

Institute of Transport Economics (TØI)

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# Road Safety Culture in Greece and worldwide

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# Structure of the presentation

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Road Safety In Greece



Road Safety in Europe and worldwide



Monitoring Road Safety Culture

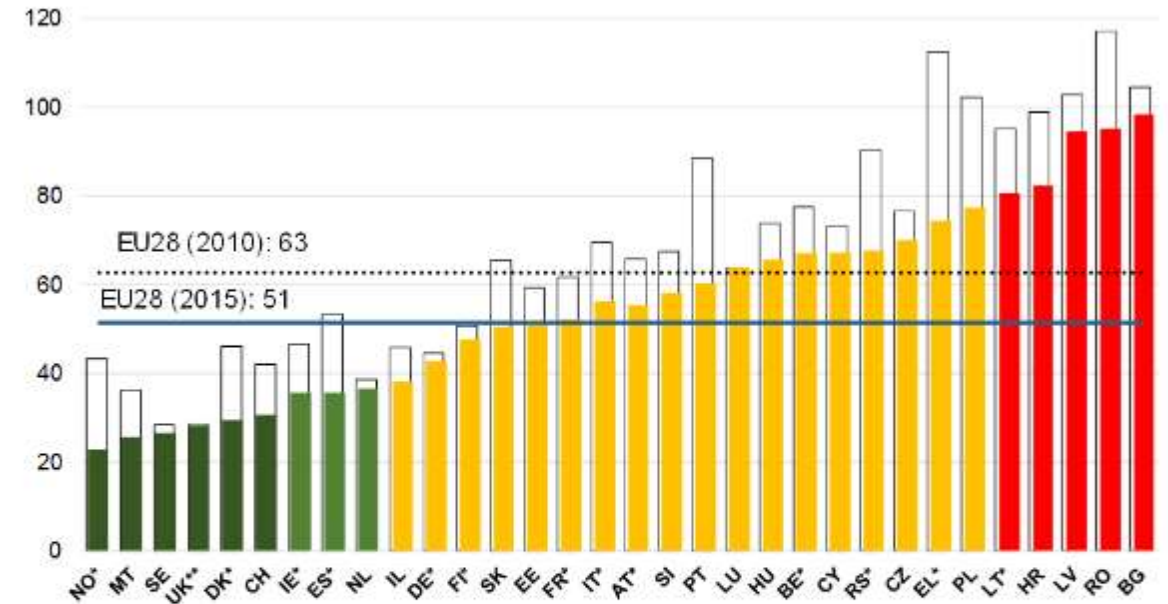


# Road Safety Culture in Greece



# Road fatalities in 2015 in Greece and in Europe

- In the EU28 the overall level of road mortality was 51 deaths per million inhabitants in 2015, compared with 63 in 2010.
- Norway had the lowest number of road deaths per million inhabitants (23), followed by Malta, Sweden, the UK and Denmark with less than 30 deaths per million inhabitants.
- Greece with 72 fatalities per million inhabitants is getting closer to the EU average (52) than to the least performing EU countries (80-105).



**Fig.6: Road deaths per million inhabitants in 2015** (with road deaths per million inhabitants in 2010 for comparison). \*National provisional estimates used for 2015, as the final figures for 2015 are not yet available at the time of going to print. \*\*UK data for 2015 are GB provisional total for year ending September 2015 and Northern Ireland total for the calendar year 2015. Numbers of deaths in Luxembourg and Malta are small and are therefore subject to substantial annual fluctuation.

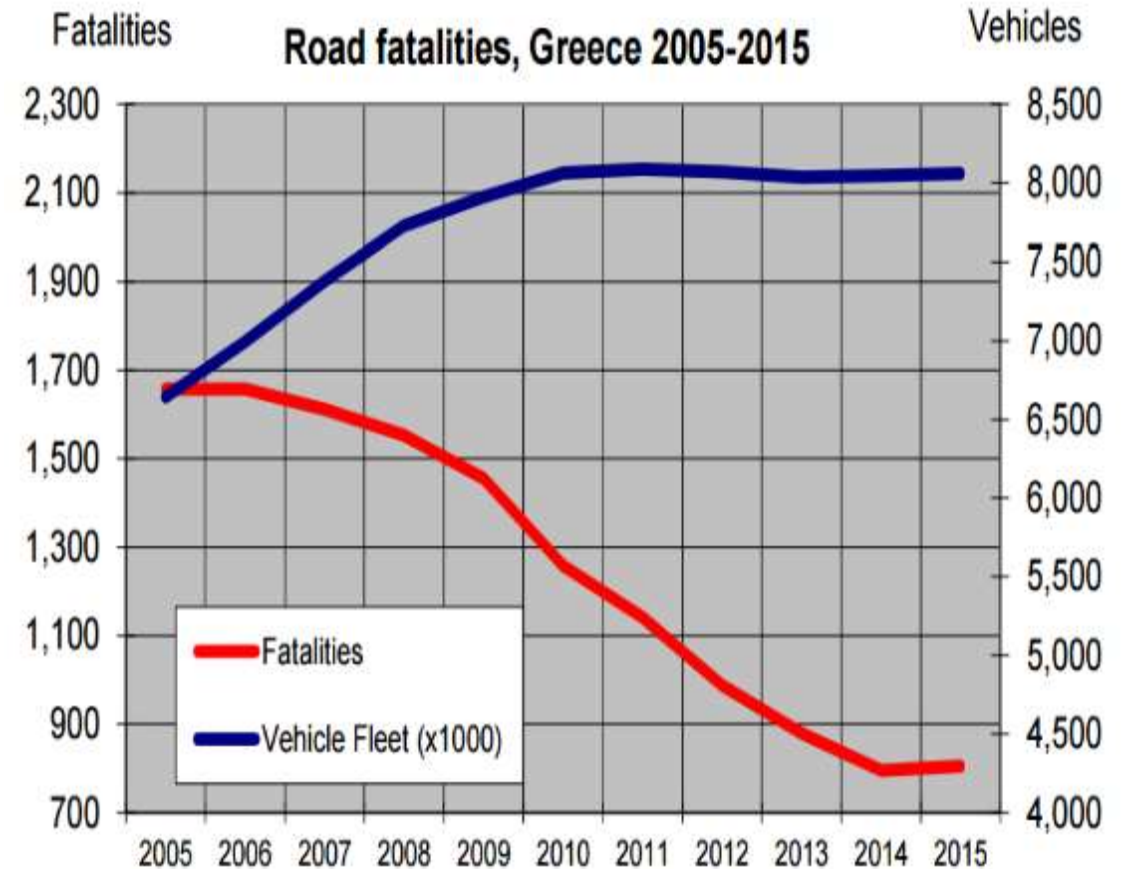
Source: ETSC, 2016





# Road Safety Performance in Greece

- Road fatalities in 2015 shows a slight annual increase of 1,3%, whereas injury accidents show a slight decrease of -1.1%.
- This road fatalities increase is observed for the first time since 2004, ending an impressive 49% road fatalities decrease in the economic crisis period 2008-2014 (-23% in injury accidents).



# Road Safety Performance in Greece

A number of possible impacts of economic recession are estimated to contribute to the impressive reductions in fatalities:

- **Less vehicle-kilometers:** increased fuel prices, decrease of recreation mobility, less heavy goods vehicle traffic
- **Less speeding:** increased fuel prices, more economical and environment friendly driving, low drivers' morale
- **Less risky driving:** fewer young, inexperienced or elderly drivers who may afford vehicle ownership and travel



# Road Safety Performance in Greece

- Today, Greece has reached a point where there is great need for extra effort to further improve road safety in the Greek roads, with systematic actions from the Authorities and serious engagement from the society despite the continuous economic and social crisis in Greece.
- There is an important potential for further road safety improvement in Greece.





# Basic road safety indicators in Greece and in EU

Greece	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 2005-2015
Fatalities	1.658	1.657	1.612	1.553	1.456	1.258	1.141	988	879	795	805	-51%
Injuries	22.048	20.675	19.766	19.010	18.641	19.108	17.259	15.724	14.812	14.564	14.033	-36%
Accidents	16.914	16.019	15.499	15.083	14.789	15.032	13.849	12.398	12.109	11.690	11.565	-32%
Vehicles (mil.)	6,641	6,996	7,380	7,729	7,911	8,062	8,087	8,070	8,035	8,048	8,061	21%
Fatal./mil.veh.	250	237	218	201	184	156	141	122	109	99	100	-60%
Fatal./mil.popul.	150	149	145	139	130	112	103	89	79	72	74	-51%

EU-28	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 2005-2015
Fatalities	45.992	43.774	43.222	39.728	35.444	31.366	30.532	28.244	26.025	25.940	26.304	-43%
Vehicles (mil.)	269,67	274,11	286,51	285,89	289,80	293,14	301,98	304,61	307,30	310,85	314,44	17%
Fatal./mil.veh.	171	160	151	139	122	107	101	93	85	84	84	-51%
Fatal./mil.popul.	92	87	86	78	70	63	61	56	52	51	52	-43%

Sources: EL.STAT., EC-CARE





# Road Safety Performance in Greece

- The socio-economic cost of fatalities, injuries and material damage in recorded road accidents with casualties in Greece is estimated to exceed 2,5 billion (€) per year.

It is possibly tripled if the actual number of casualties and accidents with material damage only are taken into account.



