Trendline

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Trendline project. Report on KPI Alcohol

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Content

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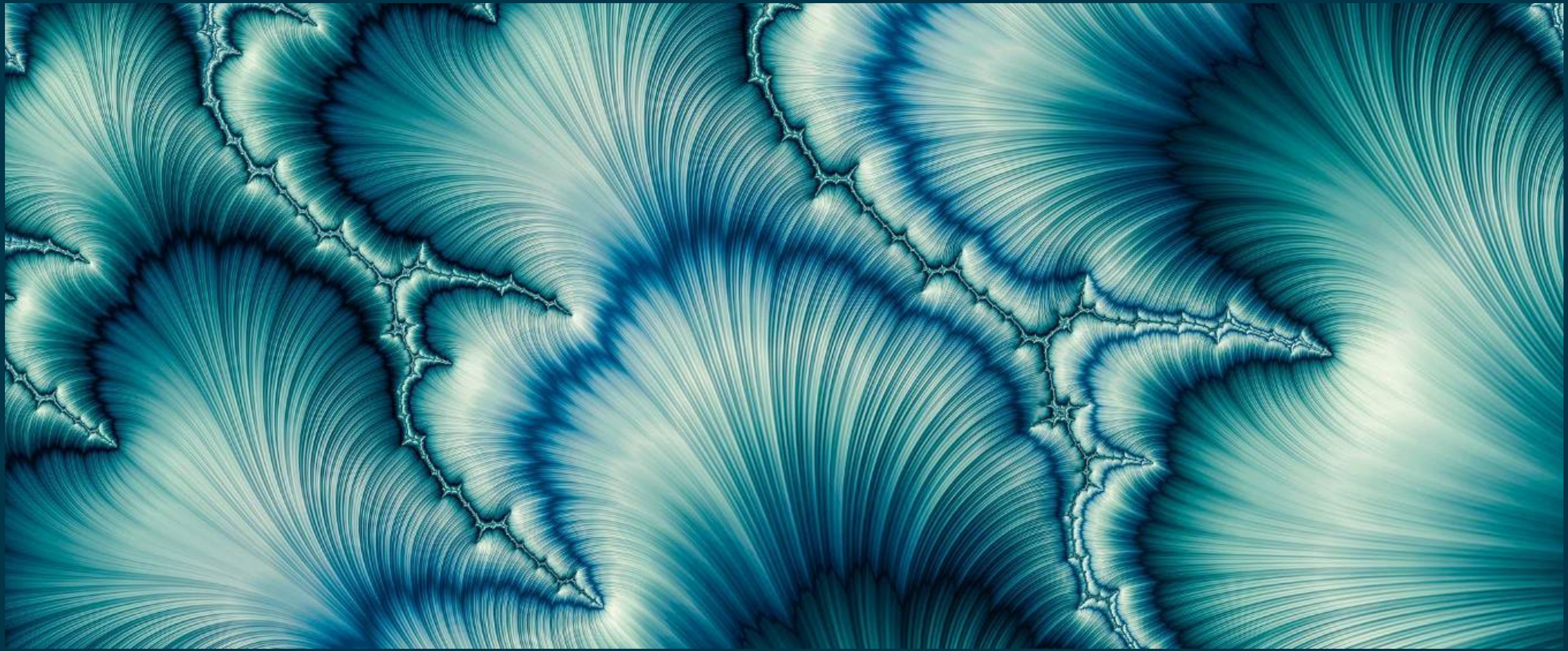
Context



Purpose and objectives of Trendline

- The purpose of the Trendline project (2022-2025) is to promote the use of road safety KPIs (Key Performance Indicators) within the European Union.
- Collecting such KPI data on a regular basis will underpin and support road safety policies and interventions.
- By using common methodologies, the KPI values of countries can be compared with those of other countries.
- Trendline is supported by the European Commission, who funds 100% of the coordination costs and up to 50% of the costs for data collection and analysis in the EU Member States.
- Trendline is the successor project of "Baseline" (2020-2022).

