these publications. The distinction by road type, vehicle type and time of day is done. Standard deviation and V85 are not reported.

SPIs used by policy makers

The improvement of road safety has been defined as one of the 3 main tasks of the presidency. In the field of speeding, it results, along with a reinforced enforcement, in the systematic speed monitoring by the Observatory for Road Safety. A big attention is accorded to the indicators reflecting the efficiency of the enforcement (the percentage of offenders by 10, 30 or 40 km/h) but no quantitative goal is given. France has a very similar purpose for its speed data comparing to what we want in SafetyNet: Producing synthetic indicators on a regular basis.

Illustration

Evolution of the average daytime speed of cars, bad weather conditions excluded



Source: Observatoire National Interministériel de Sécurité Routière (2006). "Observatoire des vitesse. Second quadrimestre 2006".

The above figure represents the evolution of the average speed of cars for the period 2002-2006, outside the rush ours. The weather conditions are taken into account to

minimise their influence on seasonal data. Since the end of 2003, the number of fixed speed camera have greatly increased, which can partially explain the big drop in average speeds on national roads even if the speed measurements are made outside the immediate proximity of speed cameras.

Reference

Observatoire National Interministériel de Sécurité Routière (2006). “La sécurité routière en France“. Paris, La Documentation Française.

9.3 Protective systems

Data received from the country

Filled questionnaire (11/2004).

Information on data collected in road accidents and some others from yearly statistical book on road safety published by ONISR ("Bilan de l'année 2005").

Recent, time-series data and methodological information (11/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 1972 (A), 2004(B). The data on the development of following indicators are available: A, B, G, H. The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	97*			N	U,R,M	N	Y	2005	Y	97**	96***	2005	77/85****

* Estimate assuming traffic performance per road type: 22/47/31 (M,U,R)

** 14% unknown, *** 13% unknown, **** Driver, front seat passenger. 15/15% unknown

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	77*		U,R,M		2005	Y	90	2005	61**

* Adults 70%, children 83%, ** 13% unknown, *** 18% unknown

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	NA								

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	NA
G: Daytime use of safety helmets by moped riders	95% in 2004 (estimated from available data) Weighting coefficients: 0.85/0.05/0.10 (Urban/National/Local)
H: Daytime use of safety helmets by motorcyclists	95% in 2005 (estimated from available data) Weighting coefficients: 0.60/0.15/0.15/0.10 (Urban/National/Local/Motorways)

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1	1		1	1
Random sampling design of survey	Y	Y	Y		Y	Y
Precision requirements exist related to the sample size	Y	Y	Y		Y	Y
Observation procedure is clearly defined for different situations in traffic	Y	Y	Y		Y	Y
All daylight hours for all working days of the week are considered	Y	Y	Y		Y	Y
Data stored, reported and measurements documented	Y	Y	Y		Y	Y

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites						
Nr of sites per road types						
Sample size at sampling site						
Observed total					452	2508

SPIs proceeding

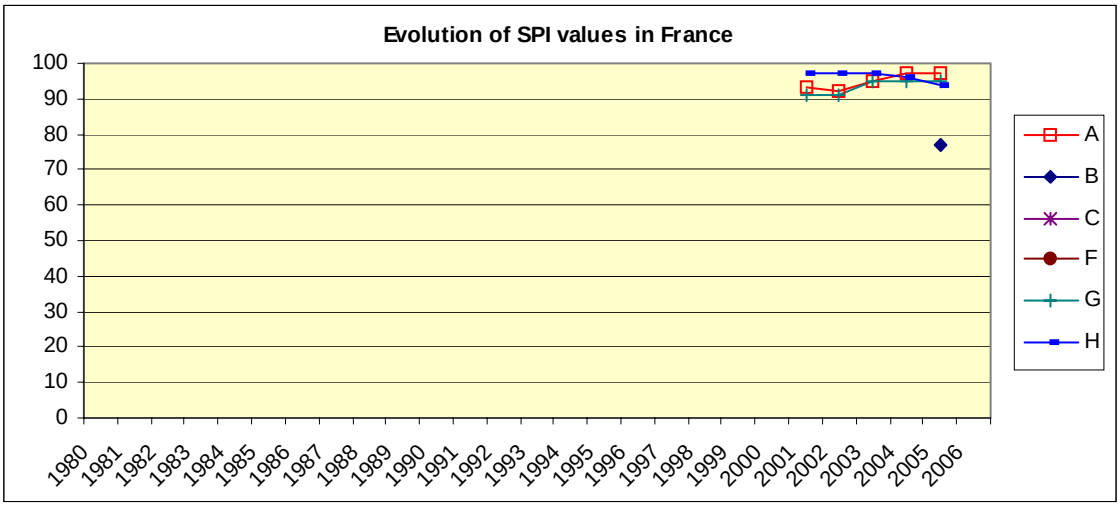
It is possible to figure out the values of the following indicators:

A (aggregation necessary driver+front seat passenger, road types), vans not included

B (aggregation necessary), G, H

For all indicators, it is recommended to reconsider the design of the survey and set aggregation rules.

SPIs presentation



Comments: the value of SPI A estimated from available data (driver/front seat passenger).

9.4 Daytime running lights

Data received from the country

Legislation
France has a law on the use of DRL. Since November 2004, the situation is as follows: Motorcyclists are obliged to use DRL the whole year, and there is a recommendation for cars to use DRL outside built up areas.

Other features
In France, an incentive campaign takes place to increase the use of DRL.

Surveys
Surveys on DRL use rates are not mandatory. Monthly surveys have taken place in 2004 however, under constant weather conditions. Data were gathered outside built up areas, on different road types, and in different parts of France (North & South). The sample sizes per site were below 500.

Data
Year: 2004

	Total (%)
motorway	35
rural	24
urban	-
Total	30

Usability of the data for SPIs

Good features of the data for France are the distinction between the different road types and the data collection method (data collected monthly). The data would be better of a distinction was made between vehicle groups.

The SPI value for France can be used, comparison with countries who also have data for different road categories will be possible.

Quality of the data

To fully assess the quality of the data, more background information would be needed. This information would consist of exact numbers of observation sites and sample sizes.

SPIs used by policy makers

DRL usage rates are probably in use as monitoring is performed recently. The monitoring is linked to the new law on DRL that was introduced recently.

9.5 Vehicles (passive safety)

No data were received.

9.6 Roads

Data received from the country

No data were received.

9.7 Trauma management

No data were received.

10 Ireland (IE)

10.1 Alcohol & Drugs

No data are available.

10.2 Speed

Background

In 1999 was launched a biannual program of free speed monitoring by the National Roads Authorities (NRA) in order to judge the progress made in terms of targets for speed and highlight the areas where improvement needs to be made. Before that, there has not been any nationwide speed survey since 1991. NRA commissioned two private companies to make separate surveys of rural and urban free speeds in 1999. In 2002, 2003 and 2005, NRA made the survey by itself, using a consistent methodology comparing with 1999.

Data received from the country

Ireland did not provide any answer to the questionnaire or any data to SafetyNet. However, an informal meeting was organised between Fergal Trace from the National Roads Authority and the SafetyNet SPI speed researchers that allowed an in-depth explanation of the Irish speed survey methods.

Usability of Irish data for SPIs

The Urban and Rural speed surveys are undertaken in June, July and August in order to have good weather conditions. The surveys are only carried out in dry weather conditions.

A sampling frame was constructed from the road network. A sample of measuring locations was chosen from it in 1999 and remained the same for the further surveys. The different types of roads are well covered: for urban zones, speed is measured on urban arterial (in 50 km/h and 60 km/h zones), urban national (incoming traffic at 50 km/h signs) and urban residential (in 50 km/h zones) and for rural roads, speed is measured on motorways, dual carriageways, national primary (2-lane) roads, national secondary (2-lane) roads, regional, and, county roads.

The particularity of the Irish survey is to measure free speeds only (Practically, it is the speed derived from vehicles with a headway / gap of at least 200 meters on roads where it is possible to exceed the speed limit), and therefore the average speed computed from these surveys is higher than the average speed of the whole traffic as constrained vehicles tend to travel at lower speeds. The preference is given to very briefs but very accurate measures. On urban arterial roads, speeds are measured early in the morning between 5h30 and 7h30. On other roads, it is between 9h30 a.m. and 5h30 p.m., from Monday to Friday.

Five vehicle classes are recorded: cars; single deck buses; double deck buses; rigid vehicles; and articulated vehicles (with the exception of urban arterial and urban residential where only cars are surveyed). .At each location, speed is measured for only 140 cars, 90 rigid vehicles and 30 articulated vehicles or for a maximum of 2h30. Human surveyors equipped with radar guns are responsible for the measurements.

The measurement locations were chosen as long, straight sections of roadway, with a carriageway of at least 7 meters (except for urban residential), where speed is relatively unaffected by geometry, traffic, traffic lights, traffic calming measures, junctions, road

works or parking, and where it is feasible to drive faster than the speed limit. It corresponds to the requirements established by the SafetyNet team.

On the whole, the Irish data are good for comparisons. The only problem is that the level of rigor in the selection of free-flowing vehicles is very high and unreachable in most other European countries with their actual data (except for Austria). It is also quite expensive to set up measurements with human surveyors. With the Irish methodology, it should not be surprising to find higher speeds than in other countries.

The following table summarise the characteristics of the Irish speed data (2005).

All road types available	++
Regular assessment	+
Random and scientific sampling	++
Data split out for day and night	+
Data split out for weekend and weekday	+
Data split out for different period of the year	+
Data split out for different vehicle types	++
Traffic conditions taken into account	++
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

+ Criteria partially fulfilled ++ criteria fully fulfilled

Quality of the data collected by SafetyNet

Data were gathered from the publications the NRA. These publications give a good explanation of the methodology and report the average speed, the percentage of vehicles over the limit and the V85 for each road type and vehicle types. It is thus useful data.

SPIs used by policy makers

The Irish government has developed several consecutive Strategies for Road Safety. Their primary target of the strategy is a reduction in fatalities. But a reduction in speed has been identified as an important supporting target to help reducing fatalities. To help setting the targets and judge the progress, the free speed survey of the NRA was set up. The government explicitly mentions this survey on its Strategy for Road Safety. In the 2004-2006 Strategy, the following targets were defined for speed:

- For cars and motorcycles:

  a) To increase from 3% to 50% the number of vehicles complying with urban speed limits on urban national roads and to increase from 39% to 80% the number of vehicles complying with urban speed limits on non-national roads;

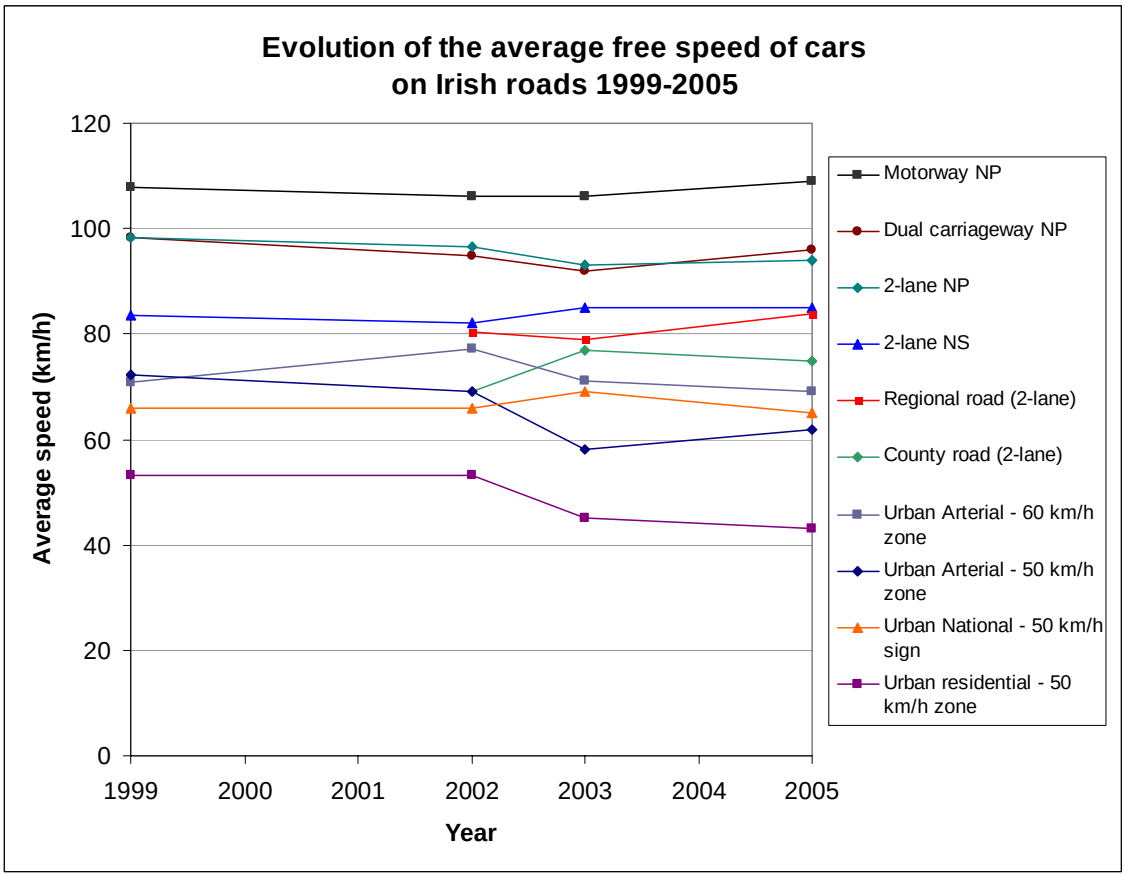
  b) To increase the incidents of compliance on urban arterials to 60% (up from 1% in 30 mph zones and 18% in 40 mph zones);

  c) On single lane national roads, to increase compliance with speed limits to 80% (up from 56%).

- For heavy goods vehicles and buses:

  To achieve a 90% compliance rate with the urban and urban arterial speed limits and 80% compliance with the ordinary speed limits applying to such vehicles on the overall non urban network of roads.

Illustration



Data source: NRA, 2005

The above figure sums up the results of the 1999, 2002, 2003 and 2005 free speed surveys in terms of average speed of cars. The speed limits that are listed in the legend correspond to the current limits. In beginning 2005, the speed units changed from mph to km/h and most speed limits were modified. Limits were lowered on regional and local roads, almost remained the same on urban roads and increased elsewhere.

Between 1999 and 2002, speed dropped or remained stable everywhere apart from urban arterial roads with the higher speed limit. Then the evolution of speed became very diverse between road types and between 2002-2003 and 2003-2005. The change in speed limits makes the 2003-2005 comparison difficult.

References

Department of Transport (2004). “Road safety strategy 2004-2006”. Dublin.

National Roads Authority (2005). “2005 survey of free speeds (urban and rural)”. Dublin.

10.3 Protective systems

Data received from the country

No data received from the country.

Reports on protective systems use downloaded from National Road Administration (NRA) web page (www.nra.ie) (including methodological information and time-series data).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country in 2002, 2003 and 2005. The data on the development of following indicators are available: A, B. The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	86*	86		Y	U,R,M	Y	Y	2005	Y	42**	30***	2004	31****

* Overall wearing rates available, ** 36 unknown, *** 23 unknown, **** 32 unknown

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	46	N	U,R,M		2005	N			Y

C: Daytime use of CRS in passenger cars as from survey	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	NA								

D: Daytime use of seat belts on front seats of HGV and coaches	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	
G: Daytime use of safety helmets by moped riders	
H: Daytime use of safety helmets by motorcyclists	NA - 7% use in accidents (16% by fatalities), while 54% unknown/not stated (47% by fatalities)

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	N	N				
Random sampling design of survey	Y	Y				
Precision requirements exist related to the sample size	Y	Y				
Observation procedure is clearly defined for different situations in traffic	Y	Y				
All daylight hours for all working days of the week are considered	Y*	Y*				
Data stored, reported and measurements documented	Y	Y				

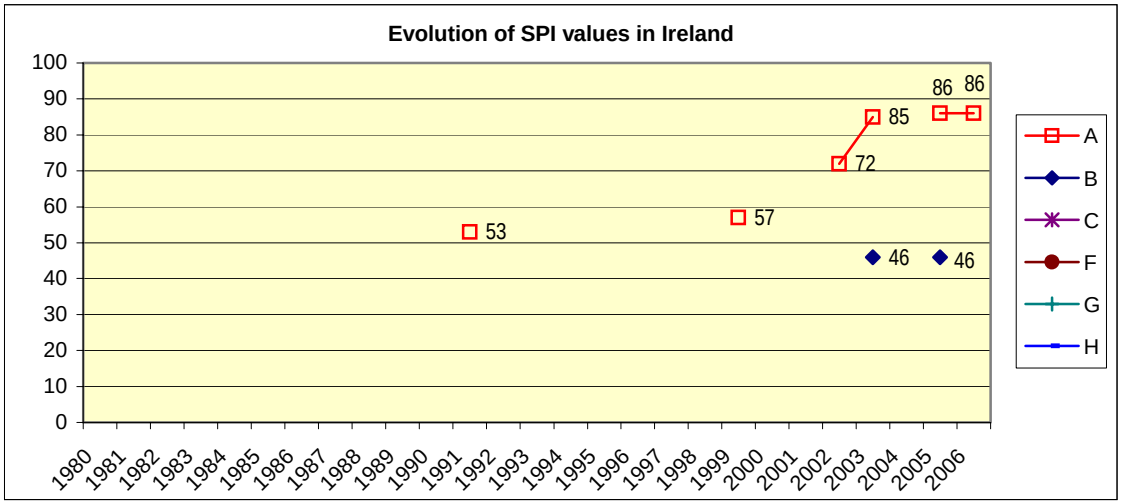
* Observations performed in summer months, vans included

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	100	NA				
Nr of sites per road types	9 (11 types)	NA				
Sample size at sampling site	100	NA				
Observed total	11250	NA				

SPIs proceeding

It is possible to figure out the values of the following indicators: A, B.

SPIs presentation



10.4 Daytime running lights

No data available.

10.5 Vehicles (passive safety)

No data were received.

10.6 Roads

No data were received.

10.7 Trauma management

No data were received.

11 Italy (IT)

11.1 Alcohol & Drugs

Data received from the country

Alcohol
In 2004 the total number of road fatalities in Italy was 5780. Of those ”the presumed psychological-physical condition in road accidents” was “drunken” for 4172, or 72.2%. If this is correct, it is extremely high compared to the other countries. The legal limit for alcohol is not stated.

Drugs
No data were provided for drugs.

Usability of the data for SPIs

Assuming the data for alcohol are correct, they can be used to calculate SPIs.

Quality of the data

The quality of the data cannot be assessed. Because the SPI is extremely high, a request for confirmation is sent to the contact person.

SPIs used by policy makers

Unknown.

Illustration

SPI Alcohol:72.2%. Extremely high – request for confirmation sent to contact person.

11.2 Speed

No data were received.

11.3 Protective systems

Data received from the country

No questionnaire response

Limited amount of information available online on ISS page (Instituto Superiore di Santita)

Latest results communication (Il sistema ULISSE per il monitoraggio nazionale dell’uso del casco e delle cinture di sicurezza, Dosi G, et.al, 2006) at www.iss.it/stra/publ/cont.php?id=72lang=1&tip=4.

Complete report, including methodology description: (Il sistema ULISSE per il monitoraggio nazionale dell’uso del casco e delle cinture di sicurezza, Taggi, F. Et al., ISS, 2005) at www.iss.it/binary/sicu/cont/10%20LIBRO%@)(74-75).1141387196.pdf.

SPIs in use

Unknown.

Presence of protective systems in vehicles

No data available at national level.

Use of protective systems

The use of protective systems in traffic has been monitored through the independent observational surveys since 80's, however it has been only since the year 2000 that the system has been settled and observations became periodical.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	71*	71			NA			2005					

* estimation SafetyNet from 3 region values (82,69,51%) (Aggregated by population)

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	NA					Y			N

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	NA								

D: Daytime use of seat belts on front seats of HGV and coaches	Not available
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y for young riders	Y

F: Daytime use of safety helmets by cyclists	NA
G: Daytime use of safety helmets by moped riders	89% in 2005, motorcyclists included in the sample
H: Daytime use of safety helmets by motorcyclists	

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	I					
Random sampling design of survey	Y					
Precision requirements exist related to the sample size	N					
Observation procedure is clearly defined for different situations in traffic	Y					
All daylight hours for all working days of the week are considered	Y					
Data stored, reported and measurements documented	Y					

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	850					
Nr of sites per road types						
Sample size at sampling site	500					
Total observed	3069236				447388	

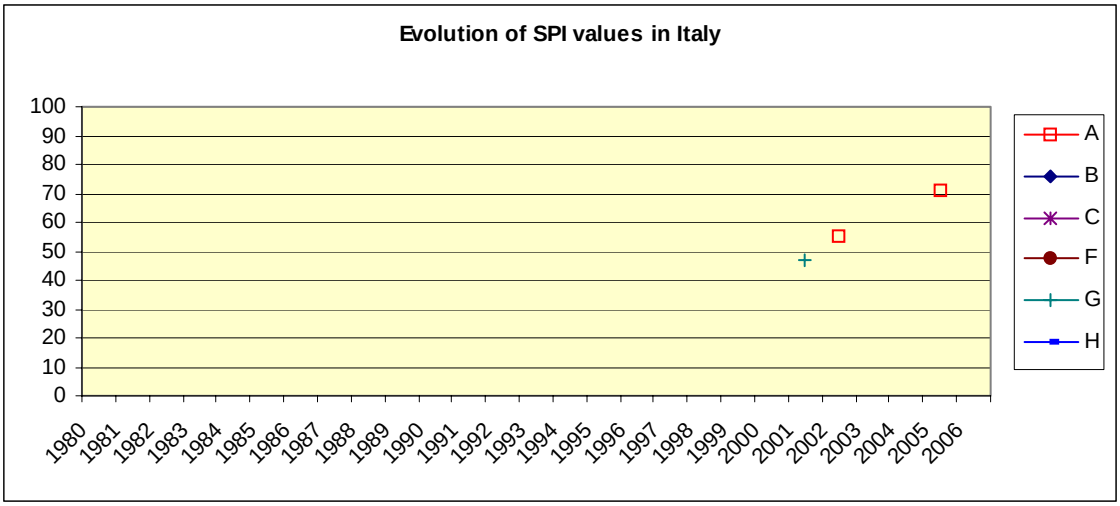
In 2004.

SPIs proceeding

No valid indicators found at national level, but regional values are available.

Rough estimations can be done for A and G+H for 2005 which are: 71and 89%.

SPIs presentation



Comments: All motorized two-wheelers together.

11.4 Daytime running lights

Data received from the country

Legislation

Since 2003 DRL is obligatory for motorcycles and mopeds. Since 2004 DRL is obligatory for all motorized vehicles on highways with a speed of at least 100 km/h (autostrada and superstrada, roads without contra-flow). It aims to reduce rear-end collisions.

Other features

No information or incentive campaigns were carried out on the topic.

Surveys
Regular surveys on DRL use are not mandatory.

Data
No data available.

Usability of the data for SPIs

Not applicable.

Quality of the data

Not applicable.

SPIs used by policy makers

Not in use.

11.5 Vehicles (passive safety)

Data received from the country

Italian vehicle fleet information has been received for years up to 2005.

Usability of the data for SPIs

It has not been possible to calculate the crashworthiness SPI yet, due to problems translating some of the text in the database from Italian to English. It may be possible in the future to perform crashworthiness analysis on this data. Compatibility calculations have been made.

Quality of the data

It has not been possible yet to assess the overall quality of the data, or to make any adjustments to the data.

SPIs used by policy makers

No SPIs for crashworthiness, vehicle age or compatibility are known to be currently in use in this country.

11.6 Roads

No data were received.

11.7 Trauma management

No data were received.

12 Cyprus (CY)

12.1 Alcohol & Drugs

Data received from the country

1. (Number of road fatalities?) year 2005 94 road accidents 102 victims.
2. (Number of road accident fatalities for which at least one driver involved was impaired by alcohol?) year 2005 20 road accidents 23 victims.
3. (Number of road accident fatalities for which at least one driver involved was impaired by drugs other than alcohol?) year 2005 3 road accidents 3 victims (illegal drugs only) .
4. Alcohol limits in Cyprus until 10/3/2006 were 39 mg% in 100 mg of breath sample and 90 mg% in 100 mg of blood sample. Since 10/3/2006 are 22 mg% in 100 mg of breath sample and 50 mg% in 100 mg of blood sample.

As the data are from year 2005 the limit is 0.9‰ BAC.

Usability of the data for SPIs

From the available data, SPIs for both alcohol and drug can be calculated.

Quality of the data

The BAC limit was 0.9 BAC in 2005. With the reduction to 0.5 BAC in 2006 the SPI should be expected to increase. In spite of the high legal limit, Cyprus has a relatively high SPI figure.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 22.5%; SPI drugs: 2.9%.

12.2 Speed

Background

The Traffic Safety Unit of the Ministry of Communications & Works is in the process of installing new traffic counters that measure speeds beside traffic volumes. More detailed data regarding speeds in Cyprus will be available from 2007 when most new traffic counters that measure speeds will be installed on the motorways and the rural road network. Detailed data for urban roads is planned to be collected, through the use of a red light / speed camera system which started its operation in October 2006.

Data received by the country

Cyprus sent back the questionnaire but only with the question about the speed limits answered because there was no speed monitoring campaign at that time. From a further contact (11-2006) with Mr. Christodoulou from the Traffic Safety Unit of the Ministry of Communications & Works, Updated information and a small dataset concerning speeds on motorway sections were received.

Usability of Cypriot data for SPIs

The indicators suggested by SafetyNet (Average speed, V85, % over limit, % over limit + 10 km/h) are computed for each road section but no aggregated at a national scale. Traffic counters allow splitting out data in time as required and information on traffic counts can be used to leave rush ours out of the indicators.

The construction of the Cypriot speed monitoring system is ongoing and involved people expressed the willingness to use SafetyNet recommendations. It raises expectations for the computation of SPIs for Cyprus in the future.

12.3 Protective systems

Data received from the country

Filled questionnaire (11/2004).

SPIs in use

Unknown.

Presence of protective systems in vehicles

No data available at national level.

Use of protective systems

No data available at national level.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	NA								N				

An observation survey performed in 2002 by Police revealed the rate of 81/77 (driver/front passenger)

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

SPIs proceeding

It is impossible to build any of proposed indicators at the moment. (Only available data for seat belts wearing rate were collected by Police in 2002 – invalid indicator.)

12.4 Daytime running lights

Data received from the country

Legislation
DRL is not obligatory in Cyprus. However, regulation is planned, only for use of DRL on motorcycles and mopeds.

Surveys
No surveys on DRL are carried out in Cyprus.

Data
No data available.

12.5 Vehicles (passive safety)

Data received from the country

Full database detailing make and year of manufacture of all vehicle types from 2003 back until 1959.

Usability of the data for SPIs

The total number of vehicles in the database provided by Cyprus is very high. This may be because the database includes all vehicles registered in Cyprus, not just those that were still on the road in 2003. This makes calculation of the crashworthiness SPI problematic. However, the SPI for compatibility has been calculated, under the assumption that the proportion of vehicles in each vehicle type included in error will be the same for all vehicle types.

Quality of the data

The quality of the data is fairly good apart from the problems stated above. If the vehicles that were no longer on the road in 2003 were removed, the data would be usable.

The database is broken down in vehicle types other than those specified in the database.

SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

12.6 Roads

Data received from the country

Complete data are received from a certain region in the country, with data from 2003/2004. Complete means data on all SPIs. The data comprises several connection types.

Usability of the data for SPIs

The data can be used for the calculation of SPIs.

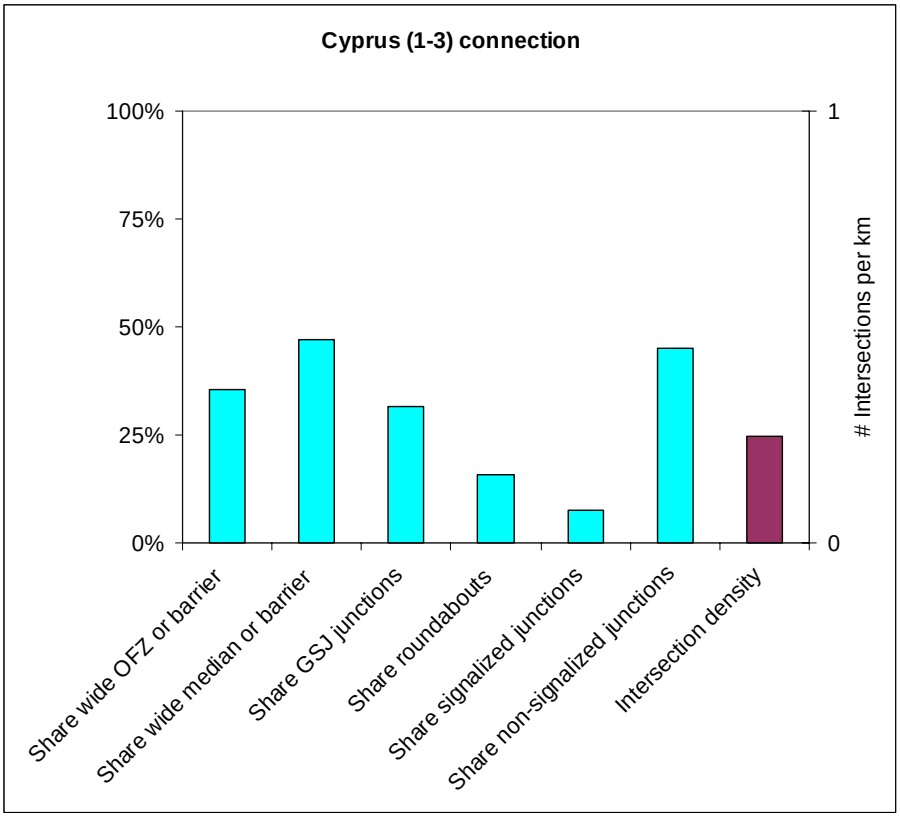
Quality of the data

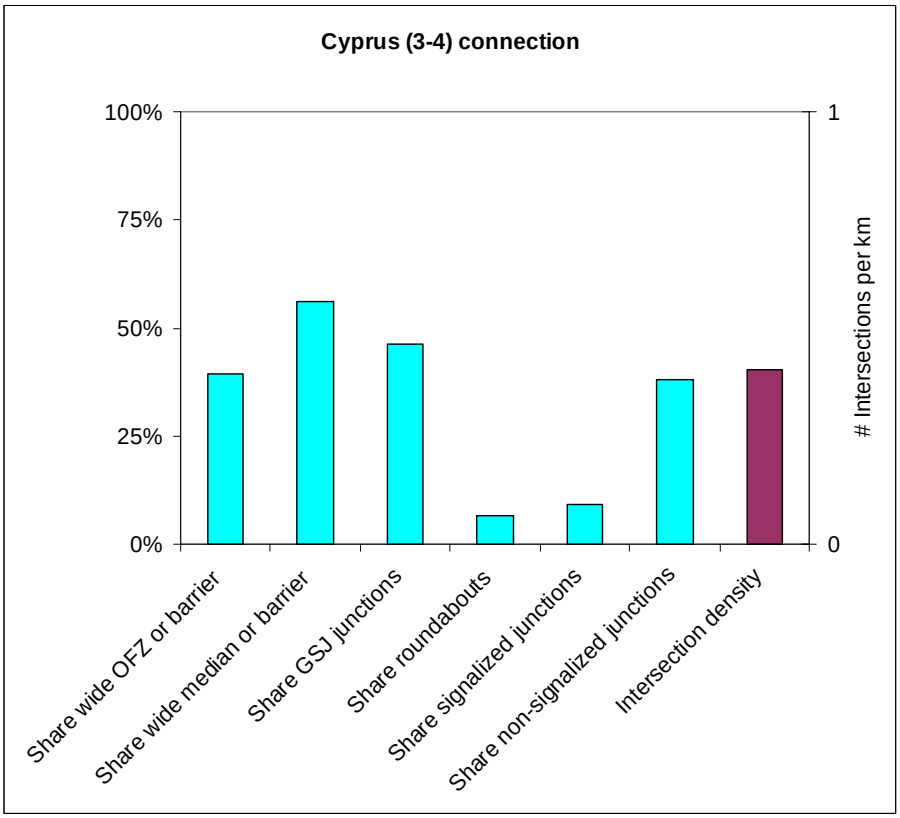
The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration





The (1-3) connection has a small share with a wide obstacle-free zone or roadside barrier (35%), just like a wide median or barrier (47%). Furthermore, only 32% of the

junctions are grade separated, the remaining share is at grade and mainly non-signalised. These SPI-values are low for this connection type. An intersection density of 0.25 intersections per kilometre is fairly low for this connection type.

The (3-4) connection performs better on the SPIs. This is surprising. Only the intersection density is higher, with 0.4 intersections per kilometre. This is still low for this connection type, connecting two minor cities.

12.7 Trauma management

Data received from the country (2003)

General data

Population, million	0.73
Road length - total, km	n.a.
Road length - public, outside built-up areas, km	2353
Vehicle-kilometres travelled, million	n.a.

Data on Trauma management

(1) No of dispatching centres	7
(2) No of EMS stations	7
Number of EMS staff in service*: (4a) No of physicians	60
(4b) No of paramedics	0
(4c) No of nurses	140
(4d) No of medical technicians	0
(4f) Total	270
Number of EMS transportation units in service: (7a) No of BLSU	65
(7b) No of MICU	0
(7d) No of helicopters/ planes	2
(7e) Total	67
Comments	*The reported numbers of medical staff on service actually describe the total number of personnel in hospitals throughout the country.

(12) No of EMS calls annually	15000
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	30000
(17) share of road accidents in the EMS rides	n.a.