# Road Safety Structure in Greece

- **Inter-Ministerial Road Safety Committee** (not operational since 2011)  
Chairman: Prime Minister, Vice Chairman: Vice President of the Government  
Members: Ministers (Economy, National Defense, Interior, Education, Health, Infrastructure, Transport and Networks, Environment, Public Order and Tourism) and the State Secretary for Infrastructure, Transport and Networks  
Committee for Processing Proposals  
Road Safety Secretariat
- **National Road Safety Board** (not operational since 2012)
- **Road Safety Stakeholders:**
  - Ministries
  - Professional Associations
  - Universities and Research Institutes
  - Non-Governmental Organisations

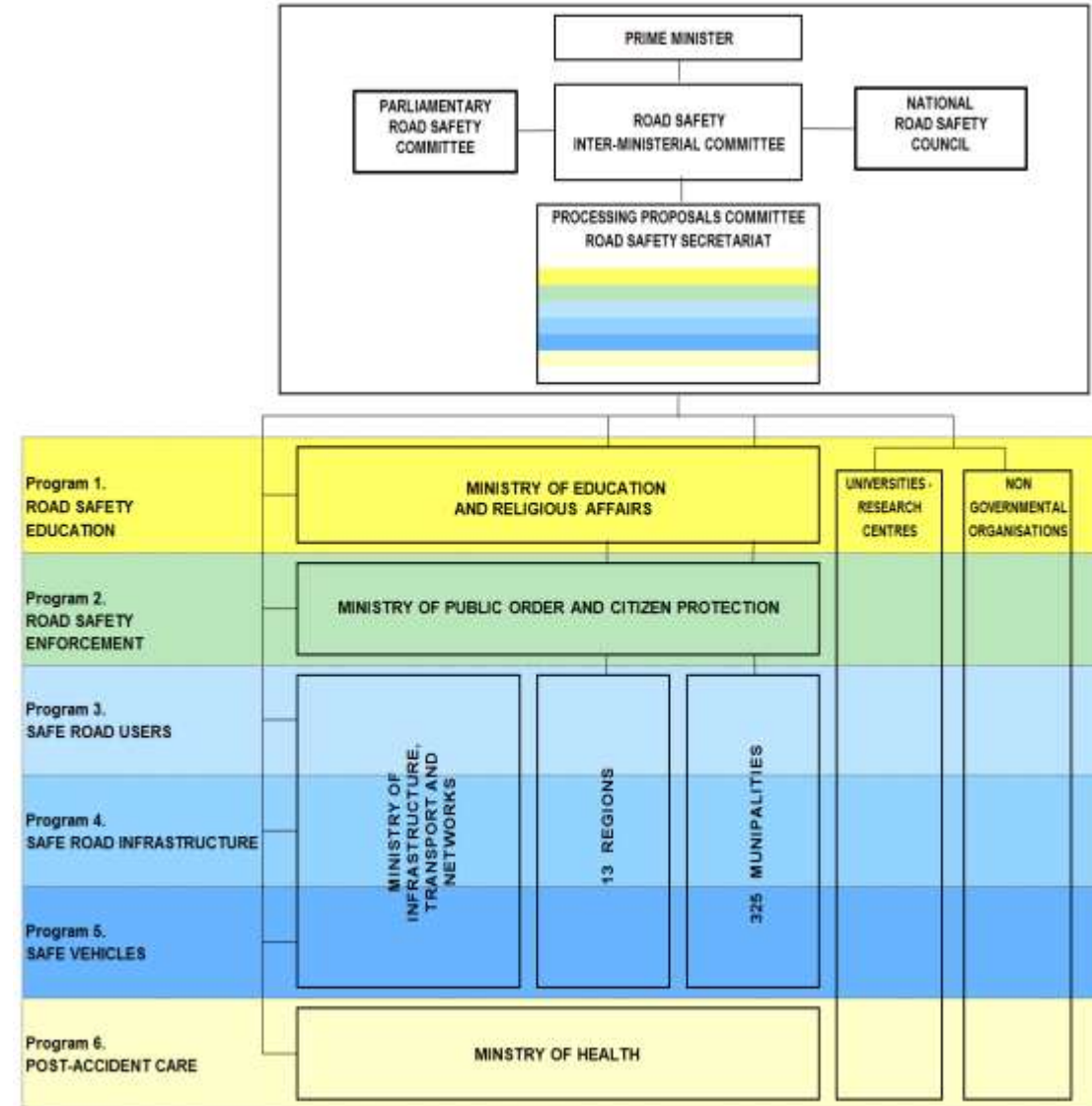


# Road Safety Structure in Greece

## Road Safety Strategic Plan:

- Need to introduce an organized way to improve road safety based on the Safe System approach.
- Quantitative target of halving road fatalities of 2010 by 50% in 2020 meaning that, in 2020, the number of road fatalities in Greece, must be lower than 640.
- Mid-term target for the first five years: the number of road fatalities in 2015 must be lower than 880.

Inadequate overall implementation.



# Problems and causes

Critical factors causing road accidents in Greece  
(in order of importance):

- driving at high speeds
- high rates of motorcyclists in traffic
- low rates of seat-belt and helmet use, especially by passengers
- unorganized and unprotected movement of vulnerable road users
- driving under the influence of alcohol and using a mobile phone
- generalized aggressive driving

Basic Road Safety Indicators  
in Greece and in Europe  
(Source: EL.STAT, EC-CARE)

% fatalities 2014	Greece	EU
Inside urban areas	50%	38%
Pedestrians	16%	22%
Motorcyclists	35%	15%
Young drivers (15-24 years old)	12%	17%
Older drivers (65+ years old)	12%	21%
Single vehicle accidents	54%	30%





# Road Safety Culture in Greece

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 2005-2015
Speed infringements	374.712	307.763	353.133	349.417	330.186	263.382	238.033	186.675	178.816	156.892	<i>141.639</i>	-62%
Drink & drive infringements	46.938	44.848	45.668	47.257	45.901	38.033	34.992	30.707	30.853	29.597	<i>25.982</i>	-45%
Seat belt infringements	142.227	142.152	107.112	86.353	77.274	49.703	37.120	33.722	35.478	34.526	<i>24.625</i>	-83%
Helmet infringements	150.198	144.251	97.953	94.530	78.453	51.526	47.250	47.736	58.122	54.354	<i>41.900</i>	-72%

Source: Traffic Police

During the last ten years there is a significant decrease in infringements related to key issues of road user behaviour.



# Road Safety Culture in Greece

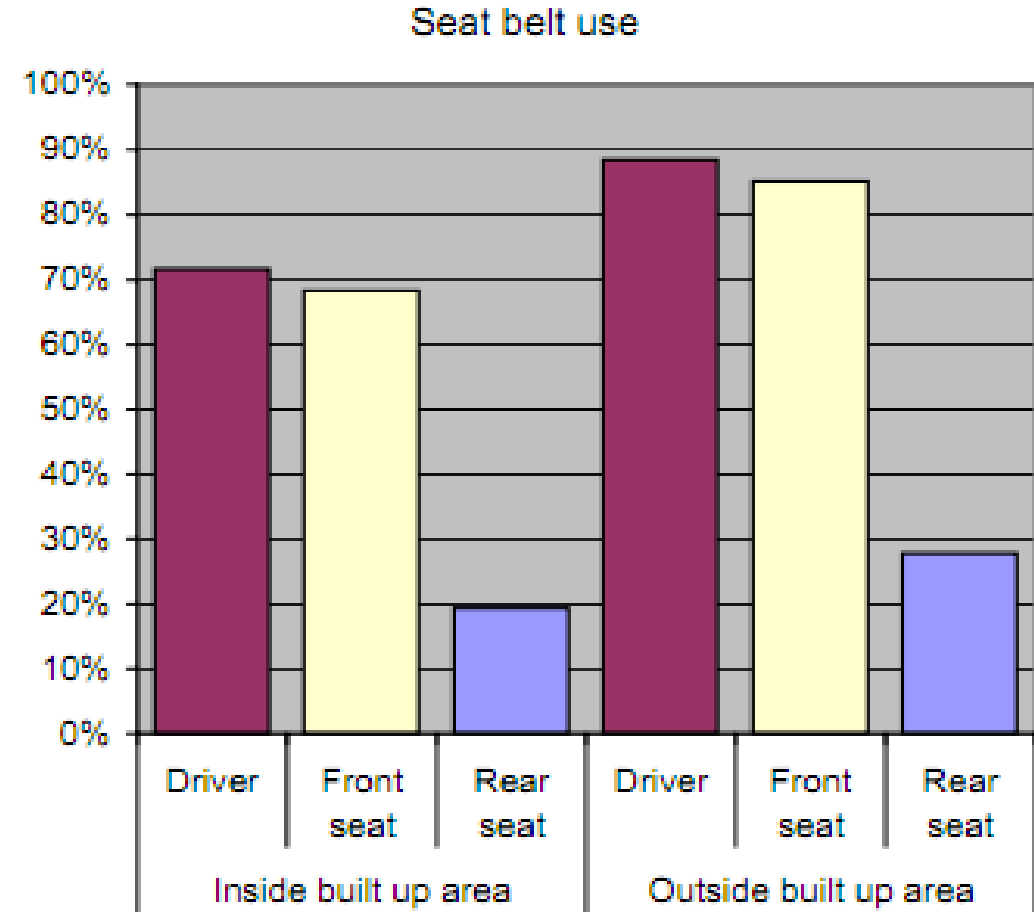
Greek citizens (and the Authorities) do not realize that speed and safety cannot coexist in the complexity of pedestrian and vehicle traffic.