Trend line

Main components of Trendline

- 8 Data collection and analysis for the 8 initial KPIs
- Define and test methodologies for 10 experimental indicators
- Promote the use of road safety KPIs in road safety policies

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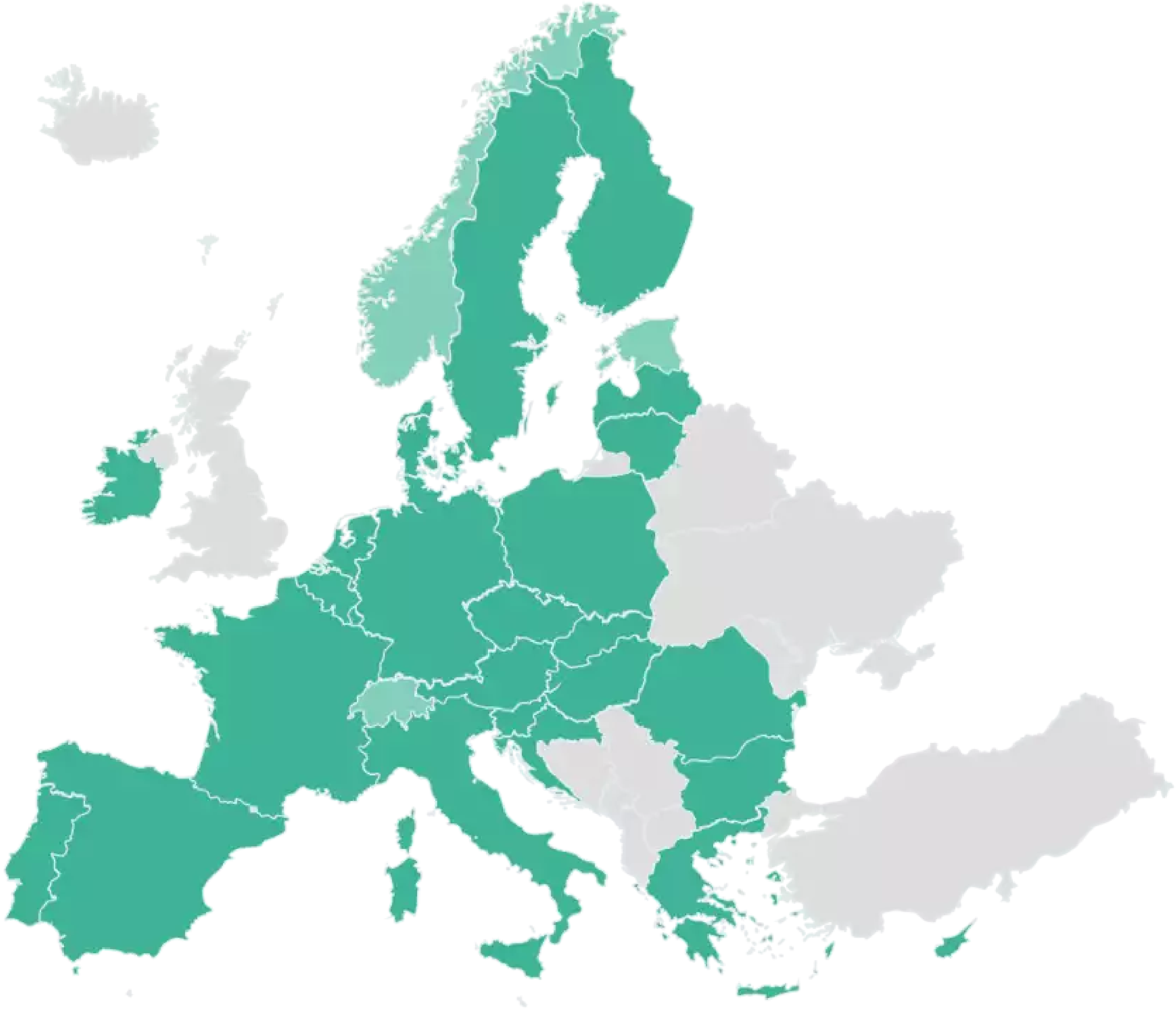
Countries participating in Trendline