(19) The demand for EMS response time, min	n.a.
(20) Percentage of EMS responses meeting the demand	n.a. (no demand)
(21) Average response time of EMS, min	n.a.
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	0
(22b) In trauma department of hospitals	0
(22d) Total	80
Comments	--

SPI values estimated for Cyprus

(3a) EMS stations per 10000 citizens	0.096
(3b) EMS stations per 100 km of rural road length	0.297
(5a) Percentage of physicians out of EMS staff*	22.2%
(5) Percentage of physicians + paramedics out of EMS staff	22.2%
(6) EMS medical staff per 10000 citizens*	3.70
(8b) Percentage of MICU out of the total EMS units	0%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	100%
(9) EMS transportation units per 10000 citizens	0.92
(11) EMS transportation units per 100 km of road length	n.a.
(19) The demand for EMS response time, min	n.a.
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	n.a.
Comments	*The reported numbers of medical staff on service actually describe the total number of personnel in hospitals throughout the country.

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	n.a.

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	0%
(25) Number of the total trauma care beds per 10000 citizens	1.10

13 Latvia (LV)

13.1 Alcohol & Drugs

Data received from the country

In 2005 442 people were killed in road traffic in Latvia. Of these, 96 were killed in "accidents caused by drivers under the influence of alcohol (Statistics of road traffic accidents in Latvia. Road Traffic Safety Directorate, 2006). The legal limit in Latvia is 0.5 g/l BAC for drivers with more than two years experience. For novice drivers, the limit is 0.2 g/l. Latvia has no information on drivers under the influence of drugs.

Usability of the data for SPIs

The available data are suitable for calculating the SPIs for alcohol, but not for drugs.

Quality of the data

The figures are taken from a printed report of the Latvian Road Traffic Safety Directorate. It is uncertain what "caused by drivers under the influence of alcohol" actually means. Otherwise the quality of the data cannot be assessed.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 21.7%.

13.2 Speed

Data received from the country

Latvia replied to the questionnaire but no speed data were available at that moment. Since the delivery of the questionnaire, Mr. Aldis Lama from the Road traffic Safety Directorate of the Ministry of Transport provided updated information and data.

Usability of Latvian data for SPIs

From April 2005, data of speed distribution are available on main roads and first class roads by the use of traffic counters. There are 109 counting points on main roads and 20 on first class roads. There is no motorway in Latvia. Even if it is on the most important roads that speed is measured, some of them, due to their cover type, will not be comparable with roads from other countries (25.5% of the first class roads are covered with crushed-stone and gravel pavements).

Only speed distributions data are available with the smaller intervals being 10 km/h. Furthermore, data are aggregated over large periods of time (minimum 1 week) and over all vehicle types. The SPIs suggested by SafetyNet can thus not be computed from Latvian data.

The following table summarise the characteristics of the Latvian speed data (2006)

All road types available	
Regular assessment	++
Random and scientific sampling	
Data split out for day and night	
Data split out for weekend and weekday	
Data split out for different period of the year	++
Data split out for different vehicle types	
Traffic conditions taken into account	
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

13.3 Protective systems

Data received from the country

Filled questionnaire (03/2005).

Recent data and methodological information (11/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

No data available at national level.

Use of protective systems

The survey on seat belt wearing was carried out for the first time in 2006 by two organizations: Road Traffic Research and Data Service.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	77*	77	77	N	U,R	Y	Y	2006	N				N

* Aggregated by SafetyNet for urban/rural roads, using weighting coefficients of 0.6 and 0.4.

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	*32**	N	U,R	Y	2006	N			N

* Aggregated by SafetyNet for urban/rural roads, using weighting coefficients of 0.6 and 0.4.

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	NA								

D: Daytime use of seat belts on front seats of HGV+BUS	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	Not available
G: Daytime use of safety helmets by moped riders	Not available
H: Daytime use of safety helmets by motorcyclists	Not available

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1*	1*				
Random sampling design of survey	N	N				
Precision requirements exist related to the sample size	N	N				
Observation procedure is clearly defined for different situations in traffic	Y	Y				
All daylight hours for all working days of the week are considered	N	N				
Data stored, reported and measurements documented	Y	Y				

* survey performed for the first time in 2006.

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	NA	NA				
Nr of sites per road types	NA	NA				
Sample size at sampling site	>500	>200				
Observed total	54083	4473				

A – 3149 for all occupants (passengers).

SPIs proceeding

It is possible to roughly estimate values of following indicators: A,B. Nevertheless, they cannot be considered valid and used in international comparison for several reasons:

- Sampling methodology used does not allow to get satisfactory representative values (e.g. for urban areas, only the capital is was considered, etc.)
- The observation period extends to summer months.

The methodology used in 2006 needs minor adjustment to produce comparable values of both indicators.

SPIs presentation

Only a rough estimation of two indicator values are available: A=77% and B=32% (for 2006).

13.4 Daytime running lights

Data received from the country

Legislation
Since 1999 DRL is obligatory in Latvia, for the whole year, on all road types, and for all motor vehicle types.

Other features
There is a penalty for non-compliance.

Surveys
It is mandatory to carry out a regular survey. In 1999, data have been collected; these data were not provided however.

Data
Not data available. In Latvia the automatic DRL use had been introduced since 1999. The rate of DRL users is close to 100%, and it will be retained on this level, because the usage is automatic (cannot be forgotten). Under such circumstances the surveys and enforcement are no more necessary.

Usability of the data for SPIs

No data available.

Quality of the data

No data available.

SPIs used by policy makers

Unknown.

13.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year production of all vehicle types from 2003.

Usability of the data for SPIs

The data can be used to calculate the vehicle crashworthiness and vehicle age SPIs and the fleet composition and compatibility SPIs.

Quality of the data

The quality of the Latvian data is the best that has been provided. The vehicles are broken down into only make model and year, making the database easy to analyse.

The vehicles are in the vehicle type groups as specified in the questionnaire and any issues are explained, for example, where there are no data for mopeds it is stated that moped registration will begin in Latvia on 1/5/04.

The year of production is given rather than year of first registration. It seems that this is better data to use as the true age of the vehicle is given and it solves the problem of imported vehicles.

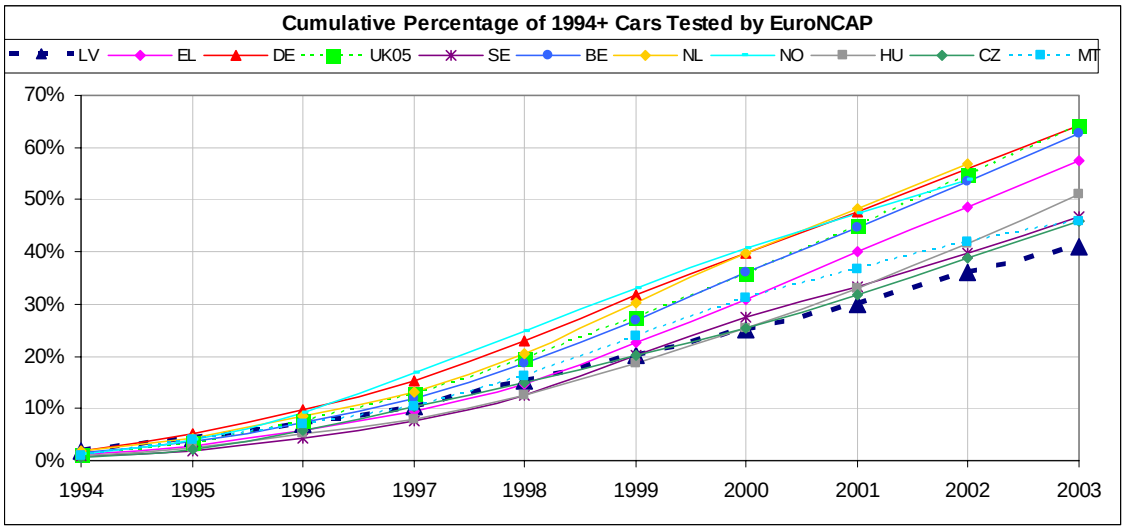
SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

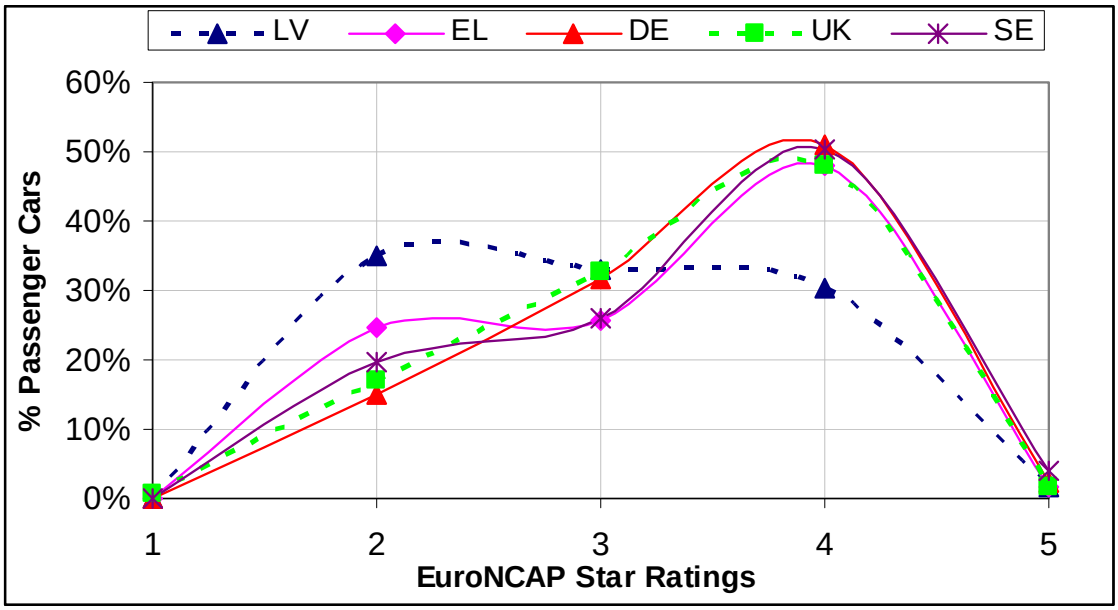
Illustration

Latvia (LV) has the 3rd smallest passenger car fleet of the 15 countries analysed.

Latvia has the greatest number of cars over 10 years old; over 85% of the fleet.

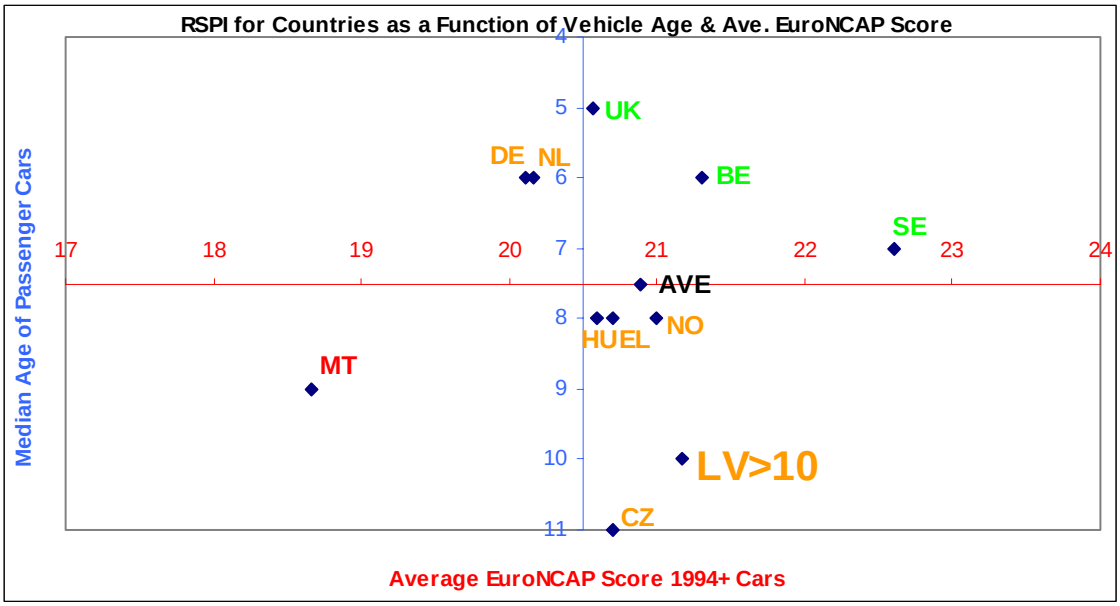


Latvia has the lowest percentage of cars that have been tested by EuroNCAP and although analysis was possible on fewer than 10% of the total fleet, it was in fact possible on over 40% of the vehicles registered since 1994. This compares favourably with the “best” of the other countries, where analysis was possible on 65% of the post-1994 fleet.

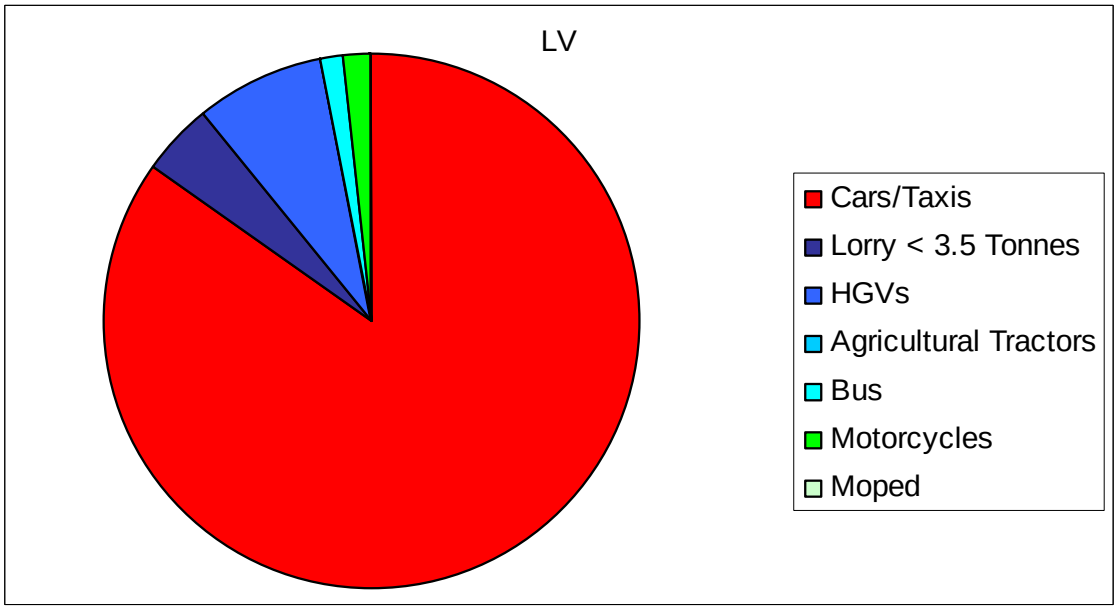


The above graph shows the differences in distribution of EuroNCAP star ratings. This shows that the spread of vehicle scores does not differ significantly, except in the case

of Latvia, which has a more even spread. This might be explained by Latvia's relatively recent accession to the EU, which has resulted in some rapid socio-economic changes.



Latvia performs above average in the crashworthiness SPI, but has one of the highest median age of vehicles – at least 10 years old on average, but likely to be older.



Latvia has a small number of motorcycles and also relatively small numbers of large vehicles, which presents a reduced risk of compatibility issues. Mopeds begin to be registered in 2004.

13.6 Roads

Data were received, but these could not be used for calculating our SPIs.

13.7 Trauma management

Data received from the country (2003)

General data

Population, million	2.3
Road length - total, km	69919
Road length - public, outside built-up areas, km*	27294
Vehicle-kilometres travelled, million	8666.3
Comments	*State roads + Forest roads

Data on Trauma management

(1) No of dispatching centres	25
(2) No of EMS stations	48
Number of EMS staff in service*: (4a) No of physicians	396
(4b) No of paramedics	0
(4c) No of nurses	416
(4d) No of medical technicians	0
(4f) Total	1645
Number of EMS transportation units in service: (7a) No of BLSU	0
(7b) No of MICU	280
(7d) No of helicopters/ planes	2
(7e) Total	282
Comments	*EMS staff only

(12) No of EMS calls annually	n.a.
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	n.a.
(17) share of road accidents in the EMS rides	n.a.

(19) The demand for EMS response time, min	15 min inside built-up areas and 25 min outside built-up areas
(20) Percentage of EMS responses meeting the demand	96% inside built-up areas and 88% outside built-up areas
(21) Average response time of EMS, min	6 min inside built-up areas and 17 min outside built-up areas
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	n.a.

SPI values estimated for Latvia

(3a) EMS stations per 10000 citizens	0.209
(3b) EMS stations per 100 km of rural road length	0.077
(5a) Percentage of physicians out of EMS staff	24.1%
(5) Percentage of physicians + paramedics out of EMS staff	24.1%
(6) EMS medical staff per 10000 citizens	7.15
(8b) Percentage of MICU out of the total EMS units	99%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	100%
(9) EMS transportation units per 10000 citizens	1.23
(11) EMS transportation units per 100 km of road length	0.40
(19) The demand for EMS response time, min*	25 min
(20) Percentage of EMS responses meeting the demand*	88%
(21) Average response time of EMS, min*	17 min
Comments	*Outside built-up areas

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	n.a.

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	n.a.

14 Lithuania (LT)

14.1 Alcohol & Drugs

Data received from the country

760 fatalities in 2005. 113 people killed in “road accidents caused by road users, who were under the influence of alcohol.” It is not known to the SafetyNet team whether these road users are drivers only or mostly, or whether bicycle riders, pedestrians and other road users are also included.

Legal limit of alcohol concentration in Lithuania is 0.4‰.

Penalties such as:

Easy intoxication (0.4-1.5‰) – Penalty 1500-2000 Litas or loss of driver licence from 1 to 1.5 years. (1 Euro approx. = 3.5 Litas)

Medium intoxication (1.5-2.5‰) – Penalty 1500-2000 Litas and loss of driver license from 1.5 to 2 years.

Hard intoxication (2.5‰ and more) – Penalty 2000-3000 Litas and loss of driver licence from 2 to 3 years.

Alcotester read-out is proof of intoxication. (November 20, 2006)

Usability of the data for SPIs

The data allows the calculation of the SPI for alcohol, but not for drugs.

Quality of the data

Unclear whether “road users who were under the influence of alcohol” includes pedestrians and bicycle riders. If so, the SPI should be reduced to compare to other countries, except Germany which does include these road user groups. Moreover, the limit for “under the influence of alcohol” is not specified.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 14.8%.

14.2 Speed

Lithuania did not respond to the questionnaire. There is no information about an eventual speed survey. Only data coming from enforcement are made available by Police Department but no SPI can be computed from this kind of data.

14.3 Protective systems

No data were received.

14.4 Daytime running lights

No data were received.

14.5 Vehicles (passive safety)

No data were received.

14.6 Roads

No data were received.

14.7 Trauma management

No data were received.

15 Luxembourg (LU)

15.1 Alcohol & Drugs

No data were received.

15.2 Speed

No data were received.

15.3 Protective systems

Data received from the country

No data were received.

Limited amount of information available online: (Enquête ILReS: le port de la centure de sécurité au Luxemburg; 03-03-Gurt189), presentation ppt, available online on: www.tr.etat.lu/sensibilisation/mlc/snote.pdf.

SPIs in use

Unknown.

Presence of protective systems in vehicles

No data available at national level.

Use of protective systems

No data available at national level.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	87*	88	84	Y	U,R,M	Y	Y	2003	Y			2002	55 **

* estimation SafetyNet, ** 2% unknown (1 person) – for all car occupants

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	72		U,R,M	Y	2003	Y			N

Transport

Project co-financed by the European Commission, Directorate-General Transport and Energy

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	57					R	???		1996

D: Daytime use of seat belts on front seats of HGV and coaches	15% for camions in 2003.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	Not available
G: Daytime use of safety helmets by moped riders	Not available
H: Daytime use of safety helmets by motorcyclists	Not available

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	-	-				
Random sampling design of survey	Y	Y				
Precision requirements exist related to the sample size	N	N				
Observation procedure is clearly defined for different situations in traffic	Y	Y				
All daylight hours for all working days of the week are considered	Y	Y				
Data stored, reported and measurements documented	Y	Y				

Foreign drivers included, vans included

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	3	3				
Nr of sites per road types	1/1/1	1/1/1				
Sample size at sampling site						
Observed total	8971+A tot.	A*				

A – 3149 for all occupants (passengers)

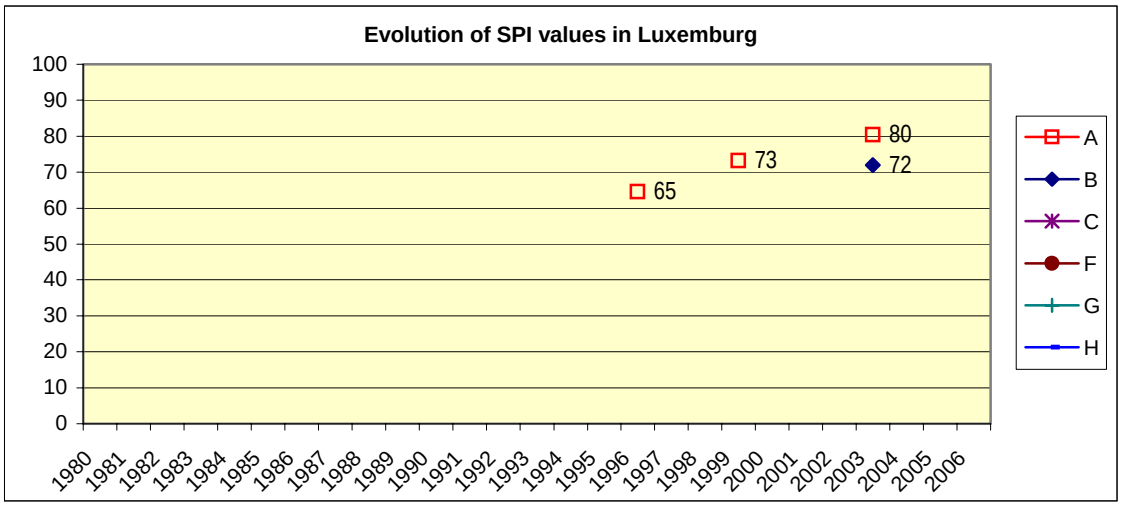
SPIs proceeding

It is possible to figure out the values of the following indicators:

A,B (need to be verified for the validity)

For all available indicators, it can be recommended to reconsider the design of the survey.

SPIs presentation



15.4 Daytime running lights

No data were received.

15.5 Vehicles (passive safety)

No data were received.

15.6 Roads

No data were received.

15.7 Trauma management

No data were received.

16 Hungary (HU)

16.1 Alcohol & Drugs

Data received from the country

Year of the data: 2005.

Number of road accident fatalities: 1284.

Number of road accident fatalities for which at least one driver involved was impaired by alcohol. The one driver is always considered the causer of the accident. Hungary has such data only about the person who is responsible for the accident. 112 fatalities.

Number of road accident fatalities for which at least one driver involved was impaired by drugs other than alcohol. Hungary could deliver data about the influence of medicine, but not about other drugs.

Definition of alcohol impaired, i.e. blood alcohol concentration level:

BAC	Number of fatalities
<0.5%	4
0.51-0.79%	16
0.8-1.49%	47
>1.5%	45
all:	112

Usability of the data for SPIs

The data allows the calculation of SPIs for alcohol.

Quality of the data

There is some problem with including the “causer” of the accident vs. all drivers. What is meant by “causer”?

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 8.4% (BAC>0.5).

16.2 Speed

Background

Speed data have systematically been monitored since 2001. The National Road Data Bank at the Technical and Information Services on National Roads is the owner of the available data and maintain related speed data database.

Data received from the country

Hungary delivered a large set of data together with the complete questionnaire responses. The fact that the KTI (Institute for Transport Sciences), one of the partner in the development of the SPIs related to speed, has a direct access to these data, facilitates delivery, validation and transformation of national data for the use in SafetyNet. The country further provided an overview of speed data collection methods containing a general description of survey methods and certain technical details.

Usability of national data for SPIs

There are 4 types of data measuring units in Hungary. It means unfortunately 4 types of data collection system. Altogether 132 road profiles are including in national sample and cover all road types and regions. Individual vehicle data are usually available. Two vehicle types are usually distinguished: cars and trucks. The measurements are usually performed over the period of 24 hours. In general, the data show a high level of aggregation (period, vehicle type) and information on legal speed limit can be sometimes missing. Reported values are the average speed and the standard deviation of speed. While for some locations (depending on measuring device types) data are detailed enough to allow computing SPIs proposed by SafetyNet, for some others, data might be to much aggregated and building SPIs therefore impossible.

The following table summarise the characteristics of the Hungarian speed data (2002).

All road types available	++
Regular assessment	+
Random and scientific sampling	++
Data split out for day and night	
Data split out for weekend and weekday	++
Data split out for different period of the year	+
Data split out for different vehicle types	++
Traffic conditions taken into account	+
Measurements without visible police presence	++
Error check	++
National scale indicators reported	+

+ Criteria partially fulfilled ++ criteria fully fulfilled

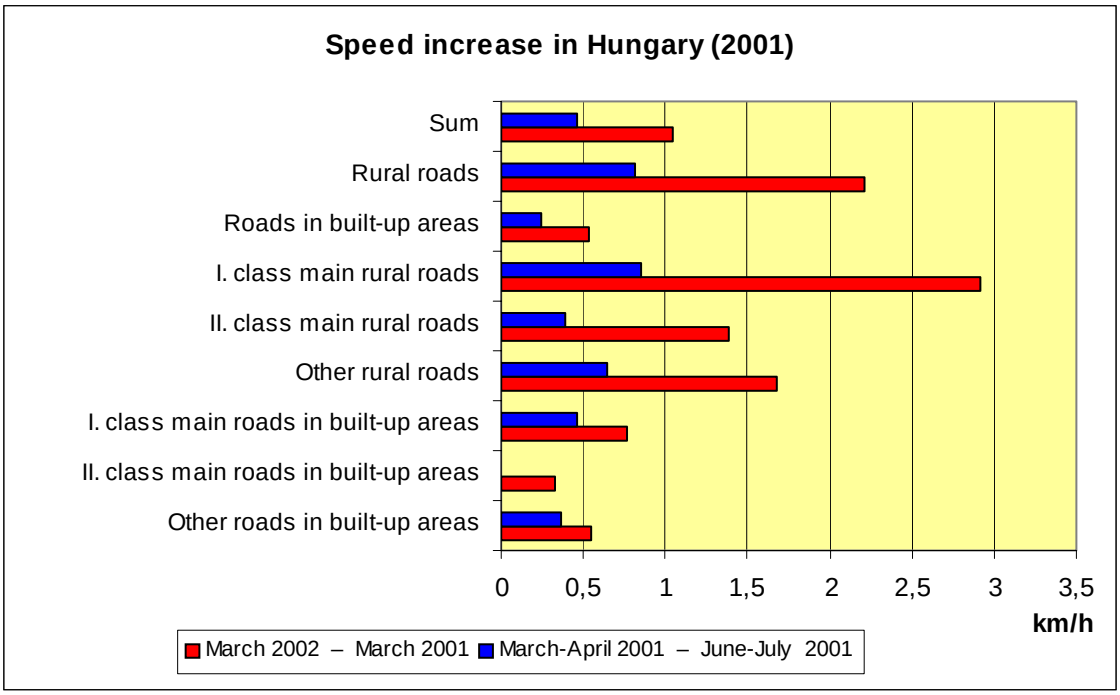
Quality of the data collected by SafetyNet

The data in possession of the SafetyNet safety performance indicators team corresponds to the best data available described above. Not all indicators are always available and some data may show a high degree of aggregation making it impossible to derive the desired indicators.

SPIs used by policy makers

The use of speed data by policy makers is rather limited and no goals exist in official governmental documents regarding the lowering the speed on national roads. Until now, the speed data were only used for the evaluation studies on the effect of legal limit changes.

Illustration



The above figure represents the evolution of the average speed between the period before and after the increase of the legal speed limit outside built up areas realised as of 1 May 2001. Cross sectional measurements were analysed by each traffic lane. In five cases outside built-up areas no significant difference could be presented during the analysis of 26 traffic lanes speed data, while the data of 21 lanes showed a significant speed increase. Inside built-up areas during the analysis of 60 lanes in 14 cases, no significant change could be proved; the data of 11 lanes showed a significant speed decrease, while those of 35 lanes indicated a significant speed increase. Using the measurements carried out with the help of the ADR 2000 instruments, it was found that in comparison with the period preceding the speed limit increase (March 2001) to the following period (March 2002), outside and inside built-up areas, the free speed of vehicles increased on average by 2.21 km/h and 0.53 km/h respectively (in total: 1.04 km/h increase).

16.3 Protective systems

Data received from the country

Filled questionnaire (03/2005).

Information on the data collection methodology.

Information on data collected in road accidents (10/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

Only a limited amount of information is available regarding the presence of protective systems in vehicles at country level through self-reported questionnaires collected through the EU funded project SARTRE.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 1997 (A,B) by TUV. The data on the development of following indicators are available: A, B.

The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs:

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	67*	67	67	Y	U,R,M	??	??	2005	Y	49	49	2003	59

* Assuming following traffic distribution 35/55/10% (U,R,M) for passenger cars

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	34	N	U,R,M		2004	Y	49	2003	59*

* Seat belts wearing in accidents for all passenger car seats together

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	NA								

D: Daytime use of seat belts on front seats of HGV and coaches	Not available
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	Not available
G: Daytime use of safety helmets by moped riders	Not available
H: Daytime use of safety helmets by motorcyclists	Not available

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1				
Random sampling design of survey	Y	Y				
Precision requirements exist related to the sample size	Y	Y				
Observation procedure is clearly defined for different situations in traffic	Y	Y				
All daylight hours for all working days of the week are considered	Y	Y				
Data stored, reported and measurements documented	Y	Y				

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	11	11				
Nr of sites per road types	4/5/2	4/5/2				
Sample size at sampling site	3300	3300				
Observed total						

Source: TUV/KTI, IRTAD

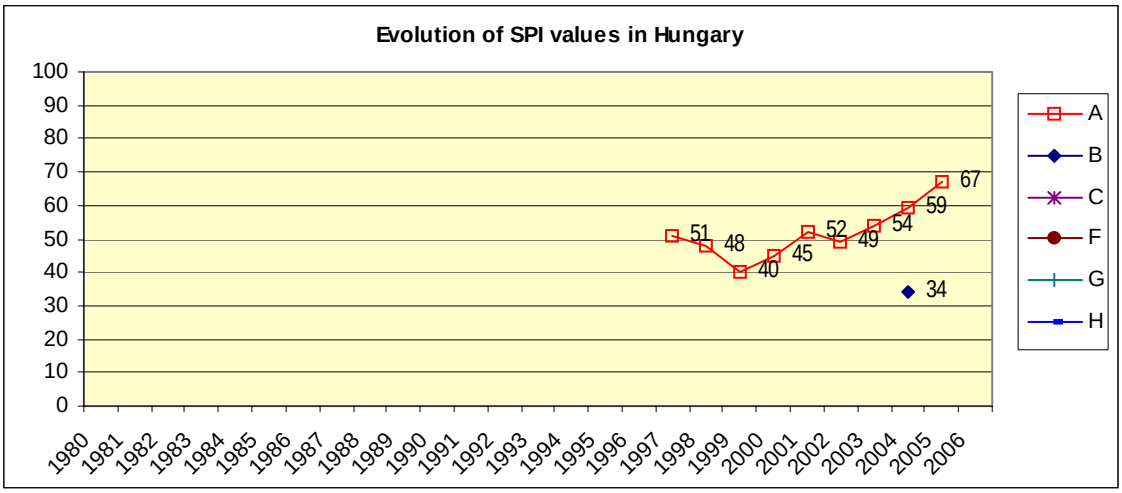
SPIs proceeding

It is possible to figure out the values of the following indicators:

A,B (valid)

For all available indicators, it can be recommended to reconsider the design of the survey.

SPIs presentation



Comments: the value of SPI A estimated from available data

16.4 Daytime running lights

Data received from the country

Legislation

Daytime Running Lights (DRL) have been introduced in Hungary in four steps:

1. As of 1 February 1984 motorcycle drivers must use the dipped beam at daytime, too.
2. As of 1 March 1993, it became obligatory for car and lorry drivers to switch on the dipped beam outside built-up areas during daytime, too, on priority roads and on highways.
3. As of 1 June 2004, this measure became valid for motor vehicles, agricultural tractors, slow-moving vehicles, and mopeds on all roads outside built-up areas.
4. The regulations made it possible to use the real daytime running light (lamps) on cars and lorries, instead of dipped beam.

Other features

Information campaigns and enforcement are applied in order to optimise the impact. The scope of the point demerit system has been extended to driving with inappropriate lights. In 2005, driving without daytime running lights was fined on the spot or after accusation to 10,000.- HUF (≅ 36 Euro) or 30,000.- HUF (≅ 107 Euro), respectively.

Surveys

Yearly roadside surveys for DRL usage rates.

Sample: more than 10,000 passenger cars (including small vans, vehicle categories M1, N1).

DRL usage rates according to road categories:

- Urban roads
- Motorways
- Country roads

The surveys are carried out under similar circumstances (same quarter, similar weather conditions).

Data

Year: 2005

Motorway	94.7%
Rural	83.5%
Urban	5.3%
DRL-roads	n.a.

Usability of the data for SPIs

The data are already used. Hungary is one of the countries with long time series of the DRL usage rates. At this moment there are rates according to road categories. In the future it will be necessary to collect rates according to vehicle categories as well.

