



ESRA 2015 – The results

Synthesis of the main findings from the ESRA survey in 17 countries

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Authors: Torfs, K., Meesmann, U., Van den Berghe, W., & Trotta, M.

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ESRA 2015 – The results

Synthesis of the main findings from the ESRA survey in 17 countries

Authors:

Katrien Torfs, Uta Meesmann, Wouter Van den Berghe, Marie Trotta (BRSI - Belgian Road Safety Institute, Belgium)

Partners in the ESRA project:

- BRSI - Belgian Road Safety Institute, Belgium: Uta Meesmann, Katrien Torfs, Marie Trotta, Wouter Van den Berghe
- KFV - Kuratorium für Verkehrssicherheit, Austria: Gerald Furian, Christian Brandstaetter, Susanne Kaiser, Angelika Witzik
- Raadet for Sikker Trafik - The Danish Road Safety Council, Denmark: Jesper Sølund
- Liikenneturva - Finnish Road Safety Council, Finland: Juha Valtonen, Leena Pöysti
- IFSTTAR - Institut français des sciences et technologies des transports, de l'aménagement et des réseaux, France: Marie-Axelle Granié
- BAST - Bundesanstalt für Strassenwesen, Germany: Hardy Holte, Ariane Von Below
- NTUA - National Technical University of Athens, Greece: George Yannis, Alexandra Laiou, Athanasios Theofilatos
- RSA - Road Safety Authority, Ireland: Velma Burns, Sharon Heffernan
- CTL - Centro di Ricerca per il Trasporto e la Logistica, 'Sapienza' Università di Roma, Italy: Veronica Sgarra, Davide Shingo Usami
- ITS - Instytutu Transportu Samochodowego, Poland: Ilona Buttler
- PRP - Prevenção Rodoviária Portuguesa, Portugal: Alain Areal, Carlos Pires, José Trigo
- AVP - Javna agencija Republike Slovenije za varnost prometa, Slovenia: Vesna Marinko
- DGT - Direccion General de Trafico, Spain: Fermina Sánchez
- VTI - Väg- och transportforskningsinstitut, Sweden: Anna Vadeby
- bfu - Beratungsstelle für Unfallverhütung, Switzerland: Yvonne Achermann Stürmer, Uwe Ewert
- SWOV - Stichting Wetenschappelijk Onderzoek Verkeersveiligheid, The Netherlands: Henk Stipdonk, Charles Goldenbeld
- TI - Transport Institute, University College London, United Kingdom: Nicola Christie

Lead organization for this report:

BRSI - Belgian Road Safety Institute, Belgium

Project coordination:

Uta Meesmann, BRSI - Belgian Road Safety Institute, Belgium

Reviewing organizations:

KFV - Kuratorium für Verkehrssicherheit, Austria; NTUA - National Technical University of Athens, Greece

ESRA 2015 output

Main report

Torfs, K., Meesmann, U., Van den Berghe, W., & Trotta, M. (2016). *ESRA 2015 – The results. Synthesis of the main findings from the ESRA survey in 17 countries*. ESRA project (European Survey of Road users' safety Attitudes). Brussels, Belgium: Belgian Road Safety Institute.

Six thematic reports

Yannis, G., Laiou, A., Theofilatos, A., & Dragomanovits, A. (2016). *Speeding. ESRA thematic report no. 1*. ESRA project (European Survey of Road users' safety Attitude). Athens, Greece: National Technical University of Athens.

Achermann Stürmer, Y. (2016). *Driving under the influence of alcohol and drugs. ESRA thematic report no. 2*. ESRA project (European Survey of Road users' safety Attitude). Bern, Switzerland: Swiss Council for Accident Prevention.

Trigoso J., Areal A., & Pires C. (2016). *Distraction and fatigue. ESRA thematic report no. 3*. ESRA project (European Survey of Road users' safety Attitudes). Lisbon, Portugal: Prevenção Rodoviária Portuguesa.

Trotta, M., Meesmann, U., Torfs, K., Van den Berghe, W., Shingo Usami, D., & Sgarra, V. (2016). *Seat belt and child restraint systems. ESRA thematic report no. 4*. ESRA project (European Survey of Road users' safety Attitudes). Brussels, Belgium: Belgian Road Safety Institute.

Furian, G., Brandstätter, C., Kaiser, S., & Witzik, A. (2016). *Subjective safety and risk perception. ESRA thematic report no. 5*. ESRA project (European Survey of Road users' safety Attitudes). Vienna, Austria: Kuratorium für Verkehrssicherheit.

Buttler, I. (2016). *Enforcement and support for road safety policy measures. ESRA thematic report no. 6*. ESRA project (European Survey of Road users' safety Attitudes). Warschau, Poland: Instytutu Transportu Samochodowego.

Country fact sheets

[Country fact sheet Austria](#)

[Country fact sheet Belgium](#)

[Country fact sheet Switzerland](#)

[Country fact sheet Germany](#)

[Country fact sheet Denmark](#)

[Country fact sheet Greece](#)

[Country fact sheet Spain](#)

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All reports are available on <http://esranet.eu/deliverables-publications>

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List of Abbreviations

Country codes

AT	Austria
BE	Belgium
CH	Switzerland
DE	Germany
DK	Denmark
EL	Greece
ES	Spain
FI	Finland
FR	France
IE	Ireland
IT	Italy
NL	The Netherlands
PL	Poland
PT	Portugal
SE	Sweden
SI	Slovenia
UK	United Kingdom
USA	United States of America

Other abbreviations

AROSO	Arab Road Safety Organisation
BAC	Blood Alcohol Concentration
BELDAM	Belgian Daily Mobility
DUI	Driving under influence of a psychoactive substance (alcohol, drugs or medication)
EC	European Commission
ESOMAR	European Society for Opinion and Marketing Research
ESRA	European Survey of Road users' safety Attitudes
ETSC	European Transport Safety Council
EU	European Union – but, in figures and tables of the present report 'EU' refers to the 17 countries participating in ESRA
FERSI	Forum of European Road Safety Research Institutes
IRTAD	International Traffic Safety Data and analysis Group
LOI	Length of Interview
OECD	Organisation for Economic Co-operation and Development
SARTRE	Social Attitudes to Road Traffic Risk in Europe
SDR	Socially Desirable Responding
TSCI	Traffic Safety Culture Index

ESRA weights

European weight A	European weight based all countries participating in ESRA except Italy
European weight B	European weight based all countries participating in ESRA
European weight C	European weight based all countries participating in ESRA except Slovenia
Individual country weight	Individual country weight based on gender and age

Summary

Objective and methodology

The ESRA project (European Survey of Road users' safety Attitudes) is a joint initiative of research organisations and road safety institutes in 17 European countries aiming at collecting comparable (inter)national data on road users' opinions, attitudes and behaviour with respect to road traffic risks. The project was funded by the partners' own resources.

The first ESRA survey was conducted online using representative samples (at least N=1,000) of the national adult populations in 17 European countries. A common questionnaire was developed and translated into 20 different country-language versions. The survey covered a range of subjects, including the attitudes towards unsafe traffic behaviour, self-declared (unsafe) behaviour in traffic and support for road safety policy measures. Data collection took place simultaneously in all countries in June/July 2015. In total, data from more than 17,000 road users (of which 11,000 frequent car drivers) were collected. Hence, the ESRA survey produced a very rich dataset. An overview of the project and the results are available on: www.esranet.eu.

This report presents the key results of the ESRA 2015 survey. The themes covered are (1) the use of different transport modes, (2) involvement in road crashes, (3) safety feeling, (4) concerns about road safety, (5) self-declared behaviour, (6) attitudes towards road safety, (7) acceptability of unsafe traffic behaviour, (8) behaviour of other road users, (9) enforcement, and (10) support for policy measures. The main focus lies on the overall European results with an emphasis on the comparison between different road safety topics: speeding, driving under influence of alcohol or drugs/medication, distraction and fatigue, and seat belt use. In the description of the results (dis)similarities between countries are highlighted as well as with regard to demographic characteristics.

Key results – 15 highlights of the ESRA 2015 survey

- Less than one tenth (6%) of the adult European road users were involved in a traffic accident within the last three months. Fortunately, the large majority are minor accidents with material damage only or only slight injuries.
- The highest involvement in road traffic accidents is reported by 'users of e-bikes' (10%) and 'users of mopeds' (6%).
- Attitudes towards drink-driving, drowsy driving, and seat belt use are quite similar between European countries. However, there are large differences in the attitudes towards speeding and distracted driving.
- The public acceptability of driving under the influence (DUI) of alcohol is very low (3%). It is much higher for speeding (30% of Europeans considers that driving 10 km/h above the speed limit is acceptable).
- Countermeasures for DUI of alcohol are widely supported by European citizens. For instance, 75% is in favour of installing alcohol interlock devices in cars of recidivists; 80% is of the opinion that there should be zero tolerance for novice drivers. This is in line with the public acceptability of DUI.
- In general, the declared personal unacceptability of risky behaviour is stronger than the perceived social unacceptability – e.g. people think that others are more likely to accept DUI of alcohol than they personally do.
- Even if people acknowledge that a certain behaviour is risky or unacceptable, they nevertheless may show that behaviour. For example, only 4% of Europeans think it is acceptable to type text messages or emails while driving, but 27% declare that they have sent a text message or email at least once during the past 12 months.
- The self-declared behaviour of women is less risky than that of men. They condemn also risky behaviour more than men, and are more in favour of countermeasures.

- The results with respect to mobile phone use differ strongly by age group, i.e. young people report more use of mobile phones in traffic, have a higher acceptability of it, and perceive the risks to be lower with respect to this behaviour, than older people do.
- Older drivers feel safer than the younger age groups when driving a car and when using public transport.
- Overall, Europeans estimate DUI of alcohol and speeding to be the main causes for road accidents.
- Annually, only 29% of Europeans is stopped for a check by the traffic police. The percentage of Europeans checked at least once a year for driving under the influence of alcohol is 19%.
- Many road users denounce the unsafe behaviour of other car drivers. The most frequently reported risky behaviours of others are driving too fast, careless driving and not leaving a safe distance to the car in front.
- Approximately 3 out of 5 Europeans (61%) feel that the occurrence of 'distracted driving' has increased. This was the highest value of all prompted behaviours followed by 'aggressive drivers' (49%), and 'speeding' drivers (45%).
- Compared to 2010 listening to music while walking or cycling seems to have increased considerably. While in 2010 most pedestrians and cyclists reported that they had never used MP3/iPod/music devices (results from SARTRE4), in 2015 about two out of three respondents younger than 34 declared listening to music through headphones as a pedestrian, and 50% declared cycling while listening to music through headphones.

Key recommendations at European level

- Define level road safety performance indicators at European level (that could partially be based on ESRA) in the fields of speeding, impaired driving, seat belt use, and distraction. Such indicators could be used at both European and national level.
- Define medium and long term targets for these road safety performance indicators.
- Facilitate and support the exchange of best practice across EU Member States in relation to effective countermeasures, in particular for speeding, impaired driving, mobile phone use, the use of seat belts, the use of child restraint systems, inadequate risk perception and enforcement.
- Develop common principles and goals at European level (based on cooperation within Member States) for the implementation of effective and efficient strategies in the areas of speed management, impaired driving, and mobile/smartphone use in the Member States.
- Integrate such common principles and goals within future of EU directives and/or other legislative mechanisms (including standards, controls and rehabilitation measures).
- Support the further development of ESRA as part of a European monitoring system for road safety and ensure that road safety performance indicators produced by ESRA are used to inform and support policy making at European and national levels.

Conclusion

The ESRA project has demonstrated the feasibility and the added value of joint data collection on road safety attitudes and performance by partner organizations in a large number of European countries. The intention is to repeat this initiative on a biennial or triennial basis, retaining a core set of questions in every wave, allowing the development of time series of road safety performance indicators. This will become a solid foundation for a joint European (or even global) monitoring system on road safety attitudes and behaviour.

1. The ESRA project

1.1. Background

Trends in road safety performance and the success of policy measures can be monitored using road safety indicators. Indicators related to road user's behaviour and safety culture are particularly valuable since human behaviour is the most frequent, and most important contributing factor to road crashes (e.g. Rothengatter & Huguenin, 2004; Shinar, 2007). A relatively inexpensive way to obtain such indicators is collecting data on self-declared behaviour and attitudes through questionnaire surveys. However, the results of national surveys are seldom comparable across countries because of differences in the aims, the scope, the methodology, the questions used, or the sample population being surveyed. Since the European road safety survey, SARTRE4 (data collection 2010; Cestac & Delhomme, 2012), there is a lack of recent comparable and reliable data on road safety culture, attitudes and behaviour within Europe. Therefore, in 2015, the Belgian Road Safety Institute (BRSI) launched the ESRA initiative: European Survey of Road users' safety Attitudes.

1.2. Objectives

ESRA intends to support road safety policy in Europe by producing comparable national data and indicators on the *current* road safety situation in Europe. More specifically, ESRA captures national information on road users' opinions, attitudes and behaviour with respect to road traffic risks and compares this information across the participating European countries.

1.3. Partners

The following 17 institutes (European countries; Table 1) joined forces to conduct the first ESRA survey in 2015. The project was funded by the participants' own resources, and coordinated by BRSI.

1.4. Outputs

An overview of the project and all final ESRA publications is available on www.esranet.eu. The results of the 2015 survey are synthesized in one Main Report and six Thematic Reports¹:

- [Speeding](#)
- [Driving under the influence of alcohol and drugs](#)
- [Distraction and fatigue](#)
- [Seat belt and child restraint systems](#)
- [Subjective safety and risk perception](#)
- [Enforcement and support for road safety policy measures](#)

Country fact sheets on all 17 countries are available on the ESRA website. In addition, several ESRA partners have started drafting and publishing reports based on their national data collected through ESRA.

¹ A group of seven partners, the so-called ESRA core group (indicated in Table 1 with *) was responsible for writing these reports.

Table 1: ESRA project partners

Country	Organisation
Austria*	KFV – Kuratorium für Verkehrssicherheit
Belgium*	BRSI – Belgian Road Safety Institute (lead organisation)
Denmark	Sikkertraffic
Finland	Liikenneturva – Finnish Road Safety Council
France	IFSTTAR – Institut français des sciences et technologies des transports, de l'aménagement et des réseaux
Germany	BAST – Bundesanstalt für Strassenwesen
Greece*	NTUA – National Technical University of Athens
Ireland	RSA – Road Safety Authority
Italy*	CTL – Centro di Ricerca per il Trasporto e la Logistica, Università La Sapienza Rome
Poland*	ITS – Instytutu Transportu Samochodowego
Portugal*	PRP – Prevenção Rodoviária Portuguesa
Slovenia	AVP - Javna agencija Republike Slovenije za varnost prometa
Spain	DGT – Dirección General de Tráfico
Sweden	VTI – Väg- och transportforskningsinstitut
Switzerland*	BFU – Beratungsstelle für Unfallverhütung
The Netherlands	SWOV – Stichting Wetenschappelijk Onderzoek Verkeersveiligheid
United Kingdom	TI – Transport Institute, UCL (University College London)

*Note: Countries/institutions marked with * form a core group responsible for the first series of common analyses and reports.*

1.5. Future plans

The ESRA initiative has raised already great enthusiasm, not just in the 17 participating countries, but in several other European countries as well – and even outside Europe. Therefore, it has been decided to launch the survey again in a number of additional countries. This second wave will take place in September 2016. The additional results will be published on the website.

Moreover, the intention is to repeat this initiative on a biennial or triennial basis, retaining a core set of questions in every survey allowing comparisons and the development of time series of road safety performance indicators. When felt appropriate, new questions will be added and some of the existing ones may be adapted in view of obtaining a higher response quality. This will be a joint decision of the participating organisations.

2. Survey methodology

Given the focus of the ESRA project on road users' perceptions and attitudes, we opted for a self-administered questionnaire. More specifically, the ESRA 2015 survey is a web survey using an access panel. An access panel² is a rich database of respondents (often over 100,000 people), which is used as a sampling frame for web surveys. The Belgian market research company iVOX (member of ESOMAR, www.esomar.org) was contracted by BRSI to implement and coordinate the field work in order to guarantee a uniform methodological sampling procedure³. The subcontracted market research companies by country can be found in Table 4.

The adopted approach has some advantages compared to other survey modes. Firstly, self-administered questionnaires are less prone to social desirability in responses (SDR) compared to interviewer-administered surveys (face-to-face or telephone) when studying sensitive topics such as one's speeding behaviour (De Leeuw, Hox, & Dillman, 2008; chapter 24; see also Baker et al., 2010; Goldenbeld, & de Craen, 2013). Secondly, given the international context of the study, web surveys using access panels clearly have practical advantages compared to other survey modes such as the length of the survey, timing and costs. It should be recognized, however, that internet penetration varies between countries. Consequently, coverage and sampling may be sub-optimal (note: in all ESRA countries internet penetration was at least 60% in 2013). Besides, also internet skills vary across countries (more information in the country fact sheets on www.esranet.eu).

In conclusion, having a uniform sampling method, an identical questionnaire and uniform programming of this questionnaire allows ESRA results to be fully comparable amongst the participating countries³. Next, the methodological specifications for the ESRA 2015 survey are described.

2.1. Participants and sample description

Figure 1 shows the geographic coverage of the survey, and Table 2 presents an overview of the sample description. The ESRA 2015 survey was conducted in Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, the Netherlands and the United Kingdom.

The targeted minimum number of respondents was 1,000 for each country of which at least 600 should be regular car drivers⁴. A regular car driver was defined as a person having a car driving licence and who has driven at least 1,500 km with a car or a van within the last 6 months (questions 3 and 7 in the questionnaire, see Appendix 6). If needed, the minimum sample of 1,000 respondents could be extended in order to reach the requirement of 600 regular car drivers. The total sample size eventually consisted of 17,767 road users from 17 countries, amongst them 11,179 regular car drivers.

² The quality of such an access panel relies primarily on how the panel is composed: based on a probability sample or based on self-selection (i.e. a non-probability sample or a convenience sample; De Leeuw et al., 2008; chapter 14).