- 25 EU countries (out of 27)
- 4 observers: Estonia, Malta, Norway and Switzerland



The eight initial KPIs in Trendline

Speeding	Safety belt	Helmets
Drink driving	Distraction	Vehicle safety
*Infrastructure**	Post-crash	

** Trendline did only support methodological development; no funding was available for data collection and analysis*

Trend line

KPI Expert Group (KEG) for each initial KPI

- Purpose of the KEGs
  - to review and adapt the methodological guidelines developed within the Baseline project
  - to advice on the interpretation and possible deviations of the common guidelines
  - to verify the quality of the data collected
  - to draft and review the report on the KPI

- Members of the KEG Alcohol:
  - Sofie Boets, VIAS (Belgium) - chair
  - Sjoerd Houwing, CBR (The Netherlands)
  - Katerina Folla, NTUA (Greece)
  - Åsa Forsman, VTI (Sweden)
  - Alain Areal, PRP (Portugal)
  - Dagmara Jankowska-Karpa, ITS (Poland)
  - Uta Meesmann, VIAS (Belgium)

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Ten ‘experimental’ indicators

- Purpose: to examine whether the standard set of European indicators should be larger:
  - by extending the scope of existing indicators, or
  - by accepting alternative definitions, or
  - by extending the range of acceptable methodologies, or
  - by addressing new topics.

- Status
  - 10 possible new indicators have been selected.
  - KEGs (Key Expert Groups) have established methodological guidelines.
  - Pilots and tests have been conducted for each indicator in several Member States,
  - Final output are methodological guidelines, lessons learned, and recommendations.

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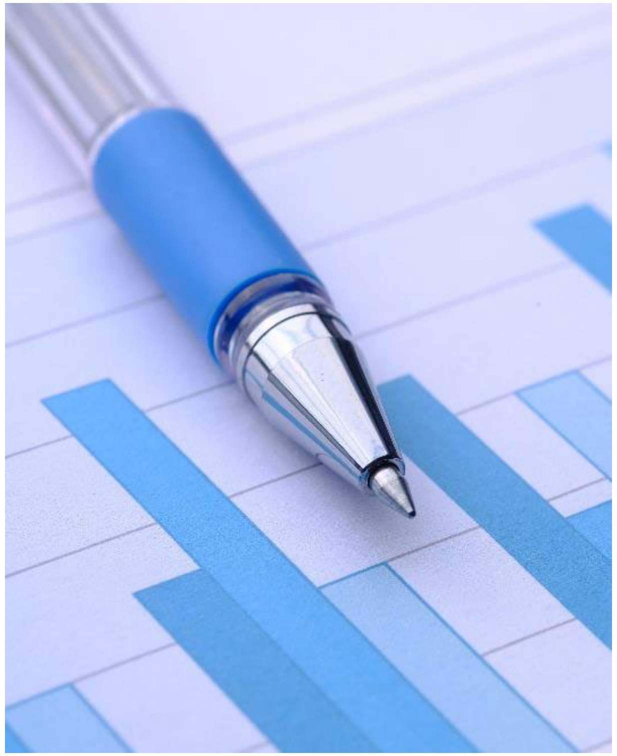
The ten experimental indicators

- Driving under the influence of drugs
- 30km/h on urban roads
- Compliance with traffic rules on signalized pedestrian crossings and intersections
- Compliance with traffic rules on unsignalized pedestrian crossings and intersections
- Helmet wearing by PMD (Personal Mobility Device) riders
- Self-report behaviour
- Attitudes
- Light use by cyclists in the dark
- Enforcement of traffic regulations
- Alternative speeding KPIs



Methodology and participants

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Definition and scope

- Definition: ***Percentage of drivers driving within the legal limit for blood alcohol content (BAC)***
- Maximum legal BAC-limits differ among the EU Member States and for different types of drivers (e.g. novice and professional drivers): between 0,0 g/l and 0,5 g/l BAC