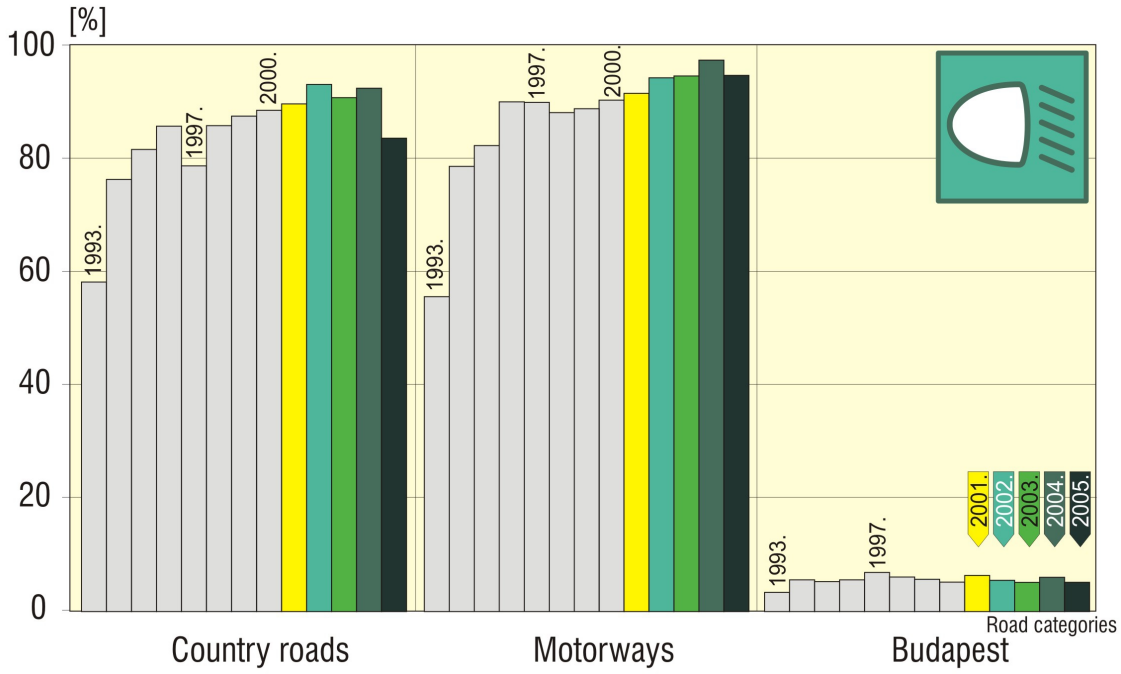
Quality of the data

The results are nearly representative and give a good picture about the whole population of the DRL users.

SPIs used by policy makers

The results (rates) can be used in the planning of the road safety campaigns and police enforcement activities.

Illustration



On the so-called DRL-roads the usage rate is high, even increasing.

16.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year manufacture of passenger cars from 2005.

Year only data for different vehicle types in 2004.

Usability of the data for SPIs

The data can be used to calculate the vehicle crashworthiness for and vehicle age SPI for vehicles in 2005

Fleet composition and compatibility SPIs could be calculated but some vehicle types are missing.

Quality of the data

The quality of the data in the passenger car database is good, although some alterations had to be made in order to compare with countries that have 2003 data.

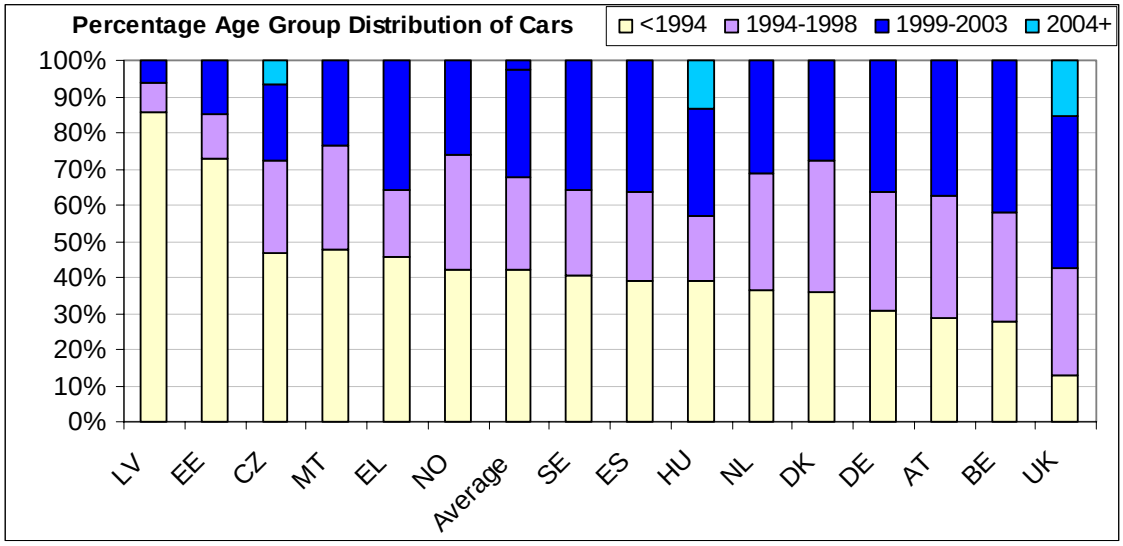
The quality of the vehicle type data is good but more vehicle types are needed, such as a distinction between different types of goods vehicles.

SPIs used by policy makers

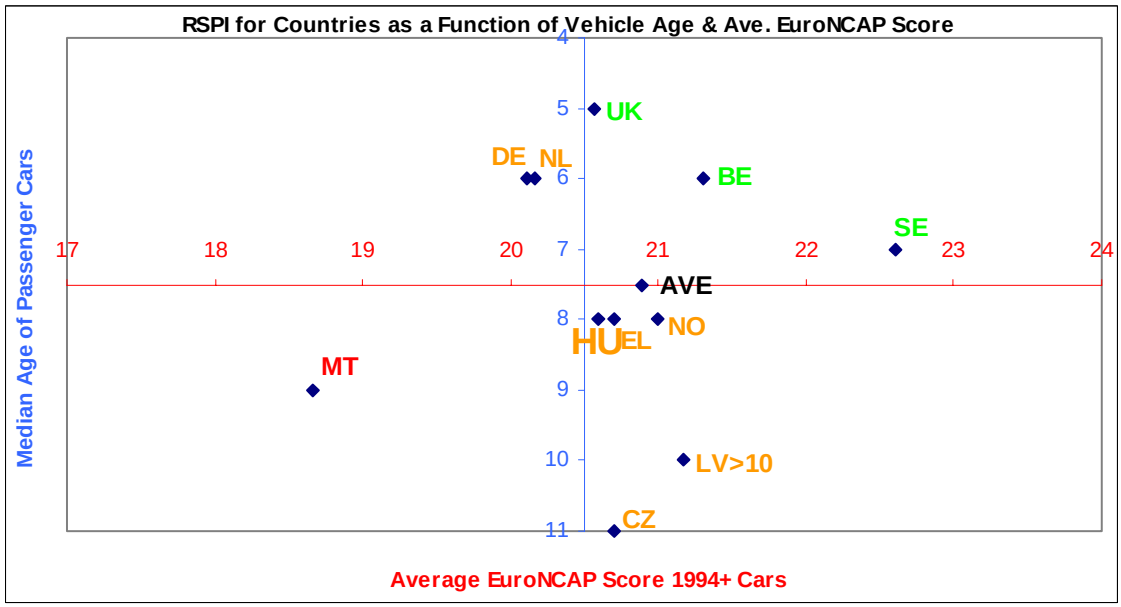
No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

Illustration

Hungary (HU) has one of the smaller passenger car fleets of the 15 countries analysed.



Hungary performs well above average when looking at age distribution and has a higher percentage of cars under 5 years old then from between 1994-1998 and those over 10 years old.



Hungary performs slightly below average in both the vehicle crashworthiness SPI and the vehicle age SPI with an average passenger car age of 8 years.

16.6 Roads

Data received from the country

Complete data are received from a certain region in the country, with data from 2005. Complete means data on all SPIs. The data comprises several connection types.

Usability of the data for SPIs

The data can be used for the calculation of SPIs.

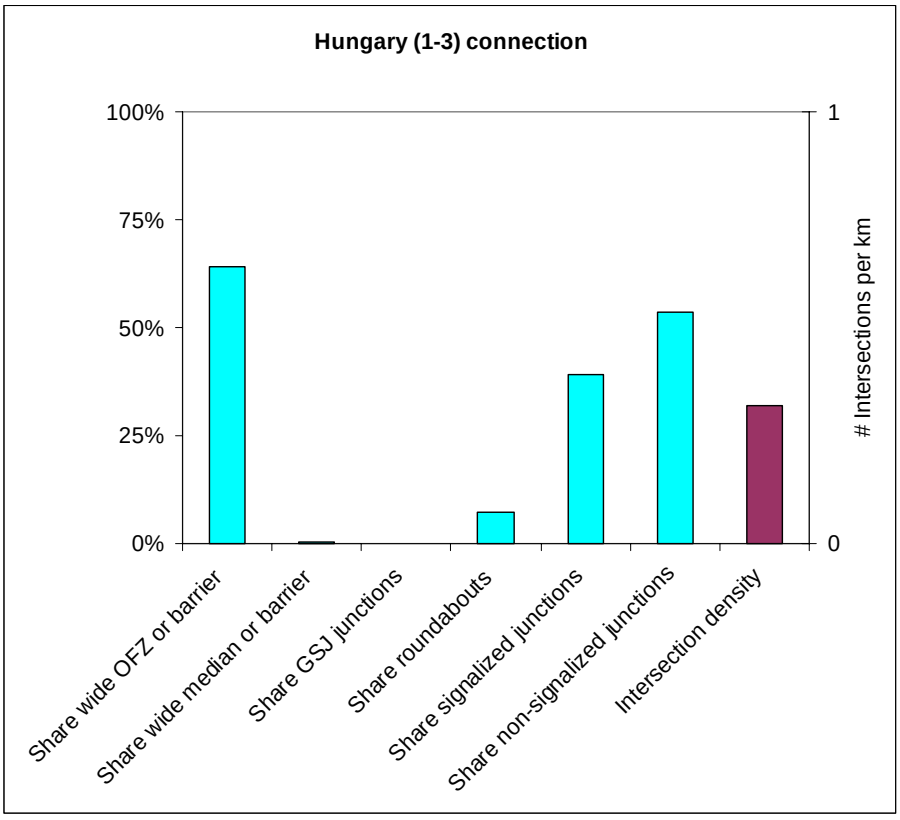
Quality of the data

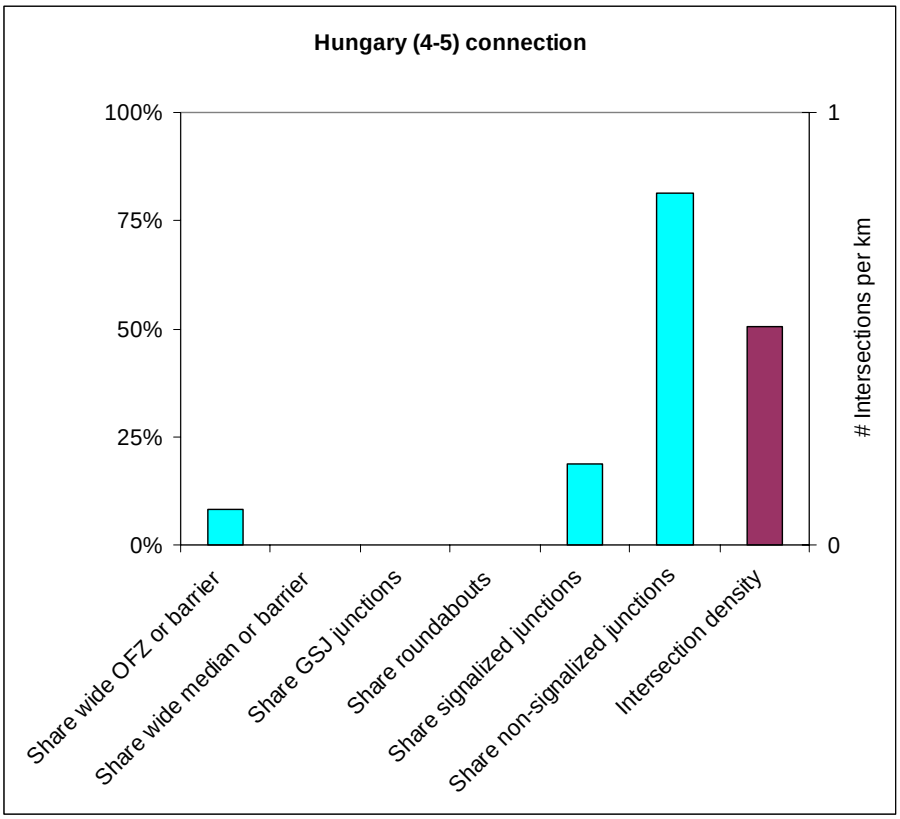
The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration





The (1-3) connection has a wide obstacle-free zone or roadside barrier at 64% of its road length, but there is no wide median or barrier. Furthermore, there are no grade-separated junctions, the junctions are mainly non-signalised and signalised. A small part is a roundabout (7%). An intersection density of 0.32 intersections per kilometre is average for this connection type.

The (4-5) connection has a small part with a wide obstacle-free zone or roadside barrier (8%), this is high for this connection type. As expected there is no wide median or median barrier. There are only at-grade junctions, mainly non-signalised. The intersection density of 0.5 intersections per kilometre is low, for this connection type.

16.7 Trauma management

Data received from the country (2003)

General data

Population, million	10.14
Road length - total, km	135555
Road length - public, outside built-up areas, km	76588
Vehicle-kilometres travelled, million	n.a.

Data on Trauma management

(1) No of dispatching centres	25
(2) No of EMS stations	216
Number of EMS staff in service: (4a) No of physicians	128*
(4b) No of paramedics	n.a.
(4c) No of nurses	0
(4d) No of medical technicians	847
(4f) Total	975
Number of EMS transportation units in service: (7a) No of BLSU	847
(7b) No of MICU	128
(7d) No of helicopters/ planes	5
(7e) Total	978**
Comments	* physicians and paramedics together **The data supplied was 835 (total).

(12) No of EMS calls annually	508000
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	507682
(17) share of road accidents in the EMS rides	6.60%
Comments	*Last data: 679682

(19) The demand for EMS response time, min	15 min*
(20) Percentage of EMS responses meeting the demand	72%**
(21) Average response time of EMS, min	12-20 min***
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	3391
Comments	* no official demand ** range 61%-82% *** in rural areas (8 min in capital)

SPI values estimated for Hungary

(3a) EMS stations per 10000 citizens	0.21
(3b) EMS stations per 100 km of rural road length	0.28
(5a) Percentage of physicians out of EMS staff	13.1%*
(5) Percentage of physicians + paramedics out of EMS staff	13.1%
(6) EMS medical staff per 10000 citizens	0.96
(8b) Percentage of MICU out of the total EMS units	13%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	100%
(9) EMS transportation units per 10000 citizens	0.96
(11) EMS transportation units per 100 km of road length	0.72
(19) The demand for EMS response time, min	15 min
(20) Percentage of EMS responses meeting the demand	72%**
(21) Average response time of EMS, min	12-20 min***
Comments	* physicians and paramedics together ** range 61%-82% *** in rural areas (8 min in capital)

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	33

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	3.34

17 Malta (MT)

17.1 Alcohol & Drugs

No data were received.

17.2 Speed

No speed data are available in Malta. Speed is only checked for enforcement purposes.

17.3 Protective systems

Data received from the country

Filled questionnaire (11/2004).

Recent, time-series data and methodological information (10/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 2004 (A,B,C).

The use of protective systems has been also monitored in accidents since 2005, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs:

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	*96**	97	95	N	U,R**	Y	Y	2006	N				N

* estimated by SafetyNet (weighting coefficients 0.66, 0.33), ** arterial roads only

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	28	N	U,R	Y	2006	N			N

Transport

Project co-financed by the European Commission, Directorate-General Transport and Energy

C: Daytime use of CRS in passenger cars (independent roadside survey)	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	20	<12				S	O	A	2006

D: Daytime use of seat belts on front seats of HGV and coaches	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	NA
G: Daytime use of safety helmets by moped riders	NA
H: Daytime use of safety helmets by motorcyclists	NA

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	2	2	2			
Random sampling design of survey	N	N	N			
Precision requirements exist related to the sample size	N	N	N			
Observation procedure is clearly defined for different situations in traffic	Y	Y	Y			
All daylight hours for all working days of the week are considered	N	N	N			
Data stored, reported and measurements documented	Y	Y	N			

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	1	1	1			
Nr of sites per road types	1	1	1			
Sample size at sampling site	1	1	1			
Observed total	3665	3665	655			

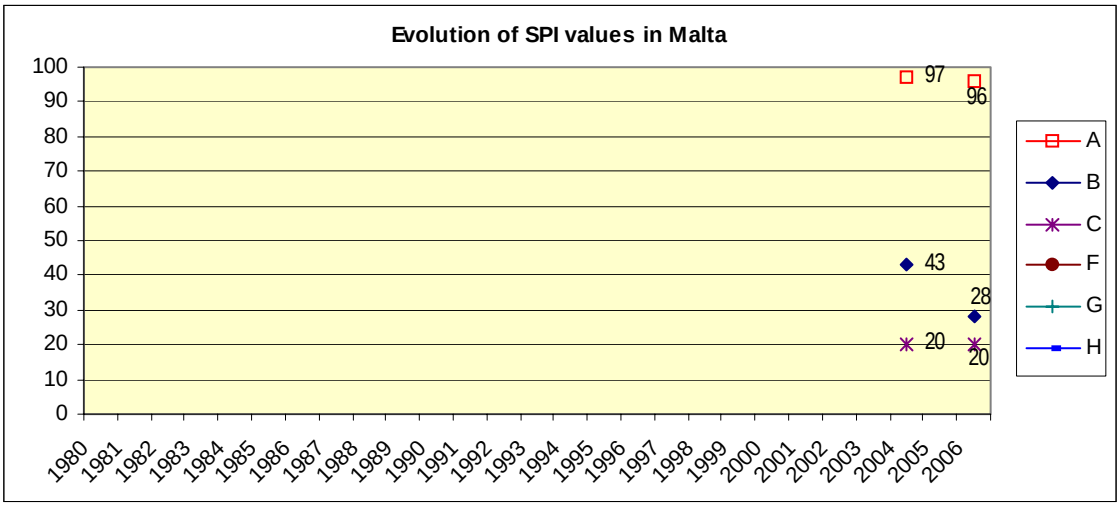
SPIs proceeding

The following indicators can be proceeded for the country:

A, B, C.

Despite the observations were done at one location only, it can be considered as representative for this relatively small island. It is, however, recommended to re-consider survey design in the future in order to reach a higher accuracy of indicators.

SPIs presentation



17.4 Daytime running lights

Data received from the country

Legislation
DRL is not obligatory in Malta.

Other features
Instruction signs are used to advise drivers to switch on their dipped headlights at the entry to a tunnel during the day.

Surveys
No information.

Data
No data available.

Usability of the data for SPIs

Not applicable.

Quality of the data

Not applicable.

SPIs used by policy makers

Unknown.

17.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year manufacture of all vehicle types from 2003 back until 1920 enabling comprehensive vehicle age analysis.

Very detailed vehicle types – a lot more than requested in the questionnaire.

Usability of the data for SPIs

The data can be used to calculate the vehicle crashworthiness and vehicle age SPI and theoretically the fleet composition and compatibility SPI once the vehicle type categories have been established, however this has not been possible so far.

Quality of the data

The problem with the Maltese data is that the database is broken down into a large number of vehicle types. It is very detailed, but in order for direct country comparison for fleet composition, each country needs to provide the vehicles broken down into the specified vehicle types.

It has been possible to isolate the passenger cars and taxis for analysis and also the two-wheeled motor vehicles, however the goods vehicles are not clearly distinguishable.

The year of manufacture has been provided. It was possible to compare the database with vehicles showing year of first registration and year of manufacture and there was a lot of difference between the two. This reinforces the point that year of manufacture is the better category to use.

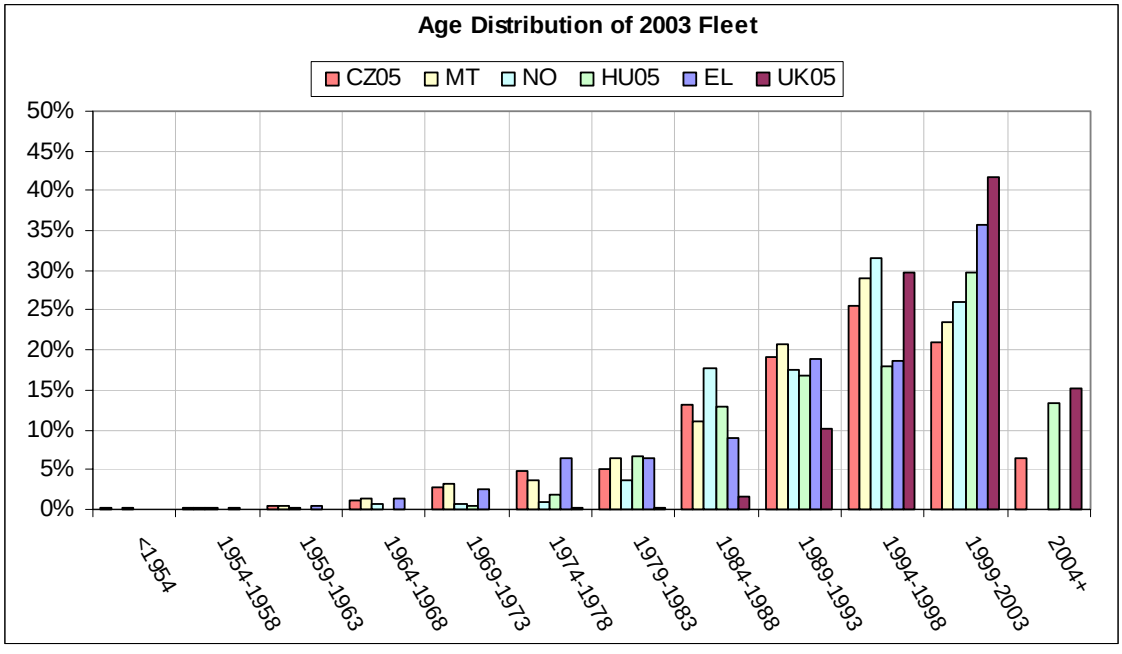
There are a few anomalies in the data where the year of manufacture has not been given correctly, however these problems made up less than 0.05% of the database so it was deemed adequate for calculations.

SPIs used by policy makers

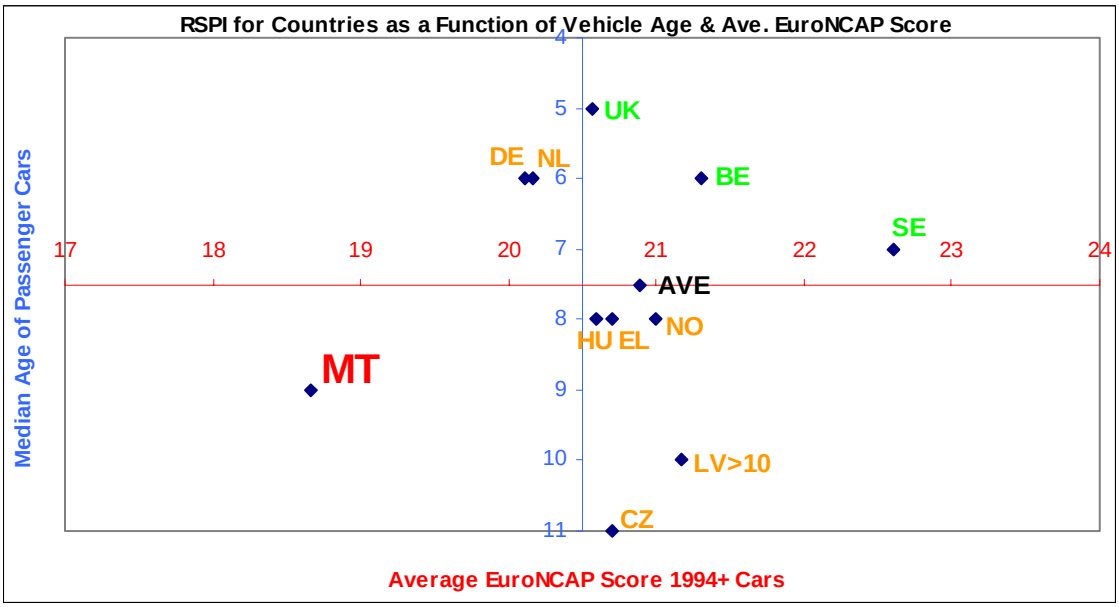
No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

Illustration

Malta (MT) has the smallest passenger car fleet of the 15 countries analysed.



The above graph demonstrate that Malta has more cars that are older than 10 years old with a high proportion from the early 90s and also a relatively high amount that are around 30 years old.



Malta performs below average in both the vehicle crashworthiness and the vehicle age SPIs. The vehicle age is an average of 9 years, while the EuroNCAP score is the lowest of all. It must be remembered though, that the Maltese dataset is very small, therefore exaggerating any differences.

17.6 Roads

Data received from the country

Data were received, but these could not be used for calculating our SPIs.

17.7 Trauma management

Data received from the country (2003)

General data

Population, million	0.39
Road length - total, km	2227
Road length - public, outside built-up areas, km	n.a.
Vehicle-kilometres travelled, million	n.a.

Data on Trauma management

(1) No of dispatching centres	1
(2) No of EMS stations	1
Number of EMS staff in service*: (4a) No of physicians	36
(4b) No of paramedics	0
(4c) No of nurses	30
(4d) No of medical technicians	0
(4f) Total	66
Number of EMS transportation units in service: (7a) No of BLSU	15
(7b) No of MICU	0
(7d) No of helicopters/ planes**	n.a.
(7e) Total	15***
Comments	* These are medical officers working full time in the accident and emergency services ** belong to Armed Forces of Malta (AFM) *** at least

(12) No of EMS calls annually	17612
(13) share of road accidents in EMS calls	n.a.*
(16) No of EMS rides annually	17118
(17) share of road accidents in the EMS rides	n.a.
Comments	*Emergency ambulance calls are yet not classified by nature of calls

(19) The demand for EMS response time, min	Not established yet*
(20) Percentage of EMS responses meeting the demand	Not established yet*
(21) Average response time of EMS, min	15-30 minutes from call initiation depending on locality
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	0
(22b) In trauma department of hospitals	16
(22d) Total	16
Comments	*Malta is working to develop a separate Pre-Hospital care unit to offer specialised medical care in the pre-hospital field

SPI values estimated for Malta

(3a) EMS stations per 10000 citizens	0.026
(3b) EMS stations per 100 km of rural road length	n.a.
(5a) Percentage of physicians out of EMS staff	54.5%
(5) Percentage of physicians + paramedics out of EMS staff	54.5%
(6) EMS medical staff per 10000 citizens	1.70
(8b) Percentage of MICU out of the total EMS units	0%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	100%
(9) EMS transportation units per 10000 citizens	0.39*
(11) EMS transportation units per 100 km of road length	0.67
(19) The demand for EMS response time, min	n.a.
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	15-30 min
Comments	* at least

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	n.a.

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	100%
(25) Number of the total trauma care beds per 10000 citizens	0.41

18 The Netherlands (NL)

18.1 Alcohol & Drugs

Data received from the country

Year	% of alcohol-related fatalities	% of alcohol-related severe injuries
2000	8.1%	9.8%
2001	7.3%	9.4%
2002	9.8%	10.0%
2003	7.0%	9.6%
2004	8.5%	9.4%
2005	8.3%	10.7%

Absolute figures are not provided, but a lot of other data concerning road-side studies of the general driver population, showing the problems of using the general driver population as a basis for SPIs for alcohol and drugs. Absolute figures should be available at www.rws-avv.nl. A document found at this site, says that "In 2003, the number of traffic fatalities as a result of an alcohol related accident amounted to 185, that is 17% of all road traffic deaths.", whereas the table above shows 7% for the same year.

Usability of the data for SPIs

The data can be used to calculate the SPIs for alcohol.

Quality of the data

Limit for "alcohol-related" is not specified, i.e. the BAC limit for an accident or fatality to be defined as alcohol-related. It seems the above data are only for involved drivers surviving the accident. If so, the percentage are likely to be too low, as killed drivers are likely to have a higher share of alcohol-impairment.

SPIs used by policy makers

Numbers and percentages of alcohol-related fatalities and injuries, e.g. in long-term campaign on Drink-Driving.

Illustration

SPI alcohol: 8.3%.

18.2 Speed

Background

Since 1983, the Ministry of Transport Research Centre's measuring system has measured both the speeds of passing vehicles and the traffic volumes per vehicle type on motorways. For other types of roads, provincial authorities are responsible for the speed monitoring but these speed data are not aggregated into national indicators.

Data received from the country

The national expert of The Netherlands did not fill in the SafetyNet questionnaire on speed but sent a table containing average speeds of four 100 km/h road sections (A-level roads) and 9 120 km/h road section (A-level roads). It has been remarked that of these road speed locations other speed indicators were also available (median or 85% percentile) and that these monthly data were available. Monthly data of A-level roads in The Netherlands are available at www.swov.nl, see:

http://www.swov.nl/uk/research/kennisbank/inhoud/90_gegevensbronnen/inhoud/data_5.htm

Usability of Dutch data for SPIs

Speed is measured at 100 locations on motorways. The measurement period is 60 minutes, whereby the average speed per hour per type can be obtained. Since 1988, the Policy information Basic Data department processes the average speeds in a report aimed at compliance with the speed limits. This study reports the data of 40 relevant locations on the road network, with a speed limit of 100 or 120 km/h. A distinction is made between three vehicle types, by vehicle length, as follows: cars (with a length up to 5.10 metres), solo lorries (length of 5.10-11.80 metres), articulated lorries (longer than 11.80 metres). Because of its purpose - the enforcement of speed limits - only the average speeds per hour on locations with undisturbed traffic, where cars can drive faster than 75 km/h, are included in the monthly average. This criterion is consistent with the SafetyNet preference for indicators of speeds that represent as much as possible free flow conditions.

The 40 measurement locations on Dutch motorways have been chosen from the 100 because of their being located on undisturbed road sections with a good traffic flow. Locations on slip roads, in the immediate vicinity of bridges, tunnels etc. have therefore, after testing against the requirements, been excluded.

The measuring apparatus used produces, per period of 60 minutes, the averages of all values measured in that hour. If, during a measurement hour, the average car speed is <75 km/h, these measurements will be eliminated. Because, there is only seldom congestion during an entire hour, the loss of rush hours is relatively small (c. 1-2%). On the basis of the volume distribution, the monthly average per location is calculated. TRC/BD also provides the monthly averages of all locations. After consultation with TRC/BD, the quarterly averages in BIS-V (RSIS), have been calculated in unweighted form.

Since 1998, to calculate the general development of, among other things, the average speed, use has been made of a fixed set of locations. For this calculation, only those locations are used that have data available for more than 20 days of the period concerned. The total monthly averages are calculated using the unweighted averages of the locations. The limited number of locations makes the total monthly average sensitive to the loss of a location with an average that deviates from the total monthly average.

The following table summarises the characteristics of the Dutch motorway data (2006)

All road types available	
Regular assessment	++
Random and scientific sampling	
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	++
Data split out for different vehicle types	++
Traffic conditions taken into account	
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

+ Criteria partially fulfilled ++ criteria fully fulfilled

For others types of roads, even if speed monitoring is well developed in Dutch provinces, it is impossible to compute any SPI because no harmonisation and centralisation of data exist. For information, the table below presents an overview of provincial measurement systems based on a short telephonic survey mid 2002.

Province	Data digitally available since	Number measurement loops	Distribution over road types	Road characteristics available?	Data available for research purposes?	How can data be delivered?
North-Holland	2 year back	15-20 speed + intensity	All 80km	No	After agreement	Data to be compressed with special computer program
South-Holland	2 months back	10-15 speed + intensity	All 80km	Yes	After agreement	Data difficult to convert
North-Brabant	Half 2001	85 speed + intensity + length	Mostly 80km	Yes	In principle yes	In development, classifications will change
Limburg	1998	95 speed + intensity + length	6-7 50km 70km rest 80km	Yes	In principle yes	In Excel
Gelderland	2001	35 speed + intensity	?	Yes	No problem	Data-per-hour per month in spread-sheet
Utrecht	From early nineties	19 speed + intensity	Mainly 80km	Not electronically	Assumes yes	Unknown, software in development
Friesland	From early nineties	>40 speed + intensity +length	80 km and 100 km roads		Yes	
Drenthe	From early nineties	45 speed +length + intensity	Mostly 80km 1 100 km road	Yes	Very likely yes	Data-per-hour
Groningen	from 3 points in 1996 to 38 now	38 speed + intensity + length	50km 60km 70km 24 80km 4 100km	Yes	After agreement	Excel-files (year-en monthly means) of raw data

Quality of the data collected by SafetyNet

The data in possession of SafetyNet pertain to speed measurements on Dutch 100 and 120 km/h motorways. The data include monthly measurements of average speed, V90 and percentage violations of three vehicle types for the period 1987-2006.