³ One exception: CTL was responsible for programming the questionnaire and data collection in Italy. To reach the target of 1,000 respondents (including 600 frequent car drivers), they used an online panel (via mailings and social networks) and telephone interviews. In the common ESRA analyses only the online data were included. Moreover, due to minor differences in programming they were not included when calculating the European average for some questions (see explanation in List of Abbreviations).

⁴ This requirement for 600 regular car drivers was included in order to allow for sufficient comparability with results of the SARTRE4 survey (see also Appendix 2).

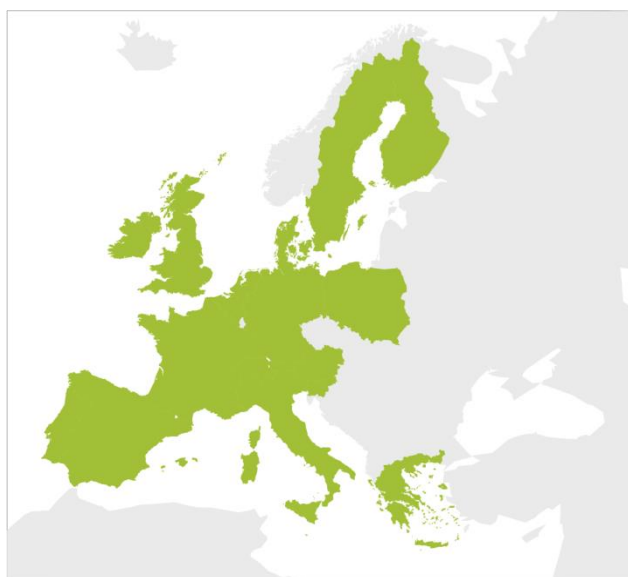


Figure 1: Geographical coverage of the first ESRA survey (2015)

Table 2: Specifications of the sample by country (unweighted sample)

Country	Sample size		Gender		Age group		
	Total	Regular car drivers	Male	Female	18-34	35-54	55+
Austria	1,019	699	50%	50%	26%	43%	31%
Belgium	1,000	630	49%	51%	25%	39%	36%
Denmark	1,077	821	55%	45%	20%	36%	44%
Finland	1,016	742	53%	47%	25%	34%	41%
France	1,001	698	49%	51%	31%	41%	29%
Germany	1,000	665	52%	48%	26%	38%	36%
Greece	1,113	610	43%	57%	26%	55%	18%
Ireland	1,000	610	52%	48%	33%	45%	22%
Italy	838	593	56%	44%	41%	40%	19%
Poland	1,085	601	52%	48%	38%	38%	24%
Portugal	1,028	712	51%	49%	31%	54%	15%
Slovenia	1,002	699	51%	49%	33%	41%	26%
Spain	1,021	632	49%	51%	40%	48%	12%
Sweden	1,298	595	44%	56%	25%	34%	40%
Switzerland	1,000	604	52%	48%	27%	39%	34%
The Netherlands	1,106	662	46%	54%	32%	44%	24%
United Kingdom	1,163	606	49%	51%	30%	42%	27%
TOTAL	17,767	11,179					

Note: Italy used different sampling methods. Only online sampling has been taken into account in this overview.

The target population was the adult population (18+) of each country. The following sampling variables were used: gender, age, and geographical distribution. However, the quota used by the market research companies were based only on gender and age, while the geographical distribution was monitored. Moreover, since such quota can never be respected 100%, the records in the national samples were slightly corrected using small weights. For European results, a weighted European average was calculated that took into account both the representativeness within a country, as well as the proportion of the population in a specific country within the total population of the 17 participating countries (for more details see also section 2.4.1).

2.2. Scope and questionnaire

The objective of the ESRA 2015 survey was to study opinions, self-declared behaviour and attitudes of road users - and more specifically regular car drivers - towards road traffic risks.

The ESRA 2015 survey contains 32 questions in total. Most questions include several sub-questions or items; therefore, the total number of variables included in the survey amounts to 222. In view of comparability, not just between the countries, but also with surveys that have been conducted in the past, almost all questions were based on, and were often identical to questions that were also used in Belgian (Meesmann, Boets & Silverans, 2014; Belgian Road Safety Institute, 2015), European (SARTRE4; Cestac & Delhomme, 2012) and American (AAA Foundation for Traffic Safety, 2016) surveys. By using some questions from the American Traffic Safety Culture Index from AAAFTS, the expectation was to be able to create a first base for a Europe-USA comparison (albeit limited in the first stage; see Appendix 3). The 222 (sub-)questions in the survey cover different themes, which are listed in Table 3. The English version of the questionnaire is available in Appendix 6.

Given the fact that the estimated maximum duration for completion of the online survey was set to 20 minutes, not all themes could be covered in the same depth. The themes for which most (sub)questions were included were: attitudes towards unsafe traffic behaviour, self-declared (unsafe) behaviour in traffic, and the feeling of unsafety as a road user.

Table 3: Themes covered within the ESRA questionnaire

Theme	Number of questions	Number of sub-questions and original variables
Attitudes towards unsafe traffic behaviour	3	64
Behaviour of other road users	2	18
Subjective safety and risk perception	2	28
Involvement in road crashes	2	15
Enforcement	6	11
Self-declared (unsafe) behaviour in traffic	2	31
Support for road safety policy measures	2	23
Use of different modes of transportation	6	20
Other items (e.g. socio-demographic information)	7	12

The first version of the questionnaire was written in Dutch and subsequently translated to English. The English version was used by the project partners to make a translation to their national language(s). At the same time, they could make suggestions for small improvements and changes in the wording. When accepted, these changes were also communicated to the other project partners. Specific attention was paid to the use of the correct terminology in the languages concerned. When deemed appropriate, questions could also differ slightly between countries where the same language was spoken. Thus, for languages spoken in more than one country – i.e. English, French, Dutch, German and Italian – this resulted in slightly different country versions in order to take into account differences in terminology as well as differences in regulations and legal framework (e.g. driving speed limitations or whether a particular measure had already been implemented or not). Thus, the questionnaire was eventually produced in 20 different country-language versions.

2.3. Data collection

The field work took place in June and July 2015. Table 4 gives an overview of the sample size and data collection details per country.

Table 4: Specifications on data collection per country

Country	Age groups quota	Sample size		Field dates (2015)	Market research company	Languages	Average LOI (minutes)
		Total	Regular car drivers				
Austria	6	1,019	699	22/06 – 03/07	Research Now	German (AT)	22
Belgium	3	1,000	630	17 – 25/06	iVOX	Dutch (BE) French (BE)	21
Denmark	3	1,077	821	02/06 – 03/07	Norstat	Danish	23
Finland	3	1,016	742	02 – 30/06	Norstat	Finnish	23
France	6	1,001	698	29/06 – 14/07	Research Now	French (FR)	18
Germany	3	1,000	665	17 – 30/06	Bilendi	German (DE)	21
Greece	3	1,113	610	03/06 – 03/07	The Hellenic Research House	Greek	24
Ireland	3	1,000	610	22/06 – 03/07	Research Now	English (IE)	20
Italy	3	838 (1,051)	593 (756)	06/06 – 25/09	CTL	Italian (IT)	21 (25)
Poland	6	1,085	601	22/06 – 14/07	MarketAgent	Polish	22
Portugal	3	1,028	712	05/06 – 07/07	Netquest	Portuguese	23
Slovenia	6	1,002	699	22/06 – 12/07	MarketAgent	Slovenian	22
Spain	3	1,021	632	29/06 – 22/07	Research Now	Spanish	21
Sweden	6	1,298	595	02 – 22/06	Research Now	Swedish	21
Switzerland	6	1,000	604	17/06 – 01/07	Bilendi	German (CH) French (CH) Italian (CH)	22
The Netherlands	3	1,106	662	04 – 23/06	Panel Inzicht	Dutch (NL)	21
United Kingdom	6	1,163	606	22/06 – 06/07	Research Now	English (UK)	17
TOTAL		17,767	11,179				

Notes:

(1) All countries (except Italy²) used an online panel with quota sampling (age*gender) while geographical distribution was monitored. In the common ESRA analyses only the online data from Italy were included. In the table the total sample size of the Italian data, including the telephone interviews, are indicated between brackets.

(2) Either three or six age groups were used for quota: 3 age groups = 18-34y, 35-54y and 55+; 6 age groups = 18-24y, 25-34y, 35-44y, 45-54y, 55-64y and 65+.

2.4. Data processing

The market research company provided one cleaned data file including the answers of all respondents in 16 countries. The data from Italy were added separately. The statistical packages used were SPSS (IBM SPSS Statistics for Windows, Version 22.0) and R (R core team, 2015).

2.4.1. Weighting of the data

The weighting used in the analyses takes into account the representativeness within a country, but also the proportion of a specific country within the group of 17 countries. In other words two different weights were used depending on the level of analysis: (1) country level or (2) European level, which is reflecting the 17 ESRA countries.

Representativeness within each country is based on age and gender (interlaced) into an 'individual country weight'. Although a regional spread has been monitored during data collection, it has not been taken into account for the weighting (i.e., no quota were used for this variable). These weights were provided by the national market research companies. They were compared with data from EUROSTAT and corrected if necessary⁵.

Additionally, we used 'population size weights'. These weights compensate for the fact that countries have different population sizes but similar sample sizes. Without this weight, any analysis combining data from two or more countries might be biased, i.e., over representing smaller countries at the expense of larger ones. The population size weight makes an adjustment to ensure that each country is represented in proportion to its population size. More details on how these 'European weights' are composed can be found in Table 5.

To summarize, country comparisons without referring to a summary measure at European level, use the individual country weights. In these cases the sample sizes are identical in all the countries (N=1,000 per country). Comparisons referring to a summary measure at European level, use the European weight which takes into account the actual population sizes, and thus 'over' and 'under' sampling used in this study.

Table 5: Analytical steps to conduct 'European weights'

Steps	Method
1	The individual country weights are all set to reflect exactly N=1,000.
2	Populations sizes are derived from EUROSTAT (based on the populations 18+, given only those are recruited for the ESRA survey). Consequently, the proportion of each country (based on populations size) in the total set of 17 countries was derived.
3	Both are combined by multiplying them.
4	SPSS will pretend the total dataset consists of only N= 1,000, so these were set so they would reflect the real total number of respondents (about 17,000). This is the final 'European weight' that is applied in the analysis.

Note: Following these steps additional European weights were computed for a few questions in which not all 17 countries could be included.

⁵ Corrections necessary for Portugal and Greece.

2.4.2. Data analysis

Inspired by the former SARTRE project and national attitude surveys, the original data were dichotomized in order to minimize the number of answer categories in view of the analyses. More efficient estimates are obtained by combining outcome variables into binary variables. The dichotomization was done centrally and used in all analyses. The dichotomizations and reference categories for each question are indicated in the questionnaire in Appendix 6.

For all reports, the authors carried out basic descriptive analyses divided by country, gender and three age groups (18-34y, 35-54y, 55+y). The significance tests (Appendix 5) used were T-test/ANOVA when comparing averages or a Chi-square test for the dichotomized variables. Due to the large sample size, it can be expected that most differences are significant. Therefore, by convention, a significance level of 99% ($\alpha = .01$) was used. More in-depth analyses depend on the requirements of the topic studied in each thematic report and the results of the descriptive analyses. Specifications on the methodology of additional analyses are provided in the thematic reports.

3. Key results from the ESRA survey

The results presented in this chapter refer to the first edition of the ESRA survey in 2015. In total, more than 17,000 road users completed the questionnaire resulting in more than 200 variables per respondent. Given the extent of the ESRA database, only a number of key results will be presented in this report. The themes covered are (1) the use of different transport modes, (2) involvement in road crashes, (3) safety feeling, (4) concerns about road safety, (5) self-declared behaviour, (6) attitudes towards road safety, (7) acceptability of unsafe traffic behaviour, (8) behaviour of other road users, (9) enforcement, and (10) support for policy measures. We focus on the overall European results with an emphasis on the comparison between different road safety topics: speeding, driving under influence (DUI) of alcohol or drugs/medication, distraction and fatigue, and seat belt use. In the description of the results gender and age effects are included if relevant. Furthermore, (dis)similarities between countries are highlighted. For more detailed analyses and results, we refer the reader to the different thematic reports: [Speeding](#); [Driving under the influence of alcohol and drugs](#); [Distraction and fatigue](#); [Seat belt and child restraint systems](#); [Subjective safety and risk perception](#); [Enforcement and support for road safety policy measures](#).

3.1. Use of different modes of transportation

Respondents were asked to indicate all the transport modes they had used during the past 12 months (Figure 2), but also to rank these transport modes based on the frequency with which they used them (Figure 3 and Figure 4).

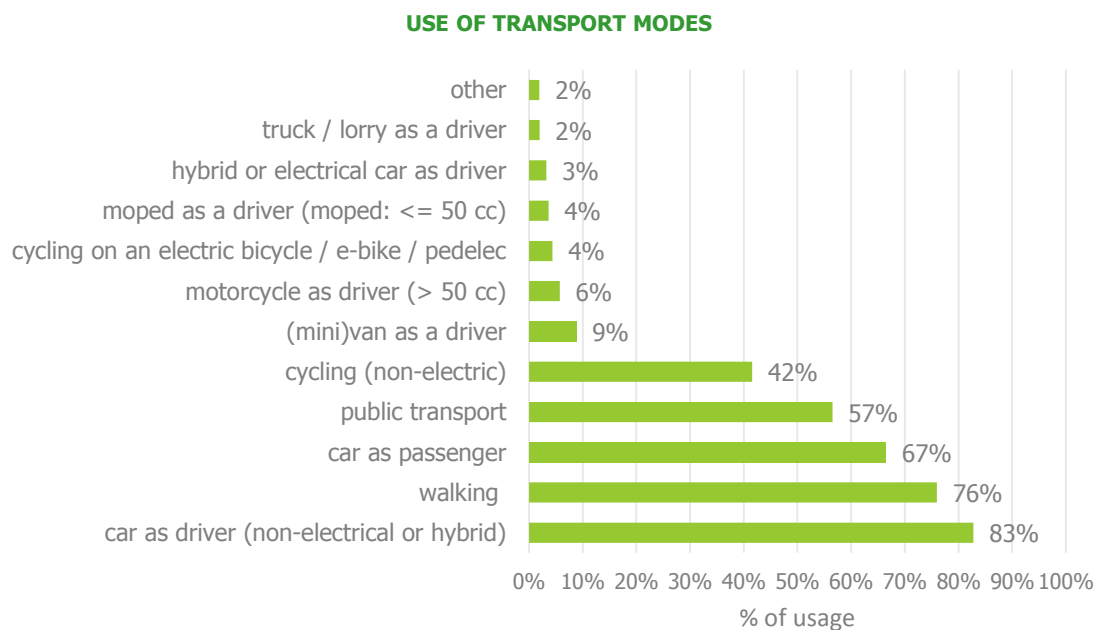


Figure 2: Frequency of transport modes, in Europe (% of respondents that used this mode of transportation during the past 12 months⁶).

Note: European weight B.

⁶ Note that people tend to forget short walks (e.g., walking to your parked car). Therefore, the % of respondents saying they have walked during the past 12 months is an underestimation of the real % (e.g., Zmud, Lee-Gosselin, Carrasco, & Munizaga, 2013; Zhao et al., 2015).

MOST FREQUENTLY USED TRANSPORT MODES

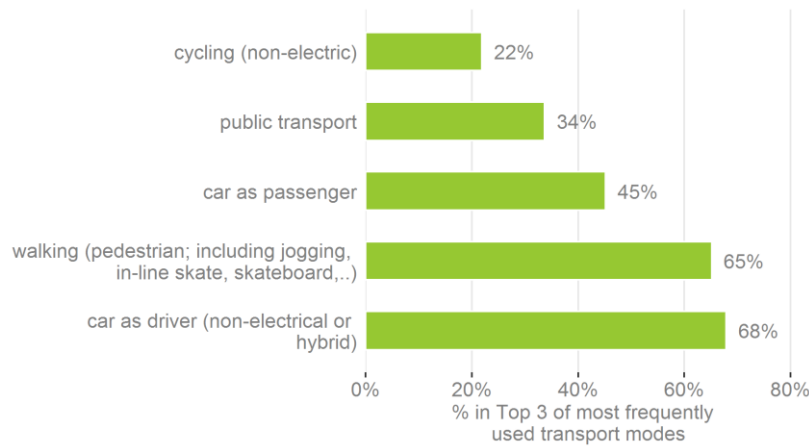


Figure 3: Most used transport modes, in Europe (% of respondents having placed a particular transport mode in their 'Top 3' of most used transport modes the past 12 months).

Note: European weight B.

Overall, driving a car and walking are the most used transport modes (placed in the 'Top 3' of most frequently used modes by respectively 68% and 65% of the respondents; Figure 3). However, large differences between countries are observed (Figure 4). Apart from Slovenia, driving a car is placed in the 'Top 3' by more than half of the respondents in each country. Cycling seems to be often chosen as a transport mode in the Netherlands and Denmark (more than 50% of the Dutch and 45% of the Danish respondents placed cycling in their 'Top 3'), while not frequently used in United Kingdom, Portugal, Spain and Greece (less than 10% in each case placed cycling in their 'Top 3'). Also, in Nordic countries (Finland, Sweden, and Denmark), walking is quite popular (more than 70% of the respondents placed it in their 'Top 3').