They drive aggressively and at speeds which are not appropriate for the existing traffic conditions, thinking that road accidents happen only to others and never to themselves.



# Road Safety Culture in Greece

- Around 1 out of 4 drivers do not use seat belts
- Females have higher seat belt use rates
- Only 19% of rear seat passengers use seat belt inside urban areas and 28% outside urban areas
- Child restraint use is 57% with no significant difference inside / outside urban area

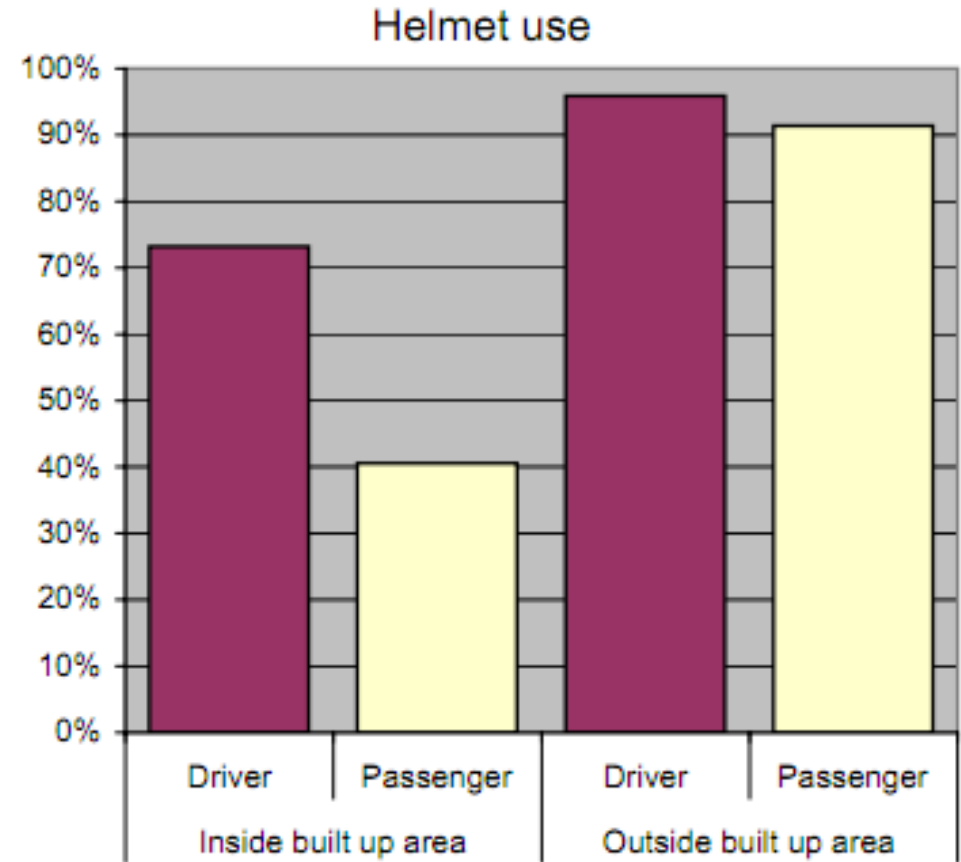


Source: NTUA 2009



# Road Safety Culture in Greece

- 75% of motorcycle riders use their helmet
- Young females (16-24 years old) have lower helmet use rates than young males, while the opposite is the case for the other age groups
- Only 41% of motorcycle passengers use their helmet inside built-up areas
- More than 90% of riders use their helmet outside built-up areas



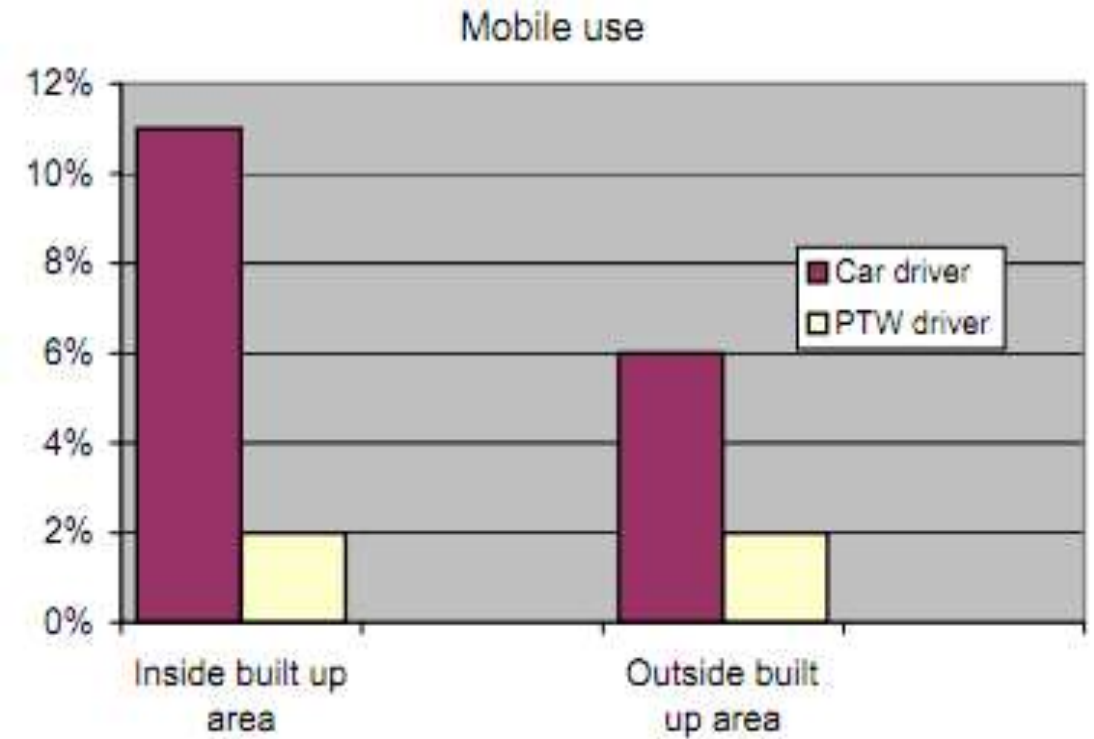
Source: NTUA 2009





# Road Safety Culture in Greece

- Mobile phone use rate is increased for young car drivers (16-24 years old)
- Mobile phone use rate is higher inside built-up areas
- PTW riders present very low mobile phone use rates, except for young females (12%)

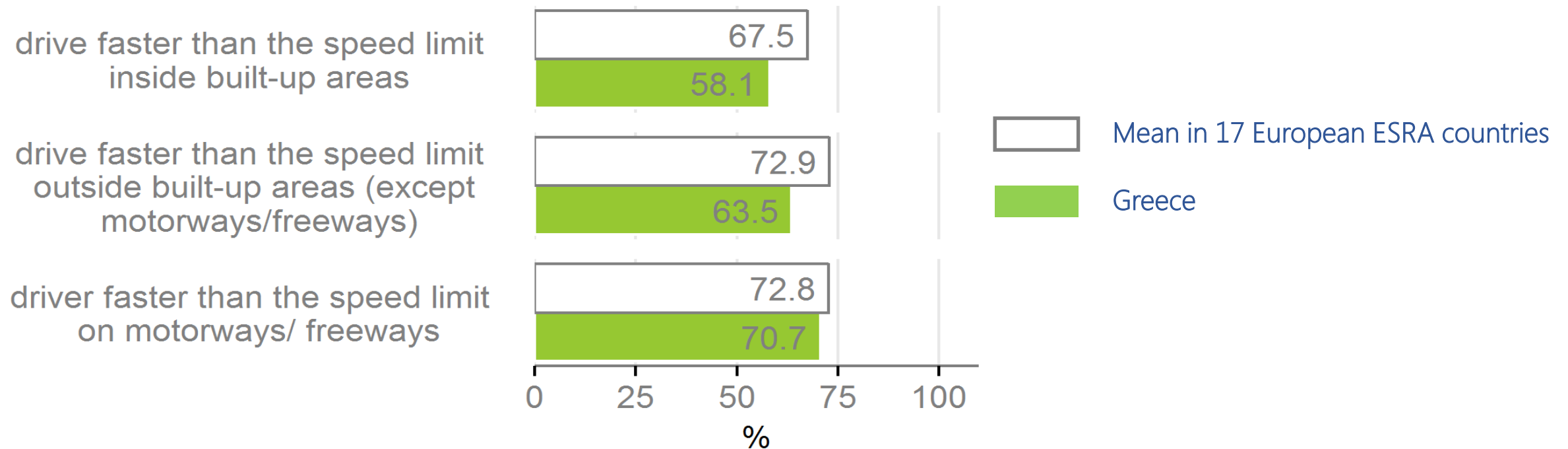


Source: NTUA 2009



# Road Safety Culture in Greece

In the past 12 months, as a road user, how often did you?  
(5-point scale, 1=never to 5=(almost) always)