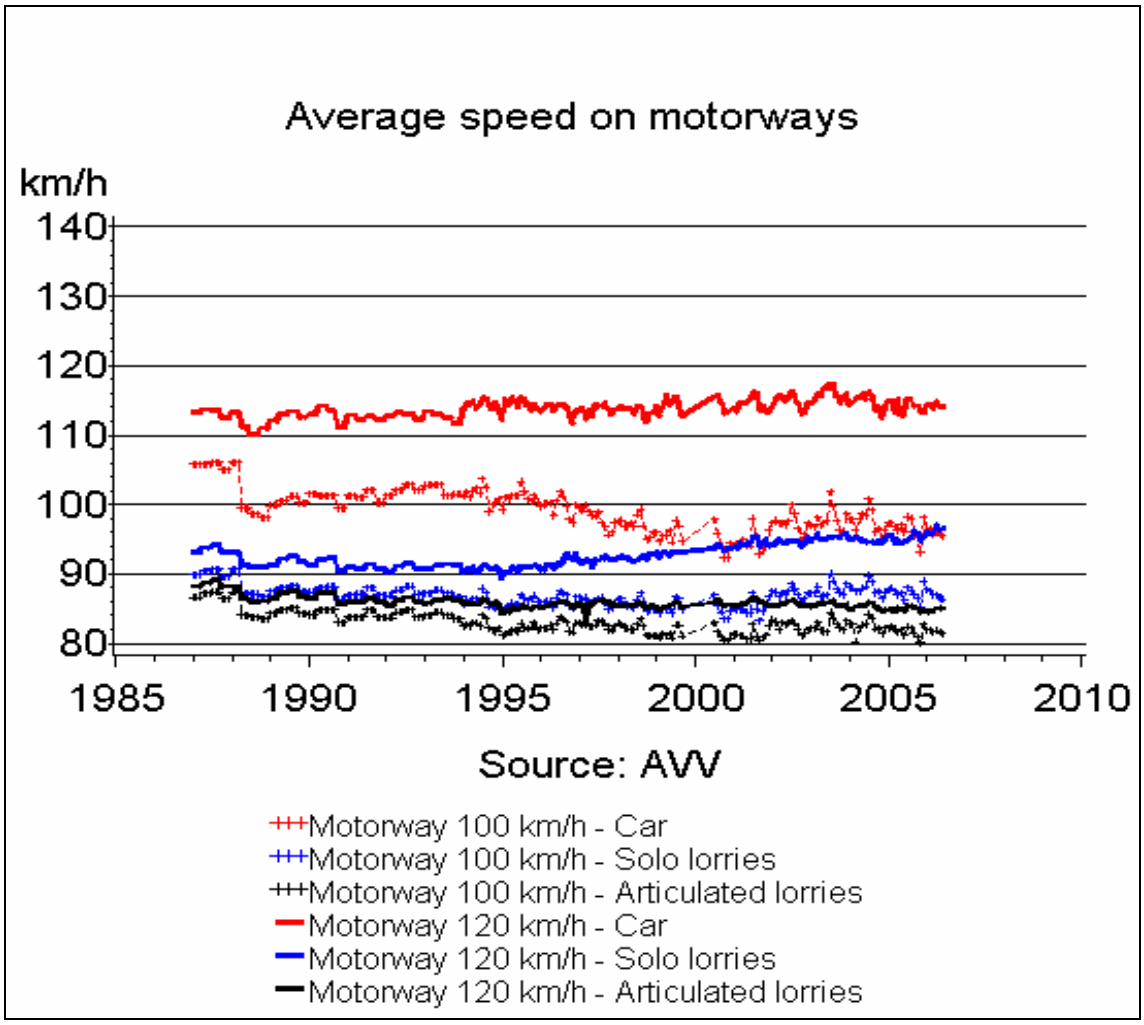
SPIs used by policy makers

The Dutch government monitors speed at A-level roads. Provincial authorities monitor speed at other types of roads but these speed data are not combined into national estimates.

The Bureau of Traffic Enforcement monitors percentages of violators on roads where speed enforcement takes place in order to monitor the effects of speed enforcement. Again, these data are not aggregated to the national level.

Illustration

The figure below shows the average speed of different vehicle types on Dutch motorways over the period 1987-2006.



Source: www.swov.nl, November 2006

18.3 Protective systems

Data received from the country

Filled questionnaire (11/2005).

Information on survey methodology (Gebruik van beveiligingsmiddelen in auto's 2006, report for AVV Transport Research Centre, 2006 (English summary present).

Recent, time-series data and methodological information (10/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is partly addressed at country level. There are no data on seat belts presence, but there are data on airbag availability in passenger cars.

% vehicles equipped by airbag	
Passenger cars	Year
73, 67, 29.17 *	2006

* Driver front, passenger front, side impact front seat, side impact rear seat by means of questionnaire

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 1991 (A,B,C) by AVV (Transport Research Centre) and OM (G) (NGO) for helmets, regular assessment dates back to 2000.

The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs:

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	90	92*	90*	N	U,R,M	Y	Y	2005	N				N

* only passenger cars

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	64	N	U,R,M		2005	N			

C: Daytime use of CRS in passenger cars (independent roadside survey)	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	87*	NA	NA	NA	NA	S	1	U,R,M	2006

* Use of CRS for children smaller than 1.35m. The legislation in The Netherlands for the use of CRS has been changed since 1 March 2006. The criterion for which CRS is necessary is changed into the length of the child, instead of the age.

Transport

Project co-financed by the European Commission, Directorate-General Transport and Energy

D: Daytime use of seat belts on front seats of HGV and coaches	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	NA
G: Daytime use of safety helmets by moped riders	93% nationwide in 2005. (Both urban and rural roads considered, aggregated values available for sex/age groups and road type)
H: Daytime use of safety helmets by motorcyclists	NA

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1	1		Y	
Random sampling design of survey	Y	Y	Y			
Precision requirements exist related to the sample size	Y	N	Y			
Observation procedure is clearly defined for different situations in traffic	Y	Y	Y			
All daylight hours for all working days of the week are considered	Y	Y	Y		Y	
Data stored, reported and measurements documented	Y	Y	Y		Y	

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	84		84			
Nr of sites per road types	NA		NA			
Sample size at sampling site			319			
Observed total	18.729*					

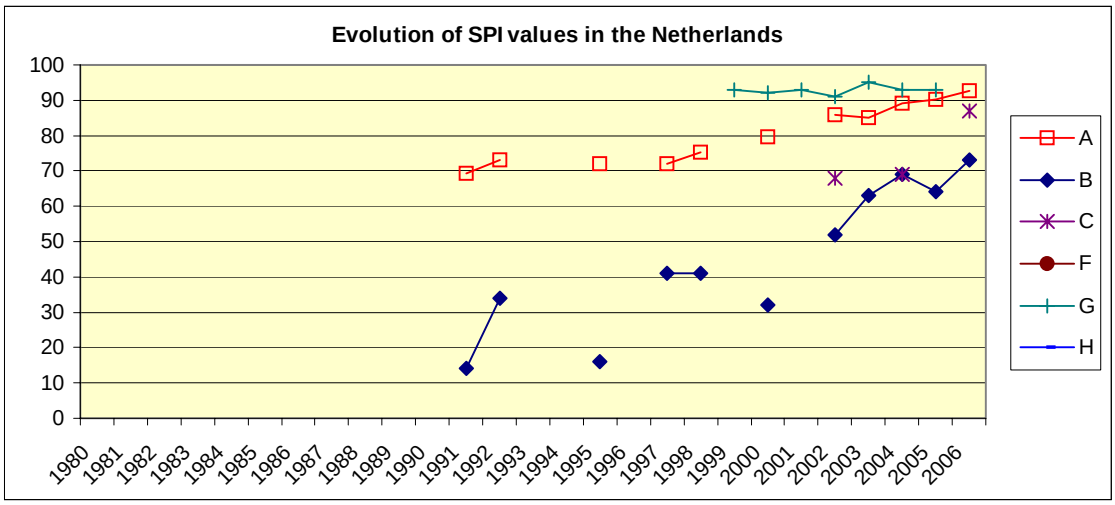
* Numbers of cars. Indicator B is part of this sample.

SPIs proceeding

The following indicators can be proceed for the country:

A, B, C. It is, however, recommended to re-consider survey design.

SPIs presentation



18.4 Daytime running lights

Data received from the country

Legislation
DRL is not obligatory in The Netherlands. There is a recommendation for motor vehicles to use DRL outside built up areas from October to March.

Surveys
Surveys on DRL use rates are not mandatory and are not done regularly. There have been baseline measurements in the past, in anticipation of an expected obligation of DRL in The Netherlands, to be able to calculate the effect of DRL. It was done by manual counting, with a sample size above 1000.

Data
Year: 1993

Conditions: only sunny weather

	Total (%)
motorway	25
rural	19
urban	14

Usability of the data for SPIs

Good features of the data for The Netherlands are the distinction between the different road types and the data collection methodology. The problems of these data are the age (most recent data are from 1993), and the fact that there is no distinction between vehicle groups.

A SPI value can be calculated for The Netherlands, but comparing with other countries will not be possible considering the age of the data.

Quality of the data

See above. However, to fully assess the quality of the data, more background information would be needed.

SPIs used by policy makers

DRL rates have not been measured recently, so currently these rates are not used as a SPI in The Netherlands.

18.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year of first registration of vehicle types from 2002.

Usability of the data for SPIs

The data can be used to calculate the vehicle crashworthiness and vehicle age SPI and the fleet composition SPI.

Quality of the data

The data from The Netherlands is from 2002 and when comparing it with the other countries it has to be remembered that the others will have an extra year of new cars and also may have lost some older cars.

The quality of the data is good although there are two vehicle categories missing.

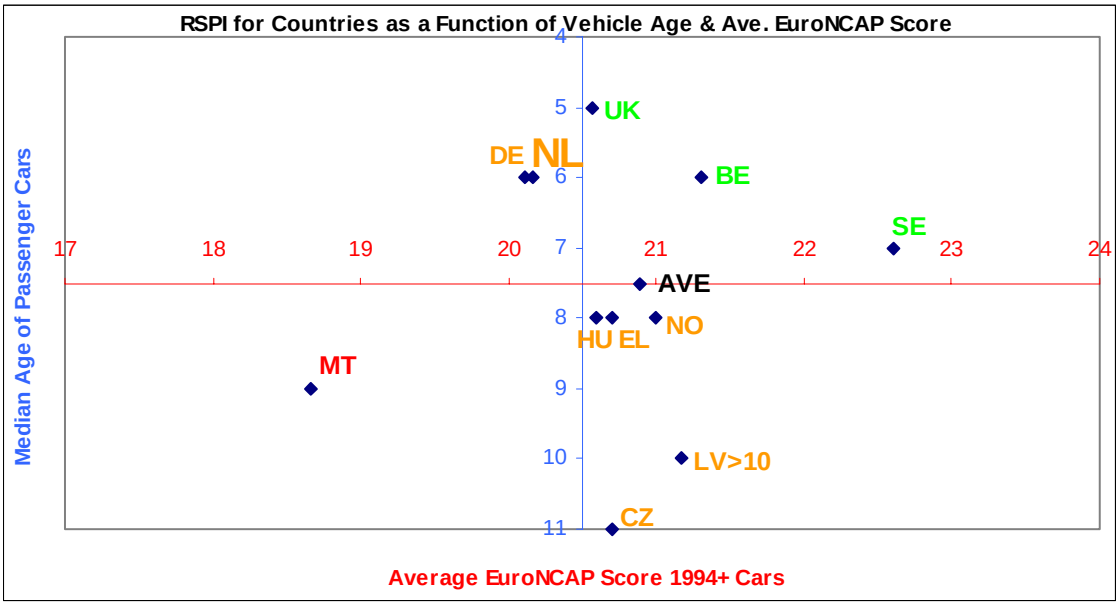
SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

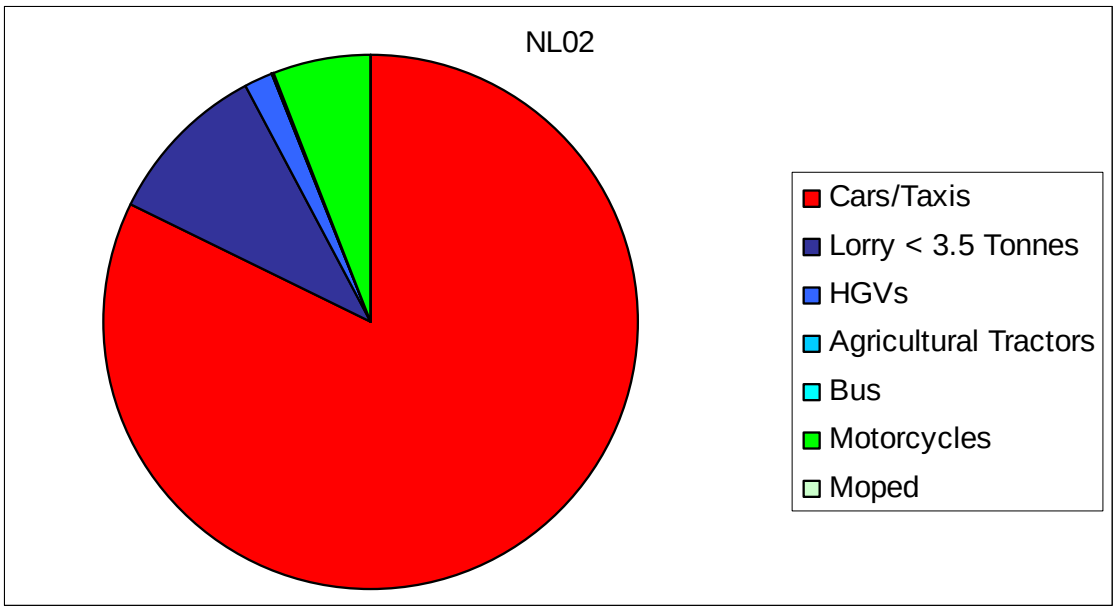
Illustration

The Netherlands (NL) has the 4th largest passenger car fleet of the 15 countries analysed.

The Netherlands has a very even distribution with a similar percentage of cars over 10 years old, from 1994-1998 and less than 5 years old. This raises compatibility issues, as collisions between very old poorly equipped vehicles and newer, heavier vehicles with a high level of equipment will pose a significant risk for the occupants of the older vehicle.



The Netherlands performs well in the vehicle age SPI with an average of 6 years which is the second lowest of all the countries analysed. It has a EuroNCAP score slightly below average. These are both good results as the data from The Netherlands is a year older than that of the other countries.



The Netherlands has a high proportion of passenger cars in the vehicle fleet with a relatively small proportion of HGVs and a very low number of buses, which poses less of a compatibility risk than some countries have. There are no data for number of mopeds but there is a relatively high number of motorcycles.

18.6 Roads

Data received from the country

Complete data are received from a certain region in the country, with data from 2004/2005. Complete means data on all SPIs. The data comprises several connection types.

Usability of the data for SPIs

The data can be used for the calculation of SPIs.

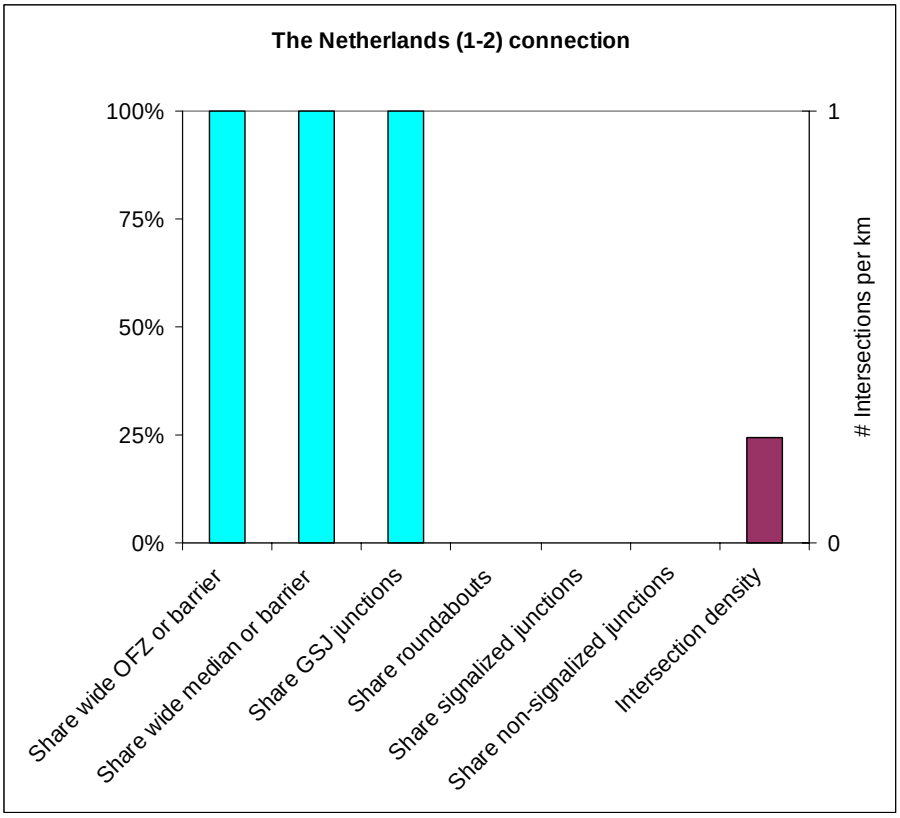
Quality of the data

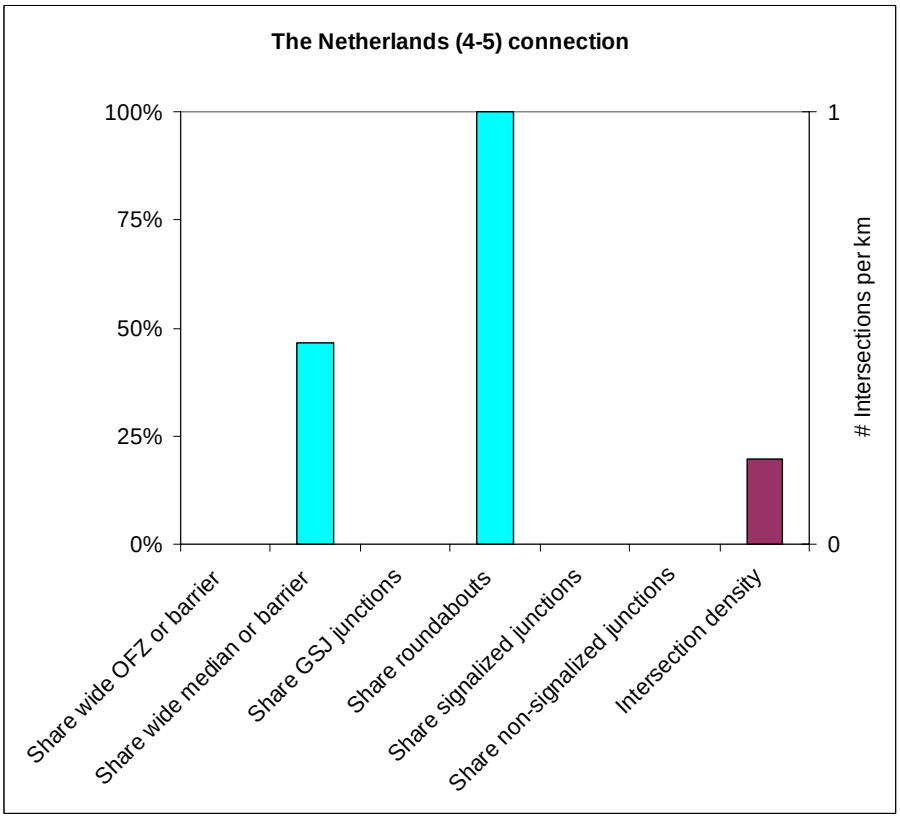
The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs used by policy makers

In The Netherlands regional road authorities use several SPIs, i.e. number of lanes, road surface quality, road surface amount, investments and costs in euros, etc. These SPIs can be calculated per kilometre and for some SPIs for the whole road network.

Illustration





The (1-2) connection has a wide obstacle-free zone or roadside barrier and a wide median or barrier over its full length. Furthermore all junctions are grade separated, just

as expected for this connection type. An intersection density of 0.24 intersections per kilometre is average for this connection type.

There is no information on the obstacle-free zone or roadside barrier for this connection type. At 47% of the length of the (4-5) connection there is a wide median or median barriers, this is high. There are only roundabouts. The intersection density of 0.2 intersections per kilometre is low for this connection type.

18.7 Trauma management

Data received from the country (2005)

General data

Population, million	16.3
Road length - total, km	117430*
Road length - public, outside built-up areas, km	63280
Vehicle-kilometres travelled, million	138800
Comment	*Source: IRTAD (2004)

Data on Trauma management

(1) No of dispatching centres	24
(2) No of EMS stations	51
Number of EMS staff in service: (4a) No of physicians	0
(4b) No of paramedics	0
(4c) No of nurses	1400
(4d) No of medical technicians*	1240
(4f) Total	2640
Number of EMS transportation units in service: (7a) No of BLSU	0
(7b) No of MICU	0
(7d) No of helicopters/ planes	4
(7e) Total**	654
Comments	*Ambulance drivers ** Including 650 ambulances

(12) No of EMS calls annually	n.a.
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	450000*
(17) share of road accidents in the EMS rides	n.a.
Comment	* Excluding non-urgent transport of patients

(19) The demand for EMS response time, min	15 min*
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	n.a.
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	n.a.
Comments	* in 95% of cases

SPI values estimated for The Netherlands

(3a) EMS stations per 10000 citizens	0.03
(3b) EMS stations per 100 km of rural road length	0.08
(5a) Percentage of physicians out of EMS staff	0%
(5) Percentage of physicians + paramedics out of EMS staff	0%
(6) EMS medical staff per 10000 citizens	1.62
(8b) Percentage of MICU out of the total EMS units	0%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	0.6%
(9) EMS transportation units per 10000 citizens	0.40
(11) EMS transportation units per 100 km of road length	0.56
(19) The demand for EMS response time, min	15 min*
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	n.a.
Comments	* in 95% of cases

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	n.a.

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	n.a.

19 Austria (AT)

19.1 Alcohol & Drugs

Data received from the country

1. Number of road accident fatalities (people killed in road accidents): 768. Number of road accident fatalities for which at least one driver involved was impaired by alcohol: 46.
2. Number of road accident fatalities for which at least one driver involved was impaired by drugs other than alcohol: not possible, because this variable is not part of the actual road accidents questionnaire which is used by the police.
3. For alcohol impaired drivers, the definition of alcohol impaired, i.e. blood alcohol concentration level: 5‰ (since 6.1.1998). 5. The year of the data: 2005.

Usability of the data for SPIs

The data allows the calculation of the SPIs for alcohol.

Quality of the data

No special indication of quality.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 5.9%.

19.2 Speed

Data received from the country

Austria delivered a complete questionnaire response and a dataset containing the average speed and the V85 of 4 types of vehicles (cars, motorcycles, heavy good vehicles, moped) on 3 types of road (motorways (AAA), urban roads 50 km/h (DDD, DD, E), urban roads 30 km/h (DDD, DD, E)) for 2004. A time series of average speed and percentage of vehicles over the limit for the period 1994-2005 was further provided.

Usability of Austrian data for SPIs

Austria collects speed data on 8 motorways and on approximately 50 urban roads. These roads are chosen in function of their importance, not randomly. The measurements are done by human observers with help of a laser gun. Speed is only measured for small periods at each location but the sample is made so that measurements occur at different periods of the day (excepted rush ours. There are more measurements during daytime than night-time), different days of the week and different periods of the year (even if measurements in spring and autumn prevail).

The human observer has to select free-flowing vehicles only for the measurements. He also class vehicles into one of the following categories: cars, heavy goods vehicles, motorcycles, mopeds.

Data are assessed and published annually. National indicators such as average speed, standard deviation, V85, percentage of vehicles over speed limit and percentage of vehicles more than 5 km/h over speed limit are published.

Globally, Austrian data are good for computing SPI. Even if annual indicators are published only, it would be possible to compute indicators for specific periods of the day, of the month or of the year from the current database. The two limitations of Austrian methodology for comparisons are the fact that only important roads are surveyed and the fact that the criteria to select free-flowing vehicles is very strict, making comparisons difficult with countries that measure a bigger proportion of the traffic.

The following table summarise the characteristics of the Austrian speed data (2004).

All road types available	
Regular assessment	++
Random and scientific sampling	
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	+
Data split out for different vehicle types	++
Traffic conditions taken into account	++
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

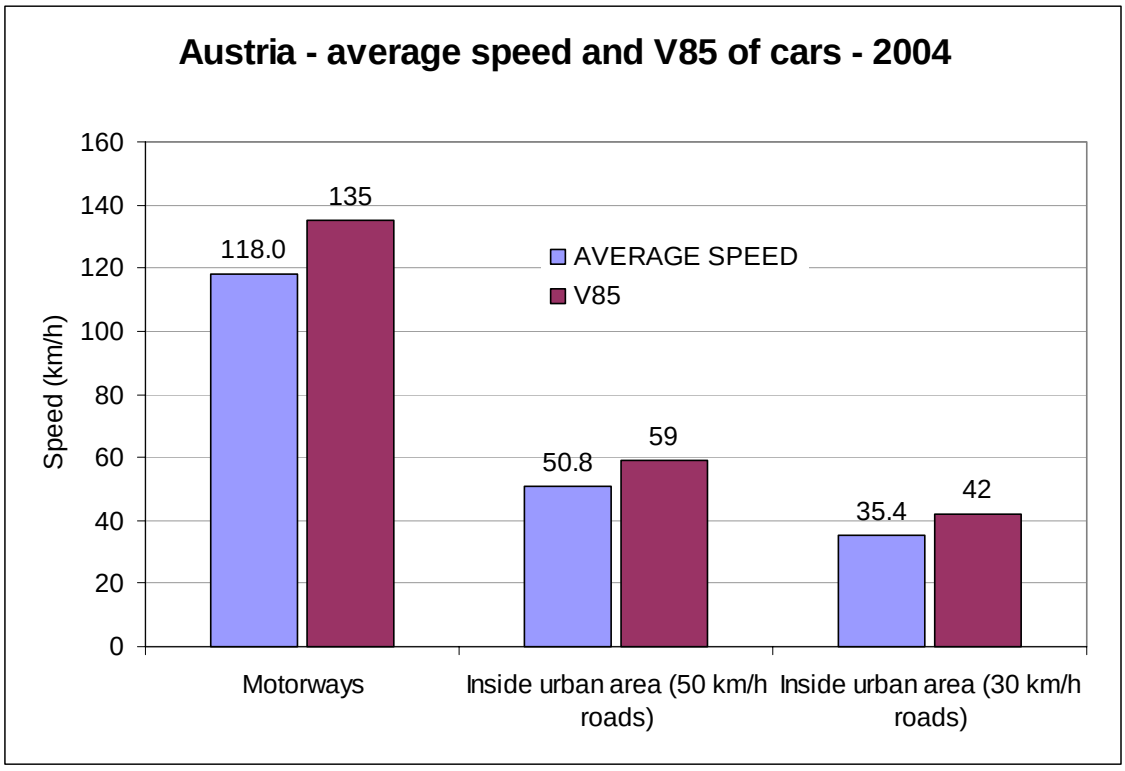
+ Criteria partially fulfilled ++ criteria fully fulfilled

SPIs used by policy makers

Acting on human behaviours, and among them on driving speed, is one of the fields of action highlighted by the Austrian road safety programme 2002-2010. The document does not contain targets about speed indicators through.

Illustration

The following graph reports the average speed and the V85 of cars on Austrian roads in 2004. The speed limit on motorways is 130 km/h.



Source: KfV, 2004

Reference

Ministry for Transport Innovation and Technology (2004). “Austrian Road Safety Programme 2002-2010. Version 2004”. Vienna.

19.3 Protective systems

Data received from the country

Filled questionnaire (11/2004).

Recent, time-series data and methodological information (11/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level. Limited information are however available through self-reported questionnaires collected through the EU funded project SARTRE.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since some decades by KfV. The data on the development of following indicators are available: A, B, C, F.

The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs:

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	*83**	82.9	81.8	Y	U,R,M	N	Y	2005	Y	89.7	-	2003	Y

*estimated by SafetyNet, assuming weighting coefficients 0.66 and 0.33

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	62	N	U,R,M	Y	2005	N			N

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	86*	0-10 kg	9-18 kg	15-25 kg	22-36 kg	S	1	U,R,M	2005

*For children under 14 years old and smaller than 150 cm.

D: Daytime use of seat belts on front seats of HGV and coaches	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	The usage rate was most recently addressed in 2001 and national-wide evaluated as 11%. No regular observations are planned. Ad-hoc survey.
G: Daytime use of safety helmets by moped riders	Not available
H: Daytime use of safety helmets by motorcyclists	Not available

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	0.5	0.5	0.5	N		
Random sampling design of survey	Y	Y	Y	N		
Precision requirements exist related to the sample size	N	N	N	N		
Observation procedure is clearly defined for different situations in traffic	Y	Y	Y	N		
All daylight hours for all working days of the week are considered	Y	Y	Y	N		
Data stored, reported and measurements documented	Y	Y	Y	N		

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	26	26				
Nr of sites per road types (U,R,M)	10/10/6	10/10/6				
Sample size at sampling site	1 hour	1 hour				
Observed total	26,947					

SPIs proceeding

It is possible to figure out the values of the following indicators:

A (aggregation necessary)

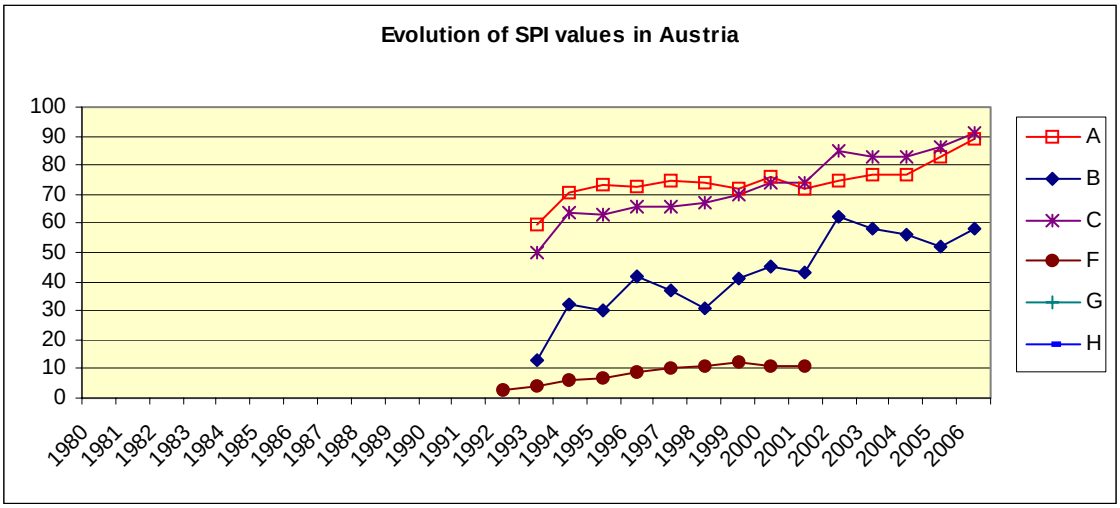
B (no objections)

C (if accepting simplification towards age/weight categorisation)

F (accepted as indicator)

For all indicators, it is recommended to reconsider the design of the survey.

SPIs presentation



Comments: SPI C for all children under 14 years old and smaller than 150 cm.

19.4 Daytime running lights

Data received from the country

Legislation
Mandatory daytime running lights (during the whole year, on all urban and rural roads) effective from 15. November 2005. Between 15. November and 15 April 2006 no fine was charged when someone forgot to turn on the lights. After that period a fine of about 15 was proposed by the ministry of transport. This fine can vary between federals states of Austria.

Other features
Special daytime lights should be turned on, these are switched on automatically in most cars when starting the engine. Also integrated fog lights and the normal dimmed headlights can be used.

Surveys
The data for daytime running lights are collected together with the speed survey. Twice a year (Spring and Autumn) such a survey is performed. Approximately 70,000 cars (no other types of vehicle) will be checked every year.

Beside this special roadside surveys before and after the introduction of daytime running lights in Austria were carried out. In these surveys also other vehicle types than cars are monitored.

Data

Year: April 2006; (After the introduction)

Road category	Vehicle type						
	Motorcycle	Car	Heavy goods vehicle	Bus	Moped	Other	Total
Motorway (AAA)**	-	94	-	-	-	-	-
Rural roads (BB&B)**	-	90	-	-	-	-	-
urban roads (DD&D)**	-	87	-	-	-	-	-
all roads where DRL is mandatory	-	91	-	-	-	-	-

Usability of the data for SPIs

The quality of the data is very good (big sample, surveys performed on different sites) but we have just yearly data for cars.

This data could be also disaggregated to gender (driver of the car) and also to NUT 2 level.

From the special surveys performed around the introduction of daytime running lights we know that for example 97% of all motorcycle turn on their lights. We think this can not be improved with reasonable investment.

Quality of the data

In general we think that the quality of the data we have so far is very high.

SPIs used by policy makers

We do not use special SPI on the national level concerning DRL. Just percentages are used for the media.

19.5 Vehicles (passive safety)s

Data received from the country

Data from 2004 detailing year manufacture of all vehicle types.

Usability of the data for SPIs

The data can be used to calculate the vehicle age SPI. The data would need to be broken down into make and model for the vehicle crashworthiness SPI.

For accurate calculation of fleet composition and compatibility SPI a distinction in the vehicle types between ‘goods vehicle < 3.5 tonnes’ and ‘HGV’ is required.

Quality of the data

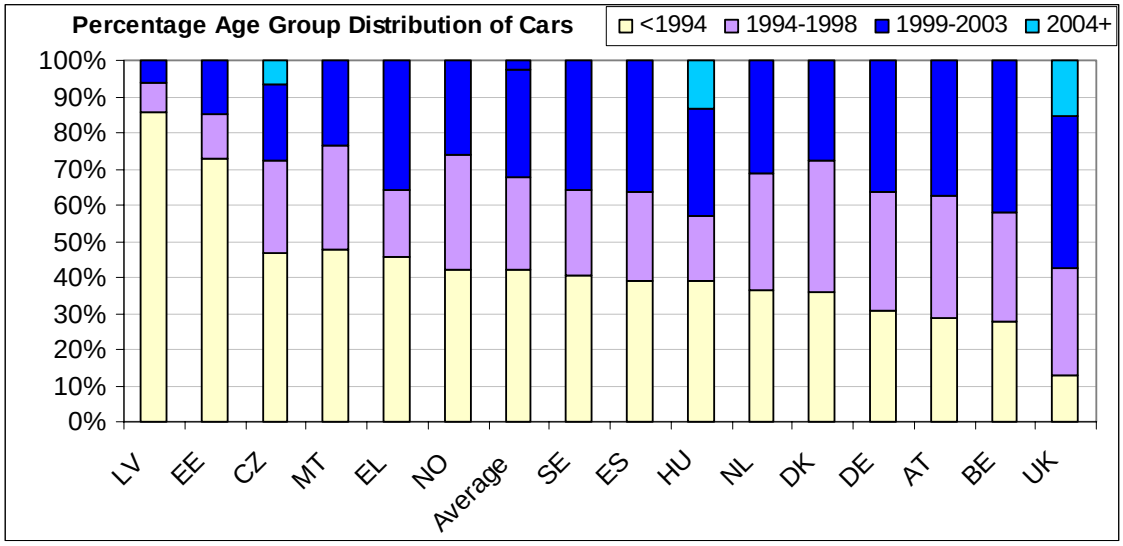
The quality of the data is good, although it has had to be adjusted slightly to compare with 2003 data from other countries.