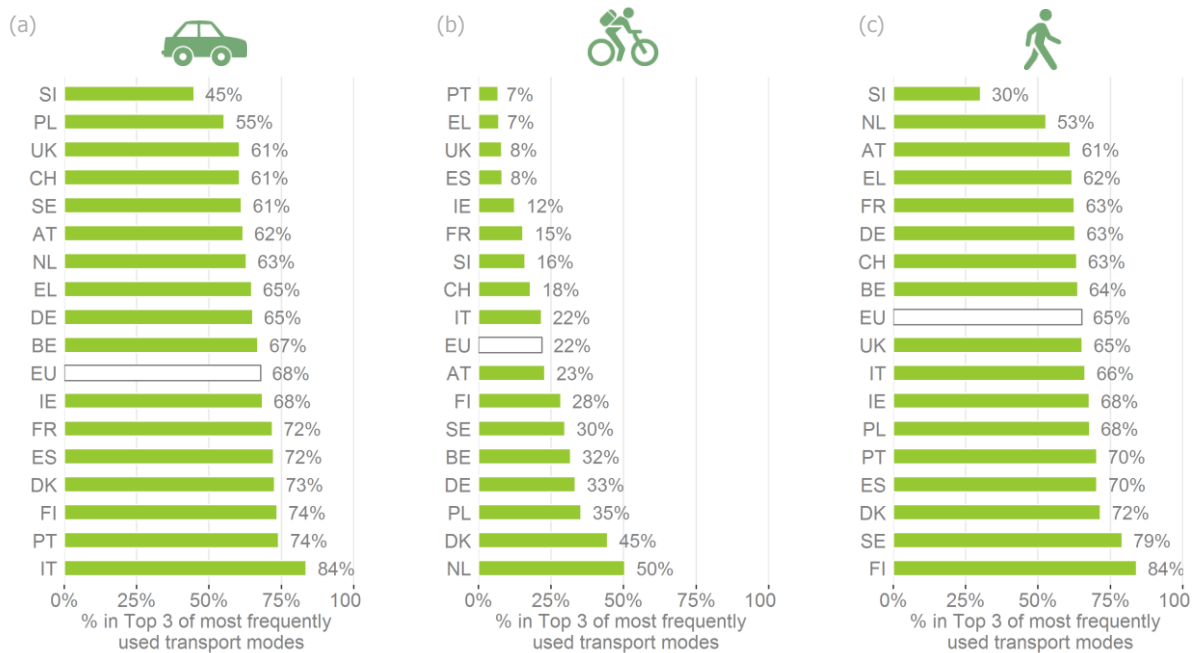


Figure 4: Most used transport modes, by country (% of respondents having placed a particular transport mode in their 'Top 3' of most used transport modes the past 12 months: (a) car as a driver, (b) cycling and (c) walking).

Note: Countries based on individual country weight, Europe based on European weight B.

3.2. Involvement in road crashes

Respondents were asked whether they had been involved in road traffic accidents. More precisely, the question asked for involvement in an accident in the past three months, what transport mode they were using and how severe the accident was ('with only material damage', 'with only minor injuries to myself or others' or 'in which someone had to be taken to hospital'). The results are presented in Table 6.

Overall, about 6% of the respondents reported being involved in a road crash in the past three months. Fortunately, the large majority are minor accidents with material damage only or slight injuries. The highest involvement in road traffic accidents is reported by cyclists on an e-bike (9.5%). The lowest accident rates are with public transport. Given the small sample size (6% accident involvement in the past three months; European total), no country comparisons are presented.

Table 6: Involvement (and severity) in a road traffic accident in the past three months in Europe.

transport mode	accident involvement	severity of the accident		
	% (users)	someone had to be taken to a hospital	only minor injuries to myself or others	only material damage
pedestrian	1.5%	10%	26%	64%
cyclist (non-electrical)	2%	15%	27%	58%
cyclist (e-bike)	9.5%	10%	20%	70%
moped (< 50 cc)	6.3%	18%	10%	72%
motorcyclist (50-125 cc)	4.0%	9%	21%	70%
motorcyclist (>125 cc)	5.7%	15%	46%	39%
car driver	5.5%	7%	15%	78%
car passenger	1.8%	11%	25%	64%
driver of a (mini)van	1.6%	62%	2%	36%
lorry/truck driver	3.4%	40%	10%	51%
on the train	.7%	40%	10%	51%
on the subway	.4%	5%	28%	67%
on a tram	.5%	10%	24%	66%
on the bus	1.0%	34%	23%	43%

Notes:

(1) Percentages reflect the proportion of specific types of road users, not the total sample (e.g., 5.5% of the car drivers (i.e. all respondents indicating they have driven a car in the past 12 months) reported being involved in a road traffic accident in the past three months).

(2) European weight A.







3.3. Subjective safety and risk perception

The concept of subjective safety in traffic refers to feeling (un)safe in traffic or the anticipation of being (un)safe in traffic for oneself and/or others (Stichting Wetenschappelijk Onderzoek Verkeersveiligheid, 2012). One's safety feeling is shaped by several factors such as personal experience, road infrastructure or traffic volume etc. Within the ESRA project, subjective safety refers to how (un)safe respondents feel when using various transport modes.

To assess the subjective safety of European road users, only those transport modes with a sufficient sample size were included in the analysis. The threshold was a usage of at least 40% based on the European-total (see Figure 2). However, motorcycling was included because of its importance for road safety. Respondents could indicate their safety feeling for each transport mode they used during the past 12 months on an 11-point scale from 0 'very unsafe' to 10 'very safe'.

Overall, European road users feel by far the safest on public transport (7.6 out of 10 on average) and the least safe when motorcycling (5.5) or cycling (5.8) (see Table 7). Women tend to feel slightly more unsafe in traffic⁷ than men (t-tests for independent samples; $p < .05$). There are also differences between age groups regarding the perception of safety as a road user, but a common trend for all transport modes was not observable. For example, when driving a car, younger respondents feel more unsafe compared to older respondents, but the opposite trend applies to cycling.

Table 7: Safety feeling per transport mode, by country.

						
				driver	passenger	
AT	7.5 (71%)	6.2 (45%)	5.8 (6%)	7.9 (87%)	7.1 (52%)	8.3 (57%)
BE	6.1 (77%)	5.4 (49%)	4.3 (3%)	6.5 (82%)	6.5 (72%)	7.3 (52%)
CH	7.2 (74%)	6 (38%)	5.6 (9%)	7.4 (83%)	6.9 (62%)	8.3 (62%)
DE	7.5 (75%)	6.4 (56%)	6.3 (6%)	7.7 (87%)	7 (60%)	8 (58%)
DK	8.3 (87%)	7.4 (67%)	5.5 (3%)	8.2 (87%)	7.7 (83%)	8.4 (58%)
EL	6.7 (74%)	4.8 (15%)	3.6 (9%)	6.6 (80%)	6.2 (53%)	7.4 (52%)
ES	7.2 (84%)	5.2 (35%)	5.6 (11%)	7.1 (88%)	6.7 (75%)	7.6 (71%)
FI	7.9 (96%)	7.3 (57%)	6.6 (5%)	7.8 (85%)	7.5 (85%)	8.3 (65%)
FR	6.2 (73%)	4.9 (33%)	4.5 (8%)	6.3 (88%)	6.1 (55%)	7.3 (49%)
IE	6.6 (76%)	5.2 (29%)	5.9 (2%)	7.1 (85%)	6.8 (75%)	7.6 (65%)
IT	7 (71%)	5.2 (31%)	5.9 (13%)	7.6 (84%)	6.6 (64%)	7.9 (68%)
NL	7 (69%)	6.7 (68%)	6.7 (4%)	7.3 (80%)	7.1 (70%)	7.5 (48%)
PL	6.6 (83%)	5.7 (63%)	5.7 (4%)	6.4 (67%)	6.3 (73%)	7.3 (62%)
PT	6.4 (82%)	5.2 (23%)	5.6 (4%)	6.9 (86%)	6.4 (74%)	7.3 (47%)
SE	7.5 (90%)	6.6 (52%)	5.5 (4%)	7.4 (73%)	6.9 (77%)	7.4 (63%)
SI	6.1 (35%)	5.3 (24%)	5 (3%)	6.5 (90%)	6.4 (31%)	7.1 (22%)
UK	7.2 (74%)	5.2 (21%)	5.5 (3%)	7.1 (76%)	6.9 (70%)	7.4 (62%)
EU	7 (76%)	5.8 (42%)	5.6 (6%)	7.2 (83%)	6.7 (67%)	7.6 (57%)

Notes:

(1) Average score on an 11-point scale from 0 'very unsafe' to 10 'very safe'. Between brackets the 'base %' is indicated (i.e. % of respondents having used this transport mode in the past 12 months).

(2) The two countries feeling safest using a particular transport mode are indicated in green, the two countries feeling least safe in yellow.

(3) Countries based on individual country weight, Europe based on European weight B.

Country comparisons⁸ are also presented in Table 7. Respondents in Finland and Denmark feel generally safer in traffic compared to respondents from other countries. Moreover, public transport is perceived to be the safest transport mode in most countries; only in Sweden walking and driving a car is being perceived equally safe. On the contrary, in all countries (motor)cycling is rated as the most unsafe transport mode.

⁷ No gender difference was observed for subjective safety as pedestrian or cyclist.

⁸ Data from Italy might be slightly overestimated as they adopted a slightly different scale from 1-11.

In addition to subjective safety, risk perception was assessed by asking respondents to estimate⁹ the percentage of accidents reducible to various risk factors. Overall, Europeans estimate DUI of alcohol and speeding to be the main causes for road accidents, and technical defects in vehicles and congestion/ traffic jams to be minor causes for road accidents (Table 8 and Table 9). Women generally tend to estimate risk factors to be higher than men¹⁰ (t-test for independent samples, $p < .01$). However, both men and women agree on the top two factors causing road accidents to be speeding and DUI of alcohol. Moreover, older respondents (55+) also tend to estimate risk factors higher.

Table 8: Risk perception, by country (% of accidents reducible to various human risk factors).

	DUI			DISTRACTION AND FATIGUE				SPEEDING	OTHER		
	alcohol	drugs	psychoactive medication	tiredness	inattentiveness	mobile phone	text message	too fast	too close	aggressive	insufficient knowledge
AT	30%	19%	13%	20%	24%	20%	19%	29%	22%	23%	13%
BE	38%	28%	19%	23%	30%	26%	26%	39%	25%	28%	19%
CH	30%	21%	16%	19%	26%	22%	21%	28%	22%	22%	12%
DE	27%	18%	14%	18%	24%	19%	18%	31%	21%	23%	12%
DK	23%	16%	11%	12%	22%	14%	15%	23%	15%	17%	8%
EL	49%	34%	26%	31%	42%	37%	35%	51%	28%	37%	29%
ES	32%	28%	17%	17%	23%	22%	19%	27%	17%	21%	12%
FI	35%	25%	19%	18%	25%	15%	16%	31%	21%	23%	15%
FR	31%	24%	17%	18%	18%	19%	20%	25%	15%	16%	13%
IE	29%	20%	13%	17%	20%	18%	18%	31%	17%	21%	14%
IT	42%	40%	33%	28%	44%	37%	36%	48%	38%	33%	30%
NL	30%	23%	17%	21%	29%	23%	24%	29%	24%	26%	16%
PL	42%	29%	22%	24%	26%	21%	21%	37%	19%	27%	21%
PT	48%	34%	25%	31%	37%	34%	33%	45%	30%	36%	25%
SE	31%	25%	16%	18%	23%	17%	18%	23%	19%	19%	12%
SI	45%	29%	23%	26%	27%	25%	26%	38%	22%	33%	21%
UK	26%	19%	14%	17%	21%	20%	19%	27%	19%	20%	14%
EU	33%	25%	19%	20%	27%	23%	22%	33%	22%	24%	17%

Notes:

(1) Risk factors were assessed independently.

(2) The two countries with the highest % are indicated in green, the two countries with the lowest % in yellow.

(3) Countries based on individual country weight, Europe based on European weight B.

⁹ This estimate was provided separately for each risk factor. Thus, the total sum of all risk factors can be higher than 100.

¹⁰ One exception: no significant gender-effect for 'poor road design'.

Table 9: Risk perception, by country (% of accidents reducible to various external risk factors).

	poorly maintained roads	poor road design	congestion / traffic jams	bad weather conditions	technical defects
AT	9%	9%	11%	15%	12%
BE	20%	19%	22%	23%	13%
CH	9%	10%	12%	14%	10%
DE	10%	10%	13%	17%	13%
DK	7%	8%	11%	10%	8%
EL	34%	32%	20%	27%	24%
ES	17%	14%	10%	14%	11%
FI	13%	8%	12%	19%	10%
FR	12%	12%	9%	13%	10%
IE	14%	12%	8%	16%	12%
IT	26%	28%	24%	26%	17%
NL	13%	13%	19%	21%	14%
PL	22%	17%	16%	22%	23%
PT	28%	25%	20%	29%	20%
SE	12%	10%	11%	15%	9%
SI	26%	22%	14%	22%	15%
UK	12%	11%	11%	17%	11%
EU	16%	15%	14%	18%	14%

Notes:

(1) Risk factors were assessed independently.

(2) The two countries with the highest % are indicated in green, the two countries with the lowest % in yellow.

(3) Countries based on individual country weight, Europe based on European weight B.

Country comparisons are presented in Table 8 and Table 9. Overall, Greek and Italian respondents tend to estimate various risk factors higher than other countries, whereas, Danish respondents assess the various risk factors lower than other countries. In 11 countries the highest risk is attributed to DUI of alcohol and in seven countries to speeding¹¹; so they are believed to be the main causes for accidents. Alcohol is thought to be a factor in about half of the road accidents by Greek and Portuguese respondents. Greek and Italian respondents believe that speeding is a factor in about half of the road accidents.

3.4. Concern about road safety

Respondents were asked to indicate how they looked at different societal issues, including road safety. More specifically, respondents had to indicate their concern about road accidents, traffic congestion, rate of crime, pollution, standard of health care, and unemployment on a 4-point scale (from 1 'very concerned' to 4 'not at all concerned'). In Table 10, the percentage of respondents being (very) concerned (i.e., score 1 or 2) about these societal problems are displayed.

The results show that, in general, Europeans are concerned about traffic safety (68% is concerned about road accidents). However, they are also concerned about pollution and rate of crime (75% and 73% respectively). Only traffic congestions are of less concern to Europeans (60%). Moreover, women are generally more concerned about these societal problems (χ^2 , all $p \leq .01$). The concern about road accidents increases with the respondents' age, which is also true for other societal problems (χ^2 , all $p < .01$), except for unemployment.

¹¹ In Denmark DUI of alcohol and speeding were assessed alike.

A country comparison is presented in Table 10. Denmark is by trend the country where people are least concerned, whereas Greece and Portugal are clearly the countries where the population is most concerned about different societal problems. With respect to road accidents, the two countries with the least concerns are Denmark and Sweden (about 50%) while the three most concerned countries are Greece, Portugal and Ireland (more than 80%). In the thematic report 'Subjective safety and risk perception' the relation to the actual accident numbers in each country has been explored ([Subjective safety and risk perception](#)).

Table 10: Concerns for road safety, by country.

	road accidents	rate of crime	pollution	standard of health care	traffic congestion	unemployment
AT	61%	76%	84%	47%	49%	78%
BE	78%	80%	79%	77%	68%	70%
CH	65%	72%	82%	44%	59%	66%
DE	60%	75%	78%	47%	51%	57%
DK	48%	55%	60%	65%	27%	44%
EL	89%	90%	88%	92%	79%	90%
ES	75%	71%	79%	81%	54%	86%
FI	65%	72%	70%	68%	32%	77%
FR	76%	80%	85%	81%	68%	79%
IE	81%	79%	76%	86%	68%	79%
IT	67%	65%	68%	66%	61%	62%
NL	59%	67%	62%	74%	44%	68%
PL	71%	71%	71%	82%	73%	73%
PT	86%	86%	87%	87%	64%	89%
SE	49%	71%	67%	69%	31%	58%
SI	74%	67%	73%	69%	58%	84%
UK	67%	70%	67%	77%	68%	66%
EU	68%	73%	75%	70%	60%	70%

Notes:

(1) % of concerned participants: scores 1 and 2 on a 4-point scale from 1 'very concerned' to 4 'not at all concerned'.

(2) The two most concerned countries are indicated in green, the two least concerned countries in yellow.

(3) Countries based on individual country weight, Europe based European weight B.

3.5. Self-declared (unsafe) behaviour in traffic

Within the ESRA survey, the respondents' self-declared behaviour was assessed by asking how often they have set certain behaviours in traffic during the past 12 months. Respondents could answer on a 5-point scale (from 1 'never' to 5 '(almost) always'). In Figure 5, the results for self-declared prevalence of (unsafe) traffic behaviour are presented.

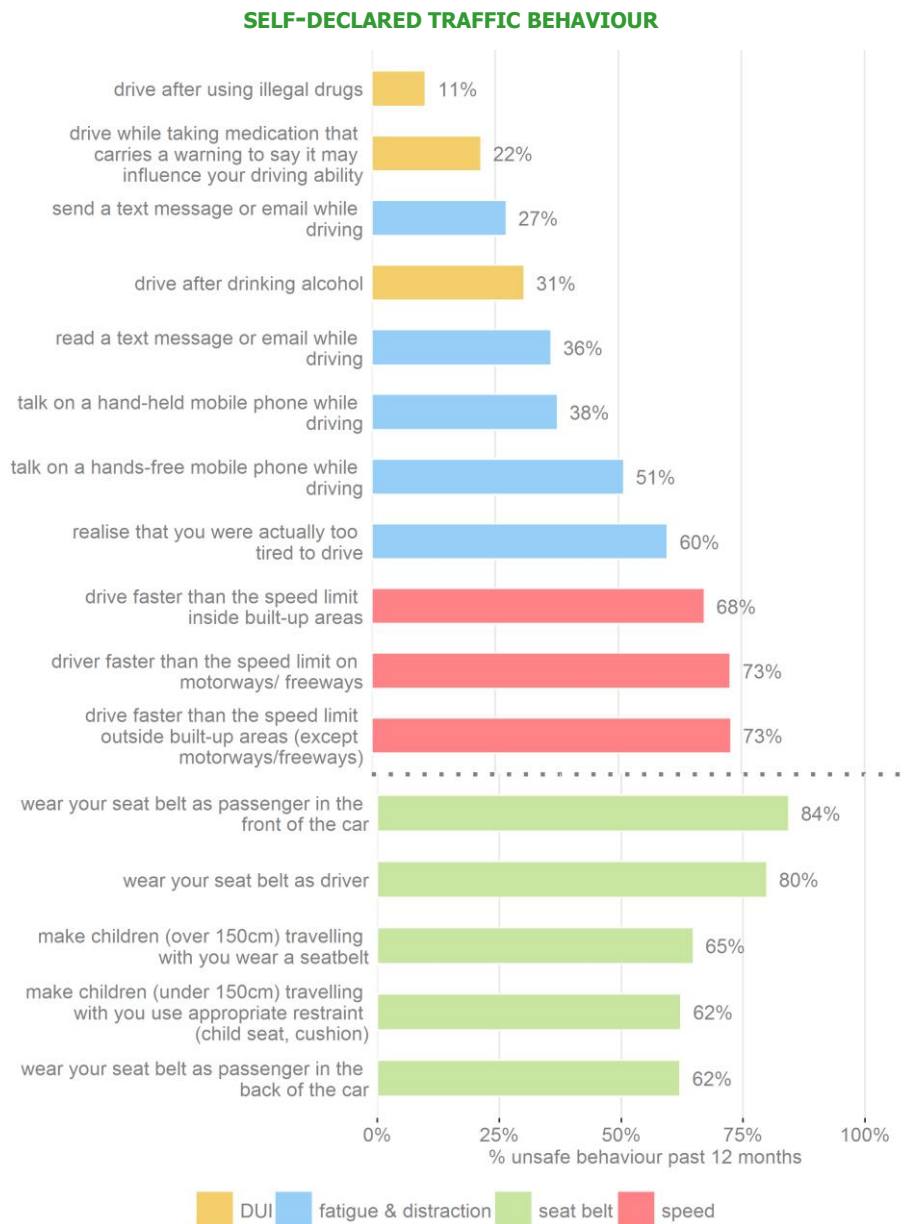


Figure 5: Self-declared (unsafe) behaviour as a road user in the past 12 months, in Europe.