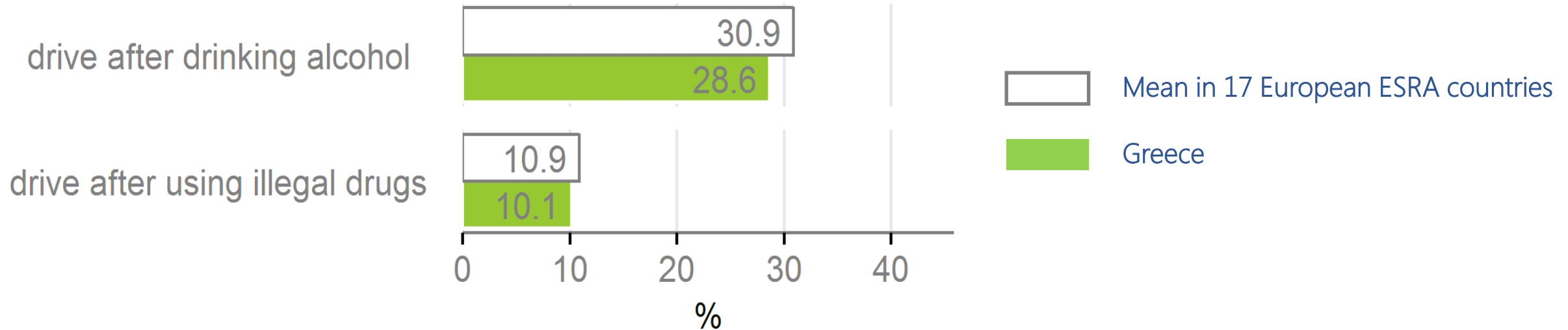


Source: ESRA 2016



# Road Safety Culture in Greece

In the past 12 months, as a road user, how often did you?  
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Source: ESRA 2016



# Road Safety Culture in Greece

In the past 12 months, as a road user, how often did you?  
(5-point scale, 1=never to 5=(almost) always)



Source: ESRA 2016





# Problems and causes

Main causes of the high number of road accidents in Greece:

- Inadequate enforcement that is not perceived by the driver
- Road infrastructure and overall organization of urban space and traffic oriented to accommodate private cars and speed
- Interurban roads with inadequate maintenance and defects making dangerous surprises to drivers while they also do not forgive driver mistakes
- Inadequacies of Authorities - a bad example for citizens
- Indifference of the Authorities and its citizens to respect the rules and the correct traffic behaviour
- Promotion of poor driving behaviour patterns



# Problems and causes

Key institutional road safety problems in Greece:

- Inefficient organization of the Public Administration
- Lack of organized State structures with responsibility for road safety and lack of accountability for the implementation of their actions
- Lack of a centralized structure with substantial road safety responsibility and authority on State agencies and accountability for its actions
- Insufficient funding for road safety
- Failure to understand that road safety is a science



# Problems and causes

- During and after the deep **economic and social crisis**, priority should be given to serious efforts to improve road safety.
- An effective road safety policy should be based firstly on the fundamental principle that incorporation of **safe driving at the expense of speed** should be taken into account in every decision made by the Authorities and the citizens.





# Priority actions

The priority actions for the improvement of road safety culture in Greece, are in order of importance:

- Establishment and operation of a **Central Government Authority**.
- **Intensification of enforcement** for road safety.
- **Systematic monitoring** of the implementation of road safety actions.
- Development and implementation of **effective road infrastructure management system**.
- **Radical redesign** of road infrastructure and urban traffic.
- Design and implementation of a **comprehensive policy** to promote safe driving behavior.





# Aspects of Road Safety Culture in Europe and worldwide



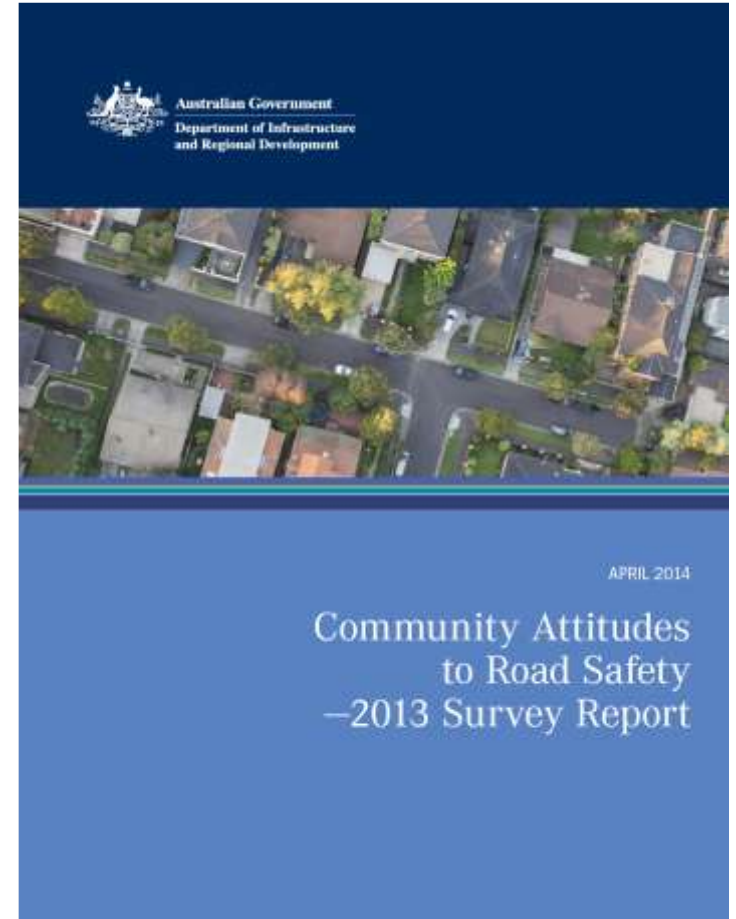
# Examples of Road Safety Culture - Sweden

- In 1997 Sweden introduced the Vision Zero approach to road safety thinking, which is summarized in the sentence: "No loss of life is acceptable".
- Its enlightened view of the role of human behavior is, basically, to encourage people to take responsibility to drive safely but also to protect them from injury even if they do not (Tingvall and Haworth 1999).
- Vision Zero approach in road safety targeting has also been adopted by other countries, such as Czech Republic, Denmark, Luxembourg, Norway, Poland, Slovenia and Spain.



# Examples of Road Safety Culture - Australia

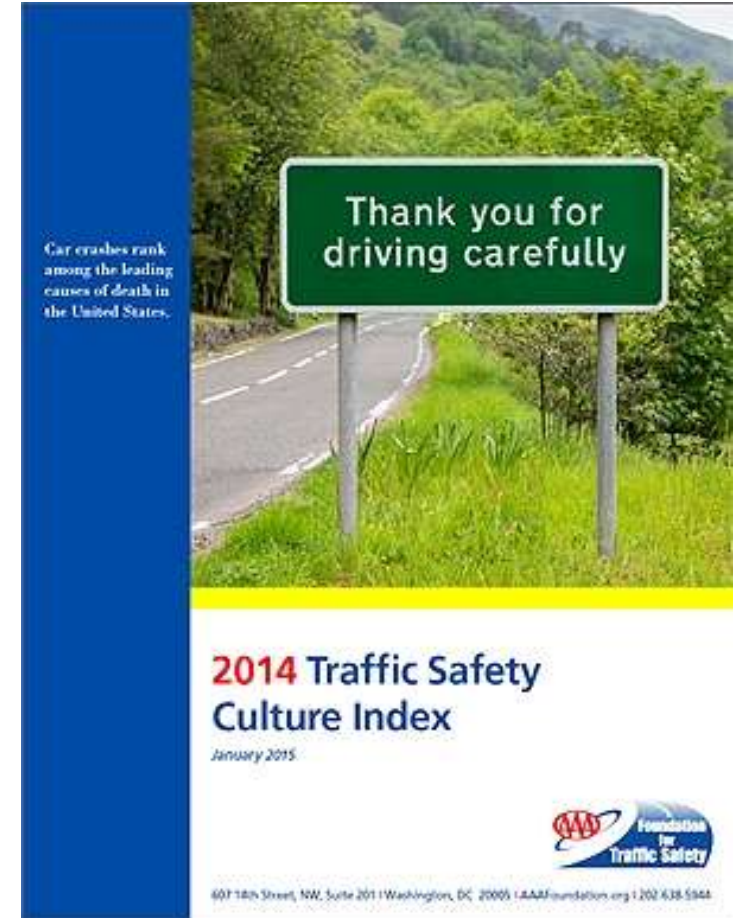
- In the previous years, Australia focused on strong enforcement and education programmes and targeted high risk behaviours such as speeding, drink-driving and non-usage of seat belts, which has benefited road safety evolution.
- The Federal Office of Road Safety and since 1999 the Australian Transport Safety Bureau were conducting surveys in order to monitor community attitudes to a variety of road safety issues, evaluate specific road safety countermeasures, suggest new areas for intervention and identify significant differences between states and territories.