SPIs used by policy makers

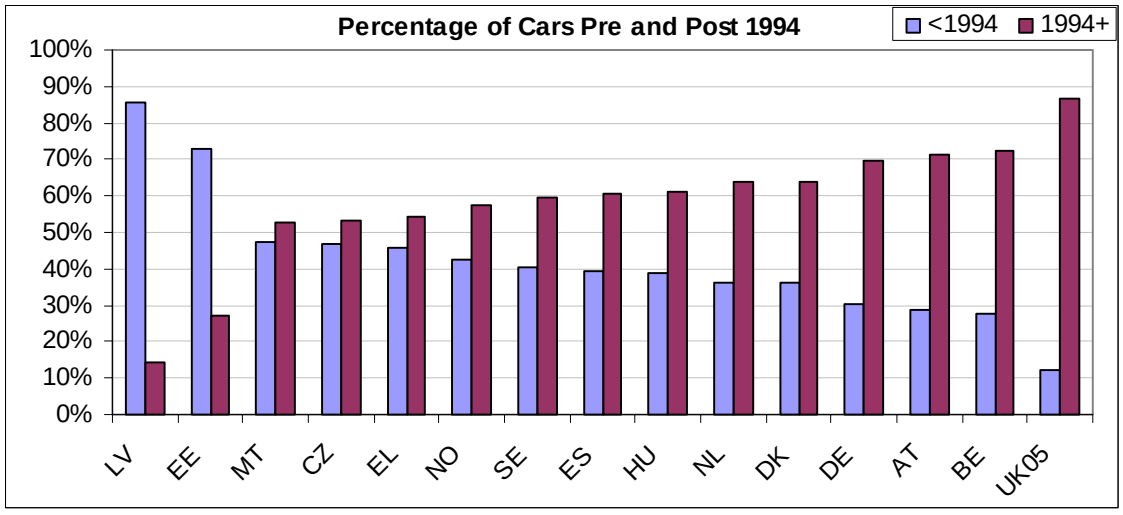
No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

Illustration

Austria (AT) has the 8th largest passenger car fleet of the 15 countries analysed.



The distribution of vehicle age in the Austrian fleet is fairly even between cars up to 5 years old and cars up to 10 years old. As shown in the graph below, Austria has one of the smallest proportions of cars over 10 years old, although it must be remembered that the data are a year newer.



19.6 Roads

Data received from the country

Incomplete data are received from certain major roads in the country, with data from 2002. Incomplete means data on one or several SPIs is missing, there is only data on the length, AADT and single or dual carriageway per connection.

Usability of the data for SPIs

The data can only be used for the calculation of the SPI 'wide median or median barrier'.

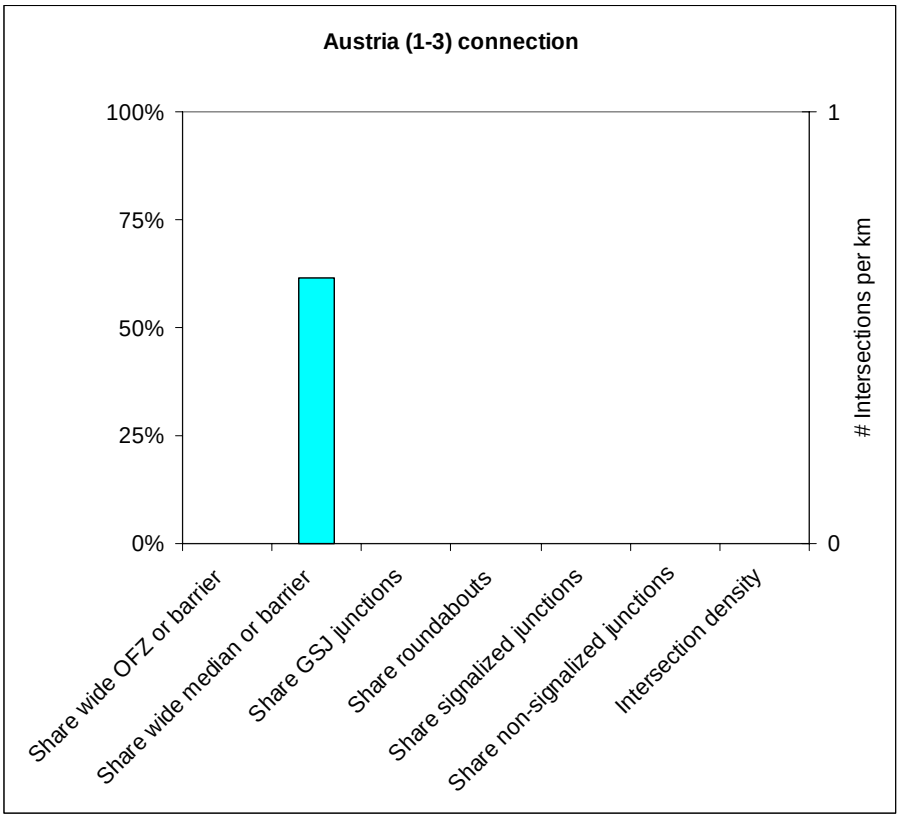
Quality of the data

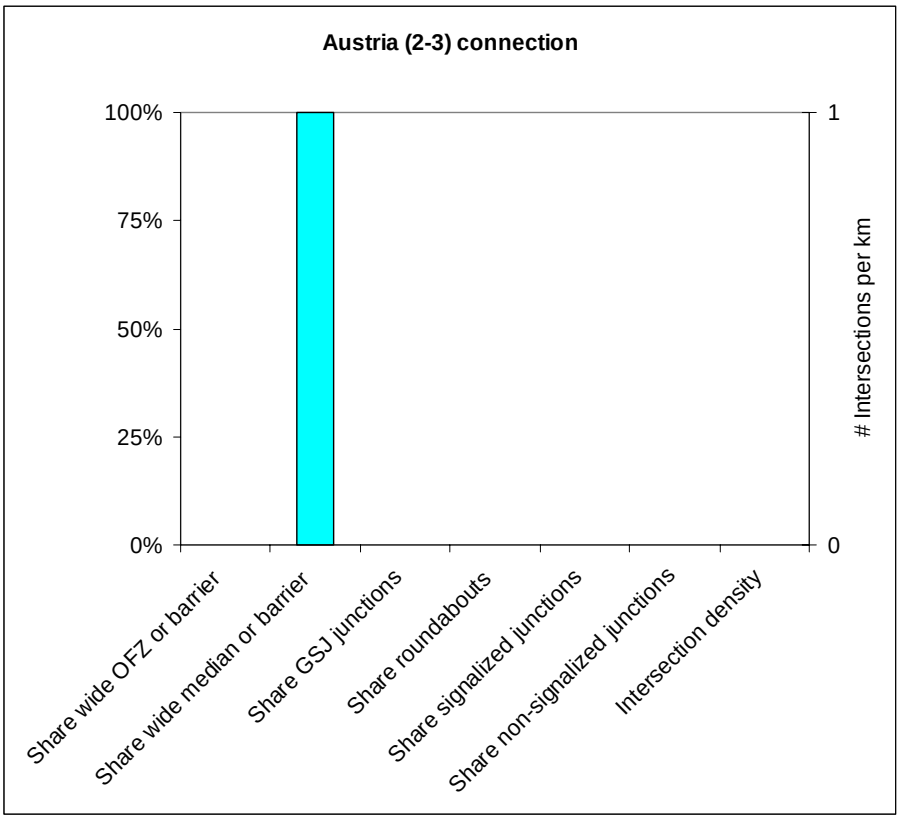
The quality of the data on dual or single carriageway has not been checked. The SPIs can be calculated directly from the data. There are no data on the other SPIs.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration





For Austria there are only data on the presence of a wide median or barrier. The (1-3) connection scores low with only 62%. The (2-3) connection scores high, with 100%. Other data are not available.

19.7 Trauma management

Data received from the country (2003)

General data

Population, million	8,118
Road length - total, km	119159
Road length - public, outside built-up areas, km	n.a. (not known)
Vehicle-kilometres travelled, million	79702

Data on Trauma management

(1) No of dispatching centres	71
(2) No of EMS stations	500
Number of EMS staff in service*: (4a) No of physicians	150
(4b) No of paramedics	450
(4c) No of nurses	10
(4d) No of medical technicians	2500
(4f) Total	3110
Number of EMS transportation units in service: (7a) No of BLSU	2100
(7b) No of MICU	135
(7d) No of helicopters/ planes	35
(7e) Total	2270
Comment	*available on a daily basis

(12) No of EMS calls annually	1100000
(13) share of road accidents in EMS calls	0.012
(16) No of EMS rides annually	589000
(17) share of road accidents in the EMS rides	0.012

(19) The demand for EMS response time, min	15 min*
(20) Percentage of EMS responses meeting the demand	95%
(21) Average response time of EMS, min	12 min
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	3979
Comments	*internal rule: up to 15 min in 95% of cases; not regulated by a law/ internal standard

SPI values estimated for Austria

(3a) EMS stations per 10000 citizens	0.62
(3b) EMS stations per 100 km of rural road length	n.a. (as not applicable)
(5a) Percentage of physicians out of EMS staff	4.8%
(5) Percentage of physicians + paramedics out of EMS staff	19.3%
(6) EMS medical staff per 10000 citizens	3.83
(8b) Percentage of MICU out of the total EMS units	6%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	100%
(9) EMS transportation units per 10000 citizens	2.80
(11) EMS transportation units per 100 km of road length	1.91
(19) The demand for EMS response time, min	15 min*
(20) Percentage of EMS responses meeting the demand	95%
(21) Average response time of EMS, min	12 min
Comments	*internal rule: up to 15 min in 95% of cases; not regulated by a law/ internal standard

(14) Road accident emergency calls per 10000 citizens	16
(15) Road accident emergency calls per million vehicle-km travelled	0.17
(18) Road accident emergency rides per 10000 citizens	9

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	4.90

20 Poland (PL)

20.1 Alcohol & Drugs

Data received from the country

1. Number of road accident fatalities (people killed in road accidents): 5444. Number of road accident fatalities for which at least one driver involved was impaired by alcohol: 535.
2. Number of road accident fatalities for which at least one driver involved was impaired by drugs other than alcohol: not available.
3. For alcohol impaired drivers, the definition of alcohol impaired, i.e. blood alcohol concentration level: 0.2 g/l BAC.
4. The year of the data: 2005.

Usability of the data for SPIs

The data can be used for the calculation of SPIs for alcohol.

Quality of the data

Assessment of quality not possible.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 9.8%.

20.2 Speed

Background

In October 2004, was published the last periodical report of a 2 year speed survey project (Czapla et al., 2004), commissioned by the National Road Safety Council and financed by the World Bank loan. During this project, ten measurements series were conducted. However, there is no ongoing programme of speed survey.

Data received from the country

Poland delivered a complete questionnaire response and a big data file of speed indicators by individual roads.

Usability of data for SPIs

For the “Analysis of Selected Aspects of Road User’s Behaviour” project, speed was measured on 48 measurement points: 16 with stationary localisation on national roads outside built-up areas with 90 km/h speed limit, 16 with stationary localization in cities areas, and 16 with changeable localization on 50 km/h roads. Roads were further differentiated by their function, width and their type of shoulder. It resulted in the definition of 8 roads categories. No measurements on motorways were made.

The last series of measurements took place between August and September 2004. The measurements were conducted in 24-hour periods on working days.

Several speed related indicators are computed by individual roads and traffic lanes and also aggregated at the road type level:

- average speed
- V85, V15, V95
- values of speed median
- standard deviation of speed
- factor of variation of speed
- number of vehicles exceeding speed limit
- share of vehicles exceeding speed limit

A division was made between light and heavy vehicle types. The parameters are available for 24h periods or for 1-hour intervals and for all traffic together or for free-flowing traffic only (not defined though). The Polish definition of free-flowing traffic is not given in the English version of the report. In urban areas, the speed limit is different between night (60 km/h) and day (50 km/h). One must remember it when analysing indicators computed for 24h periods.

A series of test was also carried out on the speed distributions to compare the empirical distribution to the theoretically expected ones. The share of light and heavy vehicles in the traffic was also checked for consistency.

A special attention was accorded to weather conditions. The measurements were carried out in relatively good weather conditions not differing from average for the season of year at each of the measurement points. In comparisons, surveys were only compared with other survey that took place in the same season and in similar weather conditions.

In conclusion, Polish data present several qualities that are in favour of comparisons. Traffic and weather conditions are taken into account, the data are carefully checked for errors, and many indicators are reported (even if not all of them are in the reports in English language). Indicators by 1-hour periods should be preferred to indicators aggregating speed for the whole day. However, no speed data are collected on motorways, which are the easiest comparable roads, and we have no information on the way measurement locations are selected for other roads. It would be very valuable to implement similar speed surveys on a regular basis and not as a one-shot campaign.

The following table summarise the characteristics of the Polish speed data (2004).

All road types available	
Regular assessment	
Random and scientific sampling	
Data split out for day and night	+
Data split out for weekend and weekday	++
Data split out for different period of the year	++
Data split out for different vehicle types	++
Traffic conditions taken into account	++
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

+ Criteria partially fulfilled ++ criteria fully fulfilled

Quality of the data collected by SafetyNet

Poland provided the data corresponding to the above-described methodology but only indicators by individual roads. We used Czapla et al. (2004) to obtain indicators aggregated by road type.

SPIs used by policy makers

The main purpose of the speed campaign is to evaluate the trends in speed change, especially on urban roads were the speed limits have been changed in May 2004.

Excessive speed is one of the main problems listed in the National Road Safety Program GAMBIT 2005 (only available in Polish language) but yet no systematic programme of speed monitoring has been implemented.

Illustration

The following table gives the result of the 4 SPIs for 8 road types for free flowing vehicles only. The indicators are computed aggregated over a whole day despite of the variation in speed limit on urban roads between day and night. No distinction is made by vehicle type. The results correspond to the survey that was conducted in August and September 2004.

		Speed limit	Average speed	V85	Standard deviation	% of vehicles over limit
Rural roads	Single or double carriageways, 7 m wide with hard shoulders	90	91.2	112	17.5	69.5
	Single or double carriageways, 7 m wide with earth shoulders	90	89.6	109	17.8	64.8
Urban roads	Single or double carriageways	50/60	66.2	80	13.7	86.5
	Single or double carriageways, 7 m wide	50/60	56.6	70	13.7	69.0
	Single or double carriageways, 8-10 m wide within kerbs	50/60	60.5	73	12.2	78.0
Transit roads	Single or double carriageways, 7 m wide with hard shoulders	50/60	77.2	91	14.3	97.3
	Single or double carriageways, 7 m wide with earth shoulders	50/60	73.8	88	14.6	94.3
	Single or double carriageways, 8-10 m wide within kerbs	50/60	70.8	89	14.7	88.2

Source: Czapla et al. (2004). “Analysis of selected aspects of road users behavior”, SIGNALCO Krakow, TRAFIK Gdansk– HB Verkehrskonsult Aachen.

Reference

Czapla M., Gaca S., Jamroz K, Michalski L., Smolarek L., Kustra, W., Karczmarek J., Zarembski J., Ząbczyk K.,.Kwak L. (2004). “Analysis of selected aspects of road users behavior”, SIGNALCO Krakow, TRAFIK Gdansk, HB Verkehrskonsult Aachen.

20.3 Protective systems

Data received from the country

Filled questionnaire (02/2006).

Recent, time-series data and methodological information (11/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level.

Use of protective systems

The use of chosen protective systems in road traffic has recently been monitored in the country by Motor Transport Institute within NRSC project. The data on the development of following indicators are available: A, B and C.

A: Daytime use of seat belts in light vehicles in front seats

Daytime use of seat belts in traffic								In accidents				By fatalities
Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
69/85*	68/84	70/85	Y	U/R	Y	Y	04/05	N				N

* estimated by SafetyNet, assuming weighting coefficients 0.66 and 0.33 , estimated overall for urban and rural roads 78%, using weighting coefficients 0.65, 0.35

B: Daytime use of seat belts in light vehicles in rear seats

Daytime use					In accidents			By fatalities
Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
48*	N	O	Y	2005	N			N

* Only for major urban roads

C: Daytime use of CRS in passenger cars

CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
Y	0-3 97.5	3-7 86.5	7-12 81.8	Y		I	U	2005

D: Daytime use of seat belts on front seats of HGV and coaches	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	NA
G: Daytime use of safety helmets by moped riders	NA
H: Daytime use of safety helmets by motorcyclists	NA

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	5	5	5			
Random sampling design of survey	N	N	N			
Precision requirements exist related to the sample size	Y	Y	Y			
Observation procedure is clearly defined for different situations in traffic	N	N	N			
All daylight hours for all working days of the week are considered	N	N	N			
Data stored, reported and measurements documented	Y	Y	Y			

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	32	32	16			
Nr of sites per road types						
Sample size at sampling site	1000	1000				
Observed total	42000	9000				

SPIs proceeding

The value of A indicator is not valid for one single year (no all road types included in sample), but a rough estimate can be calculated for 2004/2005 period.

The value of B indicator is not representative for all road types, as the observation sites cover only major urban roads.

It is recommended to reconsider the design of the survey and its performance.

SPIs presentation

Available data provide only a rough estimation of the values of two indicators in the area of PS:

A=78%, B>50% in 2005.

20.4 Daytime running lights

Data received from the country

Legislation
There is law on DRL in Poland. Motorcycles are obligated to use DRL the whole year. Passenger cars have this obligation in autumn and winter (from October until March 1st). It is valid on all road types.

Other features
Sanctions on non-compliance are penalties and demerit points. There are occasional incentive campaigns.

Surveys
There is no obligation to perform a survey, and there are no data available on DRL use in Poland. A survey has been planned at the end of 2006 or beginning of 2007.

Data
No data available.

20.5 Vehicles (passive safety)

Data received from the country

Data from 2004 and 2005 detailing vehicle type and vehicle age.

Usability of the data for SPIs

The data cannot be used to calculate the crashworthiness SPI because it lacks information on passenger car make and model. Compatibility and fleet composition calculations can be made, though ideally more categories of goods vehicle would be available. Since goods vehicles are not categorised by weight, conclusions about compatibility must be treated with some caution.

Quality of the data

The quality of the data seems good, though it lacks some details that are available for other countries, which would facilitate more detailed analysis and meaningful comparisons with other countries.

SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

20.6 Roads

Data received from the country

Incomplete data are received from some main roads in the country, it is not known from which year are the data and it is not indicated what kind of connection type this route is. Therefore it is not possible to compare the SPIs of Poland to other countries. Incomplete means data on one or several SPIs is missing; there is only data on the amount of carriageways per connection.

Usability of the data for SPIs

The data can only be used for the calculation of the SPI 'wide median or median barrier'.

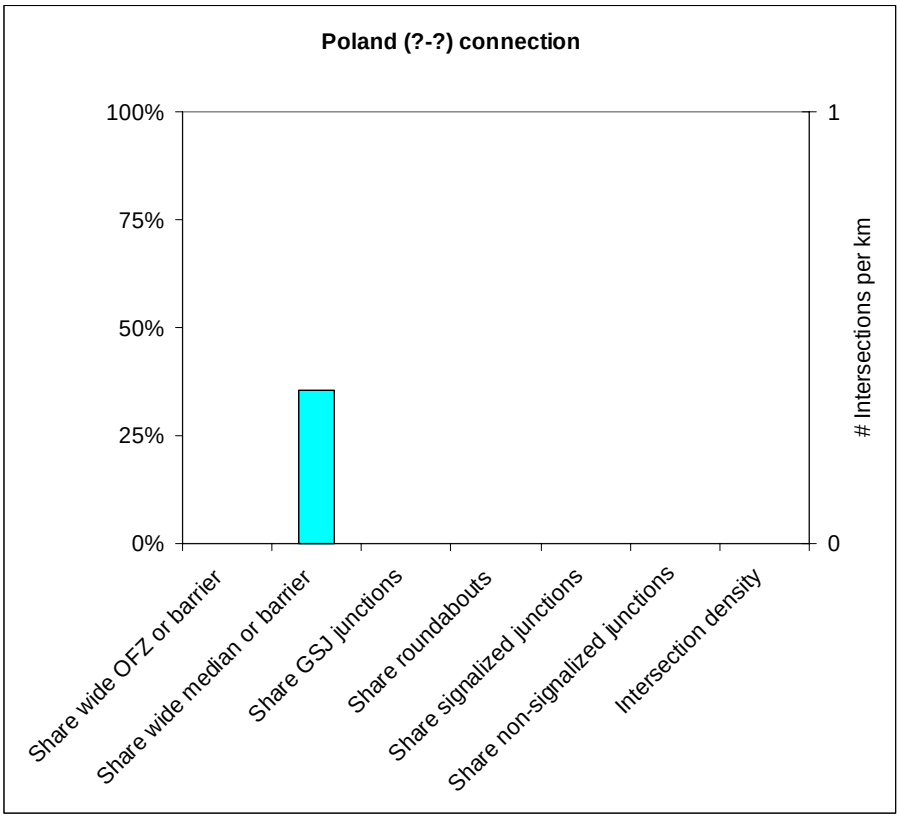
Quality of the data

The quality of the data on dual or single carriageway has not been checked. The SPIs can be calculated directly from the data. There are no data on the other SPIs.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration



For Poland there are only data on the presence of a wide median or barrier. As it is not known what connection type this is, it is not possible to draw conclusions based on these data.

20.7 Trauma management

No data were received.

21 Portugal (PT)

21.1 Alcohol & Drugs

Data received from the country

Data for drivers involved in fatal accidents provided in January 2007.

	Drivers killed	
BAC	**2004**	**2005**
0-0.49g/l	269	315
0.50-0.79 g/l	22	19
0.80-1.19 g/l	17	24
>=1.20 g/l	132	138
Total	440	496

	Pedestrians killed	
BAC	**2004**	**2005**
0-0.49g/l	122	134
0.50-0.79 g/l	4	3
0.80-1.19 g/l	7	10
>=1.20 g/l	40	41
Total	173	188

	Passengers killed	
BAC	**2004**	**2005**
0-0.49g/l	48	61
0.50-0.79 g/l	2	4
0.80-1.19 g/l	3	1
>=1.20 g/l	10	10
Total	63	76

	Road type user unknown	
BAC	**2004**	**2005**
0-0.49g/l	290	288
0.50-0.79 g/l	16	15
0.80-1.19 g/l	15	25
>=1.20 g/l	69	82
Total	390	410

Data sets for drivers involved in accident by injury type and alcohol level for 2000 – 2005 are also provided. No data for drugs provided.

Usability of the data for SPIs

The data set provided covers road users killed by BAC level for each road user category, e.g. drivers killed by BAC, pedestrians killed by BAC etc. What is needed for the SPI, however, is the number of fatalities irrespective of road user category, resulting from accidents involving one or more drivers impaired by alcohol or drugs. This means that a proxy can be made as for other countries providing the same kind of data.

Quality of the data

See above. In addition to the tables above, the full data set was provided, a fact which means that the number of drivers not tested can be calculated. Of 60162 drivers involved in road accidents in 2005, 50853 were breath tested and 1935 had a blood or urine test, i.e. some 88% of drivers involved in road accidents were tested for alcohol. But for the 674 killed drivers, only 36 were tested, i.e. some 5%. However, these figures do not agree with the tables above, which says that 496 drivers were killed in 2005. The tables and the data sets were provided by the Direcção Geral de Viação, Observatório de Segurança Rodoviária, but the late delivery of the data did not allow for clarifying this difference. Moreover, the last table shows that there were 410 fatalities within the category "road user type unknown", of which 29.7% had BAC above 0.5 g/l.

According to the first table 27.8% of killed drivers were impaired by alcohol, BAC>0.5 g/l. Using drivers killed themselves rather than drivers involved in fatal accidents may produce a bias towards a higher percentage.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 27.8% of drivers killed had BAC above 0.5 g/l.

21.2 Speed

Background

Speed is monitored since 2000 by means of a two-year Protocol between the LNEC and the DGV (Portuguese Directorate-General for Traffic, http://www.dgv.pt/dgv/index_ing.asp). The objective is to have a nationally representative estimate of speed distribution for each road category (9 classes of road are considered) and vehicle classes (cars and heavy vehicles, expect motorcycles) in the urban and rural context. The Portuguese enforcement agencies (GNR – "Guarda Nacional Republicana" and PSP-"Polícia de Segurança Pública") also make their own speed monitoring on motorways, regional roads and local streets, for enforcement purposes.

Data received from the country

Portugal provided a complete questionnaire and some data with it (Period 2001/2002). More recent speed data (2004/2005) can be obtained from the DGV. The LNEC is the organism responsible for the speed data collection and its statistical analysis. The DGV is the property owner of the speed data. LNEC study reports are available referring to the 2000, 2002 and 2004 speed data collection (in Portuguese).

Usability of Portuguese data for SPIs

The Portuguese data by road section and individual vehicles are collected in 42 speed measurement locations during a 96-hour period (2 days represent Saturday and Sunday). The data collected allow both distinctions in time and vehicle type. Luminosity conditions are taken into account in the speed measurement by defining the interval times accordingly. Weather conditions are also taken into account, as the measuring devices also register the time periods when the pavement is wet. Major requirements to create a valid SPI are thus satisfied.

The data are disaggregated by road type using the national road classification, so it is necessary to make the necessary correspondences with the SafetyNet road classification.

Nine road classes are considered, including both interurban roads and urban roads and streets. For each road class, measurements are made in six road sections, selected to be representative of their road class and spread along the country. Measurement sections were selected so that geometric characteristics do not constraint drivers' speed choice. The same locations for speed measurement are chosen every year.

The speed data are already of good usefulness to construct SPIs. However, taking into account the SafetyNet objectives of comparability of country data it is convenient to evaluate the need for adjustments in the procedures being used.

The following table summarises the characteristics of the Portuguese data (2004/2005).

All road types available (*)	++
Regular assessment	++
Random and scientific sampling	+
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	-
Data split out by vehicle types	++
Traffic conditions taken into account	++
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

+ Criteria partially fulfilled ++ criteria fully fulfilled

(*) only residential roads are not considered.

Quality of the data collected by SafetyNet

The data in possession of SafetyNet is available data and of quality.

All the SPIs indicators suggested by the SafetyNet were provided by Portugal on the national scale. No more data processing is thus required by the SafetyNet team in order to produce SPIs.

SPIs used by policy makers

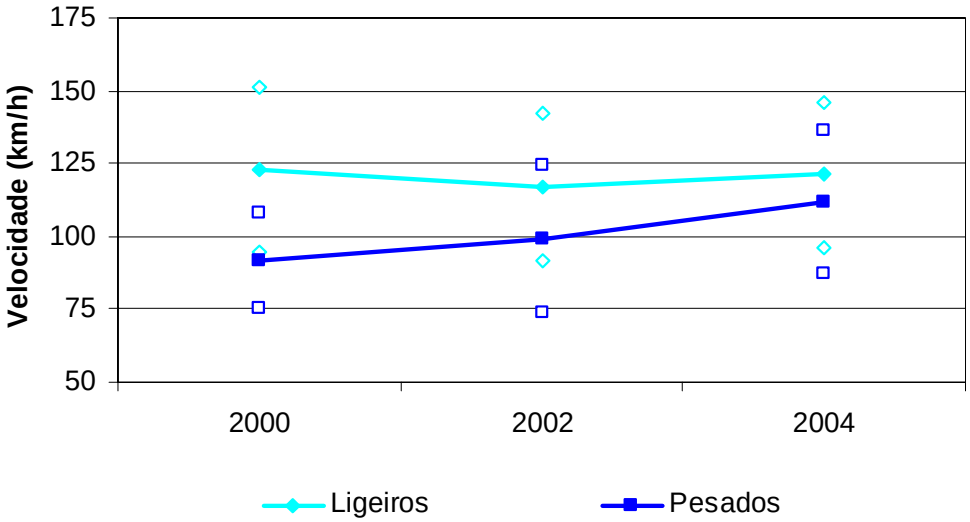
In 1999, the Portuguese Directorate-General for Traffic (DGV), which is part of the Ministry of the Interior, set the former data Protocol with the LNEC. Since the DGV is responsible for the operating the traffic system and for its road safety in the country, the objectives were to obtain speed distributions and indicators representative of the national road network, mainly to: a) provide a quantitative assessment of the compliance with general speed limits (percentage of vehicles which speed in above legal limits) in each road class; b) create the conditions for studying the developments in this compliance over time, and for evaluating the effects of safety campaigns; c) gather information on the characteristics of free flow speeds in each road class, for updating design guidelines.

The speed indicators set are the average speed (day/night), standard deviation (day/night), the V_{15} and V_{85} (day/night) and the % of vehicles above speed limit (classes used: >10 km/h; >30 km/h; >60 km/h, which corresponds to the enforcement classes).

Illustration

Average speed in motorways (± standard deviation)

("Ligeiros" =Cars; "Pesados" =Heavy vehicles).



The above figure represents the evolution of average speed (km/h) in motorways between 2000 and 2004. Two vehicle classes are considered using length as the classification criteria (threshold is 6 m). For each year, “average speed + standard deviation” and “average speed - standard deviation” are marked, as well.

21.3 Protective systems

Data received from the country

Filled questionnaire (02/2005).

Recent, time-series data and methodological information (11/2006) by LNEC and PNPR.

SPIs in use

Unknown.

Presence of protective systems in vehicles

No data available at national level.

Use of protective systems

The use of restraints in passenger cars has been irregularly assessed in the country by the PRP (NGO) since 1999. Limited amount of data available for injury accident seat belts wearing.

A: Daytime use of seat belts in light vehicles in front seats

Daytime use of seat belts in traffic								In accidents				By fatalities
Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
86	NA	NA	NA	U,R,M	N		2006	Y**	93.6	84.2*	2003	Y

** In many cases, self-reported wearing by accident participants, *for all passengers together

B: Daytime use of seat belts in light vehicles in rear seats

Daytime use					In accidents			By fatalities
Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
45	N	U,R,M	Y	2006	Y	84.2*		Y

* for all passengers together

C: Daytime use of CRS in passenger cars

CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
NA								

D: Daytime use of seat belts on front seats of HGV+BUS	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets

Cyclists	Moped riders	Motorcyclists
N	Y	Y

F: Daytime use of safety helmets by cyclists	Not available
G: Daytime use of safety helmets by moped riders	Not available
H: Daytime use of safety helmets by motorcyclists	Not available

Transport

Project co-financed by the European Commission, Directorate-General Transport and Energy

Methodological criteria

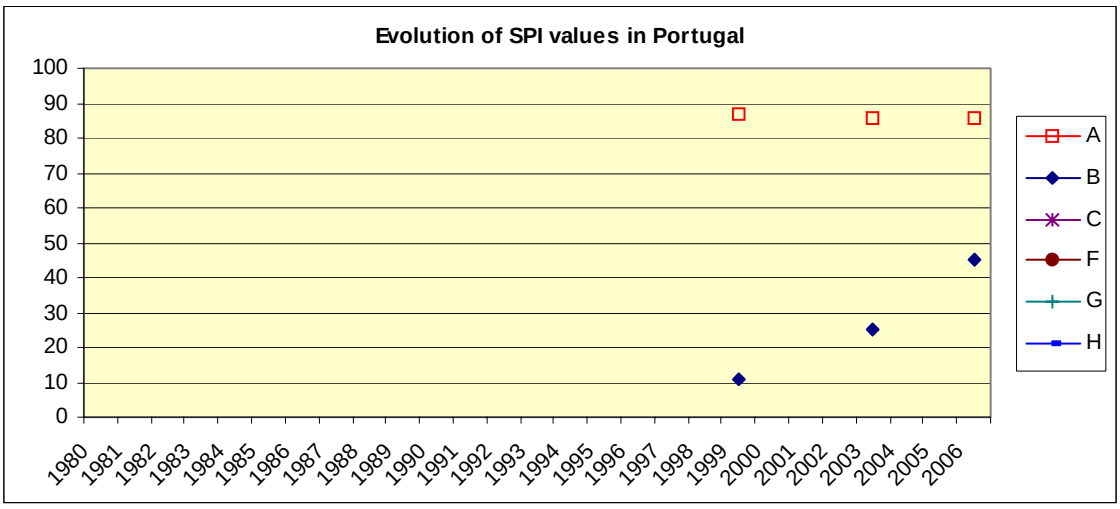
Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	N	N				
Random sampling design of survey						
Precision requirements exist related to the sample size						
Observation procedure is clearly defined for different situations in traffic						
All daylight hours for all working days of the week are considered						
Data stored, reported and measurements documented						

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites						
Nr of sites per road types						
Sample size at sampling site						
Observed total						

SPIs proceeding

A, B available, but very likely unreliable and not representative.

SPIs presentation



21.4 Daytime running lights

Data received from the country

Legislation
In Portugal there is no intention to introduce the DRL.

Other features
Not applicable.

Surveys
Due to the lack of legislation, there are no surveys, consequently this country is not ble to answer the questionnaire.

Data
None available.

21.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year manufacture of all vehicle types from 2003.

Usability of the data for SPIs

The data cannot be used for crashworthiness calculations, as the database in Portugal apparently includes many vehicles that are no longer on the road in 2003.

Quality of the data

The overall quality of the data is good – the database is broken down exactly as requested into the correct vehicle type groups. If a mechanism could be developed for removing the cars that are no longer on the road, the data could be used for all the SPIs. A compatibility SPI has been calculated under the assumption that the proportion of vehicles on the database in error for each vehicle type is equal.

SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

21.6 Roads

Data received from the country

Incomplete data are received from certain major roads in the country, with data from 2003. Incomplete means data on one or several SPIs is missing; there are no data on the SPIs 'presence of roadside barrier' and 'presence of wide obstacle-free zone. The data comprises several connection types. The data comprises several connection types.

Usability of the data for SPIs

The data can be used for the calculation of SPIs, except for the SPIs 'Roadside barrier' and 'obstacle-free zone'.

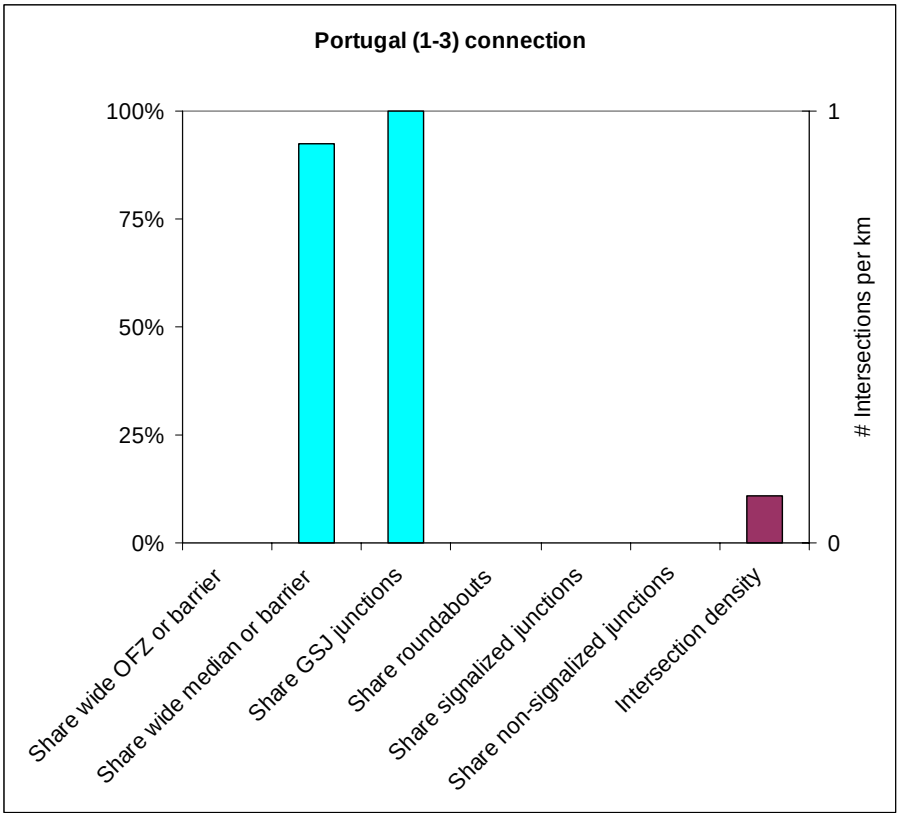
Quality of the data

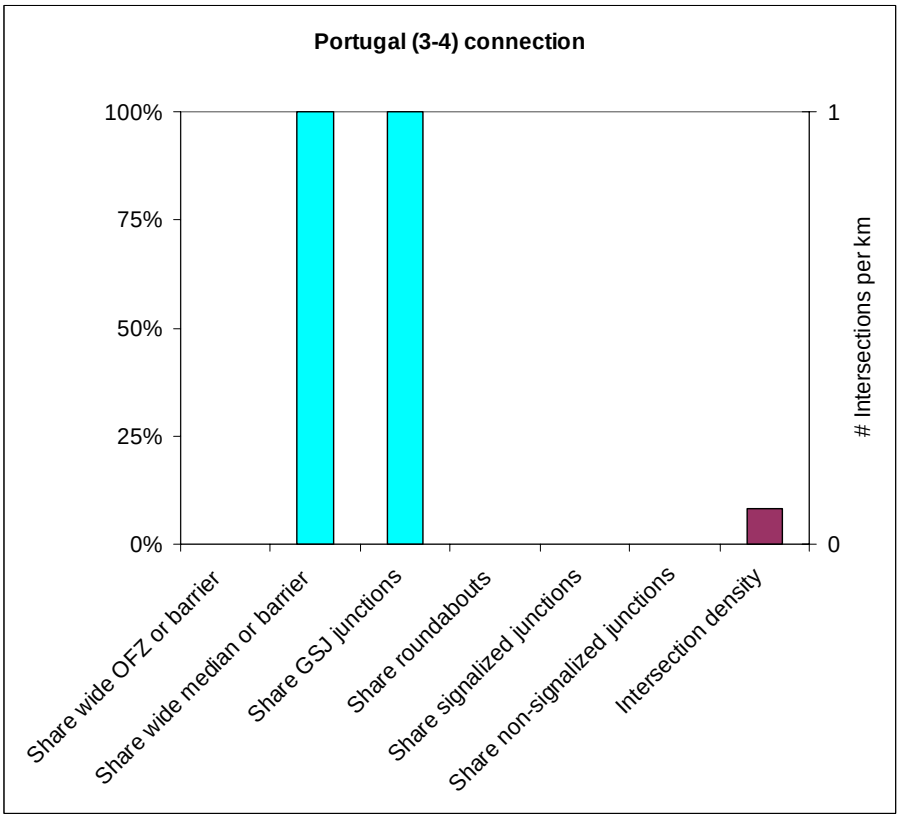
The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration





There are no data on the presence of a wide obstacle-free zone or roadside barrier. The (1-3) connection has a high share with a wide median or barrier (92%). Furthermore, all junctions are grade separated, as expected for this connection type.

An intersection density of 0.11 intersections per kilometre is low for this connection type. The same accounts for the (3-4) connection, which scores better with a share of 100% for wide median or barrier and an intersection density of 0.08 intersections per kilometre.

21.7 Trauma management

Data received from the country (2003)

General data

Population, million	10.48
Road length - total, km	n.a.
Road length - public, outside built-up areas, km	n.a.
Vehicle-kilometres travelled, million	67324

Data on Trauma management

(1) No of dispatching centres	4
(2) No of EMS stations	480
Number of EMS staff in service: (4a) No of physicians	n.a.
(4b) No of paramedics	n.a.
(4c) No of nurses	n.a.
(4d) No of medical technicians	n.a.
(4f) Total	n.a.
Number of EMS transportation units in service: (7a) No of BLSU	n.a.
(7b) No of MICU	31
(7d) No of helicopters/ planes	2
(7e) Total	n.a.

(12) No of EMS calls annually	1032963
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	512151
(17) share of road accidents in the EMS rides	n.a.

(19) The demand for EMS response time, min	n.a.
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	n.a.
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	n.a.
Comments	--

SPI values estimated for Portugal

(3a) EMS stations per 10000 citizens	0.46
(3b) EMS stations per 100 km of rural road length	n.a.
(5a) Percentage of physicians out of EMS staff	n.a.
(5) Percentage of physicians + paramedics out of EMS staff	n.a.
(6) EMS medical staff per 10000 citizens	n.a.
(8b) Percentage of MICU out of the total EMS units	n.a.
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	n.a.
(9) EMS transportation units per 10000 citizens	n.a.
(11) EMS transportation units per 100 km of road length	n.a.
(19) The demand for EMS response time, min	n.a.
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	n.a.

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	n.a.

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	n.a.

22 Slovenia (SI)

22.1 Alcohol & Drugs

No data were received.

22.2 Speed

No data were received.

22.3 Protective systems

Data received from the country

No questionnaire response.

Limited amount of data available from SUNflower+6 and SARTRE project.

Recent, time-series data and methodological information (11/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level. Limited information is however available through self-reported questionnaires collected through the EU funded project SARTRE.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 2001 (A,B,C) by POLICE. Systematic monitoring of the seatbelts use has started in 2006 by the Directorate for Roads though methodology has not been adopted yet.

The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	85	90*	81*	Y	U,M			2006	Y			2003	NA**

* estimated as 73% in SunFlower+6, 93% according to Police, 78% according Euchires project

** estimated as 57% in SunFlower+6

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	30				2006	Y		2003	N*

* estimated as 30% in SunFlower+6

C: Daytime use of CRS in passenger cars (independent roadside survey)	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	NA								

D: Daytime use of seat belts on front seats of HGV and coaches	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	NA
G: Daytime use of safety helmets by moped riders	NA
H: Daytime use of safety helmets by motorcyclists	NA

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	I	I				
Random sampling design of survey	N	N				
Precision requirements exist related to the sample size	N	N				
Observation procedure is clearly defined for different situations in traffic	N	N				
All daylight hours for all working days of the week are considered	N	N				
Data stored, reported and measurements documented						

Not applicable

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	NA	NA				
Nr of sites per road types	NA	NA				
Sample size at sampling site	NA	NA				
Observed total	16 hours	16 hours				

SPIs proceeding

At the moment, only Police-, Self-, Accident-reported data are available regarding the use of passenger car restraints. They cannot be considered as valid indicators for following reasons:

Survey not independent (done by police).

Values not representative for overall road network (not all road types considered) and very low number of observed individuals at few locations. (Total observation period only 16 hours.).

The values however provide a rough estimation of the indicators values.

It can be recommended to consider performing independent observation survey based on SafetyNet methodology.

SPIs presentation

Available data provide only a rough estimation of the values of two indicators in the area of PS:

A=85%, B=30% in 2006.

22.4 Daytime running lights

No data were received.

22.5 Vehicles (passive safety)

No data were received.

22.6 Roads

No data were received.

22.7 Trauma management

No data were received.

23 Slovakia (SK)

23.1 Alcohol & Drugs

Data received from the country

1. Number of road accident fatalities for year 2005 is 560 persons.
2. Number of road accident fatalities: offender impaired by alcohol 36 persons. Driver impaired by alcohol (wasn't offender) 31 persons. Pedestrian impaired by alcohol5 persons.
3. Alcohol impaired driver is, when measured alcohol concentrated level in his blood is more than 0.0%.

Usability of the data for SPIs

The data allows the calculation of the SPIs for alcohol.

Quality of the data

Other road users than drivers are specified, but not included in the SPI. Legal limit is 0.0, which means that the SPI figure should be reduced to compare to countries with higher limits.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 12.9%.

23.2 Speed

No data were received.

23.3 Protective systems

No data are available in Slovakia.

23.4 Daytime running lights

No data were received.

23.5 Vehicles (passive safety)

No data were received.

23.6 Roads

No data were received.

23.7 Trauma management

Data received from the country (2003)

The Trauma Management questionnaire was not responded for Slovakia. Based on the data collected by CDV and especially, on the information from Dr. Viliam Dobiáš, PhD. – Medical Director, Emergency Medical Service Bratislava, the following data are available for Slovakia:

General data

Population, million	5.42
Road length - total, km	n.a.
Road length - public, outside built-up areas, km	n.a.
Vehicle-kilometres travelled, million	n.a.

Data on Trauma management

(1) No of dispatching centres	n.a.
(2) No of EMS stations	n.a.
Number of EMS staff in service: (4a) No of physicians	184
(4b) No of paramedics	769
(4c) No of nurses	0
(4d) No of medical technicians	482
(4f) Total	1435
Number of EMS transportation units in service: (7a) No of BLSU	22*
(7b) No of MICU	0
(7d) No of helicopters/ planes	0
(7e) Total	167*
Comments	* EMS Vehicles in Bratislava

(12) No of EMS calls annually	n.a.
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	157619
(17) share of road accidents in the EMS rides	5%

(19) The demand for EMS response time, min	n.a.
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	6-14 min
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	n.a.

SPI values estimated for Slovakia

(3a) EMS stations per 10000 citizens	n.a.
(3b) EMS stations per 100 km of rural road length	n.a.
(5a) Percentage of physicians out of EMS staff	12.8%
(5) Percentage of physicians + paramedics out of EMS staff	66.4%
(6) EMS medical staff per 10000 citizens	2.65
(8b) Percentage of MICU out of the total EMS units	0%*
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	13%*
(9) EMS transportation units per 10000 citizens	2.6
(11) EMS transportation units per 100 km of road length	n.a.
(19) The demand for EMS response time, min	n.a.
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	6-14 min
Comments	* EMS Vehicles in Bratislava

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	14.5

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	n.a.

24 Finland (FI)

24.1 Alcohol & Drugs

Data received from the country

Finland has provided data for fatalities, “drink related” (91; year 2004) and “involving drunk drivers” (84; year 2004) as well as for “involving other toxicant” (7; year 2004) 89 fatalities involving drunk drivers in 2005. “Drink related” means one or more road users involved, impaired by alcohol. Consequently the figure for “involving drunk driver” should be used. Testing for “other toxicant” may not be complete as it is more difficult than testing for alcohol. Total number fatalities: 379 in 2005.

Usability of the data for SPIs

Both for alcohol and drugs the data allow for the calculation of SPIs.

Quality of the data

Limit for “drink related” or “involving drunk drivers” is not specified. Neither is the definition of the two categories.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 23.4%; SPI drugs: 1.8%.

24.2 Speed

Background

Since 1961 the Finnish Road Administration (FinnRa) has followed vehicle speed development on Finnish public roads. In 1992, the Ministry of Transport and Communications launched a Traffic Behaviour Monitoring System for the purpose of systematic data collection. Traffic behaviour data are collected and published annually using the same methods and the same measuring points. Among other behavioural measures, vehicle driving speeds are monitored by the FinnRA.

The organisation with overall responsibility is the Ministry of the Transport and Communications. The system is maintained by the Central Organization for Traffic Safety in Finland (Liikenneturva, LT), which is additionally responsible for regular dissemination of the results.

Data received from the country

Finland did not respond to the questionnaire neither sent data. We used Luukanen (2002) to get information on the Finish methodology.

Usability of data for SPIs

The FinnRa maintains a Traffic Monitoring System (TMS) comprising 250 sites throughout the country. It is a permanent measurement but splitting out is possible by periods of the day, days of the week, months of the year and vehicle types.

Interestingly, Liikenneturva (2006) states that the measurements do not give an accurate picture of the prevalence of the phenomenon being measured, nor do they describe regional variation, but that thanks to the standardized measuring methods they can, when repeated, describe changes in traffic behaviour. The statement is general concerning all the behaviour measure but no additional specific information is

given about the accuracy of the speed monitoring. It does not prevent Estonia to compare its own indicators with those of Finland.

The indicators reported in the annual reports are the average speed for the whole year, the average speed during weekend nighttime and the percentage of vehicles exceeding the speed limit by over 10 km/h. Only 80 and 100 km/h roads are included.

The following table summarise the characteristics of the Finish speed data (2006).

All road types available	
Regular assessment	++
Random and scientific sampling	
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	++
Data split out for different vehicle types	++
Traffic conditions taken into account	
Measurements without visible police presence	++
Error check	++
National scale indicators reported	+

+ Criteria partially fulfilled ++ criteria fully fulfilled

SPIs used by policy makers

The Traffic Behaviour Monitoring aims at producing national indicators and following their evolution to complement the information given by accident statistics. However, the there is fixed objective by authorities for the value of speed indicators.

Illustration

The above table gives the average speed on 80 and 100 km/h for the period 1992-2005. All vehicles and times of the year are aggregated together. This annual view hides some temporal variability. According to Kangas & Porokkola (2002), the average vehicle speeds in 2002 varied monthly from -8 to +4% of the annual average speed. Weekend traffic was 1.4% to 1.7% faster than the average weekly traffic. Of course, weather conditions play a large role in the driven speeds in Finland. Specific speed limits are implemented for the winter period and cover a constantly increasing part of the network

Average driving speeds

	80 km/h roads	**100 km/h roads**
1992	80.7	94
1993	80.6	93.7
1994	80.7	93.6
1995	81.3	93.7
1996	81.3	94
1997	81.2	94.1
1998	81.3	94.3
1999	81.1	94.1
2000	81.3	94.2
2001	80.8	94.7
2002	80.4	94.6
2003	80.1	94.2
2004	80.5	93.2
2005	80.2	92.7

Source: Liikenneturva (2006). “Monitoring of traffic behaviour 2006”.

References

Kangas J., Prokkola R. (2002). “Autojen ajonopeudet pääteillä vuonna 2001”. Tiehallinnon selvityksiä 30/2002.

Liikenneturva (2006). “Monitoring of traffic behaviour 2006”, Helsinki.

Luukanen, L. (2002) “Safety management system and transport safety performance indicators in Finland”. Liikenneturva, Helsinki.

24.3 Protective systems

Data received from the country

No questionnaire response.

Liikenneturva: Monitoring of traffic behaviour 2006 (annual report on SPIs).

Recent, time-series data and methodological information (11/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 1960's by Liikenneturva (NGO), but the method used nowadays dates back to 1985. The data on the development of following indicators are available: A, B, F.

The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs:

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	88*			Y	U,R	Y	Y	2005	Y**			2005	63% ***

* Asuming 66% of mvkms of passenger cars on rural roads, 0.66/0.34 proportion of drivers/front seat passengers and 10% of vans in traffic flow

** Only in fatal accidents

*** VALT/2004 (The Finnish Motor Insurers´ Centre)

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	78	N	U,R	Y	2005	N		2006	Y

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	NA*								

* Occasional studies only, irregular

D: Daytime use of seat belts on front seats of HGV and coaches	Not available
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	Nationally wide evaluated as 29% in 2005. Urban and rural roads considered. Not regular.
G: Daytime use of safety helmets by moped riders	NA - not interesting question in Finland – use is so near 100%
H: Daytime use of safety helmets by motorcyclists	NA - not interesting question in Finland – use is so near 100%

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1		1		
Random sampling design of survey	Y	Y		Y		
Precision requirements exist related to the sample size	Y	Y		Y		
Observation procedure is clearly defined for different situations in traffic	Y	Y		Y		
All daylight hours for all working days of the week are considered	Y	Y		Y		
Data stored, reported and measurements documented	Y	Y		Y		

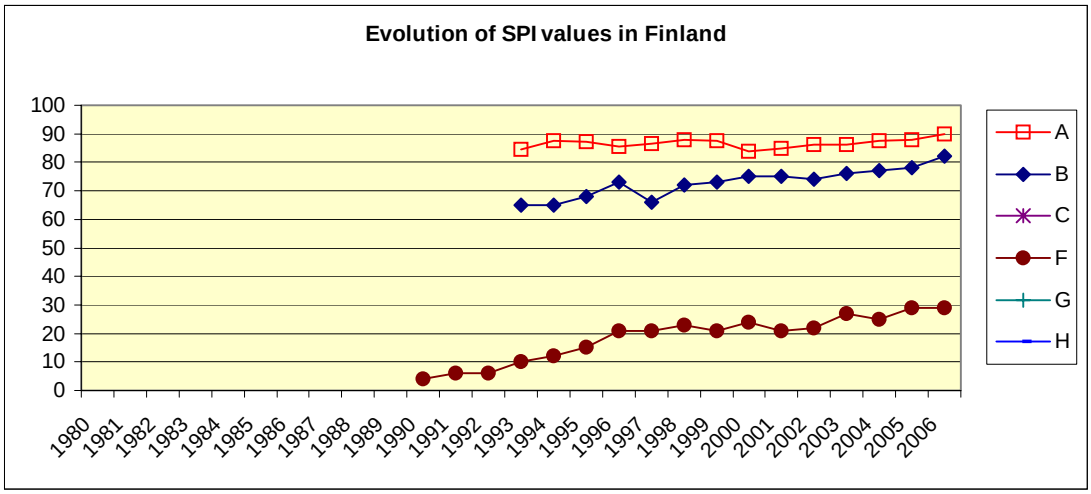
Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	100					
Nr of sites per road types						
Sample size at sampling site	180/150/ 150					
Observed total	480					

Source: Irtad 2002

SPIs proceeding

It is possible to figure out the values of the following indicators: A, B, F

SPIs presentation



24.4 Daytime running lights

Data received from the country

Legislation

In Finland obligatory use of DRL outside urban areas began 1972. First the obligatory use covered only wintertime (from November to March). The next two years the obligation was expanded to cover also September, October and April. Since 1982 use of daytime running lights has been obligatory around the year outside urban areas in Finland. As From June 1997 the obligation was expanded to cover also driving in urban areas. The law covers all motorized vehicles.

Other features

No information or incentive campaigns were carried out on the topic.

Surveys

Regular surveys on DRL use are not mandatory.

Before legislative changes the usage of daytime lights was recommended by traffic safety organizations. The usage of lights was monitored on level 45-70% outside urban areas. After legislation the usage raised to a level above 90%.

In urban areas the usage before legislative rule (years 1993-1996) was about 80-85% and also it increased to about 95% after the change in legislation.

The latest observed results for daytime light usage concerns year 2002. Then the usage was 97% outside urban areas and 95% in urban areas. Since the level of usage

is that high, the question is not interesting in Finland anymore and fresher monitoring results are not available. Also public discussion about the subject has ceased. Almost all car models are sold with automatic switching-on of dipped head lights in Finland.

Data
2002:

97% outside urban areas

95% in urban areas

Usability of the data for SPIs

The level of usage is very high. The question is not interesting in Finland anymore and fresher monitoring results are not available.

Quality of the data

Probably satisfactory. No further data adjustment is required.

SPIs used by policy makers

None in use.

24.5 Vehicles (passive safety)

No data were received.

24.6 Roads

No data were received.

24.7 Trauma management

No data were received.

25 Sweden (SE)

25.1 Alcohol & Drugs

Data received from the country

440 road fatalities in 2005. 31 road users killed in accidents where a driver is "suspected to have been under the influence of alcohol". As the reported statistics are for suspicion only, there is no defined limit for alcohol concentration, and the category may include cases of influence of other drugs than alcohol. The contact person, Thomas Lekander, Nov. 21, 2006: "This figure should not be used as it is clearly wrong and a strong underestimation of the real situation. In this context 25% could be used with a footnote saying that it is an estimate based on autopsies of killed drivers." The results of blood samples analysed in hospitals are not available to the police for reasons of professional secrecy.

Usability of the data for SPIs

The data allows the calculation of SPIs for alcohol.

Quality of the data

See above: Being under the influence of alcohol is based upon police suspicion rather than tests, meaning that there is no specified limit and drivers under the influence of other drugs than alcohol may be included in the alcohol cases. Most likely a certain number of drivers with low BAC (0.2 – 0.8) go undetected.

SPIs used by policy makers

BAC-data from chemical analyses from autopsies of killed drivers and official statistics based on suspicion. Data from in-depth studies of fatal accidents are also used, but there is no national summary/report yet.

Illustration

SPI alcohol: 25.0% estimated on the basis of autopsies of killed drivers.

25.2 Speed

Background

The Swedish Road Administration (SRA) has conducted a Vehicle Speed Survey every summer since 1996. Last available data are from 2004. However, the speed measurements will be reduced in the forthcoming years. This country profile describe the methodology has it was used until now and not the future situation.

Data received from the country

Sweden sent a complete response to the questionnaire but no data. An informal contact was also taken with Mrs Isaksson of Statistics Sweden to get more information on the Swedish sampling methodology.

Usability of data for SPIs

The Swedish speed survey aims at producing nationally representative indicators for the entire Swedish road network except rural private roads.

At each road segment, speed is measured for a random 24-hour period between May and September. The period of study is thought of as a population of time with 24-hour periods as population elements. Hence, indicators are not produced for specific times of the day. On the other hand, separate indicators can be produced between cars without trailer and lorries with trailer.

The particularity of this study is that it measure travel speeds. Speeds are averaged over segments of road and not measured at spot locations. Produced indicators are average travel speed and the percentage of mileage that is driven over the speed limit. These indicators are not comparable with indicators resulting from spot measurements.

The sampling procedure used by the SNRA to choose the measuring segments of road is remarkable. The survey began with establishing a master frame of roads (which also served as basis for other traffic behaviour surveys than speed). Then a three stage sampling procedure is used. The frame used in *the first stage* is a list supplied by Statistics Sweden of the Swedish population centres in 1990. In the first sample stage the population centres are stratified according to region and size. The list contained extra information on the number of inhabitants in each population centre, which served as a size measure for probability-proportional-to-size sampling. The frame used in the *second stage* lists of the small areas within selected population centres. In the second stage the small areas within a selected population centre are stratified according to development status (city, industrial, residential, other). For each selected small area, a frame of the road network was used. Using the intersections as breakpoint, the road-map network was partitioned in to links. The link lengths were estimated manually by the use of map measurers. The frame units are road links, and the frame contains information on the length of each link. From the frame, road sites are randomly selected for observation. In this final stage of selection, the road sites within a selected small area are stratified according to three road types (major 70 km/h, major 50 km/hr and other). All these procedures ensure a good representative sample of the Swedish roads. Research for improving the sampling procedure is still ongoing, making Sweden the EU specialist in this domain.

Controls of the quality of the equipment and of the data are ensured.

The following table summarise the characteristics of the Swedish speed data (2005)

All road types available	+
Regular assessment	++
Random and scientific sampling	++
Data split out for day and night	
Data split out for weekend and weekday	
Data split out for different period of the year	+
Data split out for different vehicle types	++
Traffic conditions taken into account	++
Measurements without visible police presence	++
Error check	++
National scale indicators reported	+

+ Criteria partially fulfilled ++ criteria fully fulfilled

SPIs used by policy makers

In Sweden, the speed survey received much attention and served as a basis for decisions on future traffic safety measures. Many resources have been allocated to the Swedish speed survey. The cost of the 2002 survey has been estimated at 600.000 (Isaksson, 2002). However, the speed measurements will be reduced in the forthcoming years due to reduction in resources allocation.

Illustration

The SPIs suggested by SafetyNet are not computed in Sweden.

Reference

Isaksson, A. (2002). “Survey Models for Vehicle Speed Survey”. Doctoral Thesis. Linköping, Department of Mathematics, Linköping University.

25.3 Protective systems

Data received from the country

Filled questionnaire (01/2005).

Information on annual driver attitudes survey.

Recent, time-series data and methodological information (11/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level. Limited information are however available through questionnaires.

% of seats equipped with seat belts		Year	Source
Passenger cars	HGV	2004	survey
99.5/99.5/98	50		

% vehicles equipped by airbag	
Passenger cars	Year
NA	

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 1982 (A,B), 1999 (D) and 1998 (F). The data on the development of following indicators are available: A, B, C, F, G, H.

The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant.

Annual survey by means of questionnaire is performed assessing among else the use of protective systems (self-reported data). The following tables summarize information on proposed SPIs.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	92*			Y	U,R	Y	Y	2005	N				Y (~40%)

* Assuming 66% of mvkms of passenger cars on rural roads

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	73	N	U,R	Y	2005	N		2003	Y (~40%)

C: Daytime use of CRS in passenger cars as from survey	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	NA								

* value for 0-12 years old

D: Daytime use of seat belts on front seats of HGV and coaches	Not available
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	Y (<15 years old)	Y	Y

F: Daytime use of safety helmets by cyclists	25% in 2005 (annual national wide value) Urban, rural roads considered.
G: Daytime use of safety helmets by moped riders	
H: Daytime use of safety helmets by motorcyclists	

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1		1		
Random sampling design of survey	Y	Y		Y		
Precision requirements exist related to the sample size	Y	Y		Y		
Observation procedure is clearly defined for different situations in traffic	Y	Y		Y		
All daylight hours for all working days of the week are considered	Y	Y		Y		
Data stored, reported and measurements documented	Y	Y		Y		

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	12	12		~ 160		
Nr of sites per road types						
Sample size at sampling site						
Observed total	~ 50 000	~ 8 000		~ 40 000		

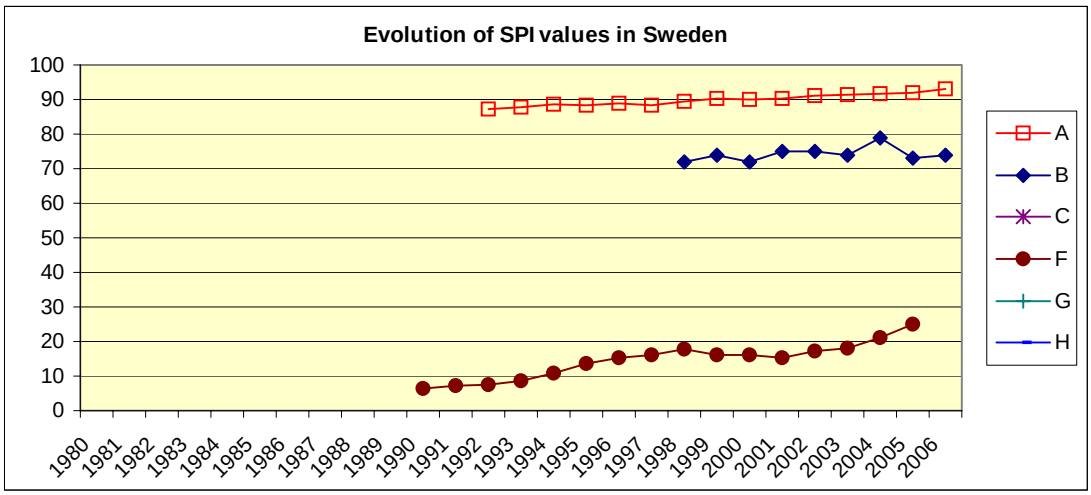
SPIs proceeding

It is possible to figure out the values of the following indicators:

A, B, F

For all indicators, it is recommended to reconsider the design of the survey.

SPIs presentation



Comments: the value of SPI A estimated from available data (available only for driver)

25.4 Daytime running lights

Data received from the country

Legislation
DRL is obligatory in the country since 1978. The law is valid for the whole year. DRL is obligatory for all vehicle types and for all road categories.

Other features
The law allows the usage of dipped headlights and special lamps as well. Switching on of the DRL is automatic. There is penalty for non-use of the DRL.

Surveys
Regular surveys are not mandatory.

Data
Not available.

In Sweden the automatic DRL use has been introduced long time ago. The rate of DRL users is very close to 100%, and it will be retained on this level, because the usage is automatic (cannot be forgotten). No studies on usage on DRL have been carried out since 1988. Under such circumstances the surveys and enforcement are no more necessary.

25.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year manufacture of all vehicle types from 2003 back until 1949.

Usability of the data for SPIs

The data can be used to calculate the vehicle crashworthiness and vehicle age SPI and also for the composition and compatibility SPIs.

Quality of the data

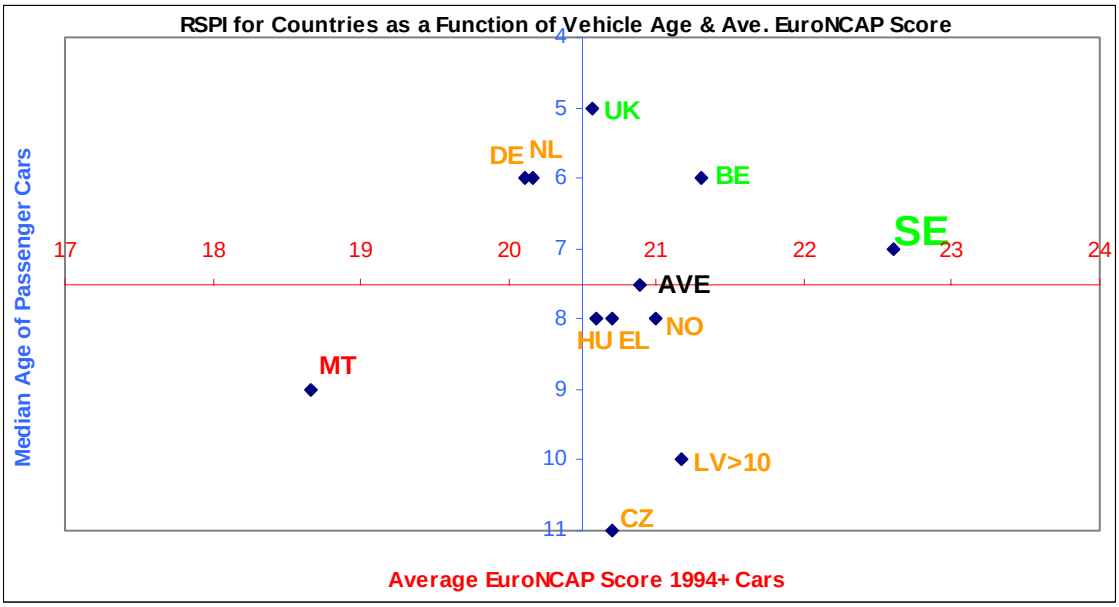
The quality of the Swedish data is very good and the vehicles are broken into the correct types as specified by the questionnaire.

SPIs used by policy makers

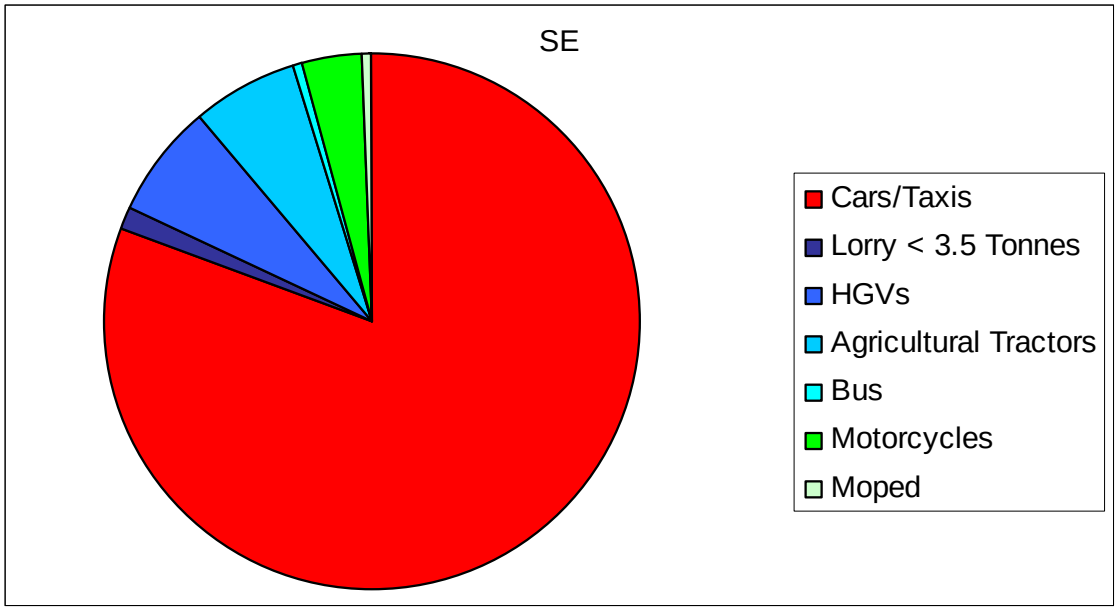
No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

Illustration

Sweden (SE) has the 6th largest passenger car fleet of the 15 countries analysed. The Swedish fleet has a similar percentage of cars that are more than 10 years old and less than 5 years old and fewer from the years in between.