Notes:

(1) Items concerning 'speeding', 'DUI' and 'distraction and fatigue' refer to unsafe traffic behaviour. Therefore, the % of respondents that have set a certain unsafe behaviour 'at least once' during the past 12 months (i.e., scores 2-5 on a 5-point scale from 1 'never' to 5 '(almost) always') are presented. For 'seat belt use', on the other hand, all items refer to safe traffic behaviour. Thus, the % of respondents reporting (almost) always wearing their seat belt or using the appropriate restraint system for children (i.e., score 5 on a 5-point scale from 1 'never' to 5 '(almost) always') are presented.

(2) European weight B. In Slovenia, the question 'talk on a hand-held mobile phone' refers to talk on the mobile phone while driving, without limiting it to hand-held mobile phone use only.

(3) The specification about the height of children (over/under '150 cm') was adapted to the policies in each country (e.g. in Belgium regulations state '135 cm').

Driving too fast is the most frequently reported unsafe behaviour (e.g., 73% reported speeding outside built-up areas or on motorways/freeways). On the other hand DUI of alcohol is only reported by 31% of the respondents (and even less for DUI of medication or drugs). Larger differences within topic are observed for distraction, fatigue and seat belt use. Always wearing a seat belt as driver or as a passenger in the front of the car is reported by more than 80% of the respondents. But only 62% of the respondents stated that they always wear a seat belt as a passenger in the back of the car. Concerning distracted driving, almost 40% reported having made a hand-held phone call while driving and about half of the respondents reported having made a phone call using a hands-free device. Texting, on the other hand, was reported by less than 30% of the respondents. Women and older¹² respondents generally report less unsafe behaviour in traffic (less self-declared speeding, DUI, distracted driving and not always wearing a seat belt; χ^2 , all $p < .01$).

Moreover, large variations between countries are observed. In Table 11, the country comparison for a selection of topics is presented. While speeding on motorways is often reported in all countries (European average: 73%), more than 80% of the Finnish and Swedish respondents admitted doing so at least once the past 12 months. Also, in those two countries (compared to other countries in the ESRA survey), talking on a hand-held phone while driving is quite often being reported. On the other hand, they are amongst the best performing countries concerning DUI of alcohol and seat belt use in the back of the car.

In Figure 6, the self-declared unsafe behaviour of cyclists and pedestrians is presented. Crossing the street while not using the pedestrian crossings is done by almost 90% of the European pedestrians. Also, 2 out of 3 pedestrians walked through a red light at least once during the past 12 months. While pedestrians do this quite often, slightly less than 1 out of 3 cyclists declared to have done so. Moreover, cycling without wearing a helmet is widely spread in Europe (80% has done so at least once in the past 12 months). It should also be noted that almost 1 out of 3 motorcyclists or moped drivers drove at least once without a helmet. Country comparisons can be found in Appendix 1.

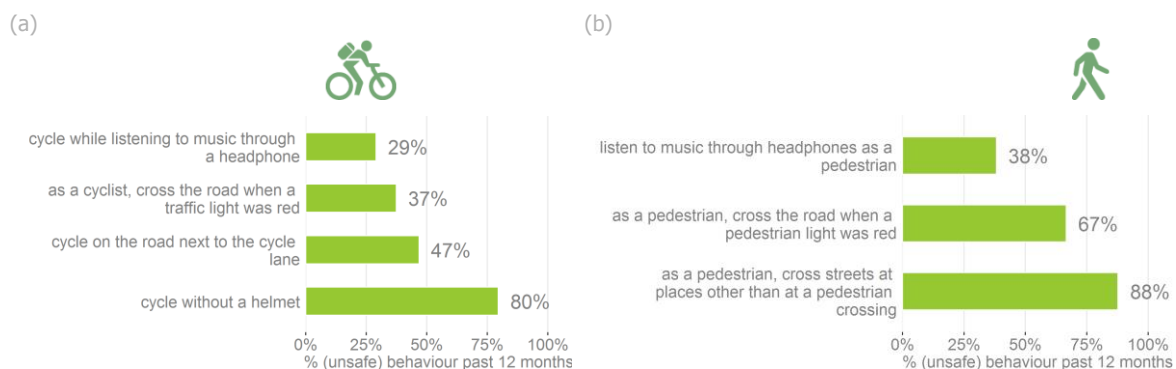


Figure 6: Self-declared unsafe behaviour as (a) cyclists and (b) pedestrians in the past 12 months, in Europe.

Notes:

(1) % of respondents that have set a certain behaviour 'at least once' during the past 12 months (i.e., scores 2-5 on a 5-point scale from 1 'never' to 5 '(almost) always').

(2) European weight B.

¹² Note, however, that we observed one exception: the respondents aged 35-54 years reported more frequently having violated the speed limits on the motorways/freeways.

Table 11: Self-declared (unsafe) behaviour as a road user in the past 12 months, by country.

	SPEEDING drive faster than the speed limit on motorways	DUI drive after drinking alcohol	DISTRACTION talk on a hand-held mobile phone	SEAT BELT wearing a seat belt in the back of the car
AT	81%	30%	47%	66%
BE	74%	43%	28%	75%
CH	80%	39%	35%	60%
DE	80%	30%	35%	72%
DK	81%	32%	42%	82%
EL	71%	29%	61%	15%
ES	74%	35%	35%	70%
FI	84%	18%	73%	86%
FR	68%	41%	31%	70%
IE	61%	20%	30%	71%
IT	76%	34%	55%	24%
NL	78%	29%	24%	64%
PL	57%	12%	48%	53%
PT	81%	34%	46%	53%
SE	83%	13%	62%	81%
SI	73%	30%	60%	54%
UK	66%	28%	22%	75%
EU	73%	31%	38%	62%

Notes:

(1) Items concerning 'speeding', 'DUI' and 'distraction and fatigue' refer to unsafe traffic behaviour. Therefore, the % of respondents that have set a certain unsafe behaviour 'at least once' during the past 12 months (i.e., scores 2-5 on a 5-point scale from 1 'never' to 5 '(almost) always') are presented. For 'seat belt use', on the other hand, all items refer to safe traffic behaviour. Thus, the % of respondents reporting (almost) always wearing their seat belt or using the appropriate restraint system for children (i.e., score 5 on a 5-point scale from 1 'never' to 5 '(almost) always') are presented.

(2) The two best performing countries are indicated in green, the two worst performing countries in yellow.

(3) Countries based on individual country weight, Europe based on European weight B. In Slovenia, the question "talk on a hand-held mobile phone" refers to talk on the mobile phone while driving, without limiting it to hand-held mobile phone use only.

3.6. Attitudes towards (unsafe) traffic behaviour

One of the key underlying mechanisms to predict ones behaviour as a road user (e.g. speeding or drink-driving) are the underlying attitudes towards that behaviour. Such attitudes were assessed in the ESRA-survey (see Figure 7). Respondents could indicate the extent to which they agreed with different statements on a 5-point scale (from 1 'disagree' to 5 'agree').

Overall, results show that Europeans' attitudes towards DUI are more negative compared to speeding. For example, 87% of the respondents agreed that DUI of alcohol makes it difficult to react appropriately to dangerous situations, compared to only 72% of the respondents agreeing that was the case for speeding. Besides, the influence of fatigue is slightly more acknowledged than of distractions while driving: 85% recognises the increasing risk of accident when they feel sleepy, compared to 82% for talking on a hand-held phone. Generally, these results are in line with the self-declared behaviour and the personal and perceived social acceptability of those behaviours (see sections 3.5 and 3.7). However, it is remarkable that only about 60% of the Europeans reported (almost) always securing children travelling with them correctly while being aware of the risks of making children travelling without appropriate restraints (87% agreement). Furthermore, women generally have more negative attitudes towards unsafe traffic behaviours (χ^2 , all $p < .01$) and attitudes towards unsafe traffic behaviours become more negative with increasing age (χ^2 , all $p < .01$).

Country comparisons for a selection of items are presented in Table 12. Attitudes towards drink-driving, fatigued-driving, and seat belt use are similar across Europe. However, large differences in attitudes towards speeding and distracted driving were observed. For example, the risk of speeding is recognized by more than 80% of the Greek and Italian respondents, while only about 60% of the Dutch and Austrian respondents think that driving faster than the speed limit makes it harder to react appropriately in a dangerous situation.

Table 12: Attitudes towards (unsafe) traffic behavior, by country.

	SPEEDING driving faster than the speed limit makes it harder to react appropriately in a dangerous situation	DUI if you drive under the influence of alcohol, it is difficult to react appropriately in a dangerous situation	DISTRACTION people talking on a hand-held mobile phone have a higher risk of getting involved in an accident	SEAT BELT it is not necessary to wear a seat belt in the back seat of the car
AT	62%	86%	83%	13%
BE	65%	89%	91%	7%
CH	68%	86%	86%	18%
DE	66%	86%	81%	13%
DK	74%	93%	85%	7%
EL	82%	89%	83%	23%
ES	73%	84%	82%	12%
FI	80%	95%	82%	6%
FR	64%	82%	75%	14%
IE	77%	86%	82%	11%
IT	84%	94%	87%	23%
NL	59%	86%	85%	13%
PL	74%	88%	82%	21%
PT	77%	92%	88%	13%
SE	71%	87%	77%	11%
SI	74%	85%	58%	14%
UK	74%	85%	81%	12%
EU	72%	87%	82%	15%

Notes:

(1) % of agreement: scores 4 and 5 on a 5-point scale from 1 'disagree' to 5 'agree'.

(2) The two countries with the safest attitudes are marked in green, those with the most unsafe attitudes in yellow.

(3) Countries based on individual country weight, Europe based on European weight B.

ATTITUDES TOWARDS (UN)SAFE TRAFFIC BEHAVIOUR

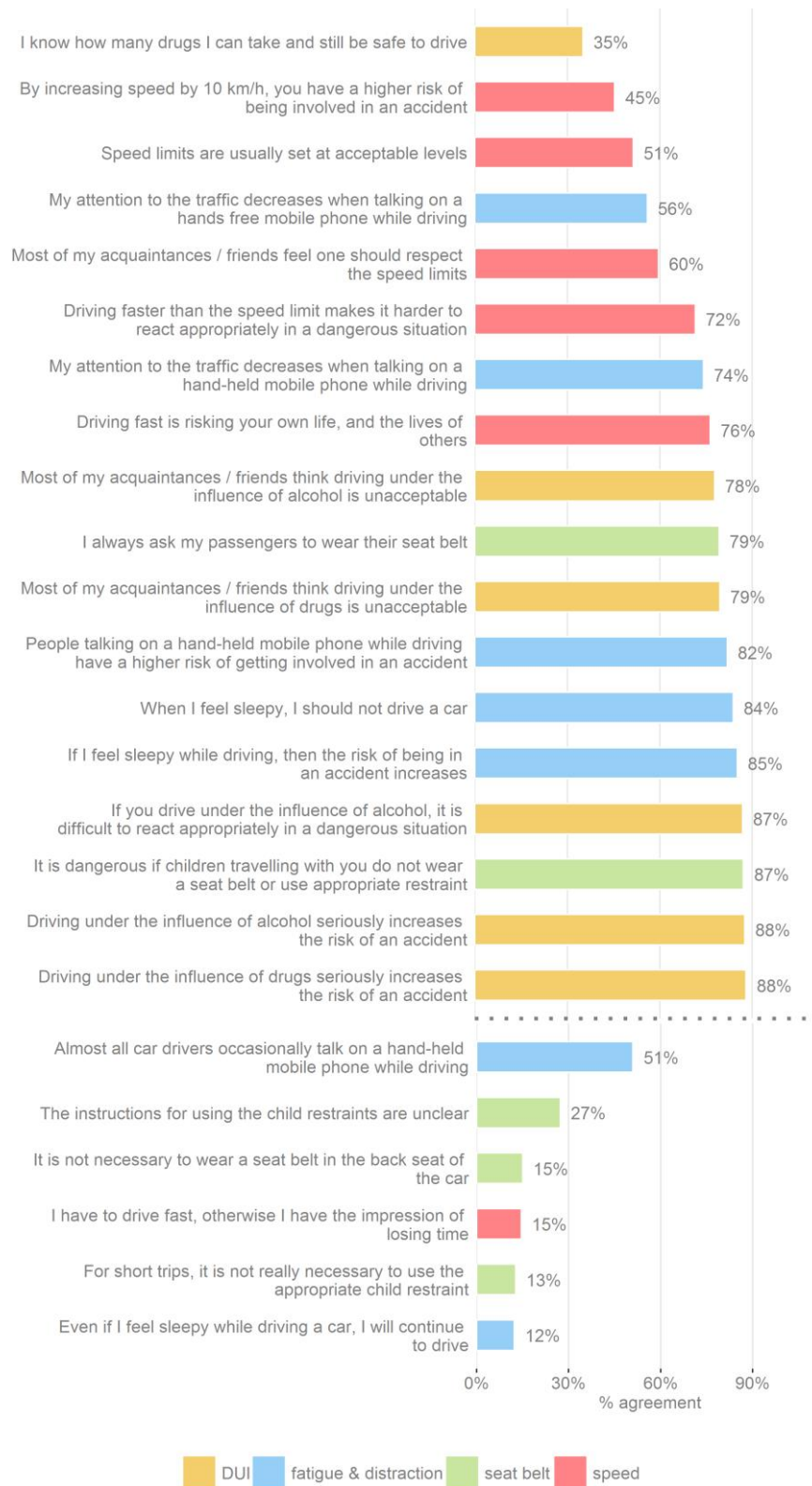


Figure 7: Attitudes towards (un)safe traffic behaviour, in Europe.

Notes:

(1) % of agreement: scores 4 and 5 on a 5-point scale from 1 'disagree' to 5 'agree'.

(2) Some items were formulated positively, and others negatively which is indicated by the dotted line.

(3) European weight B. In Slovenia, the question 'talk on a hand-held mobile phone' refers to talk on the mobile phone while driving, without limiting it to hand-held mobile phone use only.

3.7. Acceptability of unsafe traffic behaviour

ESRA provides information on which unsafe traffic behaviours are most – respectively least – accepted by Europeans, as well as on the perceived social acceptability of those behaviours. Respondents could indicate on a 5-point scale (from 1 'unacceptable' to 5 'acceptable') how acceptable they find different unsafe traffic behaviours, but also how acceptable other people would say these behaviours are. The results are presented in Figure 8.

ACCEPTABILITY OF UNSAFE TRAFFIC BEHAVIOUR

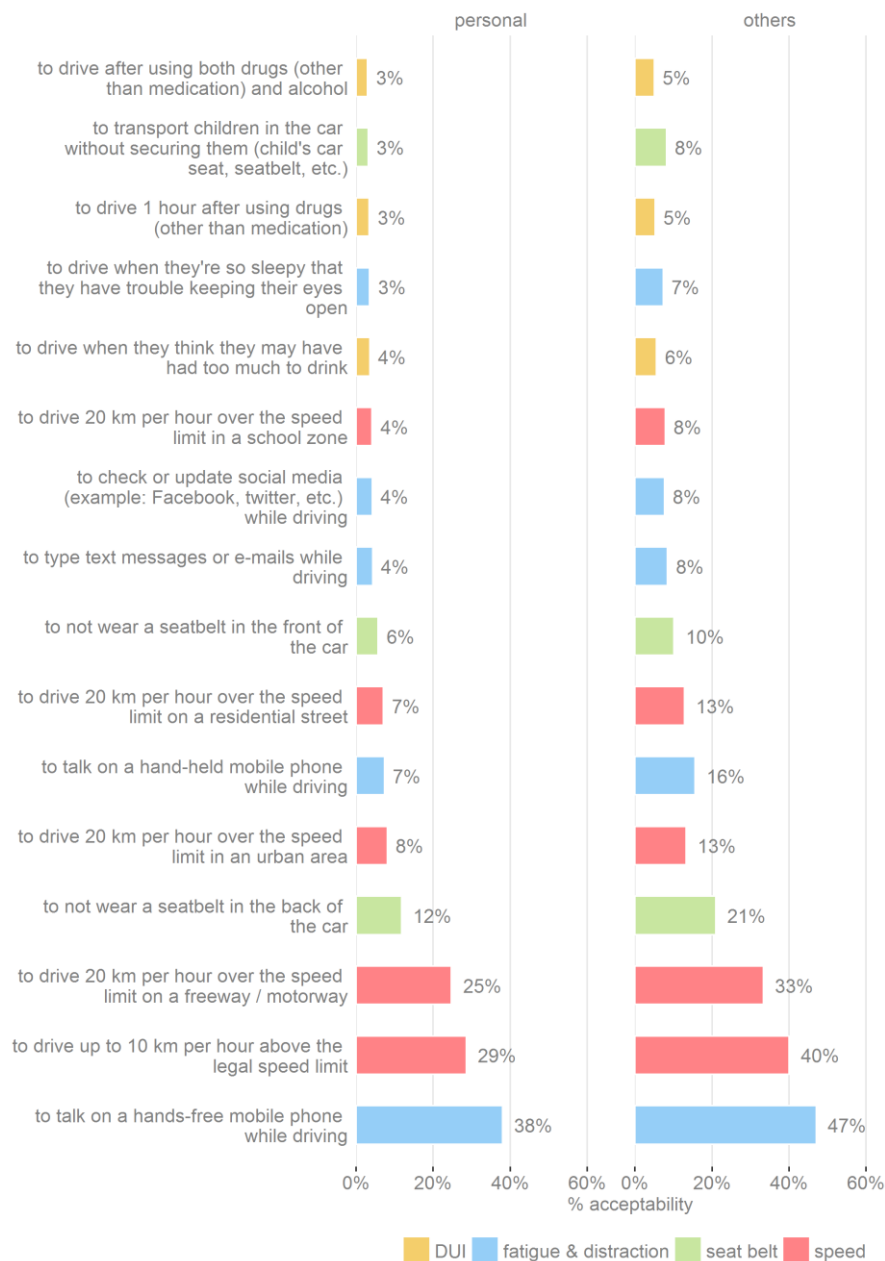


Figure 8: (a) Personal acceptability and (b) perceived social acceptability of unsafe traffic behaviours, in Europe.