# Road Safety Culture in the USA

- Traffic Safety Culture Index (AAA foundation for Traffic Safety)
- An annual, nationally representative-survey for aged 16 years and older, exploring:
  - residents' perceptions of road safety issues in relation to other current national issues
  - residents' attitudes about specific traffic safety issues, including but not limited to driving behaviors (eg. Drinking and driving, Cell phone use and text messaging, Speeding, Red-light running, Drowsy driving, Seatbelts and helmets)
  - the level of their support or opposition for a number of measures to prevent or reduce motor vehicle accidents



# Comparison between Australia and USA

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The differences in cultural safety between the two countries involve:

- governments in Australia are more willing to intervene to protect people's safety and to adopt a scientific approach in doing so
- support for safety initiatives from parliamentary committees focused on road safety and the availability of funds for safety endeavors
- policies being easier to implement because there are fewer decision makers involved, and a public that is more accepting of government interventions, in part, because of intensive community education undertaken during pre-law periods
- the acceptance of government intervention in Australia is also an outcome of traditional dependence on government to provide infrastructure and initiatives across a wide variety of areas, in contrast to the private enterprise which has been historically more important in the USA

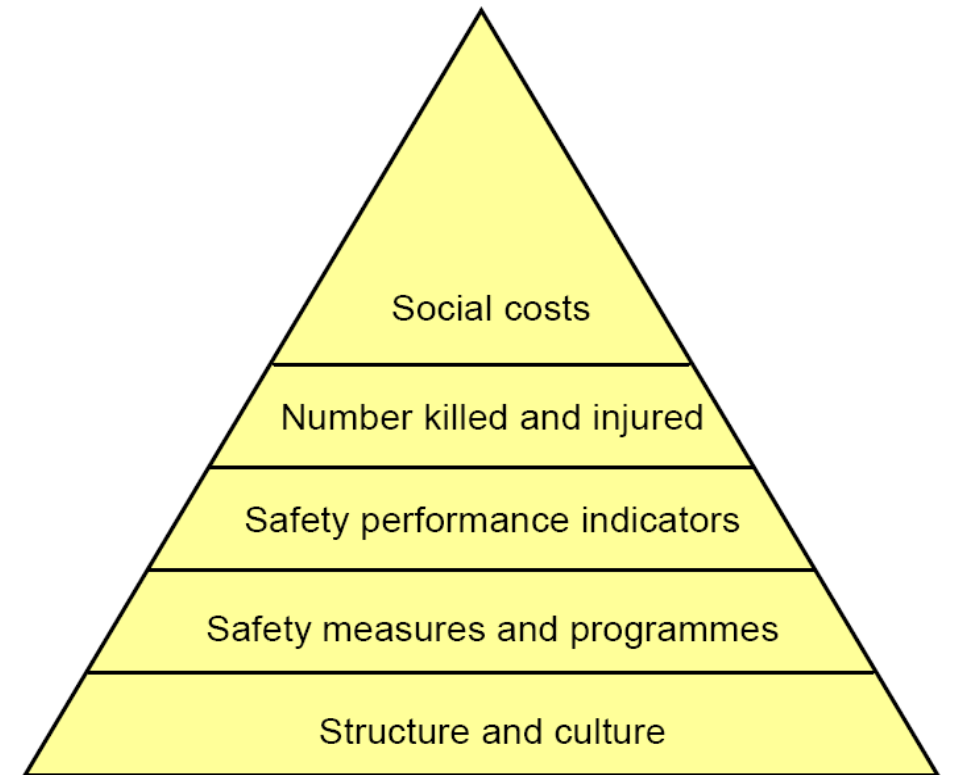
Source: Williams & Haworth, 2007





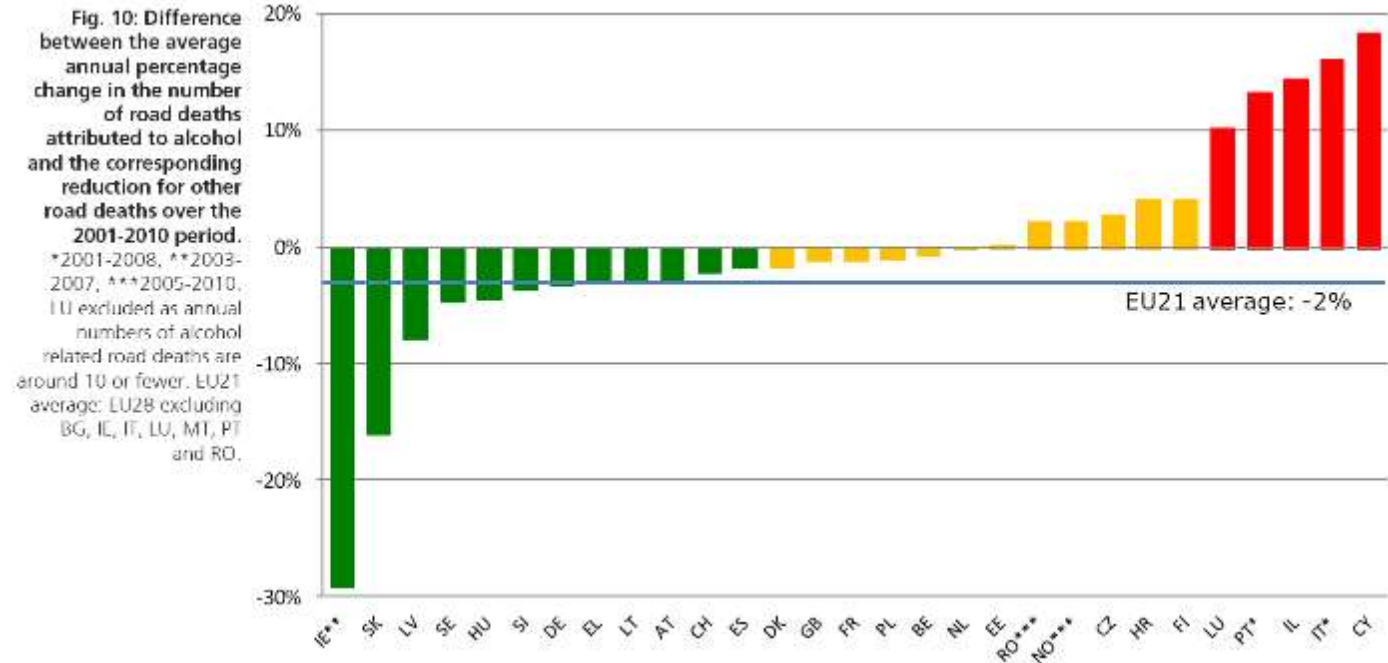
# Safety Culture in the SUNflower approach

- Structure consists of physical structure and operational (functional) structure
  - Physical structure: geographic and climate conditions, demography, road topology, urbanization etc.
  - Operational structure: the organization and arrangements between all potential actors involved in policy making
- Culture consists of values and norms in their social sense.
  - Values can be regarded as assumptions upon which implementation can be based. Values such as the value of a human life, respect for each other's rights, etc., are directly reflected in road safety provisions.
  - Norms refer to the rules that are socially enforced. Social sanctioning is what distinguishes them from values. They can be viewed as reference standards, or statements that regulate behaviour and act as informal social control.



# Drink - driving in Europe

- Country performance in reducing road deaths attributed to drink driving compared with progress in reducing other road deaths.
- In two thirds of the countries, progress in reducing drink driving has contributed more than its share to overall reduction in road deaths.