- Three measurement methods:
  - **Random roadside breath testing (RBT)**: breath test of randomly selected drivers by police on a representative sample of locations. This is the golden standard method for KPI Alcohol.
  - Self-reported behaviour through representative anonymous questionnaire survey:
    - **Trip-prevalence survey ➔** *% drivers indicating* ***not*** *to have driven when they may have been over the legal limit for drinking and driving in a* ***randomly selected recent trip***

      This is the closest method to RBT: golden standard for countries where RBT are not legally possible/feasible.
    - **Period-prevalence survey ➔** *% drivers indicating '**never**' to have driven when they may have been over the legal limit for drinking and driving' in* ***the last 30 days***

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Methodological requirements: random breath tests (RBT)

- Minimum KPI estimate (95% CI) for **passenger car drivers**:
    - Country level
    - Week period (4 levels: weekday/night, weekend day/night)
    - Road type (3 levels: urban, rural, motorways)
- Minimum sample sizes: in total 2 000 drivers
    - Min. 500 per road type, min. 250 per week period*
    - Random selection of locations: min. 10 locations/stratum, min. 2 for each combination
    - 1 session min. 30 min.
    - Weighting procedure incl. traffic volume estimates
- Optional variables: gender, age group, BAC level …
- Observations during holidays and heavy winter period excluded

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* Lowered in Trendline based on Baseline feasibility - originally (Baseline) min. 500 drivers per week period.

Methodological requirements: anonymous questionnaires

- Trip-based prevalence
    - Minimum KPI estimate (95% CI): **% car drivers indicating not to have driven when they may have been over the legal limit for drinking and driving in a randomly selected recent trip**
    - By week period (4), road type (3); optionally by age, gender
    - Representative population sample, min. 2 500 car drivers
- Period-based prevalence (e.g. ESRA3)
    - Minimum KPI estimate (95% CI) : **% car drivers indicating 'never' to have driven when they may have been over the legal limit for drinking and driving' in the last 30 days**
    - By age, gender; optionally by road type (3), week period (4)
    - Representative population sample, min. 750 car drivers

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Summary of the minimum requirements

Random breath tests (RBT)

- **Min. KPI estimate (95% CI) for car drivers:**
  - country level
  - 4 week periods (weekday/night, weekend day/night)
  - 3 road types (urban, rural, motorways)
- **Minimum sample sizes**:
  - 2 000 car drivers
  - 500 per road type, 250 per week period
  - min. 10 locations/stratum, min. 2 for each combination
- **Random selection of locations / representative location sample**
- **Random breath tests** (collaboration with police)
- **Data weighting** procedure incl. traffic volume

Trip-based prevalence survey

- **Minimum KPI estimate (95% CI) for car drivers:**
  - country level
  - week period (4)
  - road type (3)
- **Representative population sample (population-based quota/weighting)**
  - Min. 2500 drivers
- **Question on a randomly selected recent trip**

Period-based prevalence survey (e.g. ESRA3)

- **Min KPI estimate (95% CI) for car drivers:**
  - country level
  - 3 age groups
  - gender
- **Representative population sample (population-based quota/weighting)**
  - Min. 750 car drivers (at least occasional drivers)
- **Question:** *Over the last 30 days, how often did you as a CAR DRIVER drive when you may have been over the legal limit for drinking and driving?*

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Countries collecting data on alcohol (17)

- Austria
- Belgium
- Bulgaria
- Czech Republic
- Finland
- Germany
- Ireland
- Italy
- Lithuania
- Luxembourg
- Netherlands
- Poland
- Portugal
- Slovenia
- Spain
- Sweden
- Switzerland

➔ 17 participating countries (20 delivered KPI datasets)