Notes:

(1) % of acceptability: score 4 and 5 on a 5-point scale from 1 'unacceptable' to 5 'acceptable'.

(2) European weight B, but based on European weight C for the following item 'check or update social media'.

DUI of alcohol or drugs is the least accepted unsafe traffic behaviour in Europe (European average between 3% and 3.5% for the different DUI items). On the other hand, speeding is more widely accepted (e.g., almost 1 respondent out of 3 thinks it is acceptable to drive 10 km/h over the speed limit and 1 out of 4 thinks it is acceptable to drive 20 km/h over the speed limit on freeways/motorways). An exception is that speeding in school zones is not accepted (European average: 4%). Most types of distracted driving are not considered acceptable, except talking on a hands-free mobile phone while driving, which is widely accepted in Europe (38%).

These results illustrate that in general the self-declared behaviour is in line with the acceptability of that behaviour (see section 3.7). For instance, speeding is more frequently reported, and more widely accepted compared to DUI. Please note however, that although some behaviours are considered unacceptable, they are nevertheless often reported by respondents. For example, while only 4% of Europeans think it is acceptable to type text messages or emails while driving, 27% declared that they had sent a text message or an email at least once during the past 12 months.

The figure also shows that the perceived social acceptability is higher than the personal acceptability, although the same trends emerge. DUI is perceived to be least accepted by others in contrast to speeding or talking on a hands-free mobile phone while driving. Also, overall acceptability rates are lower amongst women and older respondents (χ^2 , all $p < .05$).

Country comparisons for a selection of topics are presented in Table 13. The perceived social acceptability of speeding on freeways/motorways (20 km/h above the speed limit) is highest in Italy and Portugal and lowest in Ireland and the United Kingdom. Drink-driving is least accepted in Denmark and Finland. Concerning distracted driving, and more specifically talking on a hand-held mobile phone while driving, the perceived social acceptability is highest in Greece and Italy, and lowest in the Netherlands and Switzerland. Personal and perceived social acceptability of not wearing a seat belt in the back of the car is the highest in Italy and Greece, while lowest in Slovenia and Denmark.

Table 13: Personal and perceived social acceptability for a selection of topics, by country.

	SPEEDING		DUI		DISTRACTION		SEAT BELT	
	drive 20 km/h over the speed limit on a freeway/motorway	Other	drive when they think they may have had too much to drink	Other	talk on a hand-held mobile phone while driving	Other	not wear a seat belt in the back of the car	Other
	Personal	Other	Personal	Other	Personal	Other	Personal	Other
AT	36%	43%	1%	3%	10%	14%	13%	17%
BE	27%	30%	2%	4%	3%	8%	8%	14%
CH	27%	30%	1%	2%	6%	6%	15%	21%
DE	24%	40%	3%	6%	9%	20%	9%	19%
DK	24%	30%	1%	1%	5%	8%	5%	8%
EL	20%	36%	3%	12%	6%	25%	23%	45%
ES	24%	33%	2%	5%	5%	9%	6%	11%
FI	20%	26%	1%	2%	11%	24%	8%	20%
FR	25%	28%	5%	7%	7%	11%	9%	11%
IE	15%	23%	3%	6%	5%	12%	7%	12%
IT	31%	46%	6%	7%	8%	32%	25%	54%
NL	28%	31%	3%	3%	6%	6%	11%	16%
PL	30%	34%	4%	5%	14%	17%	19%	24%
PT	37%	44%	1%	4%	3%	8%	10%	17%
SE	30%	40%	3%	4%	12%	21%	8%	12%
SI	24%	29%	2%	4%	5%	9%	6%	9%
UK	12%	17%	4%	5%	4%	7%	6%	10%
EU	25%	33%	4%	6%	7%	16%	12%	21%

Notes:

(1) % of acceptability: score 4 and 5 on a 5-point scale from 1 'unacceptable' to 5 'acceptable'.

(2) The two best performing countries are indicated in green, the two worst performing countries in yellow.

(3) Countries based on individual country weight, Europe based on European weight B.

3.8. Behaviour of other road users

Respondents were asked to indicate how often they are confronted with a number of behaviours of other traffic participants by indicating the frequency on an 11-point scale from 0 'never' to 10 'very often'. Besides, they also had to indicate the evolution of the occurrence of those behaviours over the past 2 years ('increased', 'no change' or 'decreased'). Results are presented in Table 14 and Table 15.

Overall, European respondents reported to be most confronted with others 'driving too fast' (6.8; making it the behaviour most confronted with in 12 countries). This was followed closely by 'careless drivers' (6.7) and by 'drivers who don't leave a safe distance to the car in front' (6.6). Moreover, men report to be more often confronted with 'slow' drivers than women. On the other hand, women report to face more drivers committing 'dangerous driving offences', 'distracted drivers', 'careless drivers', and 'speeding' drivers (t-test for independent samples, $p < .05$). Moreover, younger respondents (<34y) tend generally to report less confrontations with dangerous behaviour of other road users (one exception: 'slow drivers'), while the ones aged 35-54 years reported most confrontations (ANOVA, all $p < .01$).

A comparison between the results for the different countries is presented in Table 14. Portuguese and Greek respondents have a tendency to report more often to be confronted with dangerous behaviours of other road users, while French respondents have the tendency to report such confrontations the least.

From our analyses it also appears that 61% of respondents feel that the occurrence of distracted driving has increased over the past two years and almost half of the respondents think aggressiveness in traffic has increased (see Table 15). Women generally have the tendency to indicate an increase of different behaviours more frequently than men (χ^2 , all 13 $p < .01$). Moreover, older respondents tend to see an increase in most dangerous behaviours (χ^2 , all 14 $p < .01$).

The country comparison (Table 15; χ^2 , all $p < .01$) shows that, overall, Danish respondents noted fewer increases of unsafe traffic behaviour by other road users. Furthermore, in almost all countries the occurrence of distracted drivers is being perceived as having increased most over the past two years, except in Belgium and Poland. Besides, more than half of the Belgian and German respondents reported a sharp rise of aggressive drivers.

Table 14: Being confronted with unsafe traffic behaviours of other road users, by country.

	speeding	careless drivers	do not leave a safe distance	do not respect traffic rules	distracted drivers	ignore needs of other road users	aggressive drivers	dangerous driving offences	too slow
AT	6.9	6.8	7	6.3	6.6	6	6.5	5.7	5.3
BE	7.4	7.4	6.7	6.9	6.8	6.9	6.3	6.2	4.8
CH	6.1	7.2	6.6	5.9	6.3	5.6	5.9	5.3	5
DE	6.7	6.4	6.4	6.2	6.1	5.8	6.1	5.3	4.7
DK	7.2	6.2	6.7	6.5	6.2	5.3	5.8	5.7	4.7
EL	7.5	7.2	7.1	7.5	7.5	7.4	7.1	7.2	5.3
ES	7.3	7.3	7	6.8	6.8	6.8	6.5	6.5	5.2
FI	7.5	7.1	7.3	6.6	6.5	6.4	6.2	6.4	5
FR	6.1	6.5	6.3	6	6	6	5.5	5.5	4.4
IE	7.2	7.2	6.8	6.9	6.7	6.7	6.5	6.3	5.8
NL	6.9	7	6.3	6.2	6.4	6.2	5.8	5.7	5.2
PL	7.4	6.4	6.3	6.6	6.4	6.6	6.4	6.3	4.5
PT	7.5	7.6	7.2	7.3	7	7.1	7	7.2	5.7
SE	6.9	6.7	6.5	6.2	5.9	5.4	5.6	4.9	4.5
SI	7.2	7	6.9	6.7	6.8	6.3	6.7	6.3	5.8
UK	6.7	6.7	6.5	6.4	6.2	6.4	6.1	5.6	5.1
EU	6.8	6.7	6.6	6.4	6.3	6.3	6.1	5.8	4.9

Notes:

(1) Average frequency on an 11-point scale from 0 'never' to 10 'very often'.

(2) The two countries reporting being least confronted with certain behaviours of other road users are indicated in green, the two countries reporting being most confronted with certain behaviours of other road users are indicated in yellow.

(3) Countries based on individual country weight, Europe based on European weight A.

¹³ One exception: 'driving too slow'. There were also no significant gender differences for the following behaviours: drivers who don't take into account the 'needs of other road users' and drivers who 'don't leave a safe distance' to the car in front.

¹⁴ Data from Italy might be slightly overestimated as they adopted a slightly different scale from 1-11.

Table 15: Evolution of occurrence of other road users' unsafe traffic behaviours, by country (% increase).

	speeding	careless drivers	do not leave a safe distance	do not respect traffic rules	distracted drivers	ignore needs of other road users	aggressive drivers	dangerous driving offences	too slow
AT	49%	43%	44%	38%	71%	40%	54%	36%	18%
BE	48%	52%	40%	47%	68%	49%	58%	42%	17%
CH	47%	40%	48%	39%	70%	35%	55%	36%	22%
DE	54%	44%	44%	42%	67%	42%	56%	37%	21%
DK	34%	30%	35%	30%	53%	28%	39%	31%	14%
EL	47%	43%	33%	45%	65%	48%	51%	44%	22%
ES	33%	33%	26%	30%	54%	34%	35%	33%	18%
FI	50%	44%	43%	37%	56%	35%	43%	41%	17%
FR	41%	46%	39%	45%	60%	46%	47%	39%	23%
IE	47%	46%	38%	44%	57%	42%	45%	40%	23%
NL	46%	51%	46%	42%	63%	43%	54%	39%	25%
PL	48%	28%	26%	33%	40%	32%	44%	36%	14%
PT	43%	38%	30%	37%	50%	40%	45%	41%	19%
SE	43%	47%	40%	40%	61%	32%	41%	30%	15%
SI	45%	42%	37%	36%	57%	37%	51%	43%	32%
UK	44%	46%	42%	42%	58%	43%	47%	37%	23%
EU	45%	43%	38%	36%	61%	44%	49%	38%	20%

Notes:

(1) The two countries with the lowest % of respondents perceiving an increase over the past two years are indicated in green, the two countries with the highest % increase over the past two years are indicated in yellow.

(2) Countries based on individual country weight, Europe based on European weight A.

3.9. Enforcement

The term 'enforcement' in road safety refers to the area of activity aiming at controlling road user's behaviour by preventive and punitive measures in order to ensure the efficient movement and safety of traffic (Zaal, 1994 after OECD, 1974). Different aspects of enforcement were covered within ESRA, in particular the respondents' experience with traffic enforcement and the subjective risk of being checked. Respondents were asked to indicate how many times over the past 12 months they had been stopped by the police for a check, had to pay a fine, and/or were convicted at court for a traffic violation (Table 16). Given that DUI is one of the main killers in traffic, separate questions were added to assess DUI enforcement. Respondents had to indicate how many times during the past 12 months they had been checked by the police for DUI of alcohol and drugs/medication.

Overall, during the past 12 months, 29% of the respondents were stopped for a check by road police (12% even more than once), 15% were fined for a road traffic violation (4% more than once), and 2% were convicted in court (1% more than once). Besides, 19% of the respondents have been checked for DUI of alcohol (8% more than once) and 4% for DUI of drugs/medication. Note that men reported to have been stopped for a check more often, to be fined more often, and to be convicted more often than women (χ^2 , all $p < .01$). It are usually the younger respondents who are stopped for police checks (Test T2 Tamhane; $p < .05$).

Table 16: Intensity of enforcement, by country.

	stopped by the police for a check	checked by the police for alcohol	checked by the police for the use of drugs/medication	pay a fine for a traffic violation	convicted at court for a traffic violation
AT	34%	17%	2%	25%	1%
BE	19%	17%	1%	13%	0%
CH	33%	14%	3%	26%	2%
DE	16%	8%	2%	18%	0%
DK	10%	6%	3%	8%	3%
EL	41%	22%	4%	10%	3%
ES	31%	29%	5%	12%	2%
FI	30%	37%	0%	4%	0%
FR	29%	23%	7%	18%	4%
IE	39%	9%	2%	6%	1%
IT	67%	15%	5%	35%	8%
NL	18%	17%	2%	19%	2%
PL	46%	47%	6%	11%	1%
PT	44%	19%	2%	8%	3%
SE	25%	29%	3%	4%	1%
SI	42%	25%	3%	10%	2%
UK	8%	5%	4%	6%	3%
EU	29%	19%	4%	15%	2%

Notes:

(1) % of respondents reporting 'at least once' in the past 12 months.

(2) The two countries with the most intensive enforcement are indicated in green, the two countries with the least intensive enforcement are indicated in yellow.

(3) Countries based on individual country weight, Europe based on European weight B.

More specifically, the type of fines respondents received was also assessed. Analysis shows that 63% of the respondents that received at least one fine during the past 12 months (15% of total sample), received a speeding ticket, 7% were fined for not wearing their seat belt, and 6% for talking on a hand-held mobile phone. Offences that are very rarely punished include driving under the influence of illegal psychoactive substances, driving under the influence of alcohol and carrying children without proper restraints (3% respectively). Given the small samples sizes per country, no elaboration on country comparisons or age and gender effects is included in this report. For more detailed information, the reader is referred to the ESRA thematic report on enforcement: [Enforcement and support for road safety policy measures](#).

Analyses also reveal that the intensity of traffic law enforcement differs from country to country (see Table 16; Test T2 Tamhane; $p < .05$). Overall, in all countries (except the UK) checks for alcohol are more frequent than checks for other psychoactive substances. Specifically, Poland seems to have a highly intensive traffic law enforcement: almost half of the Polish respondents report that they have been checked by the police for DUI of alcohol at least once during the past 12 months; the country has also one of the highest % for DUI of drugs/medication.

The subjective risk of being checked (Figure 9) was assessed by rating the perceived likelihood of being checked for different violations on a typical journey on a 5-point scale from 1 'very small chance' to 5 'very big chance'. Overall, Europeans think that on a typical journey, one is most likely to be checked for speeding (36%) and least likely to be checked for DUI of illegal psychoactive substances (11%). No gender differences were observed, and while there are differences across countries, they are not statistically significant. However, younger respondents think it is more likely to be checked on a typical journey (ANOVA, $p < .01$).

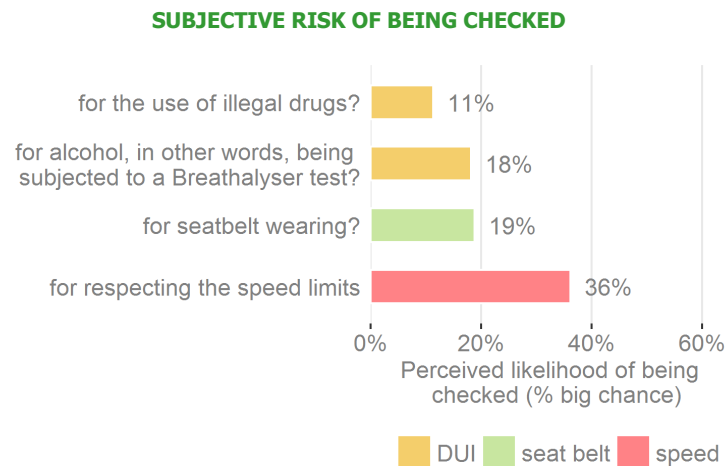


Figure 9: Perceived likelihood of being checked by the police on a typical journey, in Europe.

Notes: (1) % of (very) big chance; scores 4 and 5 on a 5-point scale from 1 'very small chance' to 5 'very big chance'. (2) European weight B.

3.10. Support for road safety policy measures

Road safety measures are decisions, rules, regulations, initiatives, etc. that aim at improving road safety, i.e. reducing the number of crashes or decreasing their impact. Policy measures to improve road safety can be taken at local, regional, national or even international level. However, people may not be in favour of such measures because it may require them to change their behaviour or because it may conflict with other needs (e.g. travel time). The general support for different road safety policy measures¹⁵ (European average) is presented in Figure 10.

This figure illustrates that DUI countermeasures are widely supported in Europe: 80% of Europeans supports a zero tolerance for alcohol for novice drivers; in five countries this is the most endorsed road safety policy measure. Moreover, obligatory alcohol ignition interlock installation for recidivists is supported by most European road users (in eight countries this is the most popular road safety policy measure). These results are in line with the low acceptability of DUI (see section 3.7). On the other hand, allowing cyclists to ride through red lights when permitted by specific road signs is only supported by 1 out of 3 European road users. In general, women and older road users are more supportive of preventive countermeasures.

¹⁵ Regardless of whether these measures are already implemented in a country.