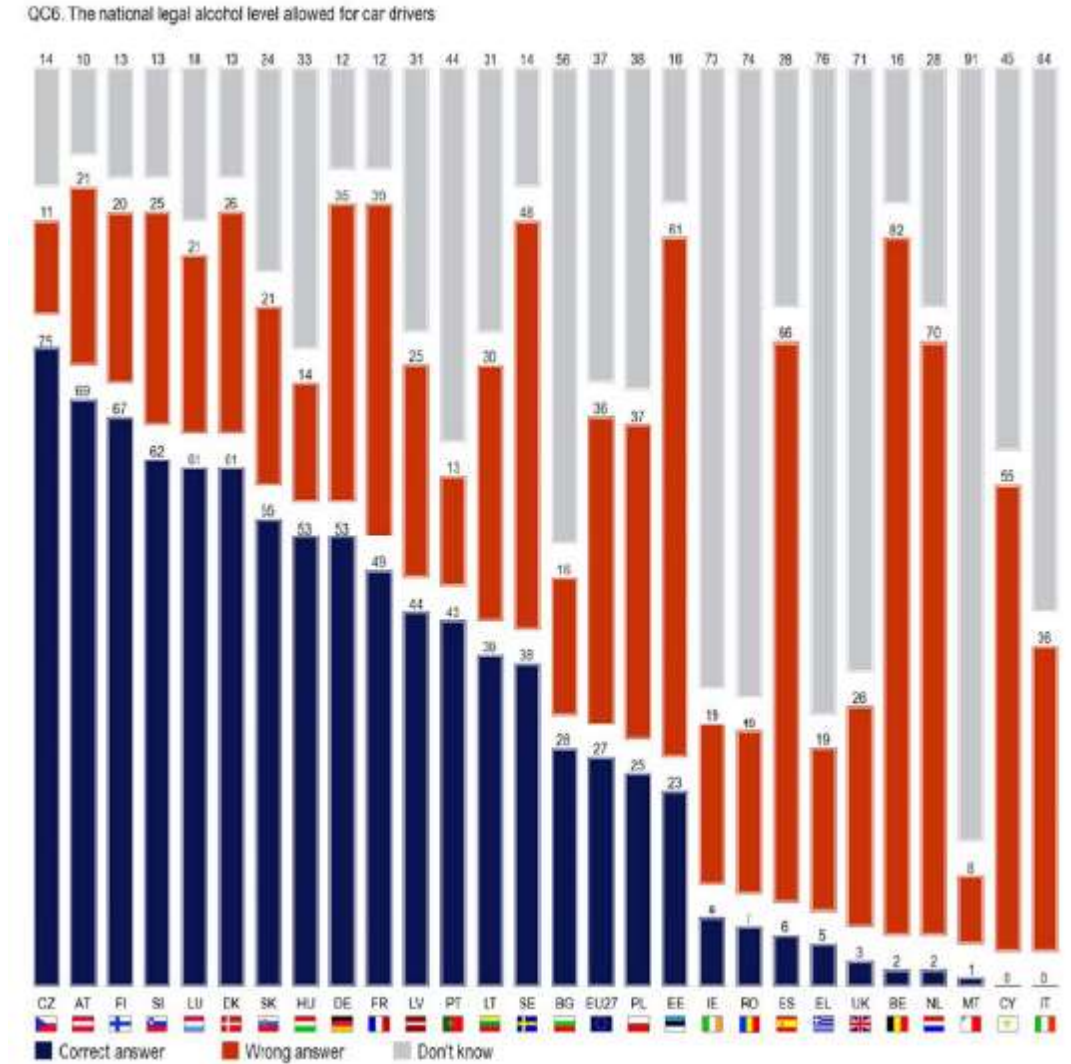
Source: ETSC, 2014



# Drink - driving in Europe

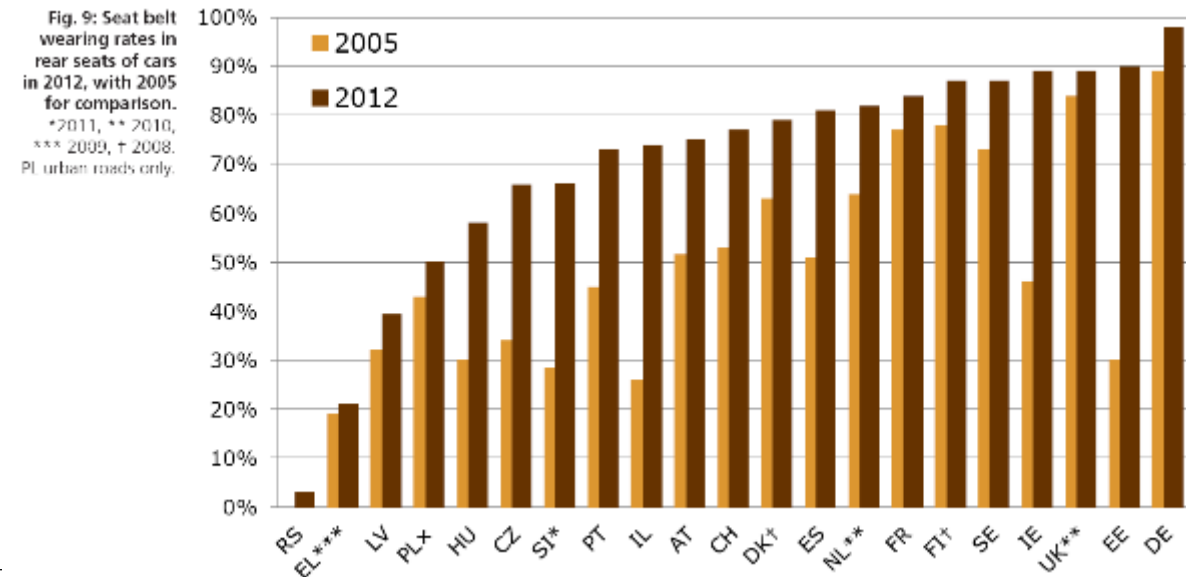
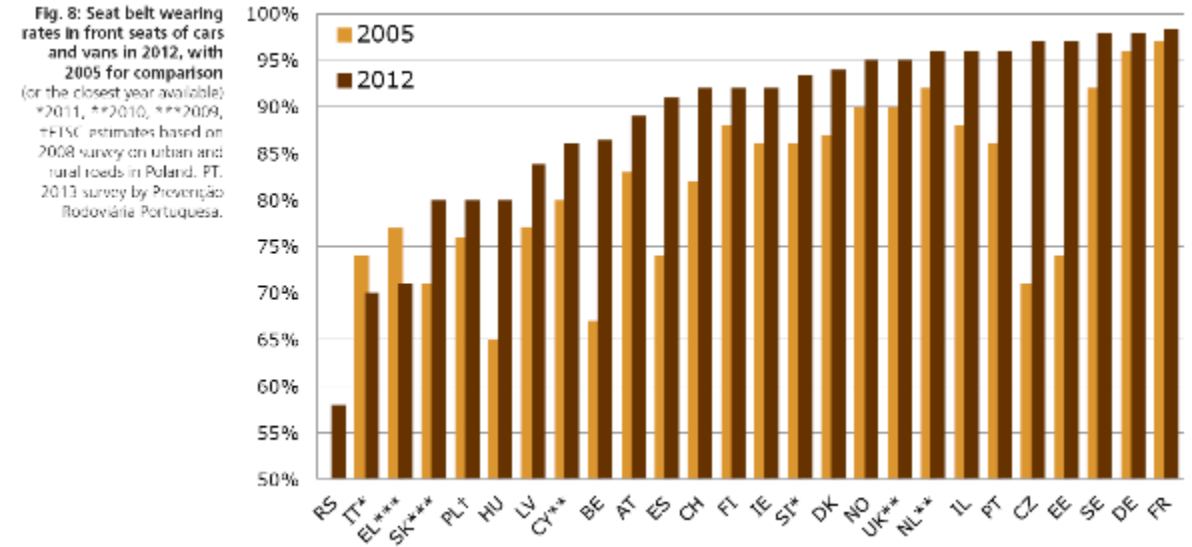
- The knowledge about the legal national BAC limit varies widely among EU countries.
- The Czech Republic, with a BAC limit for driving of zero, tops the list with 75% of respondents able to answer correctly.
- In Austria (69%) and Finland (67%), both with a limit of 0,5 g/l, over two-thirds of respondents gave a correct answer.
- In Belgium (82%), the Netherlands (70%) and Spain (66%), all countries with a 0,5 g/l limit, two thirds or more gave a wrong answer.
- There is also huge variation across Member States in the proportion of respondents who said they don't know the legal limit.

Source: Eurobarometer, 2010



# Seat-belt use in Europe

- France, Germany and Sweden have the highest seat belt wearing rates with 98% drivers and front passengers buckling up.
- Seat belt use in front seats increased most between 2005 and 2012 in the Czech Republic, Estonia, Belgium, Spain, Hungary, Switzerland and Portugal.



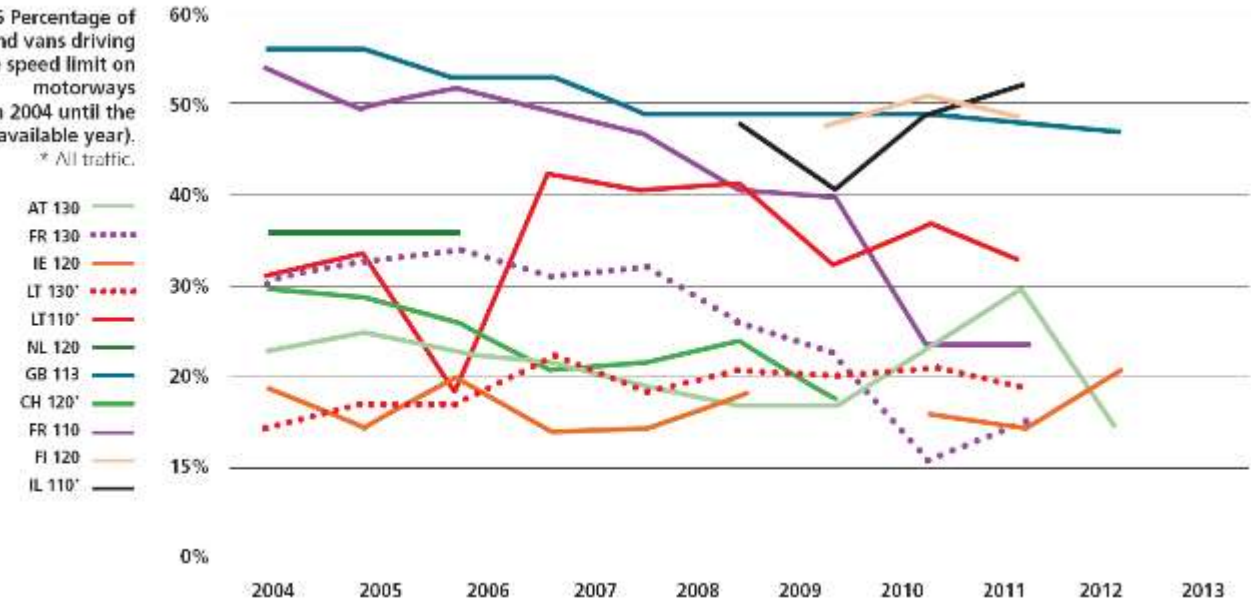
Source: ETSC, 2014



# Speeding in Europe

- The proportion of drivers exceeding the speed limit on motorways has been between 15% and 50% since 2008.
- 48% of drivers in free-flowing traffic exceed the limit on motorways in Finland and Great Britain, 38% in Spain and 35% in the Netherlands.
- In France the number of drivers exceeding the speed limit of 110km/h decreased from 59% in 2003, before the deployment of speed cameras, to 24% in 2012.

Fig. 6 Percentage of cars and vans driving above the speed limit on motorways (from 2004 until the latest available year).  
\* All traffic.