Sweden is one of the best performers in both the vehicle age and the vehicle compatibility SPIs. It has the highest EuroNCAP score of all countries analysed, and an average passenger car age of 7 years.



Sweden has a very small proportion of HGVs and buses, which make for a lower compatibility risk than other countries. However, it does have the largest number of agricultural tractors of all the countries analysed, which could pose a risk. It has one of the lowest proportions of mopeds.

25.6 Roads

Data received from the country

Complete data are received, with data from 2004, but only for one route. Complete means data on all SPIs. The data comprises several connection types.

Usability of the data for SPIs

The data can be used for the calculation of SPIs, but data from only one route gives probably not an accurate image of the SPIs in Sweden or even a certain part of the country.

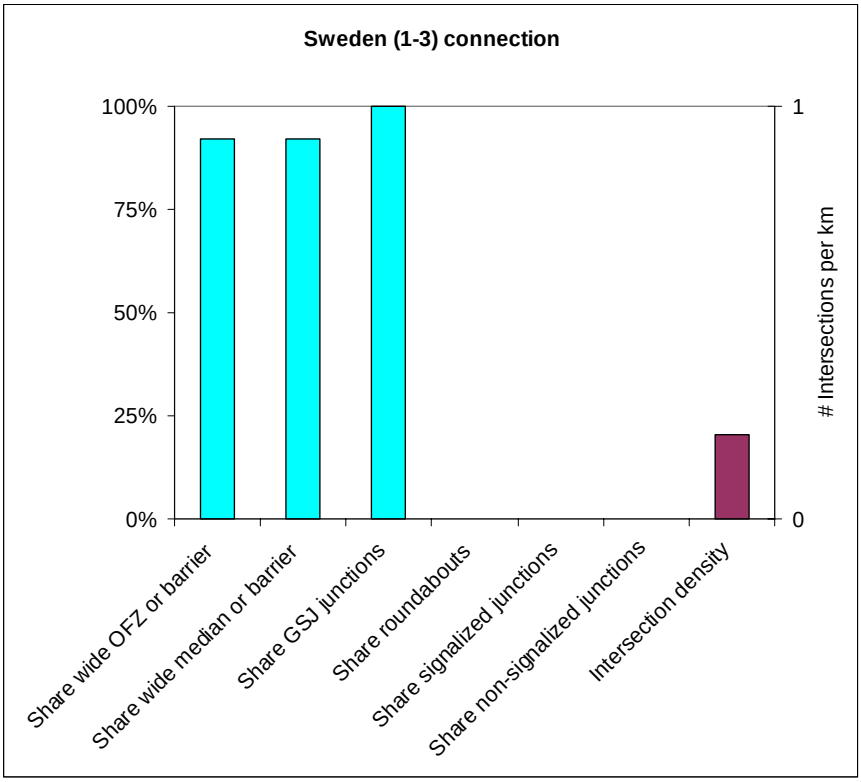
Quality of the data

The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration



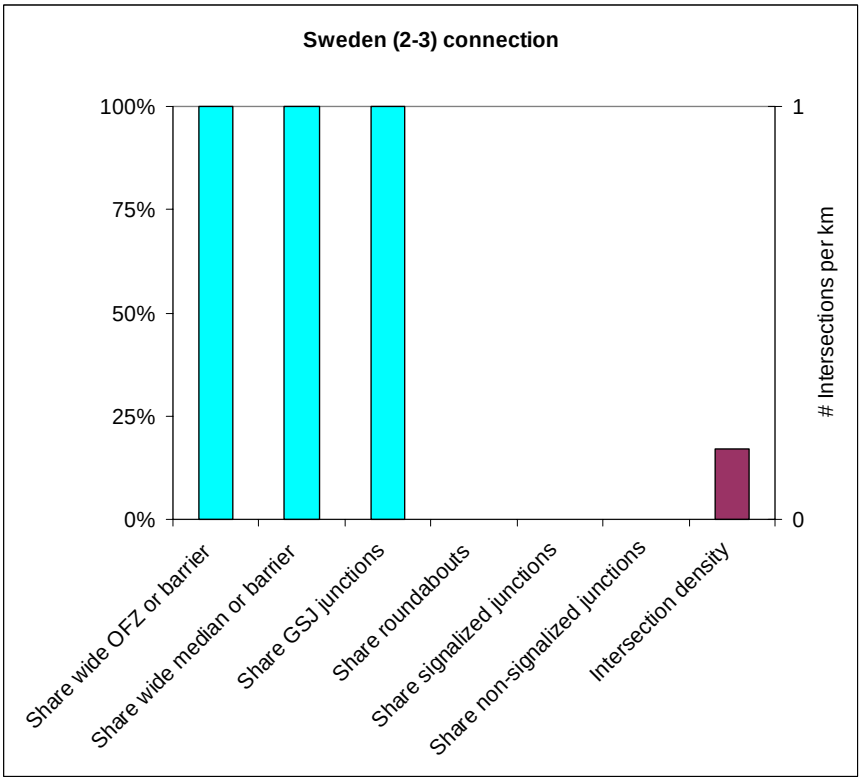


Figure 25.1. SPI results Sweden[6]

[6] OFZ = Obstacle-free zone, GSJ = Grade separated junction

The (1-3) and (2-3) connection have a high share of wide obstacle-free zone or roadside barrier, and wide median or median barrier. Furthermore, all junctions are grade separated. An intersection density of respectively 0.2 and 0.17 intersections per kilometre is quite low for this road type. These connections are both part of the same highway.

25.7 Trauma management

Data received from the country (2003)

General data

Population, million	8.94
Road length - total, km	212000
Road length - public, outside built-up areas, km	98000
Vehicle-kilometres travelled, million	74000

Data on Trauma management

(1) No of dispatching centres	18
(2) No of EMS stations	275
Number of EMS staff in service: (4a) No of physicians	10
(4b) No of paramedics	0
(4c) No of nurses	2000
(4d) No of medical technicians	2000
(4f) Total	4010
Number of EMS transportation units in service: (7a) No of BLSU	500
(7b) No of MICU	0
(7d) No of helicopters/ planes	10
(7e) Total	510

(12) No of EMS calls annually	600000
(13) share of road accidents in EMS calls	2%
(16) No of EMS rides annually	900000
(17) share of road accidents in the EMS rides	1.5%

(19) The demand for EMS response time, min	10 min for 80% of calls*
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	10-30 min
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	n.a.
Comments	*in general, different rules exist for different regions

SPI values estimated for Sweden

(3a) EMS stations per 10000 citizens	0.31
(3b) EMS stations per 100 km of rural road length	0.28
(5a) Percentage of physicians out of EMS staff	0.2%
(5) Percentage of physicians + paramedics out of EMS staff	0.2%
(6) EMS medical staff per 10000 citizens	4.48
(8b) Percentage of MICU out of the total EMS units	0%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	100%
(9) EMS transportation units per 10000 citizens	0.57
(11) EMS transportation units per 100 km of road length	0.24
(19) The demand for EMS response time, min	10 min for 80% of calls*
(20) Percentage of EMS responses meeting the demand	n.a.
(21) Average response time of EMS, min	10-30 min
Comments	*different rules for different regions

(14) Road accident emergency calls per 10000 citizens	13
(15) Road accident emergency calls per million vehicle-km travelled	0.16
(18) Road accident emergency rides per 10000 citizens	15

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	n.a.

26 United Kingdom (UK)

26.1 Alcohol & Drugs

Data on **alcohol** received from the country

Sources
Transport Statistics Bulletin. Road casualties in Great Britain. Main results 2005. Published by the Department for Transport (DfT), June 2006.

(http://www.statistics.gov.uk/CCI/nscl.asp?ID=8094)

TRL Leaflet LF2095, Blood alcohol levels in road accident fatalities for 2003 in GB. TRL,

October 2005 (217.118.128.203/store/downloadreport.asp?id=5009)

www.homeoffice.gov.uk; www.dft.gov.uk- REVISED

BAC Impairment and accidents

Fatal crashes with BAC known: GB 2004						
Percentage of casualties with known BAC, exceeding					Total fatalities with BAC unknown	Total fatalities
0.09 g/l	0.5 g/l	0.8 g/l	1.0 g/l	1.5 g/l		
37%	28%	25%	24%	17%	1252	3037

Of 1785 fatalities with a recorded BAC level, 25% were over the legal limit. For drivers/riders, 21% of those with a known level were over the limit, and 42% of pedestrians were over the legal limit for driving. (All figures pertain to the year 2004).

Estimates for 2004 suggest that 6% of all road casualties and 17% of road deaths occurred when someone was driving whilst over the legal limit for alcohol. (Road Casualties Great Britain, DfT, London, September 2005).

Estimates of total casualties in accidents involving illegal alcohol levels adjusted for underreporting: GB 1979-2005.

	Casualties			
Year	**Fatal**	**Serious**	**Slight**	**Total**
1979	1,640	8,300	21,490	31,430
1980	1,450	7,970	20,420	29,830
1981	1,420	7,370	19,160	27,950
1982	1,550	8,010	20,660	30,220
1983	1,110	6,800	18,610	26,520
1984	1,170	6,820	19,410	27,390
1985	1,040	6,810	19,380	27,220
1986	990	6,440	19,220	26,650
1987	900	5,900	17,670	24,470
1988	790	5,100	16,860	22,740
1989	810	4,790	16,620	22,220
1990	760	4,090	15,550	20,400
1991	660	3,610	13,610	17,880
1992	660	3,280	12,770	16,710
1993	540	2,660	11,780	14,980
1994	540	2,840	11,780	15,160
1995	540	3,000	12,450	16,000
1996	580	3,010	13,450	17,040
1997	550	2,940	13,310	16,800
1998	460	2,520	12,610	15,590
1999	460	2,470	13,980	16,910
2000	530	2,540	14,990	18,060
2001	530	2,690	15,550	18,770
2002	550	2,790	16,760	20,100
2003	580	2,590	15,820	18,990
2004	580	2,340	14,060	16,980
2005[p]	560	2,100	12,740	15,400
P Provisional data				

Source: DfT publication “Road Casualties Great Britain 2005” www.dft.gov.uk/transtat/casualties

Total number of fatalities in UK 2004: 3221 (DfT publication “Road Casualties Great Britain 2005” www.dft.gov.uk/transtat/casualties

BAC & the general driving population

Roadside surveys conducted in two areas of England in 1988 during the traditional drinking hours of 10pm-3am found alcohol present in 17.3% of drivers, around 5% of them being above 50 mg%, 1.7% being over 80 mg% and 0.2% being more than 160 mg%. Subsequently in 1990, further roadside surveys were carried out between 7pm and 2am at weekends in 10 areas of England and Wales. In total, around 13,500 drivers were breath tested, 3.2% were found to be over half the legal limit and 1% were over the legal limit.

Source; Institute of Alcohol studies Fact Sheet, August 2006. Accessed via Home Office.

Website (www. www.homeoffice.gov.uk)

Usability of the data for SPIs

The data allows the calculation of SPIs for alcohol.

Quality of the data

In the example provided some 41% of total fatalities have BAC unknown. The number of fatalities involving illegal alcohol levels is adjusted for underreporting using a method described in" Road Accidents Great Britain 1989". This method takes into account BAC data from Coroners, as well as using the proportion of accidents in the database with illegal alcohol levels as the basis of a scaling factor.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 17.0% for 2004.

26.2 Speed

Background

Several measures of speed are carried out in Great Britain by the Department for Transport (DfT). Travel speed measurements are performed in London since 1968, in other big urban areas every 3 years since 1993 and on trunk roads every 3 years since 1995. Also spot speeds surveys are executed annually and their results reported in publications called "Vehicle speeds in Great Britain". Urban vehicle speeds surveys are carried out since 1994 and rural vehicle speeds surveys since 1991. During all these years, the methodology and the selected locations remained almost constant. The only change occurred in 2002, when the number of sites in each category slightly changed and when all data where used in the calculation instead of a sample of them. However, comparisons remain valid between the different years.

Data received from the country

United Kingdom delivered a complete questionnaire response and a table about the speed limits in the country. They did not provide data directly. However they referred to the publications of the Department for Transport, which contain good data and methodology explanations. In July 2006, we had a personal phone interview with M. Andy Lees from the Department of Transport.

Usability of British data for SPIs

For their spot speed monitoring, the DfT use automatic counters that work all year 24h/24h. Still, splitting out the data for day against night and weekday against weekend is possible and done in the reports. Splitting out by periods of the year is also theoretically possible but not done for the published results. Data for periods where it is known that a site was malfunctioning are discarded. The counters collect data by individual vehicles and send them daily to a central server. This requires a huge storage capacity (1.2 terabytes).

The sample of measuring points was selected randomly from a database containing roads lengths and links per road types. For non-built-up zones, it is constituted by 27 motorway sites, 7 dual carriageway sites and 26 single carriageway sites. For built-up roads, data were collected from 26 sites with a 30 mph speed limit and 10 sites with a 40 mph limit. It was mentioned in the questionnaire that none of these roads could be comparable to the rural road class (B, BB and C) of SafetyNet.

The total number of vehicle records which were processed to produce 2005 statistics was about 860 million. The number of vehicle speeds measured daily at the sites varies widely from a few hundred at the least busy site to many thousands at the motorway sites. From 2002 onwards, all vehicle records recorded at each site were analysed (except for a few very slow-moving vehicles indicating that conditions at the site were

congested). In the publication of 2000, the DfT acknowledge that the sample of locations is small and may not accurately reflect the national picture.

The counting equipment uses the output from inductive loops and axle sensors to measure vehicle length, the number and spacing of axles and vehicle speed. The equipment is capable of classifying 21 different vehicle types (even if some categories are not mutually exclusive), which represent the best result in Europe.

Automatic checks of data reliability are implemented, looking for deviant data from the expected outcomes. Each day, a manual inspection of the daily figures is also carried out.

The measuring locations are generally situated away from junctions, hills or sharp bends, not near speed cameras and at locations where traffic is likely to be free flowing (defined by people of the DfT as traffic conditions at which the behaviour of drivers is not constrained by congestion or other road conditions). Any sites affected by long term road works are excluded. DfT researchers believe that casual incidents or congested conditions arising at some sites don't have a significant effect on the figures published in their bulletin. The fact that their measurements occur all year long indeed smooth the influence of extreme conditions but still, the British definition of "free flow" is not very restrictive compared to other countries (i.e. Ireland). It must be remembered if we try to compare countries.

Apart from the free flowing issue, we must also note that UK still use speeds limits in miles per hour, meaning that they will have no equivalent in any other European country and that a standardisation process will be needed for comparisons.

The following table summarise the characteristics of the British speed data (2005)

All road types available	++
Regular assessment	++
Random and scientific sampling	++
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	+
Data split out for different vehicle types	++
Traffic conditions taken into account	+
Measurements without visible police presence	++
Error check	++
National scale indicators reported	+

+ Criteria partially fulfilled ++ criteria fully fulfilled

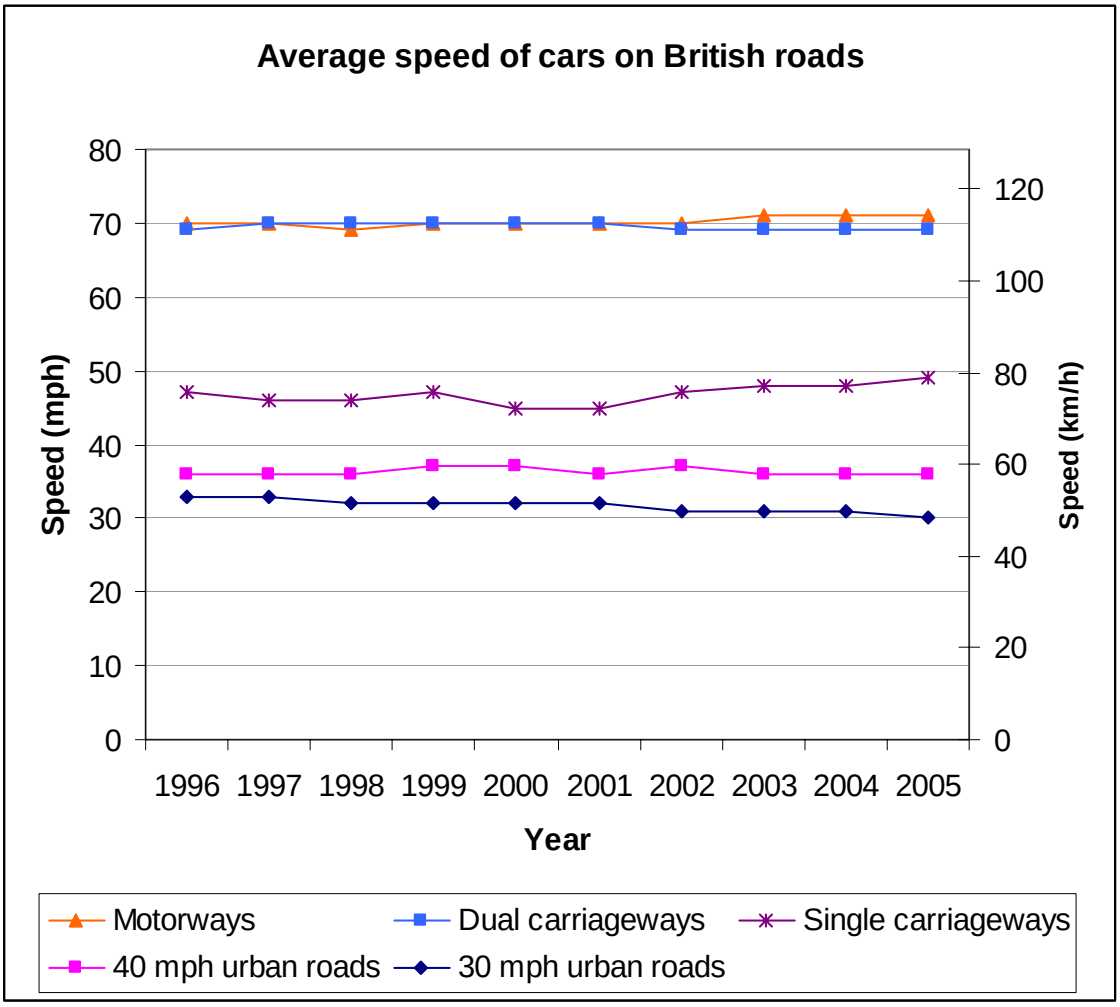
Quality of the data collected by SafetyNet

The publications of the DfT contain very detailed data, including the average speed and the percentage of drivers over the limit, disaggregated by vehicle types and by road types. Comparisons between weekday and weekend and between day and night are also made. Standard deviation and V85 are not reported though.

SPIs used by policy makers

Reducing the number of injuries and fatalities caused by excessive or inappropriate speed is one of the objectives of the British Department for Transport. The indicator about the percentage of offenders is widely used to back-up the argumentation about the necessity to deal with the problem of excessive speeding. It is used both in the publications aimed to a restricted public and to those aimed to the general public. However, no quantitative objective of reduction of the percentage of speeders is given.

Illustration



Data source: Department for Transport (2000 – 2001 – 2002 – 2003 – 2004 – 2005) "Vehicle speeds in Great Britain"

The above figure represents the evolution of the average speed of cars for the period 1996-2005. It is interesting to see that on the whole, the average speeds change very few. But the indicators are the result of permanent measurements, thus minimising the random fluctuations between years. So, the slight decrease on speeds on 30 mph urban roads and the slight increase on single carriageways and motorways are significant and may have real consequences for road safety.

Reference

Department for transport (2006). "Vehicles speeds in Great Britain 2005". Statistics bulletin SB(06)21, London.

26.3 Protective systems

Data received from the country

Filled questionnaire (03/2005).

Recent, time-series data and methodological information (10/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 1970. The data on the development of following indicators are available: A, B, C, F.

The use of protective systems in accidents is unknown (not made public by Police). The following tables summarize information on proposed SPIs:

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	*90**			Y	U,R,M	Y	Y	2005	N				N

* Estimated by SafetyNet, weighting coefficients 0.65/0.35 (driver/frontal passenger), 0.9/0.1 for GB and Northern Ireland.

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	84	N	U,R,M	Y	2005	N		2003	N

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	93					O	1		2005

D: Daytime use of seat belts on front seats of HGV and coaches	Not available
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	28.2/9.6% (major, minor urban roads only) in 2004 (annual national wide value) Not regularly assessed
G: Daytime use of safety helmets by moped riders	No regular survey, presumably very high value.
H: Daytime use of safety helmets by motorcyclists	No regular survey, presumably very high value.

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1	1	1		
Random sampling design of survey	Y	Y	Y	Y		
Precision requirements exist related to the sample size	Y	Y	Y	Y		
Observation procedure is clearly defined for different situations in traffic	Y	Y	Y	Y		
All daylight hours for all working days of the week are considered	Y	Y	Y	Y		
Data stored, reported and measurements documented	Y	Y	Y	Y		

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	32	32				
Nr of sites per road types						
Sample size at sampling site						
Observed total	<28000					

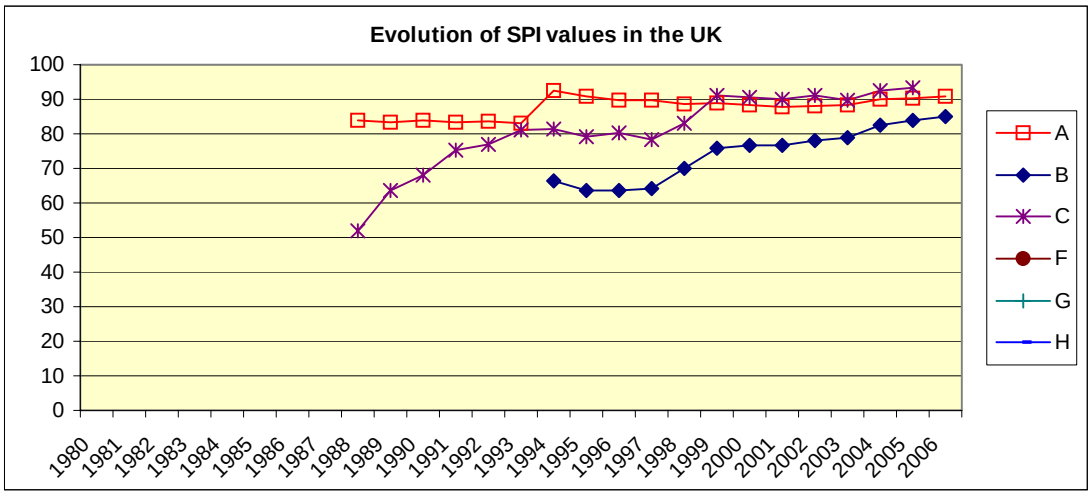
SPIs proceeding

It is possible to figure out the values of the following indicators:

A (aggregation necessary driver + front seat passenger)

B, C (no objections)

SPIs presentation



Comments: the value of SPI A estimated from available data (driver/front seat passenger)

26.4 Daytime running lights

Data received from the country

Legislation
In the United Kingdom there is no intention to introduce DRL.

Surveys
Due to the lack of legislation there are no surveys, consequently the country is not able to answer the questionnaire.

Data
None available.

26.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year of manufacture of all vehicle types from 2005.

Numbers of vehicles type groups from 2004.

Usability of the data for SPIs

The data can be used to calculate the vehicle crashworthiness and vehicle age SPI and also fleet composition and compatibility SPIs. The data will be more directly comparable with other countries when the next release of their data is obtained.

Quality of the data

The quality of the UK data is good, although there are a small number of vehicles where the year of manufacture is missing. These anomalies represent less than 0.9% of the database, so it has been deemed usable.

Some adjustments were necessary in order to make the 2004 data provided comparable with the 2003 data provided by other countries.

SPIs used by policy makers

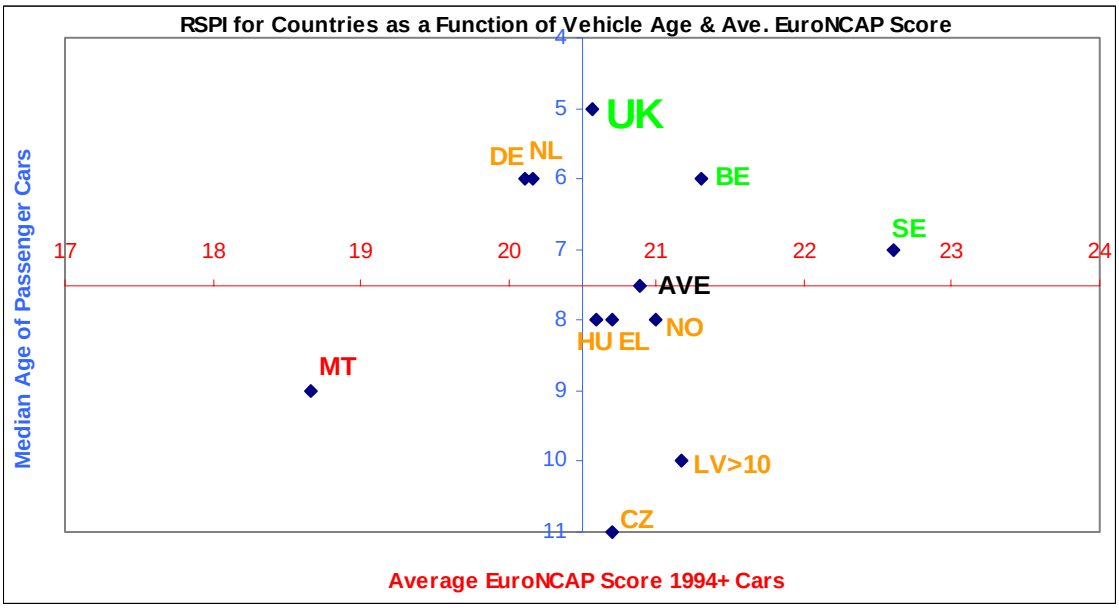
No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

Illustration

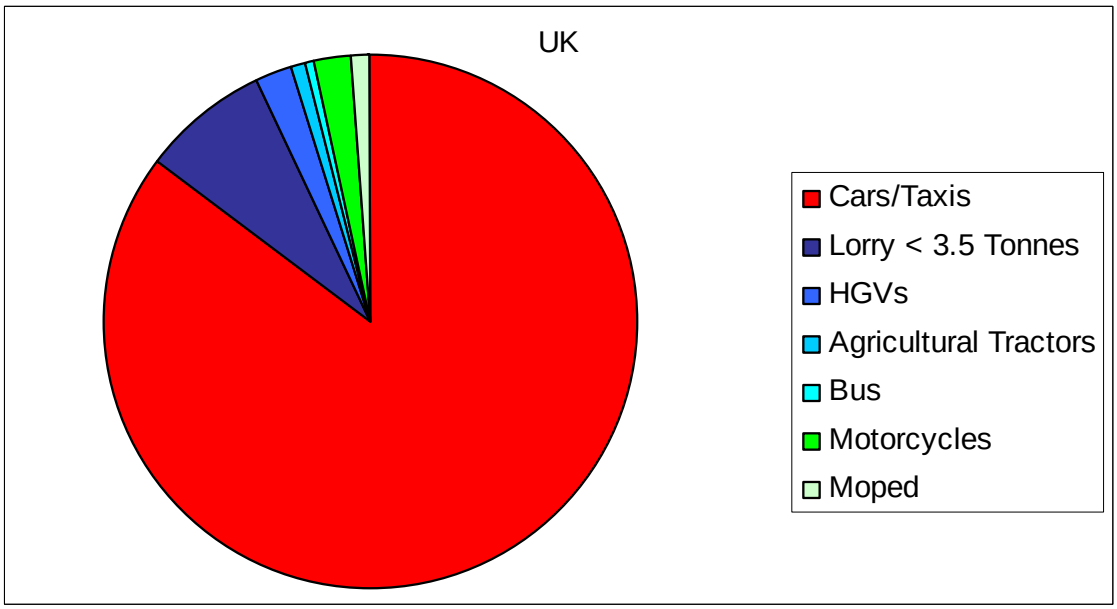
The UK has the 2nd largest passenger car fleet of the 15 countries analysed.

The UK has the smallest proportion of cars that are over 10 years old – just over 12%. Almost 57% of the fleet is made up of cars that are under 5 years old.

In the UK a consistently higher proportion of the fleet consists of cars tested by EuroNCAP. This may be because a saturation point is being reached.



The UK is slightly below average in the vehicle crashworthiness SPI and well above average in the vehicle age SPI with a median car age of just 5 years. This figure holds when the newer data are removed from the UK database.



The UK fleet consists of over 85% passenger cars and taxis, thus having a very small proportion of other vehicle. This means there is a reduced compatibility risk, especially as the UK has one of the smallest proportions of motorcycles.

26.6 Roads

No data were received.

26.7 Trauma management

Data received from the country

Based on the TM questionnaire's response, data collected by VSRC and general data from IRTAD, the following data are available for Great Britain (for year 2003):

General data

Population, million	57.85
Road length - total, km	392321
Road length - public, outside built-up areas, km	249649
Vehicle-kilometres travelled, million	494800

Data on Trauma management

(1) No of dispatching centres	53 (for England and Wales)
(2) No of EMS stations	979
Number of EMS staff in service: (4a) No of physicians	0
(4b) No of paramedics	17272
(4c) No of nurses	0
(4d) No of medical technicians	9630*
(4f) Total	26902
Number of EMS transportation units in service: (7a) No of BLSU	n.a.
(7b) No of MICU	n.a.
(7d) No of helicopters/ planes	14 (for England and Wales)
(7e) Total	n.a.
Comments	*ambulance support staff Data reported for West Yorkshire, 2004: 640 vehicles in total, including 123 emergency vehicles and 14 rapid response vehicles; there are 780 A&E staff. These serve a population of 2 million, road length of 36691 km.

(12) No of EMS calls annually	5,340,000
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	3,400,000
(17) share of road accidents in the EMS rides	n.a.

(19) The demand for EMS response time, min	8 min for 75%*
(20) Percentage of EMS responses meeting the demand	100%**
(21) Average response time of EMS, min	n.a.
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	n.a.
Comments	* of Category A; 14/19 min for 95% of Category B, C. ** Because 75.7% of Category A get a response within 8 min

SPI values estimated for the United Kingdom (actually, for Great Britain)

(3a) EMS stations per 10000 citizens	0.17
(3b) EMS stations per 100 km of rural road length	0.39
(5a) Percentage of physicians out of EMS staff	0%
(5) Percentage of physicians + paramedics out of EMS staff	64.2%
(6) EMS medical staff per 10000 citizens	4.65
(8b) Percentage of MICU out of the total EMS units	0%*
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	21%*
(9) EMS transportation units per 10000 citizens	3.20*
(11) EMS transportation units per 100 km of road length	1.74*
(19) The demand for EMS response time, min	8 min for 75%**
(20) Percentage of EMS responses meeting the demand	100%**
(21) Average response time of EMS, min	n.a.
Comments	* for West Yorkshire. Unavailable for the country. ** See above comments for the data

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	n.a.

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	n.a.

27 Norway (NO)

27.1 Alcohol & Drugs

Data received from the country

The number of fatalities in accidents involving at least one driver influenced by alcohol and/or drugs, is presumably not available in Norway. The figures for Norway are taken from a study of prevalence of alcohol and drugs among motor vehicle drivers killed in road accidents, i.e. the figures show only drivers who were killed themselves rather than drivers involved in fatal accidents where *the driver or some other road user* is killed. The study is based upon the killed drivers tested, some 70% of the total number of killed drivers in the period. 243 killed drivers are included in the study, 137 negative for substances tested, 55 positive for alcohol alone or with other substances, 77 for other drugs alone or together with alcohol (Christophersen et al, 2005).

Usability of the data for SPIs

The data allow the calculation of SPIs for both alcohol and drugs.

Quality of the data

See above. The figures include only drivers killed and tested rather than drivers involved in fatal accidents. Testing is done on demand from police, a fact likely to produce a bias towards a high percentage of impaired drivers. Using drivers killed themselves rather than drivers involved in fatal accidents may also produce a bias towards a higher percentage.

SPIs used by policy makers

Percentage of general drivers impaired by alcohol or drugs (None for alcohol and drug use).

Illustration

SPI alcohol: 22.2%; SPI drugs: 30.1%.

27.2 Speed

Data received from the country

Norway delivered a complete questionnaire response, an information table about their speed limits and a small data table.

Usability of data for SPIs

Speed measurements are carried out on six different road types (speed limits 50, 60, 70, 80, 90 and 100 km/h). Measurements are permanent and based on a big number of locations. The choice of the locations was made on the basis of the importance of roads and not with a scientific sampling procedure.

Vehicles are sorted into 5 classes, on the basis of their length. Data can potentially be split out up to one-hour periods and rush ours can be excluded. Seasonal and monthly data are also computable, which allow taking weather and lighting conditions into account. All indicators suggested by SafetyNet related to Speed can be computed.

Norwegian data thus fulfil most requirements except for the fact that measuring locations are not chosen randomly.

The following table summarise the characteristics of the Norwegian speed data (2004).