SUPPORT FOR ROAD SAFETY POLICY MEASURES

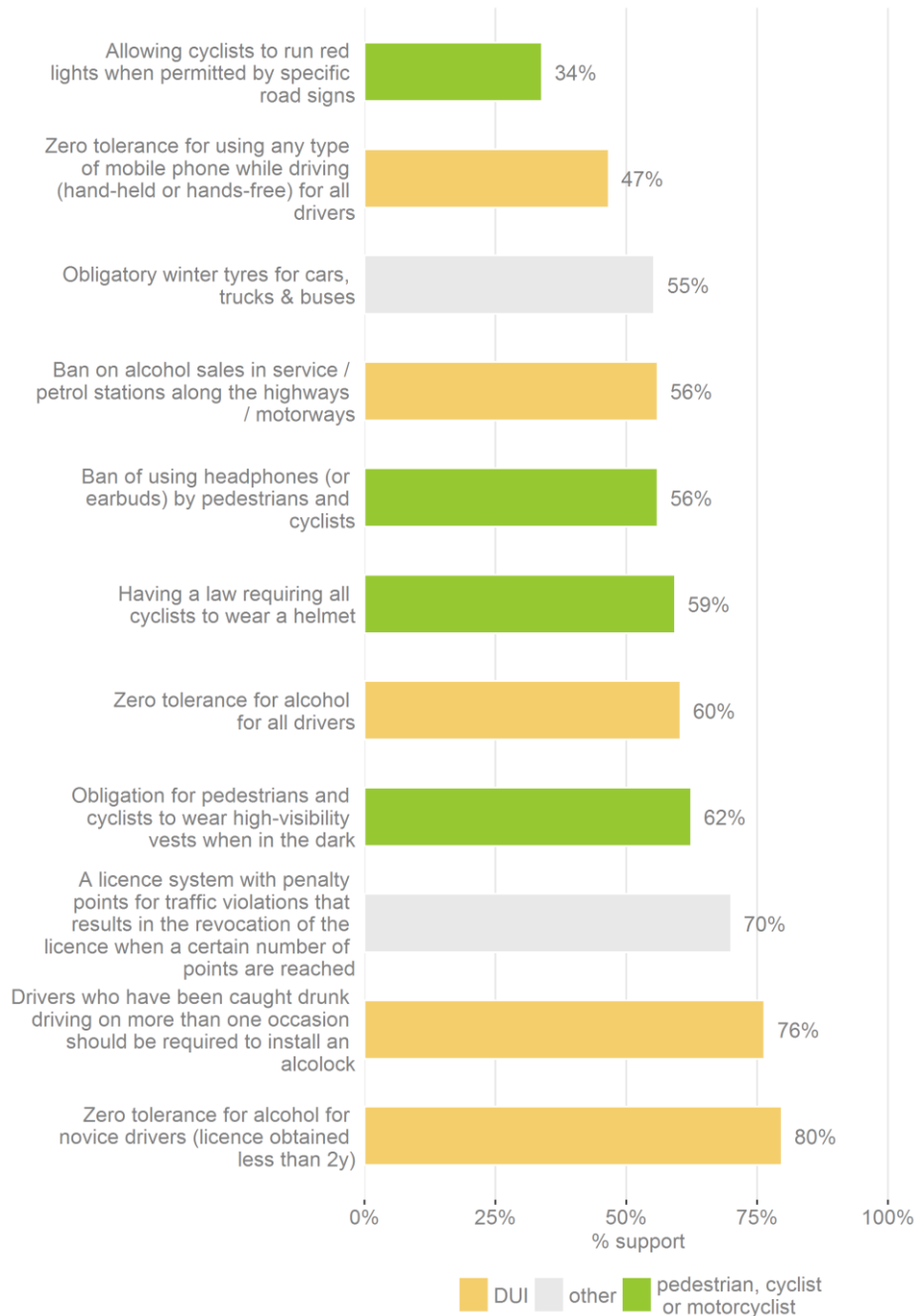


Figure 10: General support for road safety policy measures, in Europe (% of respondents supporting the road safety measure).

Note: European weight B.

Country comparisons are presented in Table 17 ([Enforcement and support for road safety policy measures](#)). Note that Italy and Greece are most supportive of most of the listed policy measures, whereas Denmark and Finland are amongst the least supportive countries.

Table 17: Support for road safety policy measures, by country (% of respondents supporting the road safety measure).

	DUI				DISTRACTION		OTHER				
	Zero tolerance for alcohol for novice drivers	Zero tolerance for alcohol for all drivers	Installation interlock in recidivists	Ban on alcohol sales in service/petrol stations	Zero tolerance for using mobile phone while driving	Ban of using headphones by pedestrians or cyclists	Penalty point system (driver's license)	Obligatory winter tyres	Law requiring all cyclists to wear a helmet	Obligation for pedestrians and cyclists to wear high-visibility vests	Allow cyclists to run red lights when permitted by a road sign
AT	86%	52%	64%	54%	36%	43%	58%	90%	51%	60%	26%
BE	83%	58%	80%	59%	45%	50%	46%	34%	46%	68%	33%
CH	79%	49%	64%	56%	41%	49%	49%	78%	61%	56%	41%
DE	87%	63%	63%	58%	43%	50%	73%	84%	44%	50%	39%
DK	68%	48%	84%	38%	38%	32%	65%	69%	44%	36%	57%
EL	77%	60%	85%	53%	55%	73%	88%	60%	79%	73%	54%
ES	82%	71%	80%	53%	54%	53%	76%	26%	71%	76%	29%
FI	71%	52%	94%	28%	28%	27%	76%	67%	45%	45%	17%
FR	73%	50%	74%	55%	55%	63%	50%	35%	53%	67%	37%
IE	79%	68%	82%	58%	57%	42%	74%	38%	75%	82%	37%
IT	76%	50%	89%	66%	30%	65%	84%	69%	81%	61%	27%
NL	84%	71%	70%	55%	47%	57%	74%	38%	19%	43%	42%
PL	80%	71%	82%	53%	43%	49%	68%	74%	50%	80%	30%
PT	78%	57%	72%	80%	43%	62%	64%	31%	78%	78%	34%
SE	79%	72%	84%	41%	44%	58%	78%	76%	50%	51%	26%
SI	87%	54%	76%	59%	45%	47%	68%	89%	54%	76%	40%
UK	77%	64%	78%	54%	61%	59%	73%	31%	72%	59%	31%
EU	80%	60%	76%	56%	47%	56%	70%	55%	59%	62%	34%

Notes:

(1) The two countries most supportive of a certain policy measure are indicated in green, the two least supportive countries in yellow.

(2) Per country, the policy measures with most support are presented in bold.

(3) Countries based on individual country weight, Europe based on European weight B.

The ESRA survey also collected opinions about current traffic rules and penalties for DUI, speeding, and seat belt use (Figure 11). The opinions of road users are in line with the acceptability of these types of behaviour (see section 3.7). For example, we remind that the acceptability of DUI is very low (see Figure 8). Accordingly, only about 10% of the respondents think the penalties for DUI are too severe in their country while more than 80% thinks traffic rules concerning DUI could be stricter. Speeding, on the other hand, is more widely accepted: 1 out of 3 respondents consider that penalties for speeding are too severe (and less than half of the respondents are of the opinion that traffic rules should be more strict). Women are generally more supportive of strict traffic rules, efficient enforcement and severe penalties (χ^2 , all $p < .01$). Moreover, younger road users are less supportive of strict traffic rules, efficient enforcement and severe penalties (χ^2 , all $p < .01$).

A country comparison about the perceived severity of penalties is presented in Table 18. It can be seen that, compared to other countries, Slovenian respondents think penalties for speeding, DUI and seat belt use are too severe in their country. At the other end of the spectrum we find the Fins to agree the least that penalties are too severe.

OPINIONS ABOUT TRAFFIC RULES AND PENALTIES

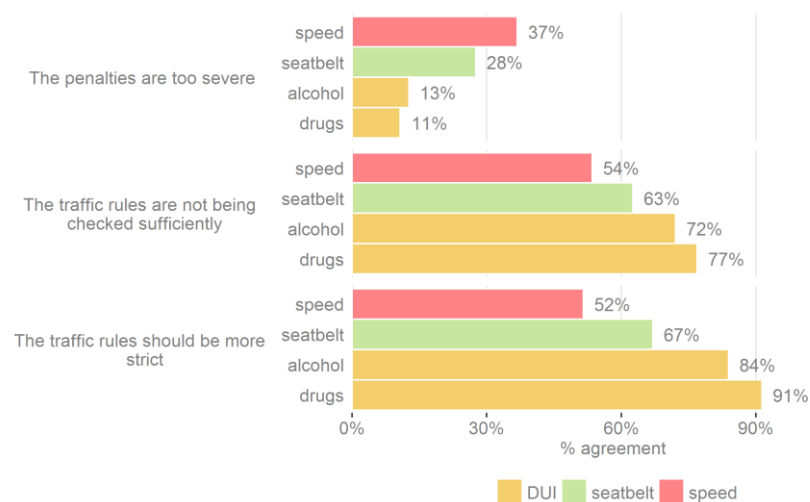


Figure 11: Opinions about current traffic rules and penalties, in Europe.

Notes: (1) % of agreement; % yes-responses. (2) European weight B.

Table 18: Opinions about the severity of penalties for different traffic offences, by country (% of respondents who think that penalties are too severe).

	Speeding	DUI alcohol	DUI drugs	Seat belt
AT	40%	8%	7%	27%
BE	29%	9%	3%	21%
CH	41%	15%	11%	31%
DE	25%	9%	9%	21%
DK	23%	5%	6%	18%
EL	30%	25%	15%	31%
ES	46%	17%	15%	31%
FI	24%	5%	5%	15%
FR	48%	14%	11%	30%
IE	27%	11%	9%	16%
IT	25%	10%	7%	13%
NL	49%	8%	8%	32%
PL	27%	10%	9%	30%
PT	44%	18%	14%	34%
SE	23%	7%	8%	20%
SI	55%	23%	20%	52%
UK	24%	10%	9%	18%
EU	33%	12%	10%	24%

Notes:

(1) The two best performing countries are indicated in green, the two worst performing countries in yellow.

(2) Countries based on individual country weight, Europe based on European weight B.

3.11. Limitations of the first ESRA survey

As shown in this chapter the ESRA 2015 survey provides a unique data set of European road users' opinions, attitudes, and behaviour in relation to road safety. The total sample size consists of 17,767 road users from 17 countries, including 11,179 regular car drivers. The information is recent (2015), reliable and comparable across countries. Therefore, the results can form the basis for benchmarking road safety culture in Europe. Still, lessons for future editions can be learned from this first one¹⁶.

Firstly, having a standardised methodology (see also Appendix 4) and sampling procedure in all participating countries is essential to obtain fully comparable and reliable data (e.g. De Leeuw et al., 2008). Although this was clearly anticipated in ESRA a few issues arose. For instance, some national market research companies used three and other six age categories during sampling. Furthermore, programming of the questionnaire was done centrally for all countries, except for Italy. To reach the target of 1,000 respondents (including 600 frequent car drivers), data collection in Italy took place online combined with telephone interviews. Moreover, in Slovenia a minor error in the translation occurred for some items. For these reasons, Italy and Slovenia had to be excluded from a few questions.

¹⁶ The list of issues presented here is not exhaustive.

Secondly, survey research is fraught with general response tendencies and biases, and this is especially true in cross-national studies (see e.g., Tellis & Chandrasekaran, 2010; Lajunen, Corry, Summala, & Hartley, 1997). These biases might lead to erroneous conclusions (i.e., confusing differences in SDR with genuine differences in the measured trait). Indeed, our ESRA data revealed differences in general response tendencies between countries on several questions. For example, Denmark is by trend the least concerned country across different societal problems, whereas Greece and Portugal are the most concerned countries (Table 10). Unfortunately, the current ESRA questionnaire did not include a social desirability scale. Thus, caution is needed when interpreting the results.

Thirdly, some questions were excluded from the current analyses for various reasons. For example, exposure data (Q8 in the questionnaire; Appendix 6) have not been analysed at this point. Also, parts of the question regarding crash involvement (Q21b in the questionnaire; Appendix 6) referred to incidents and were excluded from the current analyses. Moreover, in the UK km/h was adapted to miles/h, but lacking the conversion of the actual number of kilometres resulted in differences between these items (e.g., 10 miles/h equals 16 km/h). This might explain UK results on those items.

Finally, as highlighted in this section, some improvements are to be made when envisioning a second edition of the ESRA survey in 2017/18. A core set of questions will be retained in every survey allowing comparisons and the development of time series of road safety performance indicators. If deemed appropriate new questions could be added and some of the existing ones may be modified or removed in view of obtaining a higher response quality. This will be a joint decision of all participating organisations.

4. Conclusions and recommendations¹⁷

4.1. Achievement of the initial aims and objectives

When the Belgian Road Safety Institute launched the ESRA initiative, the initial aim was to develop a cost-effective method for gathering reliable information on people's attitudes towards road safety in a range of European countries. An important prerequisite was that the data collected could be a base for road safety performance indicators that are fully comparable across countries. Since the deadlines were tight it was initially expected that about 10 countries might join the initiative. But from the outset there was the expectation that ESRA might sufficient interest to attract additional countries at a later stage.

It can safely be stated that these initial objectives have been achieved and even exceeded. Within a period of two months, partner organisations from 17 European countries joined the ESRA initiative and adopted the same questionnaire as the basis for an online survey that would take place almost simultaneously in all countries in the summer of 2015 (altogether 20 country-language versions were developed). The total sample size for this first ESRA survey consists of 17,767 road users, including 11,179 regular car drivers.

As of the date of the publication of this report (June 20, 2016), 11 additional countries (including several non-European ones) have expressed interest in joining ESRA. For at least four of these the ESRA survey will be organized in September 2016. Moreover, several international organisations and federations who are active in the field of road safety such as IRTAD, ETSC, FERSI, the European Commission and AROSO have expressed interest in ESRA and are considering to use the ESRA outcomes in their activities and publications.

This report, as well as the six in-depth thematic reports and the 17 country fact sheets have been published within 16 months after the initiative was launched. This is a remarkable achievement, which results from the enthusiastic commitment, flexibility and cooperative attitude of the 17 participating organisations, each of which spent time and resources on this project (so far ESRA has not received any external funding). This holds in particular for the seven members of the ESRA core group (BRSI, KFV, PRP, CTL, NTUA, ITS, BFU) who spent over 30 person months on analysing the data and producing this first series of reports.

4.2. Fifteen highlights from the first ESRA survey

The dataset within ESRA is huge: over 17,000 records with each over 200 variables. Even the results in this report and the six thematic reports are only a fraction of the insights that can be gained by analysing the ESRA data. What follows are, therefore, only some highlights that emerge from the first analyses, based on the findings presented in this report and the six thematic reports.

The results presented in this section are restricted to the European level only, i.e. they refer in general to the European (weighted) average. Of course, similar analyses could be made at national level; for a start we refer to the 17 country fact sheets; each of them includes a comparison between results for that country and the weighted European average.

¹⁷ These conclusions and recommendations reflect the common view of all authors of the ESRA core group.

15 highlights of the ESRA 2015 survey

1. Less than one tenth (6%) of the adult European road users were involved in a traffic accident within the last three months. Fortunately, the large majority are minor accidents with material damage only or only slight injuries.
2. The highest involvement in road traffic accidents¹⁸ is reported by 'users of e-bikes' (10%) and 'users of mopeds' (6%).
3. Attitudes towards drink-driving, drowsy driving, and seat belt use are quite similar between European countries. However, there are large differences in the attitudes towards speeding and distracted driving.
4. The public acceptability of driving under the influence (DUI) of alcohol is very low (3%). It is much higher for speeding (30% of Europeans considers that driving 10 km/h above the speed limit is acceptable).
5. Countermeasures for DUI of alcohol are widely supported by European citizens. For instance, 75% is in favour of installing alcohol interlock devices in cars of recidivists; 80% is of the opinion that there should be zero tolerance for novice drivers. This is in line with the public acceptability of DUI.
6. In general, the declared personal unacceptability of risky behaviour is stronger than the perceived social unacceptability – e.g. people think that others are more likely to accept DUI of alcohol than they personally do.
7. Even if people acknowledge that a certain behaviour is risky or unacceptable, they nevertheless may show that behaviour. For example, only 4% of Europeans think it is acceptable to type text messages or emails while driving, but 27% declare that they have sent a text message or email at least once during the past 12 months.
8. The self-declared behaviour of women is less risky than that of men. They condemn also risky behaviour more than men, and are more in favour of countermeasures.
9. The results with respect to mobile phone use differ strongly by age group, i.e. young people report more use of mobile phones in traffic, have a higher acceptability of it, and perceive the risks to be lower with respect to this behaviour, than older people do.
10. Older drivers feel safer than the younger age groups when driving a car and when using public transport.
11. Overall, Europeans estimate DUI of alcohol and speeding to be the main causes for road accidents.
12. Annually, only 29% of Europeans is stopped for a check by the traffic police. The percentage of Europeans checked at least once a year for driving under the influence of alcohol is 19%.
13. Many road users denounce the unsafe behaviour of other car drivers. The most frequently reported risky behaviours of others are driving too fast, careless driving and not leaving a safe distance to the car in front.
14. Approximately 3 out of 5 Europeans (61%) feel that the occurrence of 'distracted driving' has increased. This was the highest value of all prompted behaviours followed by 'aggressive drivers' (49%), and 'speeding' drivers (45%).
15. Compared to 2010 listening to music while walking or cycling seems to have increased considerably. While in 2010 most pedestrians and cyclists reported that they had never used MP3/iPod/music devices (results from SARTRE4), in 2015 about two out of three respondents younger than 34 declared listening to music through headphones as a pedestrian, and 50% declared cycling while listening to music through headphones.

¹⁸ These percentages are based on the total number of cyclists on an e-bikes and mopeds respectively.

4.3. Six general policy recommendations at European level

The six thematic reports include specific recommendations in relation to the themes they cover. Here, the more general policy recommendations from the thematic reports are included, complemented with some overall recommendations that emerge from the analyses in this report. The policy recommendations concern the European level only.