Source: ETSC, 2015





# Aspects of Road Safety Culture in Europe

- Projects in the EU
  - The SARTRE study explored the opinions and reported behaviours of car drivers throughout Europe. The first one was in 1991-1992 (15 countries); the second in 1996-1997 (19 countries); the third in 2002-2003 (23 countries).
  - SARTRE 4 (2010 - 19 countries) addressed issues such as mobility experiences, perception of safety needs by different types of road users; opinions and experiences about speeding, impaired driving; attitudes towards motorcycle riders, pedestrians and other road users.

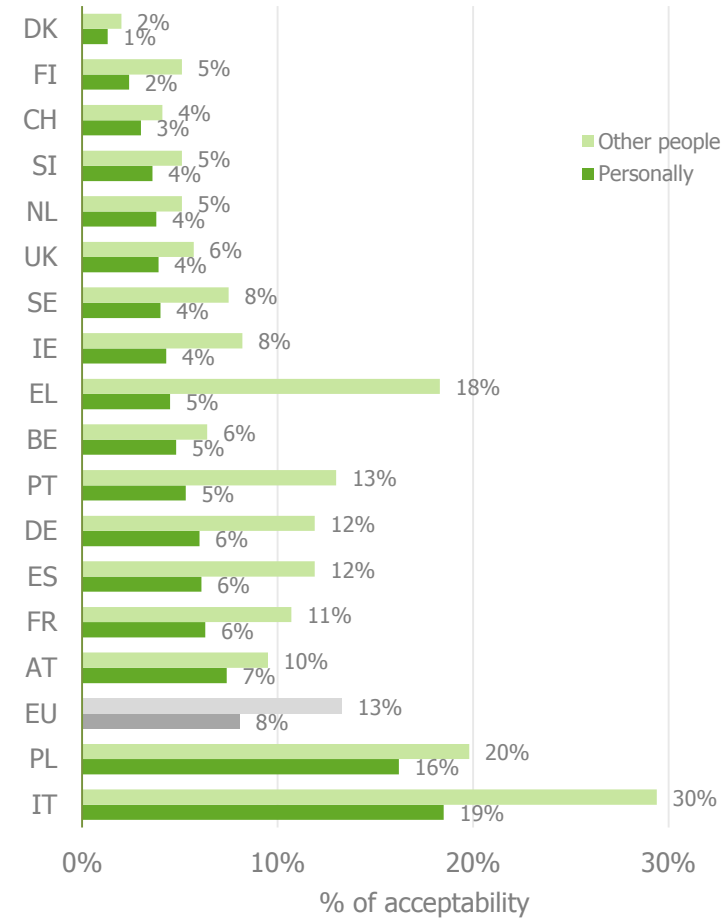
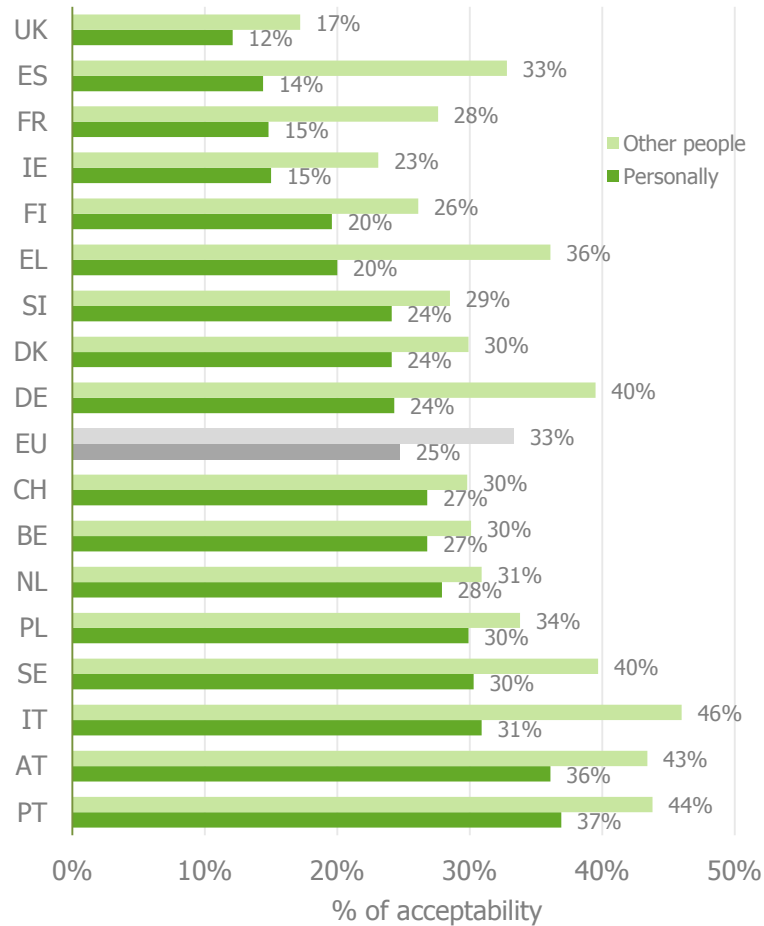


# Aspects of Road Safety Culture in Europe

- The ESRA project is a joint initiative of 17 European countries aiming at collecting comparable national data on road users' opinions, attitudes and behaviour with respect to road traffic risks.
- The survey took place in 2015 and the results will start to be published on June 2016.



# Speeding in Europe

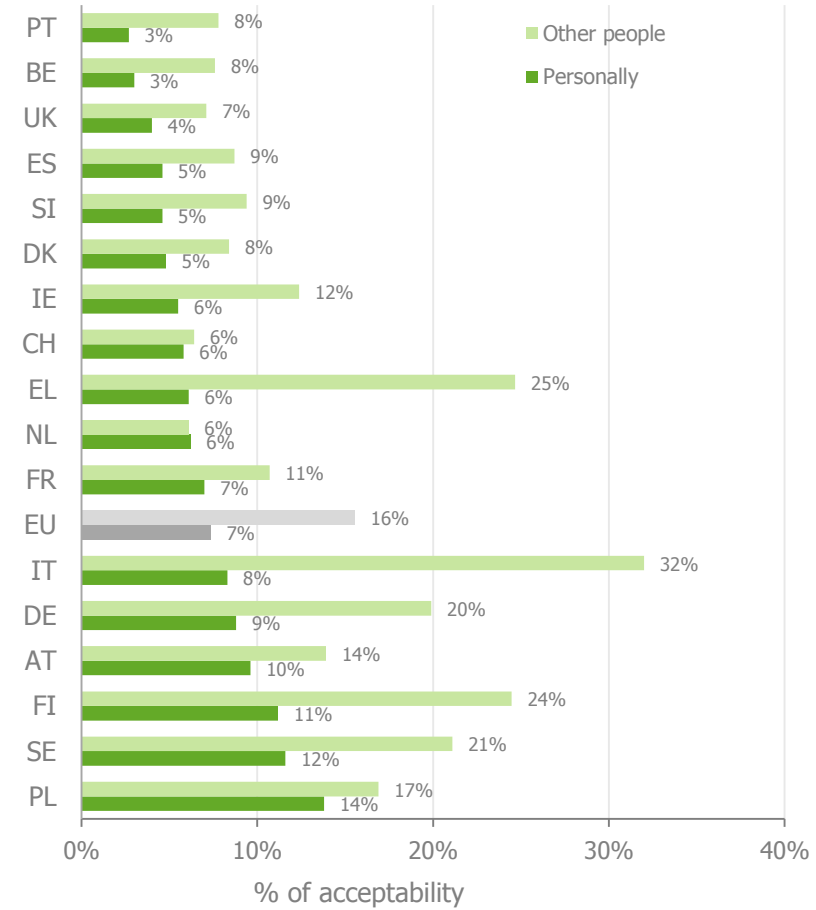
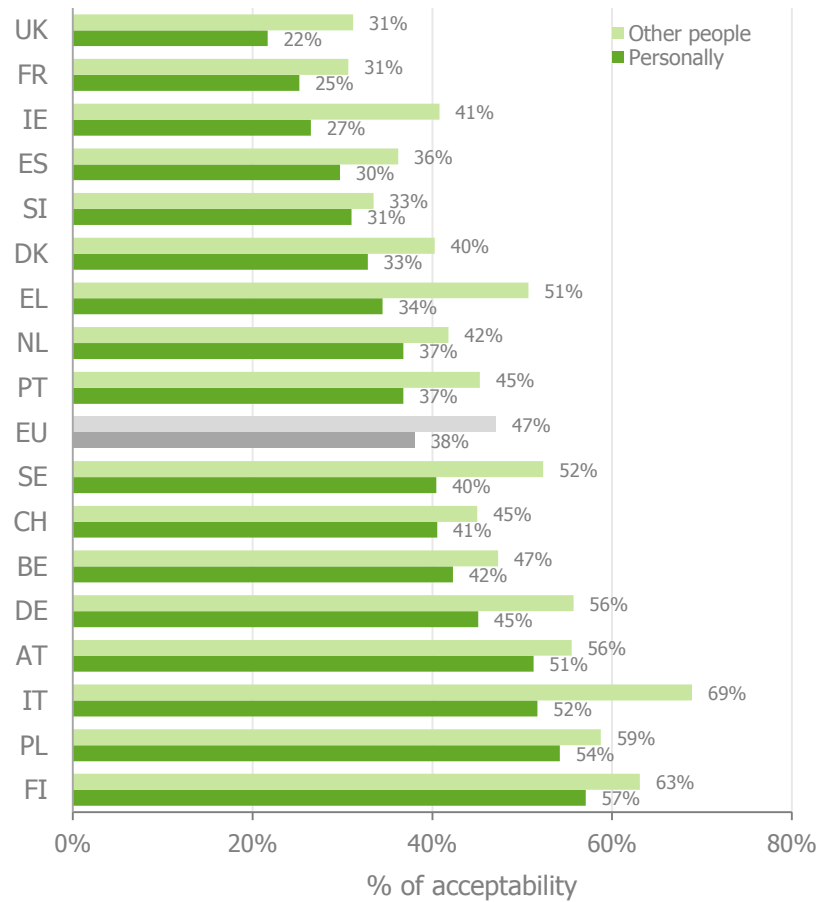