All road types available	++
Regular assessment	++
Random and scientific sampling	
Data split out for day and night	++
Data split out for weekend and weekday	++
Data split out for different period of the year	++
Data split out for different vehicle types	++
Traffic conditions taken into account	+
Measurements without visible police presence	++
Error check	++
National scale indicators reported	++

+ Criteria partially fulfilled ++ criteria fully fulfilled

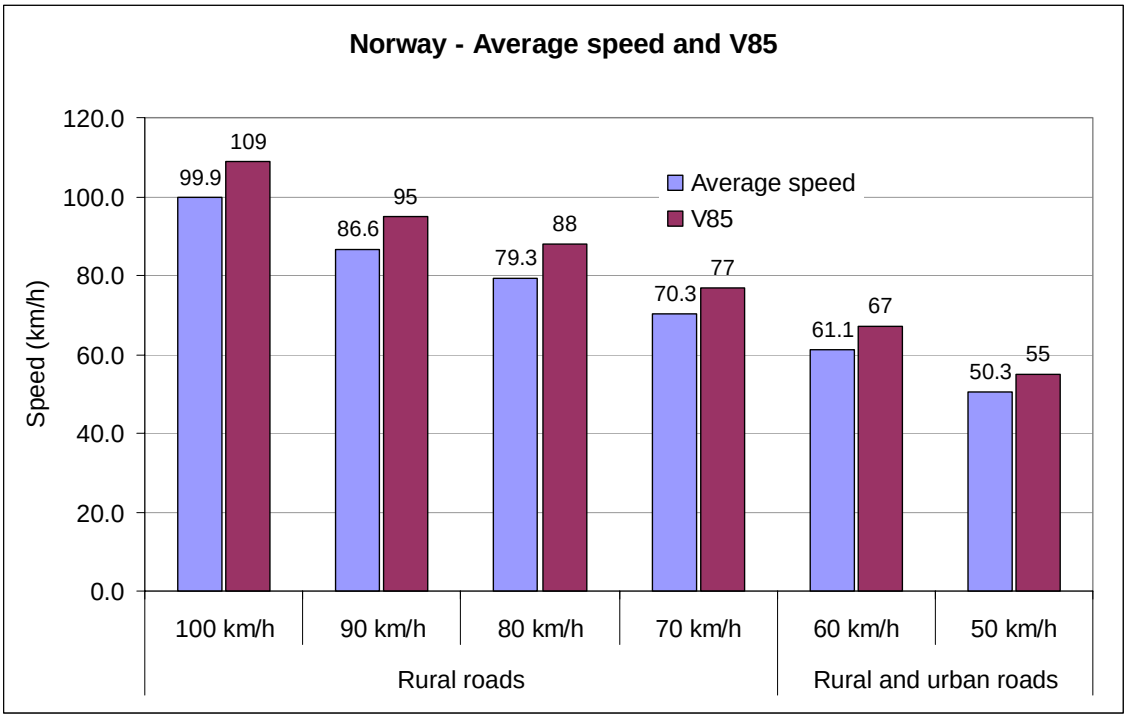
SPIs used by policy makers

The application of Safety Performance Indicators is one of the measures adopted in the National Action Plan for Road Safety 2002-2011. Operating speeds, or the proportion of users over the speed limits, is one of the phenomena that are monitored.

The SPIs factors will be followed up annually and the development of these performance indicators will be presented to the main actors, the Ministry of Transport and Communication and the Ministry of Justice at meetings in the Liaison Committee for Traffic Safety.

Illustration

The following figure shows the average speed and V85 on 6 types of Norwegian roads for the year 2004. However, we do not have information on which vehicles types are included and on how traffic conditions have been taken into account for these specific indicators.



Source: Norwegian Public Roads Administration, 2005

Reference

Norwegian Public Roads Administration (2006). “Vision, Strategy and Targets for Road Traffic Safety in Norway 2006-2015”. Oslo.

27.3 Protective systems

Data received from the country

Filled questionnaire (02/2005).

Recent and time-series data (10/2006).

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 1998 (A,B,C), 1999 (F). The data on the development of following indicators are available: A, B, C, F, G, H.

The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs:

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
	*90**	90	89	N	U,R,M	Y	Y	2005	Y	56	67	2003	Y

* Aggregated by SafetyNet – weighting coefficients 0.66 drivers and 0.33 front passenger

** 2005 data are not reliable, not presented

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	85	N	U,R,M	Y	2005	Y	56	2003	N

C: Daytime use of CRS in passenger cars	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	94	0-14				S	1	U,R,M	2005

D: Daytime use of seat belts on front seats of HGV and coaches	NA
E: Daytime use of seat belts by passengers in coaches and HGV	NA

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	30% in 2004 (annual national wide value) 2005 data are not reliable, not presented
G: Daytime use of safety helmets by moped riders	100% in 2004 (annual national wide value)
H: Daytime use of safety helmets by motorcyclists	100% in 2004 (annual national wide value)

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1	1	1	1	1
Random sampling design of survey						
Precision requirements exist related to the sample size						
Observation procedure is clearly defined for different situations in traffic						
All daylight hours for all working days of the week are considered						
Data stored, reported and measurements documented						

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites						
Nr of sites per road types						
Sample size at sampling site						
Total observed						

SPIs proceeding

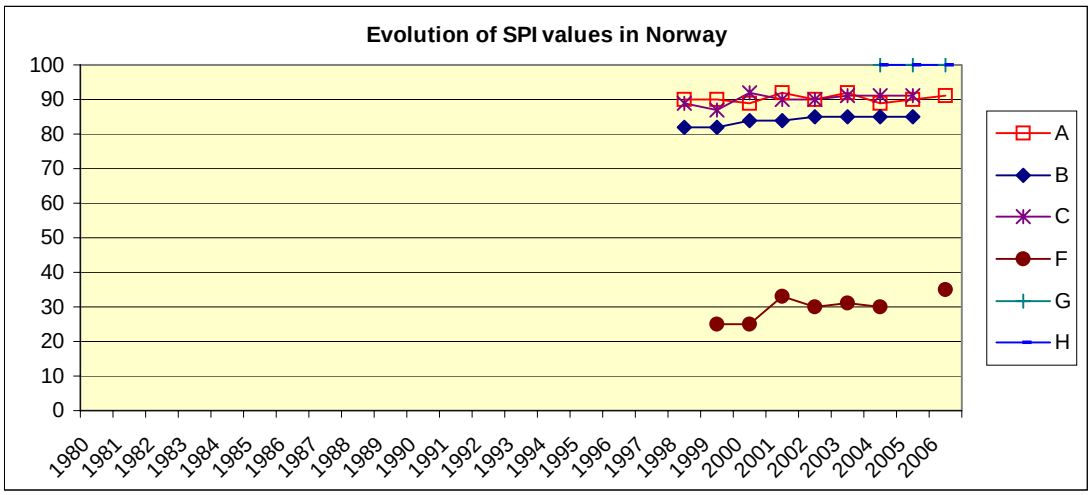
It is possible to figure out the values of the following indicators:

A (aggregation necessary)

B, C, F, G, H

For all indicators, it is recommended to reconsider the design of the survey.

SPIs presentation



27.4 Daytime running lights

Data received from the country

Legislation
DRL is obligatory in the country. The law is valid for the whole year. DRL is obligatory for all vehicle types and for all road categories.

Other features
The legislation requires the use of the dipped headlights. Switching on of the lights is automatic (with the ignition). Fines are also applied in order to keep the usage rate on a high level.

Surveys
Regular surveys are not mandatory.

Data
Not available.

In Norway the automatic DRL use had been introduced long time ago. The rate of DRL users is very close to 100%, and it will be retained on this level, because the usage is automatic (cannot be forgotten). Under such circumstances the surveys and enforcement are no more necessary.

27.5 Vehicles (passive safety)

Data received from the country

Full database detailing make, model and year of first registration of all vehicle types from 2003.

Usability of the data for SPIs

The data can be used to calculate the vehicle crashworthiness and vehicle age SPI and also the fleet composition and compatibility.

Quality of the data

The Norwegian data are of very good quality; no adjustments were required. The database is broken down into vehicle types as specified by the database.

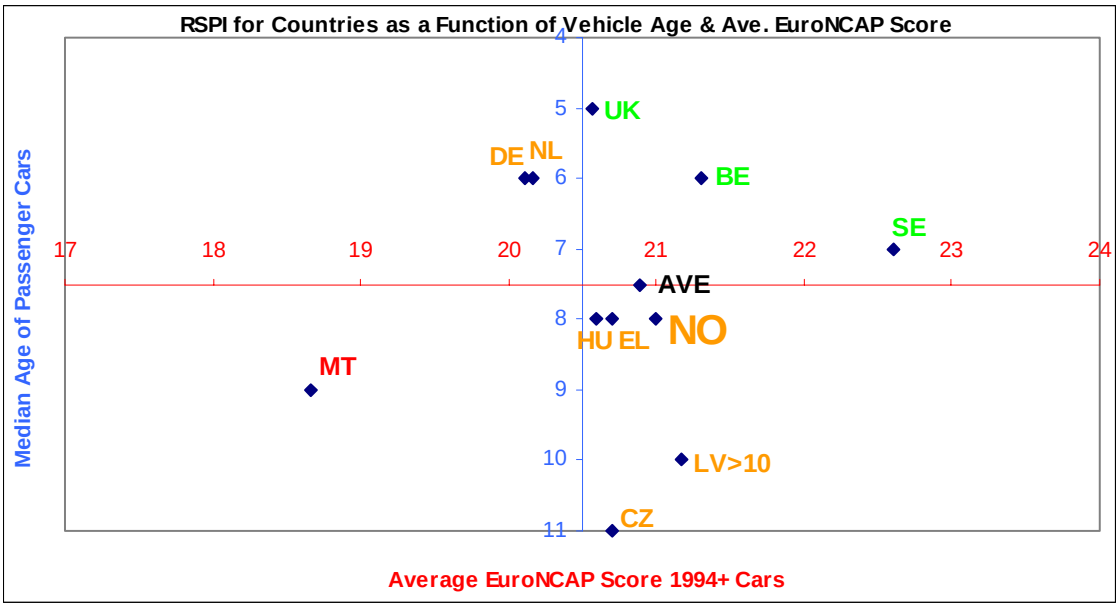
SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

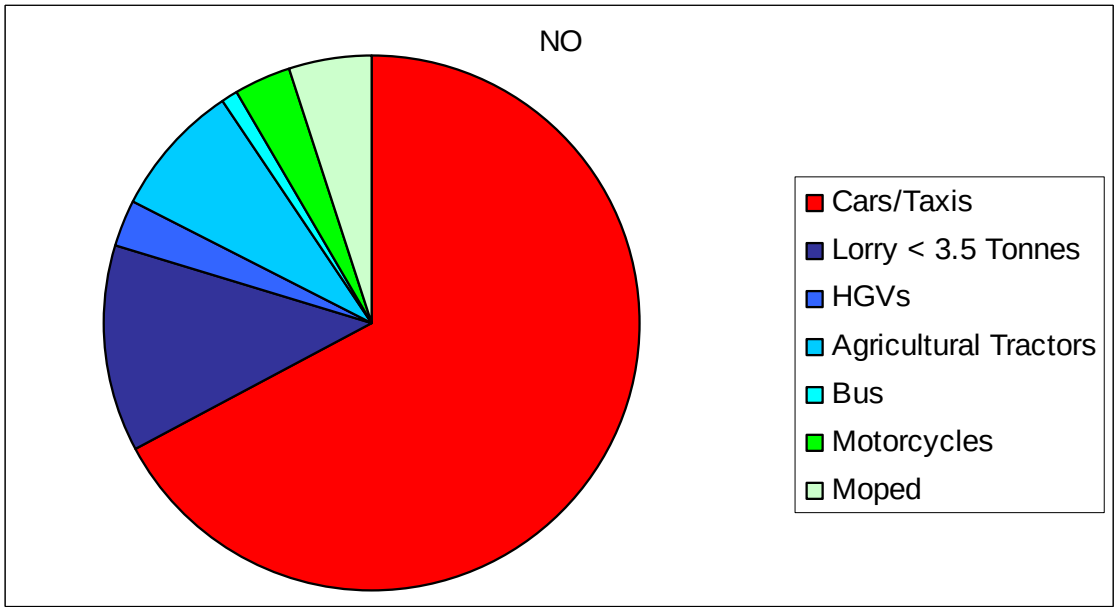
Illustration

Norway (NO) has the 5th smallest passenger car fleet of the 15 countries analysed.

Norway has a proportion of cars over 10 years that is just better than average and has a fairly ever distribution of cars up to 5 and up to 10 years old.



Norway performs well in both the vehicle age SPI and the vehicle crashworthiness SPI, just below and just above average respectively. It has a vehicle median age of 8 years.



Norway has the lowest proportion of passenger cars in the fleet of the countries analysed, just over 67%. It has the highest proportion of goods vehicles under 3.5

tonnes and tractors and one of the highest proportions of buses. This, along with a relatively high numbers of two-wheeled motor vehicles could present compatibility risks.

27.6 Roads

Data received from the country

Incomplete data are received from certain major roads in the country, it is not known from which year is the data. Incomplete means data on one or several SPIs is missing. There is only data on the SPI 'Share wide median or barrier' and 'share road type', there are no data on the other SPIs. The data comprises two major connection types.

Usability of the data for SPIs

The data can only be used for the calculation of the SPI 'Share wide median or barrier'.

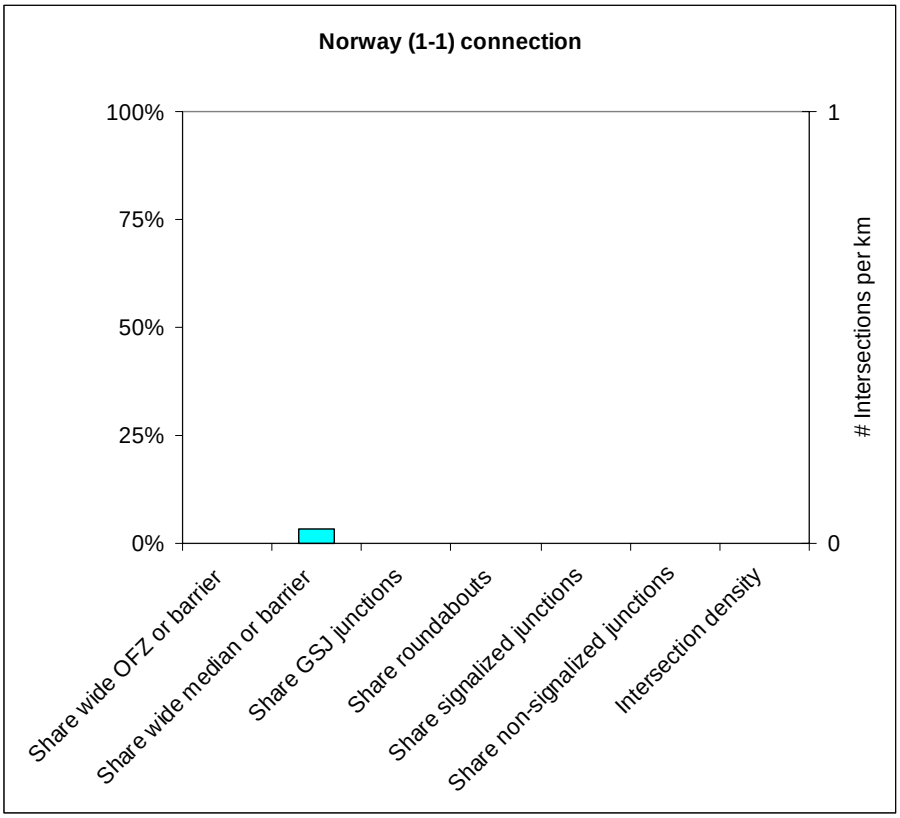
Quality of the data

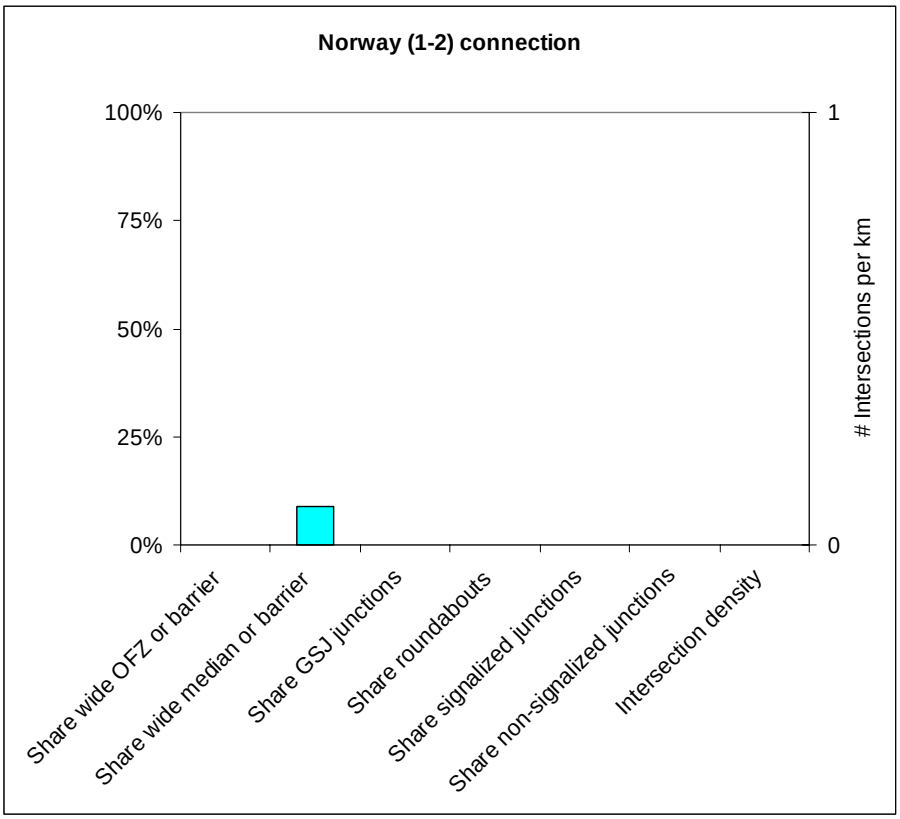
The quality of the data has not been checked. The SPIs can be calculated directly from the data.

SPIs used by policy makers

It is not known which SPIs are used by policymakers in this country.

Illustration





There is only data on the share of (1-1) and (1-2) connections with a wide median or barrier. This is low, with only 3% and 9%. Data on all other SPIs is missing.

27.7 Trauma management

Data received from the country (2003)

General data

Population, million	4.58
Road length - total, km	91825
Road length - public, outside built-up areas, km	90663
Vehicle-kilometres travelled, million	37000

Data on Trauma management

(1) No of dispatching centres	44
(2) No of EMS stations	200
Number of EMS staff in service: (4a) No of physicians	n.a.
(4b) No of paramedics	n.a.
(4c) No of nurses	n.a.
(4d) No of medical technicians	n.a.
(4f) Total	n.a.
Number of EMS transportation units in service: (7a) No of BLSU	604
(7b) No of MICU	0
(7d) No of helicopters/ planes	19
(7e) Total	672*

*Incl. 49 boats

(12) No of EMS calls annually	350000
(13) share of road accidents in EMS calls	n.a.
(16) No of EMS rides annually	n.a.
(17) share of road accidents in the EMS rides	n.a.

(19) The demand for EMS response time, min	n.a.*
(20) Percentage of EMS responses meeting the demand	app. 90%
(21) Average response time of EMS, min	n.a.
Number of trauma beds in permanent medical facilities: (22a) In certified trauma centres	n.a.
(22b) In trauma department of hospitals	n.a.
(22d) Total	n.a.
Comments	*Standards are defined for urban areas and non-urban areas

SPI values estimated for Norway

(3a) EMS stations per 10000 citizens	0.44
(3b) EMS stations per 100 km of rural road length	0.22
(5a) Percentage of physicians out of EMS staff	n.a.
(5) Percentage of physicians + paramedics out of EMS staff	n.a.
(6) EMS medical staff per 10000 citizens	n.a.
(8b) Percentage of MICU out of the total EMS units	0%
(8) Percentage of BLSU + MICU + Helicopters/ planes out of the total EMS units	93%
(9) EMS transportation units per 10000 citizens	1.47
(11) EMS transportation units per 100 km of road length	0.73
(19) The demand for EMS response time, min	n.a.
(20) Percentage of EMS responses meeting the demand	app. 90%
(21) Average response time of EMS, min	n.a.

(14) Road accident emergency calls per 10000 citizens	n.a.
(15) Road accident emergency calls per million vehicle-km travelled	n.a.
(18) Road accident emergency rides per 10000 citizens	n.a.

(24a) Percentage of beds in certified trauma centres and trauma departments of hospitals out of the total number of trauma beds	n.a.
(25) Number of the total trauma care beds per 10000 citizens	n.a.

28 Switzerland (CH)

28.1 Alcohol & Drugs

Data received from the country

Year 2005, total number of fatalities: 409, ("Einfluss von Alkohol, Drogen oder Medikamente") Influence of alcohol, drugs or medicines) Alcohol/killed: 79; Drugs/killed: 27; Medicines/killed: 4; Total alcohol, drugs and medicines: 96.

Legal limit for alcohol 0.5 ppm from 1. January 2005. The significant reduction in fatalities due to alcohol from 2004 to 2005 of almost 25% can be explained by the reduction of the limit of blood alcohol from 0.8 ppm to 0.5 ppm by 1. January 2005.

Usability of the data for SPIs

The data allow for the calculation of SPIs for both alcohol and drugs.

Quality of the data

The police) do not systematically test all drivers involved in an accident. In some cantons dead drivers are not tested to alcohol or drugs even if they have obvious signs to alcohol. 7 substances the are defined as illegal drugs: Cannabis, heroin/morphin, cocaine, amphetamine, methamphetamin, MDEA, MDMA. The legal limit is 0.0 ppm. Like in alcohol, there is no systematic test for illegal drugs in accidents, even if people are killed. 'Medikamente' are medical drugs. There exists no legal limit.

SPIs used by policy makers

Unknown.

Illustration

SPI alcohol: 19.3% ; Drugs (including medicines): 7.6%.

28.2 Speed

Background

Speed is monitored since 1972 on an annual basis by the Institute for Transport Planning and Systems (IVT) of the Swiss Federal Institute of Technology Zurich (ETHZ) in order to have a nationally representative estimate of speed. IVT is the owner of the data.

Data received from the country

Switzerland provided a complete questionnaire response but no data with it. BfU (Swiss Council for Accident Prevention), as a partner in the development of the SPIs related to speed, has a direct access to these data and is annually publishing these results. Therefore SafetyNet could get the answers quite easily.

Usability of Swiss data for SPIs

The data are collected in 30 measurement locations: 10 locations per road type (motorways, rural roads, urban roads). On urban roads only data for speed limit 50 km/h are collected (not for speed limit 30 km/h). The locations were selected because of the importance of the roads (not randomly selected and not selected because of the high risk). The instruments in use are invisible measurement loops, radar and laser gun. Speed is only measured for a few hours in one period of the year at each location. Recorded in the reports are "average speed for all motorways together", "median speed for all motorways together", "quantiles (v15, v85)", "standard deviation of all motorways together" and "percentage of offenders measured at 1 km/h over the limit".

In general, the data show a high level of aggregation but it should be possible to obtain desired SPIs proposed by SafetyNet.

The following table summarise the characteristics of Swiss speed data (2005).

All road types available	+
Regular assessment	++
Random and scientific sampling	+
Data split out for day and night	
Data split out for weekend and weekday	
Data split out for different period of the year	
Data split out by vehicle types	
Traffic conditions taken into account	++
Measurements without visible police presence	++
Error check	++
National scale indicators reported	+

+ Criteria partially fulfilled ++ criteria fully fulfilled

Quality of the data collected by SafetyNet

The data in possession of SafetyNet corresponds to the best data available described above. Most of the indicators that are suggested as SPI were provided by Switzerland on the national scale. Standard deviations of all motorways are recorded but not reported.

SPIs used by policy makers

The use of speed data by policy makers is rather limited and no targets exist in official governmental documents. Until now, the speed data were only used for the evaluation studies.

Illustration

Speed behaviour, 1972–2006

	Speeds (cross section) in km/h								
	Roads in built-up areas[1]			Roads outside built-up areas[2]			Motorways[3]		
Year	V85	Average speed	% over limit	V85	Average speed	% over limit	V85	Average speed	% over limit
1972	…	…	…	99	82	…	127	105	…
1973	…	…	…	91	76	6	138	113	…
1974	…	…	…	91	78	6	124	106	8
1975	…	…	…	…	…	…	…	…	…
1976	…	…	…	96	82	12	132	112	18
1977	…	…	…	…	…	…	133	113	22
1978	…	…	…	…	…	…	…	…	…
1979	59	51	18	…	…	…	…	…	…
1980	55	49	42	…	…	…	133	113	22
1981	55	49	45	…	…	…	132	112	18
1982	57	50	51	…	…	…	138	116	32
1983	…	…	…	…	…	…	…	…	…
1984	…	…	…	102	89	20	133	114	20
1985	…	…	…	92	81	49	126	110	28
1986	…	…	…	94	83	55	129	112	34
1987	…	…	…	91	80	46	125	109	24
1988				…	…	…	…	…	…
1989	…	…	…	89	78	38	123	107	23
1990	…	…	…	88	77	35	129	113	35
1991	…	…	…	…	…	…	130	114	38
1992	…	…	…	87	78	35	129	114	37
1993	…	…	…	85	77	32	129	114	34
1994	…	…	…	83	73	21	131	115	42
1995	…	…	…	92	82	56	127	112	33
1996	…	…	…	83	75	24	127	112	29
1997	…	…	…	…	…	…	124	113	27
1998	…	…	…	…	…	…	129	112	35
1999	…	…	…	…	…	…	128	114	35
2000	…	…	…	…	…	…	129	112	35
2001	…	…	…	85	78	35	127	112	34
2002	…	…	…	83	76	27	129	114	38
2003	50	43	21	83	75	24	128	114	38
2004	49	43	19	81	73	19	125	111	30
2005	49	43	18	83	75	26	125	111	29

[1] Roads in built-up areas: From 1.1.1984, speed limit 50 km/h
[2] Roads outside built-up areas: From 1.1.1985, speed limit 80 km/h
[3] Motorways: From 1.1.1985, speed limit 120 km/h

Source; IVT, 2006

The above figure represents the evolution of average speed of (reasonably) free-flowing cars, of v85 and percentage of offenders measured at 1 km/h over the limit.

28.3 Protective systems

Data received from the country

Filled questionnaire (03/2005).

Information on the data collection methodology (BfU report Nr. 53).

Information on data collected in road accidents.

SPIs in use

Unknown.

Presence of protective systems in vehicles

The presence of protective systems in vehicles is not addressed at country level. Limited information is however available through self-reported questionnaires collected through the EU funded project SARTRE.

Use of protective systems

The use of chosen protective systems in road traffic has been systematically monitored in the country since 1970. The data on the development of following indicators are available: A, B, C, F, G, H.

The use of protective systems has been also monitored in accidents, though the proportion of unknown remains significant. The following tables summarize information on proposed SPIs.

A: Daytime use of seat belts in light vehicles in front seats	Daytime use of seat belts in traffic								In accidents				By fatalities
	Together	Front / driver	Front / passenger	Per gender	Road types	Vans included	Foreigners included	Year	Yes / No	Front / driver	Front / passenger	Year	Yes / No
		82		N	U,R,M	Y	Y	2005	Y	91.6	94.9	2003	

B: Daytime use of seat belts in light vehicles in rear seats	Daytime use					In accidents			By fatalities
	Rear seats	Per gender	Road types	Foreigners included	Year	Yes / No	Rear	Year	Yes / No
	53	N	U,R,M	Y	2005	N		2003	N

C: Daytime use of CRS in passenger cars as from survey	CRS	Category I	Category II	Category III	Category IV	Source	Periodicity	Road types	Year
	85			0-6 87	7-12 81	S	1	U,R,M	2002

D: Daytime use of seat belts on front seats of HGV and coaches	Not available.
E: Daytime use of seat belts by passengers in coaches and HGV	Not available

Obligation to wear helmets	Cyclists	Moped riders	Motorcyclists
	N	Y	Y

F: Daytime use of safety helmets by cyclists	27% in 2003 (annual national wide value)
G: Daytime use of safety helmets by moped riders	88% in 2003 (annual national wide value)
H: Daytime use of safety helmets by motorcyclists	99% in 2003 (annual national wide value)

Methodological criteria

Criteria/Indicator	A	B	C	F	G	H
Regular road-side independent observation (periodicity in years)	1	1	1	1	1	1
Random sampling design of survey	Y	Y	Y	Y	Y	Y
Precision requirements exist related to the sample size	Y	Y	Y	Y	Y	Y
Observation procedure is clearly defined for different situations in traffic	Y	Y	Y	Y	Y	Y
All daylight hours for all working days of the week are considered	Y	Y	Y	Y	Y	Y
Data stored, reported and measurements documented	Y	Y	Y	Y	Y	Y

Sampling details/Indicator	A	B	C	F	G	H
Nr of observation sites	57	11		53	54	98
Nr of sites per road types	14/18/25					
Sample size at sampling site	500			120	68	
Observed total	28000			5580	99	2053

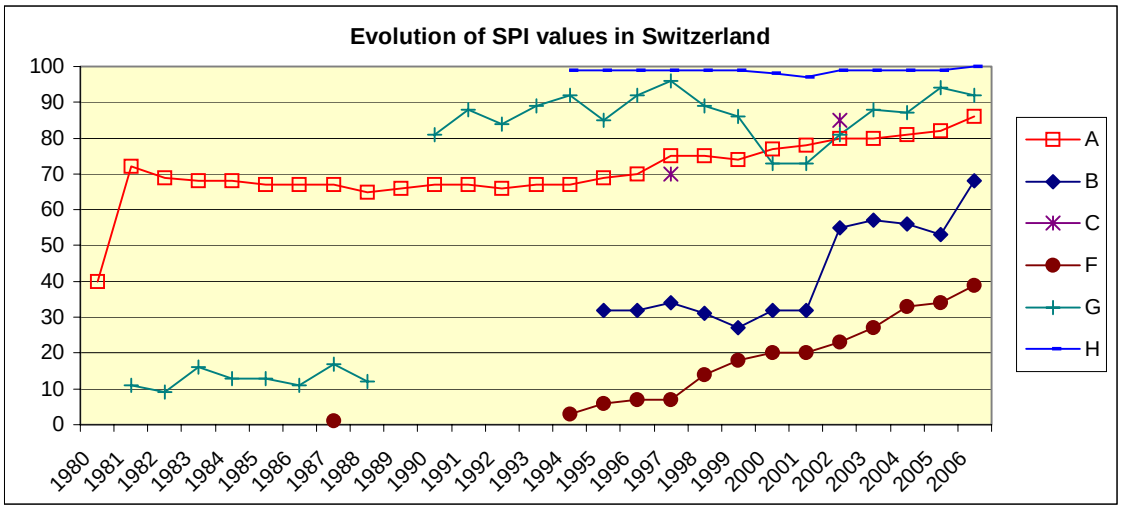
SPIs proceeding

It is possible to figure out the values of the following indicators:

A, B, C, F, G, H (valid)

For all indicators, it is recommended to reconsider the design of the survey.

SPIs presentation



Comments: the value of SPI A estimated from available data (driver)

28.4 Daytime running lights

Data received from the country

Legislation
DRL is (highly) recommended in Switzerland for all motor vehicle types, all year, on all road types. There are plans to make DRL obligatory in the future. But until now, DRL is not obligatory, but recommended by the law.

Other features
Special daytime lights should be turned on, these are switched on automatically in most cars when starting the engine. Occasionally, there is an incentive campaign.

Surveys
It is recommended to perform regular surveys. These are done yearly, making sure that season, weather conditions and site selection are constant. They are done in May and June, on roads representative for the whole territory. DRL use is counted manually, with sample size between 500 and 1000 per site.

Data
Year: 2004

Road category	Vehicle type						
	Motorcycle	Car	Heavy goods vehicle	Bus	Moped	Other	Total
Motorway (AAA)**	100	50	54	54			51
Rural roads (BB&B)**	94	38	47	47	76		48
urban roads (DD&D)**	90	36	49	49	74		46
all roads where DRL is mandatory	93	39	49	49	75		48

Usability of the data for SPIs

Switzerland has excellent data on DRL, which certainly can be used for calculating SPIs. The collection method is good, and there is a wide variety of disaggregations available.

Quality of the data

To fully assess the quality of the data, more background information would be needed, but the general impression is the Switzerland data are of good quality.

SPIs used by policy makers

Unknown.

28.5 Vehicles (passive safety)

Data received from the country

Very detailed database of passenger cars from 2004, giving make and model.

Usability of the data for SPIs

The data cannot be used from any of the SPIs, as no information is provided about vehicles from different years – just 2004. The data only lists passenger cars and other vehicle types are needed.

Quality of the data

The quality of the data provided is very detailed although no use for any of the SPIs. If vehicle year details were provided a lot of analysis would be possible.

SPIs used by policy makers

No SPIs relating to vehicle fleet age, crashworthiness or composition are known to be used by policymakers in this country. EuroNCAP scores are available to indicate the crashworthiness of individual vehicles.

Illustration

No SPIs were possible for Switzerland.

28.6 Roads

No data were received.

28.7 Trauma management

Data received from the country (2003)

General data

Population, million	7.06
Road length - total, km	n.a.
Road length - public, outside built-up areas, km	n.a.
Vehicle-kilometres travelled, million	44339

Data on Trauma management

Not available.

SPI values estimated for Switzerland

With the Trauma management questionnaire's response, no data on TM were provided for this country. Therefore, no SPI values could be estimated.

The answer on the TM questionnaire was that the country is subdivided into 26 cantons therefore it is impossible to provide the data for the whole country.

Following the national experts' meeting in Brussels in February 2006, it was suggested for the countries where different organizations of trauma care exist in different regions (e.g. Länder, cantons, counties), to collect the data for two representative areas, e.g. for one highly-populated and one scarcely-populated area.

Then, it was suggested for Switzerland to fill in the requested TM data *for two representative sub-areas of the country, and accompany them by General data for these areas*.

So far, no data on TM are available for the country.