6 policy recommendations at European level

1. Define level road safety performance indicators at European level (that could partially be based on ESRA) in the fields of speeding, impaired driving, seat belt use, and distraction. Such indicators could be used at both European and national level.
2. Define medium and long term targets for these road safety performance indicators.
3. Facilitate and support the exchange of best practice across EU Member States in relation to effective countermeasures, in particular for speeding, impaired driving, mobile phone use, the use of seat belts, the use of child restraint systems, inadequate risk perception and enforcement.
4. Develop common principles and goals at European level (based on cooperation within Member States) for the implementation of effective and efficient strategies in the areas of speed management, impaired driving, and mobile/smartphone use in the Member States.
5. Integrate such common principles and goals within future of EU directives and/or other legislative mechanisms (including standards, controls and rehabilitation measures).
6. Support the further development of ESRA as part of a European monitoring system for road safety and ensure that road safety performance indicators produced by ESRA are used to inform and support policy making at European and national levels.

4.4. Five areas where more research is needed

The first results of the ESRA initiative have provided new insights but have also pointed out that there is need for further research that can help underpin road safety policy measures. Key areas for further research that emerged clearly from the analyses undertaken are:

5 areas for more research

1. the relationship between personal acceptability, perceived social acceptability, perception of risks and the actual behaviour in traffic
2. the factors that explain differences in traffic behaviour between and within countries
3. the factors and measures (such as enforcement, infrastructure design, electronic devices, ...) that are most effective in changing road user behaviour
4. the mechanisms and factors that can influence the public acceptability of road safety measures that are unpopular
5. the prevalence of distracted driving, drowsiness, driving under the influence of alcohol, and driving under the influence of illegal and medicinal drugs.

4.5. Challenges for the future development of ESRA

The ESRA project has demonstrated the feasibility of establishing a set of reliable road safety performance indicators that are comparable across countries. It is currently envisaged to conduct the second version of ESRA in the second half of 2017 or the first half of 2018 – and then repeat the survey on a biennial or triennial basis. This will lead to a very interesting and unique set and time series of road safety performance indicators for an increasing number of countries in Europe (and most probably also beyond Europe).

In order to achieve this, we propose to maintain the essence of the current approach for the next editions of ESRA, i.e.

- Use a representative sample (N=1,000) of the population of all the countries participating (although this requirement may be adapted for (very) small countries).
- Undertake the field work by using online panel services who can guarantee a representative sample of the population (this is the most cost-efficient approach).
- Use a common questionnaire¹⁹, translated in the national languages, for all the countries participating (in order to ensure comparability and correct interpretation of the results).
- Have one organization for the coordination and management of all activities, with a core group of partners who combine their forces to analyse the main ESRA results.
- Continue the involvement of local research organisations or institutes with considerable road safety knowledge in every country (in order to assure the quality of the translations and a meaningful interpretation of the national results).

Yet, the lessons learned from the first ESRA wave as well as the expected expansion towards other countries make it clear that a reflection is needed about the future development of ESRA. Points for consideration are:

- It does not suffice to have nice, reliable and comparable road safety performance indicators. There is also a need for 'promoting' the performance indicators nationally and internationally so that they are used for benchmarking and policy making at national and European level.
- There are limits to the voluntary involvement and the free commitment of own resources by the ESRA partner organisations. It is desirable to obtain funding from external sources that could cover at least part of the costs.
- Under the leadership of BRISI, the 'ESRA core group' has so far taken joint decisions on ESRA issues such as the nature and content of the reports to be produced and the access to the ESRA data. But with the expansion of the database and the growing number of countries joining ESRA there is a need for defining a more permanent 'structure' (or even a legal entity) and an adequate governance structure to cope with the growing expansion as well as with external requests (data access, interpretation of data, new interested members, etc.).
- Whilst it is essential for the development of time series to keep questions identical across different waves (core set of variables), it is also recognized that a few questions in the first questionnaire were not as useful as initially imagined. Such questions need to be adapted or replaced by new questions that are more relevant (e.g. it was already suggested to include a question on in-vehicle devices/systems and at least one more question relating to pedestrians and cyclists).
- There is a growing number of non-European countries interested in joining ESRA, including developing countries. So, it may not be long anymore before we might need to re-baptize ESRA into ISRA. This extension will require the ESRA partners to address two important questions: (1) the feasibility to use internet access panels in certain countries in order to obtain a representative sample of the adult population; and (2) the feasibility to include some questions (or question items) that differ across countries, while maintaining the underlying database structure.

¹⁹ with a centralized common programming of the questions

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²⁰ Available in Dutch, French and German

Appendix 1: Self-declared unsafe behaviour of vulnerable road users

Country comparisons for self-declared unsafe behaviour of vulnerable road users are presented in Table 19. Large differences between countries are observed, especially for helmet use amongst motorcyclists (including mopeds). In Belgium and Austria, a minority of the motorcyclists reported having driven without a helmet at least once in the past 12 months, while in Ireland and Greece more than half of the motorcyclists admitted to having done so. Besides, more than three quarters of the pedestrians in Spain and Ireland declared having crossed the road as a pedestrian when the traffic light was red. In contrast, pedestrians in Poland and Slovenia reported the least crossing of red lights compared to respondents from other countries (46% and 38%, respectively). For other unsafe behaviours differences between countries are smaller.

Table 19: Self-declared (unsafe) behaviour as a vulnerable road user in the past 12 months, by country.

							
	listen to music through headphones	cross the road when a pedestrian light was red	listen to music through headphones	cycle on the road next to the cycle lane	cross the road when a traffic light was red	not wear a helmet	not wear a helmet
AT	35%	50%	20%	35%	28%	81%	13%
BE	26%	56%	23%	34%	27%	89%	11%
CH	37%	59%	26%	46%	29%	73%	22%
DE	34%	63%	25%	49%	26%	86%	22%
DK	40%	62%	35%	37%	35%	81%	34%
EL	44%	75%	38%	55%	30%	80%	55%
ES	50%	82%	35%	45%	26%	72%	29%
FI	42%	75%	32%	42%	41%	82%	27%
FR	33%	75%	26%	42%	30%	78%	27%
IE	46%	75%	34%	43%	27%	66%	56%
IT	41%	62%	36%	94%	33%	73%	18%
NL	35%	64%	32%	31%	25%	88%	26%
PL	39%	46%	31%	35%	25%	86%	43%
PT	36%	69%	30%	29%	28%	63%	23%
SE	45%	70%	34%	48%	32%	83%	43%
SI	33%	38%	29%	84%	27%	85%	35%
UK	36%	71%	30%	39%	21%	59%	38%
EU	38%	67%	29%	47%	27%	80%	27%

Notes:

(1) Items refer to unsafe traffic behaviour. Therefore, the % of respondents that have set a certain unsafe behaviour 'at least once' during the past 12 months is reported (i.e., scores 2-5 on a 5-point scale from 1 'never' to 5 '(almost) always').

(2) The two best performing countries are indicated in green, the two worst performing countries in yellow.

(3) Countries based on individual country weight, Europe based on European weight B.

Appendix 2: SARTRE4 and ESRA

Some of the ESRA questions are identical or highly similar to questions used in SARTRE4 (Cestac & Delhomme, 2012 – data collection was organized in 2010) and 13²¹ countries participated in both projects. This will allow an assessment of the evolution of certain topics. In this section, only some highlights are presented and the reader is referred to the different thematic reports for more in-depth information on this comparison.

However, it remains challenging to assess whether the observed differences between ESRA and SARTRE4 reflect real evolutions or whether these are induced by the differences in methodologies used in ESRA (online survey) and SARTRE4 (face-to-face interviews²²). According to several studies, SDR is more likely to occur in interviewer-administered surveys than in web surveys (Baker et al., 2010; specifically in the SARTRE-context: Goldenbeld & de Craen, 2013; (Appendix 4).

For instance, the comparison of SARTRE4 and ESRA data suggest that, overall, drink-driving over the legal limit has somewhat decreased from 15% in 2010 to 12% in 2015 (results for the participating countries are shown in Figure 12; see countries above the diagonal). Given SDR is more likely to occur in interviewer-administered surveys, this might even be an underestimation of the effect. The biggest decrease of the self-declared drink-driving rate was noted for Italy (decreasing from 33% in 2010 to 14% in 2015). However, in France and Poland, the percentage of respondents answering they might have driven when over the legal limit during the past 30 days was higher in ESRA than in SARTRE4 (i.e., below diagonal). Besides, Italy, Belgium, Spain and France have a rather high self-reported drink-driving rate above the legal BAC (at least 19% in ESRA as well as in SARTRE4) whereas Finland, Sweden and Poland have a low rate (less than 5% in both projects).

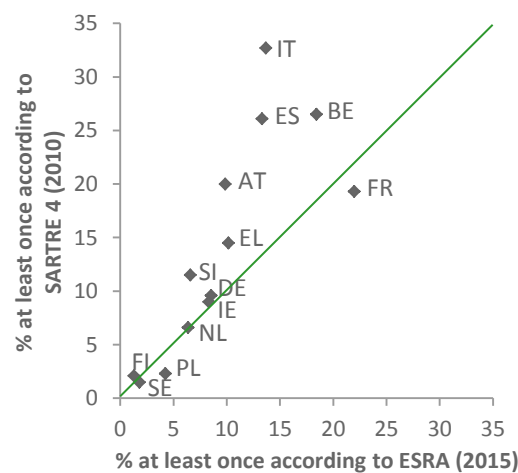


Figure 12: Drink-driving above the legal limit over the last 30 days according to SARTRE4 and ESRA.

²¹ Switzerland, Denmark, Portugal and United Kingdom did not participate in SARTRE4.

²² Except in the Netherlands were both face-to-face interviews and online surveys were used for data collection in SARTRE4.

Another example to illustrate the evolution since 2010 is listening to music through headphones, which is known to be an important cause of distraction of pedestrians and cyclists. While in SARTRE4 most pedestrians and cyclists have reported that they never had used MP3/iPod/music devices, in ESRA about two out of three respondents younger than 34 declared listening to music through headphones as a pedestrian, and 50% declared cycling while listening to music through headphones. Despite the different methodologies, these results suggest that the habit of listening to music while walking and cycling is increasing. Note that in ESRA respondents indicated that distracted driving is one of the behaviours with the biggest increase over the past two years (see Table 15).

Conversely, acceptability of speeding behaviour remained stable over the years. Similar to the results of SARTRE4, the ESRA results show that acceptability of driving 20 km/h over the speed limit on a freeway / motorway and acceptability of driving up to 10 km/h over the speed limit, regardless of the road environment, is much higher than acceptability of speeding in school zones or urban areas.

Appendix 3: Traffic safety culture in Europe and USA

The AAA Foundation for Traffic Safety is an American foundation that aims to understand – and strengthen – a culture of safety on roads in the USA by measuring and benchmarking the attitudes and behaviours of American drivers using their Traffic Safety Culture Index (TSCI; AAFTS, 2016). The TSCI is also an online questionnaire²³, in which the following themes are covered: threats on the highway, acceptability of behaviours, support for laws and countermeasures, and frequency of engaging in risky behaviours. Although there are common objectives and similar topics covered in ESRA and TSCI, the questionnaires are too dissimilar for a full comparison. Nonetheless, a tentative comparison on the safety attitudes of Europeans and Americans is possible, and two questions are suited for this comparison: the personal acceptability and the perceived social acceptability of unsafe traffic behaviour. Six items are identical²⁴ and the answering scales are very similar in both questionnaires. The results for personal acceptability are presented in Figure 13.

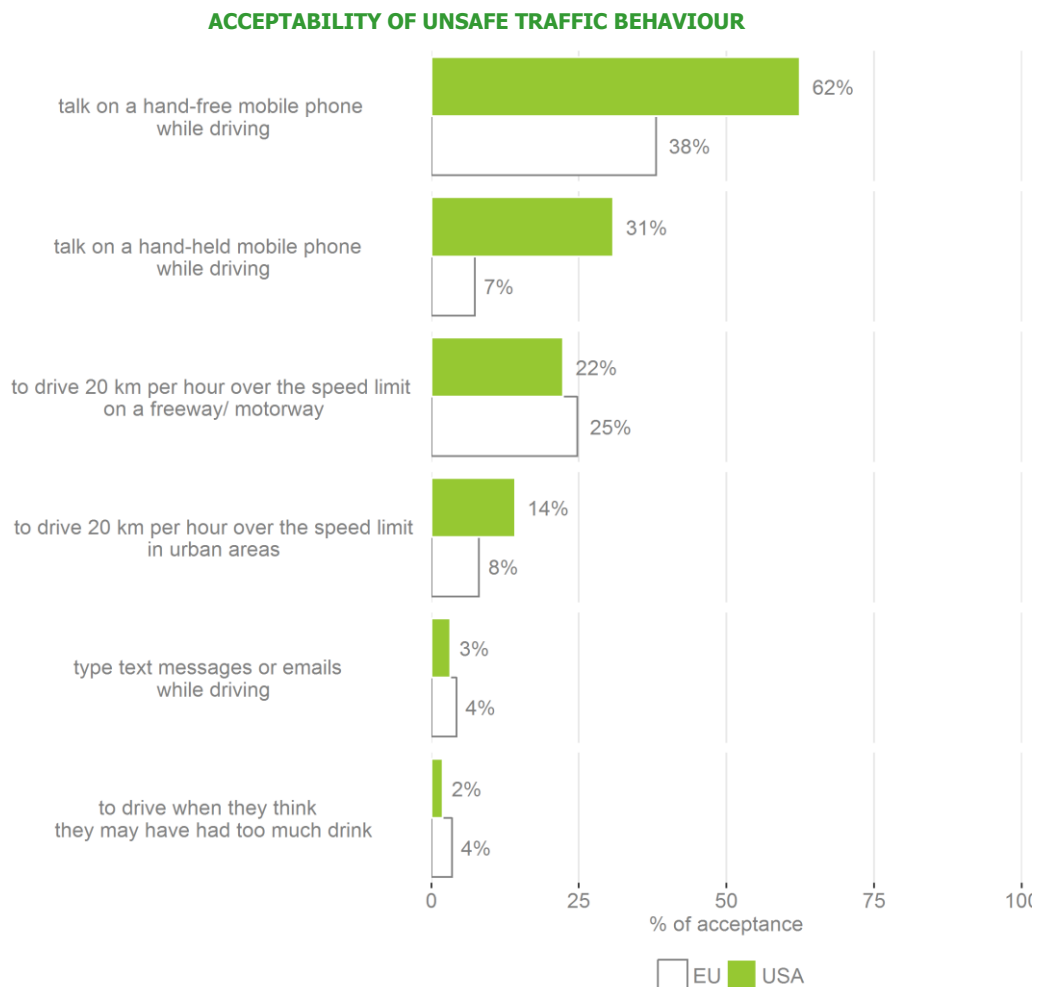


Figure 13: Personal acceptability of unsafe traffic behaviours (European and USA average).

Note: ESRA used a 5-point scale (only endpoints are labeled) from 1 'unacceptable' to 5 'acceptable', while the TSCI used a 4-point scale with the following categories: 1 being 'completely acceptable' – 2 'somewhat acceptable' – 3 'somewhat unacceptable' and 4 'completely unacceptable'. Therefore, the dichotomized version is used to compare the results (i.e., % of respondents that 'rather accept' a certain behaviour; scores 1+2 for USA and scores 4+5 for EU).

²³ A unique panel was composed for this survey, using telephone recruitment.

²⁴ Note that items regarding speeding are not identical, but highly similar: ESRA uses 20 km/h while TSCI uses 10 and 15 miles/h which equals 16 and 24 km/h.

The results show that for the items covered the perceived social acceptability in general is higher in the USA than in Europe. The largest discrepancies are observed for distracted driving. The pattern is less clear when personal acceptability is considered. Nevertheless, acceptability of drink-driving is lowest compared to speeding and distracted driving, while the use of hands-free devices is more accepted by both respondents in the USA and in Europe. Note also that text-messaging is much less accepted than talking on the phone while driving. The differences in acceptability of speeding could be explained by the slight differences in the actual violations asked. For example, the speed violation in urban areas in TSCI was somewhat lower than in ESRA (respectively, 16 and 20 km/h), consequently, personal acceptability was higher in the USA.

Appendix 4: Tentative comparison with other survey modes

Belgium has a considerable tradition of monitoring car drivers' attitudes. Since 2003, car drivers' attitudes are monitored by means of a triennial attitudes measurement using face-to-face interviews to collect the data (Meesmann et al., 2014). In the latest edition (spring 2015), in addition to these face-to-face interviews, data were also collected using an online panel to assess the options of moving to a less expensive survey mode to monitor the Belgian road safety situation. 20 questions were (almost) identical to the ESRA survey. Together with the Belgian ESRA sample this provides a unique opportunity for comparing outcomes not only of the two survey modes, but also of two different online panels. Both population effects and modality effects were investigated.

In this section, the comparison between the survey modes is restricted to regular car drivers since merely car drivers are interviewed in the Belgian face-to-face attitudes measurement (specifications can be found in Table 20). The differences between the face-to-face and online samples were analysed with independent samples t-test at the 99% confidence level. Only some key results are described and illustrated with examples.

First, the population and sample distributions before weighting are presented in Table 21. To minimize the possible influence of initial sample differences, the data were weighted to make all samples comparable to national reference data (BELDAM: Cornelis et al., 2012) on car drivers' gender, age and region. Overall, the three samples are highly similar: only the online sample of the Belgian attitudes measurement differs slightly. For example, this sample consists of somewhat more higher educated respondents than the other samples and the population distribution.

Second, given the moderate population differences between the different samples, the main focus of the analyses were potential modality effects. Overall, results were in line with previous research indicating that interviewer-administered surveys are more prone to SDR than self-administered surveys. Results showed that respondents in the face-to-face interviews reported less unsafe traffic behaviour. For example, about 20% of the car drivers in both online surveys reported having driven at least once under influence of alcohol in the past 30 days, while only 12% of the respondents interviewed face-to-face did so. Fewer self-declared unsafe traffic behaviours in face-to-face mode could be at least partially explained by the difference in SDR tendencies between the different modes.

Table 20: Specifications of the three surveys.