Social and personal acceptability of driving 20km/h over the speed limit on motorways (left) and in urban areas (right)

Source: ESRA, 2016



# Use of mobile phone while driving in Europe



Social and personal acceptability of talking on a hands-free mobile phone (left) and on a hand-held mobile phone (right) while driving

Source: ESRA, 2016

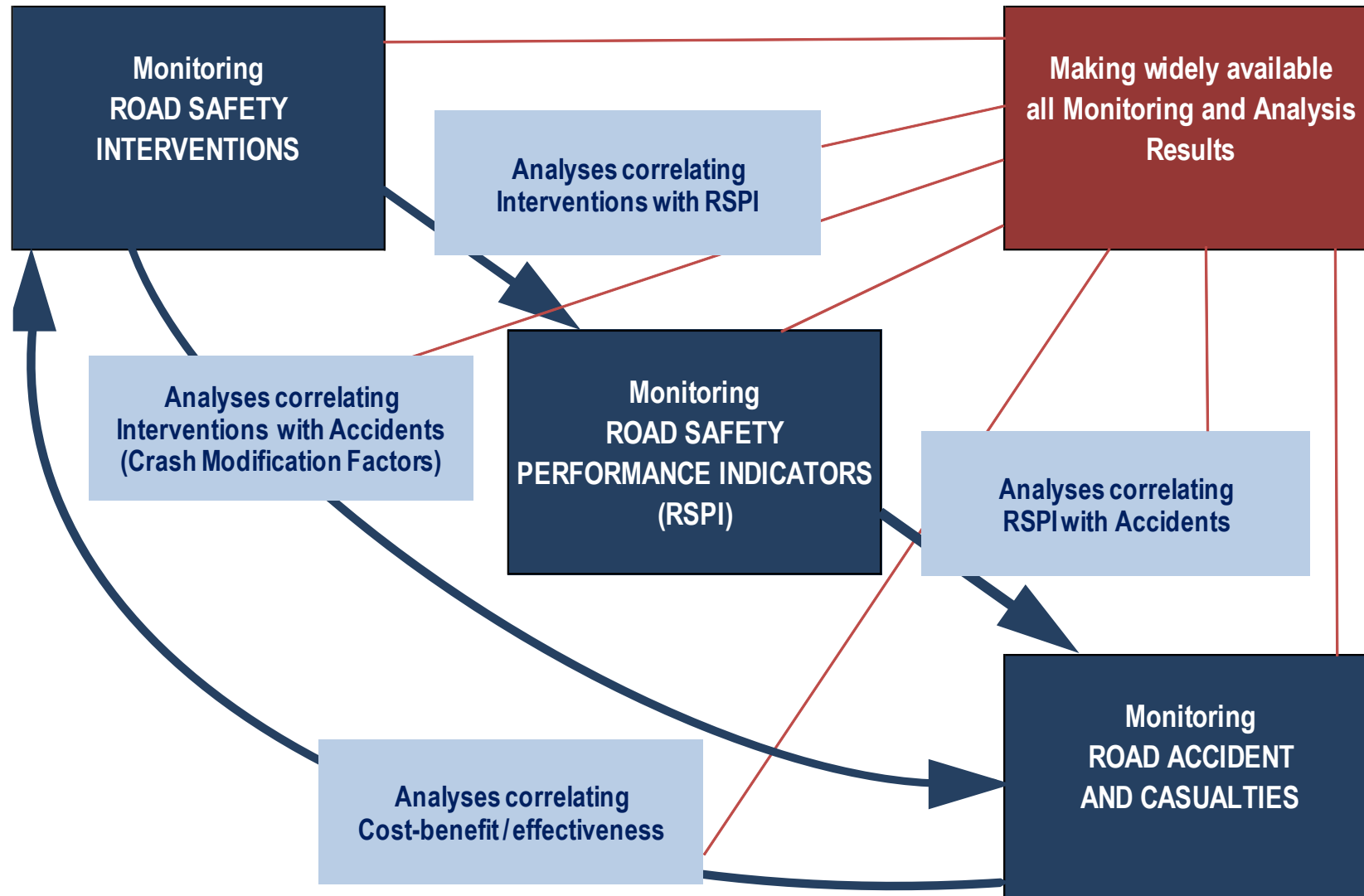


# Monitoring Road Safety Culture

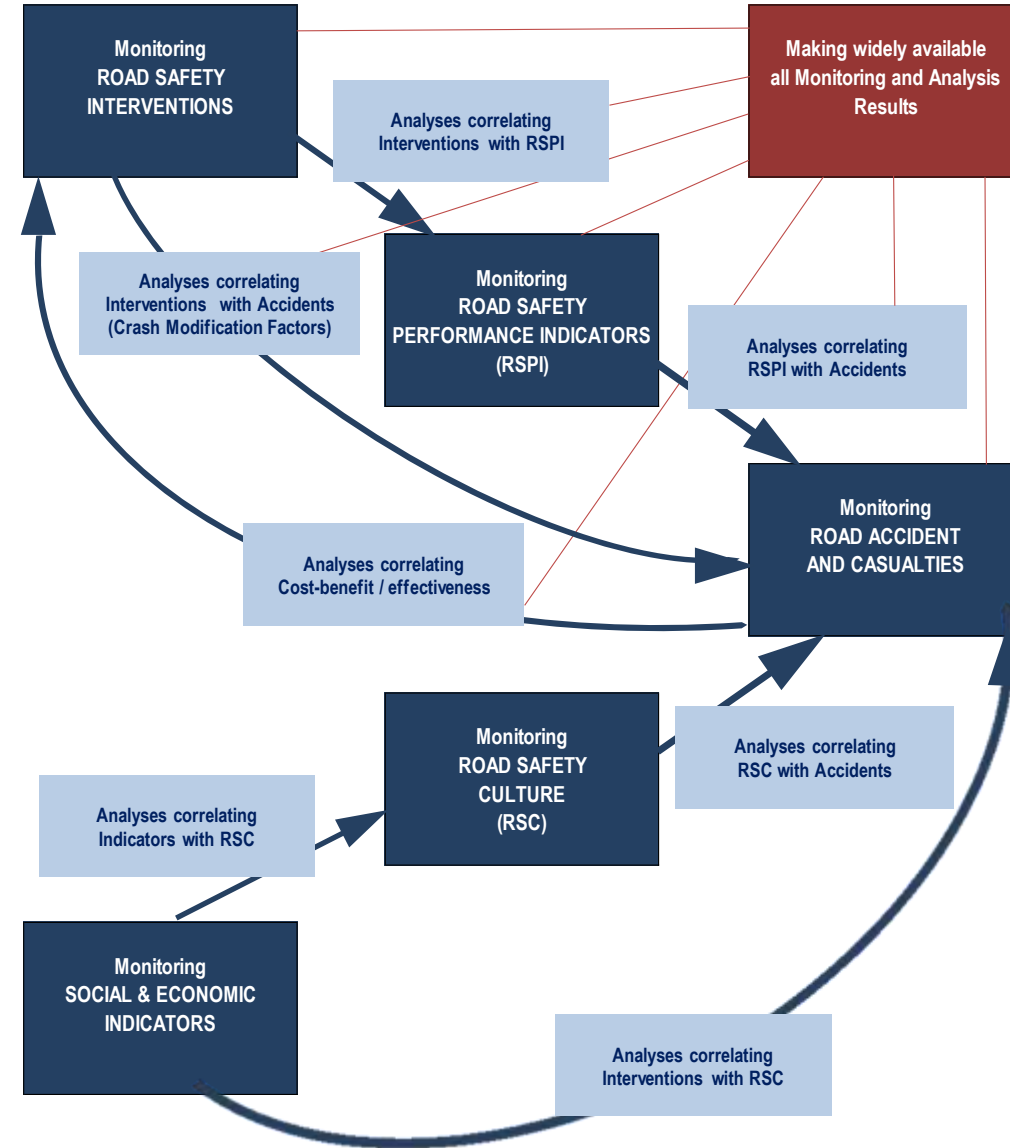




# Monitoring Road Safety



# Monitoring Road Safety and Safety Culture



# Concluding Remarks

Road Safety Culture is developed through systematic implementation of integrated road safety policies and programmes by local, regional, national and international Authorities.

Road Safety Culture might be a very appropriate notion integrating all the characteristics and efforts of the society affecting road safety performance.

Road Safety Culture Composite Indexes could be developed to be used as latent variables in Structural Equation Models for capturing the effect of various different road safety related components.



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