	ESRA BE	Attitudes measurement BE	
		online	Face-to-face
sample size (frequent car drivers)	N = 630	N = 1,486	N = 1,537
method	online panel	online panel	F2F interviews
field work	June 2015	April – May 2015	May – June 2015
market research company	iVOX	GfK	GfK

Table 21: Population and sample distributions (unweighted).

			national reference (source BELDAM) %	ESRA BE (N = 630) unweighted %	Attitudes measurement BE	
					online (N = 1,486) unweighted %	Face-to-face (N = 1,537) unweighted %
Flanders	Male	18-29y	5	5	3	5
		30-38y	5	3	3	5
		39-49y	7	7	5	7
		50-62y	7	9	5	7
		63+	7	10	5	7
	Female	18-29y	4	4	3	4
		30-38y	5	3	3	5
		39-49y	7	7	5	7
		50-62y	7	8	5	7
		63+	6	3	4	6
Brussels	Male	18-29y	1	1	.1	1
		30-38y	1	1	.5	1
		39-49y	1	1	.4	1
		50-62y	1	1	.3	1
		63+	1	1	.1	1
	Female	18-29y	1	.3	.1	1
		30-38y	1	1	.3	1
		39-49y	1	1	.3	1
		50-62y	1	1	.3	1
		63+	1	.5	.2	1
Wallonia	Male	18-29y	2	3	<i>6</i>	2
		30-38y	3	2	3	3
		39-49y	4	4	5	4
		50-62y	4	5	7	4
		63+	4	5	<i>10</i>	4
	Female	18-29y	2	2	6	2
		30-38y	2	2	2	2
		39-49y	4	3	5	4
		50-62y	4	4	5	4
		63+	3	2	5	3
Education	max. secondary education	62	62	44	60	
	higher education (cf. bachelor or higher)	38	38	<i>56</i>	40	

Note: % indicated in italics differ compared to the national reference population.

In summary, in several studies it has been found that the samples of web surveys tend to be biased towards having more privileged social groups (see e.g. Baker et al., 2010). While this might be true in some cases and is a concern when using online panels, in the current case the population differences between the face-to-face and the online samples are modest (or even negligible). Furthermore, the results indicated that online respondents were less inclined to give socially desirable answers, confirming earlier research (see e.g. Baker et al., 2010; Goldenbeld & de Craen, 2013). To conclude, given different survey modes all have their methodological (or even practical) advantages and disadvantages, a researcher (extensive overview can be found in De leeuw et al., 2008). For a monitoring tool it is recommended to retain the same sampling procedure and methodology in order to guarantee full compatibility between the results. Nevertheless, even between different survey modes tentative comparisons are possible as has been shown when comparing results from SARTRE4 and ESRA (see Appendix 2).

Appendix 5: Clarifications of statistical tests used

T-test and ANOVA

T-tests and analysis of variance (ANOVA) are used to compare group means (or average). The t-test can be conducted on one sample, paired samples, and independent samples. The one sample t-test checks if the population mean is different from zero. The null hypothesis states that the population mean is not different from zero, whilst the alternative hypothesis states that the population mean is different from zero.

If there are two samples which are not independent but paired, it is needed to compute differences of individual matched pairs. If the two samples are taken from different populations and their elements are not paired, then the independent sample t-test compares the means of two samples. Usually, the null hypothesis states that the two means are the same (the difference between the two means is zero), while the alternative hypothesis states that the difference between the two means is different than zero.

When two samples have the same population variance, then the independent samples t-test utilizes the pooled variance when computing standard error, otherwise it is imperative that the individual variances are used instead and degrees of freedom should be approximated. The folded F test is used to evaluate the equality of two variances. In both cases the null hypothesis is two samples have the same mean.

While the independent sample t-test is limited in a way that it is used only for comparing the means of two groups, the one-way ANOVA (Analysis of Variance) can compare the means of more than two groups. ANOVA use F statistic to test if all groups have the same mean. Therefore, it can be assumed that the t-test is considered a special case of the one-way ANOVA.

Chi-square

This statistical test is applied when there are two categorical variables from a single population. It is used to determine whether there is a significant association between the two variables. For example, variable A has r levels and variable B has c levels. The null hypothesis states that the variables are independent. The alternative hypothesis is that knowing the level of variable A can help you predict the level of variable B.

H₀: Variable A and Variable B are independent.

H_a: Variable A and Variable B are not independent.

This involves comparing the P-value to the significance level, and rejecting the null hypothesis when the P-value is less than the significance level.

Appendix 6: ESRA 2015 Questionnaire

Legend

Dichotomization of the variables has been indicated in green below the question; the reference category is indicated in italics.

Introduction

In the questionnaire, we ask about different traffic situations and your reactions to them. We would like to ask you when responding to **only be guided by your opinion on road safety in [COUNTRY]**, and to not take into account any experience with road safety abroad.

Thank you for your contribution!

Socio-demographic information (1)

- Q1) Are you a...** male - female
- Q2a) In which year were you born?** _ _ _ _
- Q2b) In which month were you born?** (dropdown)

Mobility and exposure

- Q3) Do you have a car driving licence or permit?** yes – no
- Q4) How often do you drive a car?**
Items: At least 4 days a week – 1 to 3 days a week – A few days a month – A few days a year – Never – Don't know / no response
- Q5a) During the last 12 months, which of the following transport modes have you been using in [COUNTRY]...**
Items: walking (pedestrian; including jogging, inline skate, skateboard,...) - cycling on an electric bicycle / e-bike / pedelec – cycling (non-electric) – moped as a driver (moped: ≤ 50 cc) – motorcycle as driver (> 50 cc) – hybrid or electrical car as driver – car as driver (non-electrical or hybrid) – car as passenger – (mini)van as a driver – truck/lorry as a driver – public transport – other
- Q5b) What were your most frequent modes of transport during the last 12 months? Place your modes of transport in order in the right hand column. Start with your most frequent mode first, followed by your second most frequent, and so on.** (drag & drop)
Items: only items marked in Q5a are displayed
- If respondent has a car driving licence and has driven a car in the past year → Q6
Else → Q8
- Q6) Did you drive a car yourself in the past 6 months?** yes – no
- Q7) How many kilometres²⁵ would you estimate you have driven a car in the past 6 months?** __ km in total
- Q8) Think about all the trips you undertook yesterday, so not only as a car driver but also as a pedestrian or cyclist, as a car passenger,... . How many kilometres have you travelled using each of these transport modes?**
To indicate e.g. 500 metres (half a kilometre): please type 0.5 (Please limit to 1 decimal). If you did not travel using a particular mode, please indicate so by writing "0" km next to this mode.
Items: only items marked in Q5a are displayed

²⁵ In the UK, miles instead of kilometres are used.

Road safety in general

Q9) How concerned are you about each of the following issues?

You can indicate your answer on a scale from 1 to 4, where 1 is "very concerned" and 4 is "not at all concerned". The numbers in between can be used to refine your response.

Binary variable: *concerned (1-2)* - not concerned (3-4)

Items: rate of crime – pollution - road accidents - standard of health care - traffic congestion – unemployment

Acceptability of unsafe traffic behaviour

Q10) Where you live, how acceptable would most other people say it is for a driver to....?

You can indicate your answer on a scale from 1 to 5, where 1 is "unacceptable" and 5 is "acceptable". The numbers in between can be used to refine your response.

Binary variable: *acceptable (4-5)* – unacceptable (1-3)

Items (random)

- drive 20 km per hour over the speed limit on a freeway / motorway
- drive 20 km per hour over the speed limit on a residential street
- drive 20 km per hour over the speed limit in an urban area
- drive 20 km per hour over the speed limit in a school zone
- talk on a hand-held mobile phone while driving
- type text messages or e-mails while driving
- check or update social media (example: Facebook, twitter, etc.) while driving
- drive when they're so sleepy that they have trouble keeping their eyes open
- drive through a light that just turned red, when they could have stopped safely
- drive when they think they may have had too much to drink
- drive 1 hour after using drugs (other than medication)
- drive after using both drugs (other than medication) and alcohol
- drive with incorrect tyre pressure
- drive without insurance
- park their car where it is not allowed
- not wear a seat belt in the back of the car
- not wear a seat belt in the front of the car
- transport children in the car without securing them (child's car seat, seat belt, etc.)

Q11) How acceptable do you, personally, feel it is for a driver to...?

You can indicate your answer on a scale from 1 to 5, where 1 is "unacceptable" and 5 is "acceptable". The numbers in between can be used to refine your response.

Binary variable: *acceptable (4-5)* – unacceptable (1-3)

Items (random): idem Q10

Support for road safety policy measures

Q12) Do you support each of the following measures?

Answering options: *support (pro)* – oppose (contra) – no opinion

Items (random):

- Obligatory winter tyres for cars, trucks & buses
- A licence system with penalty points for traffic violations that results in the revocation of the licence when a certain number of points are reached
- Drivers who have been caught drunk driving on more than one occasion should be required to install an "interlock" (*) *interlock: technology that won't let the car start if the driver's alcohol level is over the legal limit*
- Zero tolerance for alcohol (0,0‰) for novice drivers (licence obtained less than 2y)
- Zero tolerance for alcohol (0,0‰) for all drivers
- Zero tolerance for using any type of mobile phone while driving (hand-held or hands-free) for all drivers
- Ban on alcohol sales in service / petrol stations along the highways / motorways
- Allowing cyclists to run red lights when permitted by specific road signs
- Having a law requiring all cyclists to wear a helmet
- Obligation for pedestrians and cyclists to wear high-visibility vests when in the dark

Q13) What do you think about the current traffic rules and penalties in your country for each of the following themes?

Answering options: *yes* – *no* – *don't know/no response*

Items (fixed order): each time for: speeding – alcohol – drugs – seat belt

- The traffic rules should be more strict
- The traffic rules are not being checked sufficiently
- The penalties are too severe

Self-declared behaviour

Q14) In the past 12 months, as a road user, how often did you... ?

You can indicate your answer on a scale from 1 to 5, where 1 is "never" and 5 is "(almost) always". The numbers in between can be used to refine your response. (+ answering options: 'not applicable' & 'no response')

Binary variable: *never* (1) – *at least once* (2-5)

Binary variable for seat belt use: *(almost) always* (5) – *at least once not* (1-4)

Items (random; only items compatible with the road user types indicated in Q5a are shown):

- wear your seat belt as driver
- wear your seat belt as passenger in the front of the car
- wear your seat belt as passenger in the back of the car
- make children (under 150cm)²⁶ travelling with you use appropriate restraint (child seat, cushion)
- make children (over 150cm) travelling with you wear a seat belt
- listen to music through headphones as a pedestrian
- cycle without a helmet
- cycle while listening to music through a headphone
- cycle on the road next to the cycle lane
- not wear a helmet on a moped or motorcycle
- drive faster than the speed limit inside built-up areas
- drive faster than the speed limit outside built-up areas (except motorways/freeways)
- driver faster than the speed limit on motorways/ freeways
- drive after drinking alcohol
- drive after using illegal drugs
- talk on a hand-held mobile phone while driving
- talk on a hands-free mobile phone while driving
- read a text message or email while driving
- send a text message or email while driving
- realise that you were actually too tired to drive
- stop and take a break because you were too tired to drive
- drive while taking medication that carries a warning to say it may influence your driving ability
- drive aggressively
- drive too slow
- drive without respecting a safe distance to the car in front
- not indicating directions when you overtake, turn left or turn right
- drive dangerously
- as a pedestrian, cross the road when a pedestrian light was red
- as a cyclist, cross the road when a traffic light was red
- as a pedestrian, cross streets at places other than at a pedestrian crossing

Q15) Over the last 30 days, how many times did you drive a car, when you may have been over the legal limit for drinking and driving? (dropdown 0 – 30 + no response)

Binary variable: *never* (0) – *at least once* (1-30)

²⁶ Adapted in each country to the correct legislation (e.g. in BE 135cm)

Attitudes towards (unsafe) traffic behaviour

Q16) To what extent do you agree with each of the following statements?

You can indicate your answer on a scale from 1 to 5, where 1 is "disagree" and 5 is "agree". The numbers in between can be used to refine your response.

Binary variable: *agree (4-5) – disagree (1-3)*

Items (random)

- Driving under the influence of alcohol seriously increases the risk of an accident
- Most of my acquaintances / friends think driving under the influence of alcohol is unacceptable
- If you drive under the influence of alcohol, it is difficult to react appropriately in a dangerous situation
- Driving under the influence of drugs seriously increases the risk of an accident
- Most of my acquaintances / friends think driving under the influence of drugs is unacceptable
- I know how many drugs I can take and still be safe to drive
- Driving fast is risking your own life, and the lives of others
- I have to drive fast, otherwise I have the impression of losing time
- Driving faster than the speed limit makes it harder to react appropriately in a dangerous situation
- Most of my acquaintances / friends feel one should respect the speed limits
- Speed limits are usually set at acceptable levels
- By increasing speed by 10 km/h, you have a higher risk of being involved in an accident
- It is not necessary to wear a seat belt in the back seat of the car
- I always ask my passengers to wear their seat belt
- The instructions for using the child restraints are unclear
- It is dangerous if children travelling with you do not wear a seat belt or use appropriate restraint
- For short trips, it is not really necessary to use the appropriate child restraint
- My attention to the traffic decreases when talking on a hands free mobile phone while driving
- My attention to the traffic decreases when talking on a hand-held mobile phone while driving
- Almost all car drivers occasionally talk on a hand-held mobile phone while driving
- People talking on a hand-held mobile phone while driving have a higher risk of getting involved in an accident
- When I feel sleepy, I should not drive a car
- Even if I feel sleepy while driving a car, I will continue to drive
- If I feel sleepy while driving, then the risk of being in an accident increases

Subjective safety and risk perception

Q17)* How (un)safe do you feel when using the following transport modes in [country]?

You can indicate your answer on a scale from 0 to 10, where 0 is "very unsafe" and 10 is "very safe". The numbers in between can be used to refine your response.

Items (random): only items marked in Q5a are displayed

Q18) In your opinion, how many road traffic accidents are caused by each of the following factors? Estimate a percentage of accidents for each factor. In other words, how many accidents out of 100 were caused by the following factors. Provide a separate estimate for each factor. Always answer using a figure between 0 and 100 (+ option: don't know) The total sum of all the factors can be more than 100.

Items (random):

- Tiredness behind the wheel
- Driving under the influence of alcohol
- Driving too close to the vehicle in front
- Driving too fast
- Taking psychoactive medication and driving(*) *psychoactive medications: with side effect on the central nervous system (e.g. sedatives, antidepressants)*
- Taking drugs and driving
- Poorly maintained roads
- Poor road design
- Using a mobile phone to make a call while driving without using a hands-free device
- Congestion / traffic jams
- Bad weather conditions
- Technical defects in vehicles
- Aggressive driving style
- Inattentiveness
- Insufficient knowledge of the rules of the road
- Sending a text message while driving

Behaviour of other road users

Q19) Can you specify, for each of the following behaviours how often you, as a road user, are confronted with these behaviours?

You can indicate your opinion by means of a number from 0 to 10. '0' is "never", and '10' is "very often". The numbers in between can be used to refine your answer.

Items (random):

- aggressive drivers
- distracted drivers (drivers who are busy with something else, e.g. phone, tuning the radio etc)
- road users who don't respect traffic rules
- speeding drivers / drivers who drive too fast
- drivers who drive too slow
- drivers who don't leave a safe distance to the car in front
- careless drivers (e.g., not indicating direction)
- drivers who don't take into account the needs of other road users (e.g., blocking an exit etc)
- drivers committing dangerous driving offences

Q20) Do you think the occurrence of the following behaviour has increased, decreased or not changed compared to 2 years ago?

Answering options: *increased* – no change – decreased

Items (random): idem Q19

Involvement in road crashes

Q21a) In the past three months have you been involved in a road traffic accident as a ... (if no accident: answering option: 'none of these')

Items (multiple responses possible; only items indicated in Q5a are displayed):

Extra sub-items for

- motorcycling: motorcyclist (50-125 cc) – motorcyclist (>125 cc)
- public transport: on the train – on the subway – on a tram – on the bus

Q21b) Please indicate the severity of the accident:

Answering options (multiple responses possible per transport mode (i.e.; if a respondent had multiple accidents as pedestrian e.g.)): Without material damage or any injured parties²⁷ – With only material damage – With only minor injuries to myself or others – In which someone had to be taken to hospital

Items: each transport mode indicated in Q21a

Enforcement

If Q3 = 'No' → Q23

Q22) On a typical journey, how likely is it that you (as a driver) will be checked by the police for?

You can indicate your answer on a scale from 1 to 5, where 1 is "very small chance" and 5 is "very big chance". The numbers in between can be used to refine your response. (+ option: don't know/no response)

Binary variable: *big chance (4-5) – small chance (1-3)*

Items (random):

- ... alcohol, in other words, being subjected to a Breathalyser test
- ... the use of illegal drugs
- ... seat belt wearing
- ... respecting the speed limits (including checks by police car with a camera and/or flash cameras)

²⁷ This option refers to an 'incident', not a crash → left out in the analysis

Q23a) In the past 12 months, how many times have you...

Answering options: number + don't know/no response

Items:

- been stopped by the police for a check?
- had to pay a fine for a traffic violation? (except a parking fee)
- been convicted at court for a traffic violation?

Q23b) Was this a fine for

Items (multiple responses possible): violating the speed limits – driving under the influence of alcohol – driving under the influence of drugs (other than medication) – not wearing a seat belt – transporting children in the car without securing them correctly (child's car seat, seat belt, etc.) – talking on a hand-held mobile phone while driving – other reason – no response

Q23c) Was this conviction for

Items (multiple responses possible): idem Q23b

only show Q24 & Q25 to respondents who have driven a car in the last 12 months

Q24) In the past 12 months, how many times were you checked by the police for alcohol while driving a car (i.e., being subjected to a Breathalyser test) ? ____

Binary variable: *at least once - never*

Q25) In the past 12 months, how many times have you been checked by the police for the use of drugs/medication while driving? ____

Binary variable: *at least once - never*

Socio-demographic information (2)**Q26) What is the highest qualification or educational certificate you obtained?**

Items: None – Primary education – Secondary education – Bachelor's degree or similar – Master's degree or higher – No answer

Q27) What is the postal code of the municipality in which you live?²⁸

²⁸ If in a country no postal codes are in use, this question is rephrased as follows: In which county do you live?



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