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Country	Precise definition of the KPI	Data collection period (m/y)
Random breath tests		
Belgium	% drivers driving within the legal BAC limit (≥ 0,5 g/l, prof ≥ 0,2 g/l)	October-December 2024
Finland (3)	% drivers driving within the legal BAC limit (≥ 0,5 g/l)	autumn 2023 + spring 2024
Luxembourg	% drivers driving within the legal BAC limit (≥ 0,5 g/l, prof ≥ 0,2 g/l)	October-December 2024
Poland	% drivers driving within the legal BAC limit (≥ **0,2** g/l all drivers)	October-November 2024
Portugal	% drivers driving within the legal BAC limit (≥ 0,5 g/l, novice/prof ≥ 0,2 g/l)	October-December 2024
Spain	% drivers driving within the legal BAC limit (≥ 0,5 g/l, novice/prof ≥ 0,3 g/l)	May-June 2024
Switzerland	% drivers driving within the legal BAC limit (≥ 0,5 g/l, novice/prof ≥ 0,1 g/l)	April-September 2024
Period-prevalence survey		
Austria	% drivers **never** driven when they may have been over the legal limit (≥ 0,5 g/l, novice ≥ 0,1 g/l) in the **last 30 days**	May 2023 (ESRA3)
Czech Republic	% drivers **never** driven when they may have been over the legal limit (> **0,0** g/l) in the **last 30 days**	2023 (ESRA3)
Finland (2)	% drivers **never** driven when they may have been over the legal limit (≥ 0,5 g/l) in the **last 30 days**	April 2024
Ireland	% drivers **never** driven when they may have been over the legal limit (≥ 0,5 g/l, novice/professional ≥ 0,2 g/l) in the **last 30 days**	December 2023
Italy	% drivers **never** driven when they may have been over the legal limit (≥ 0,5 g/l, novice/young/prof > 0,0 g/l) in the **last 30 days**	June-July 2023 (ESRA3)
Netherlands (1)	% drivers **never** driven after drinking more than the legal limit (≥ 0,5 g/l, novice ≥ 0,2 g/l) in the **past 12 months**	September-October 2023
Netherlands (2)	% drivers **never** driven when they may have been over the legal limit (≥ 0,5 g/l, novice ≥ 0,2 g/l) in the **last 30 days**	May-Sept 2023 (ESRA3)
Slovenia	% drivers **never** driven when they may have been over the legal limit (≥ 0,5 g/l, novice/prof > 0,0 g/l) in the **last 30 days**	May 2024
Sweden	% drivers **never** driven when they may have been over the legal limit (≥ **0,2** g/l all drivers) in the **last 30 days**	May 2023 (ESRA3)
Trip-prevalence survey		
Bulgaria	*% trips not being driven with a BAC above the legal limit (≥ 0,5 g/l) in a sample of all 24-hours trips of randomly interviewed car drivers on-road*	May-June 2024
Finland (1)	% drivers **not** driven while believing their BAC was above the legal limit (≥ 0,5 g/l) in a **randomly selected recent trip** (3 days)	April 2024
Germany	% drivers **not** driven with a BAC exceeding the legal limit (≥ 0,5 g/l; novice > 0,0 g/l) in a **randomly selected recent trip** (7 days)	May 2024
Lithuania	% drivers **not** driven while thinking their BAC was above the legal limit (≥ **0,4** g/l, novice/prof > 0,0 g/l) in their **last trip**	November 2023

Note: Finland and the Netherlands delivered several KPI datafiles, based on different methods: **FI (1) trip-prevalence survey**; FI (2) period-prevalence survey; FI (3) random breath tests; **NL (1) period-prevalence survey 12 months' period**; NL (2) period-prevalence survey 30 days' period ESRA3**.**
The official KPIs are "(1)". Bold in the table: legal BAC-limits below 0,5 g/l; period used in the period-prevalence survey, trip used in trip-prevalence survey.

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Key results

Key results : Compliance with methodological guidelines

- **Random breath testing** (7 countries/datasets): All min. requirements are met in 4 countries, including all minimum strata samples N>500. Deviations in 3 countries: missing motorway stratum in FI; low driver sample (N<250) for motorway and weeknight strata in ES; and LU had several deviations (no weighting, insufficient location and driver samples for several strata, no 95% CI).
- **Trip-prevalence survey** (4 countries/datasets): Min. requirements are well met in 2 countries, except for small nights' samples (N<250). These 2 countries used an online representative population survey sample and questioned a randomly selected recent trip. The method in the 2 other countries deviates from the standard method which impacts international comparability (although with consistent historical comparability within 1 country). The differences concern: sampling method, e.g. roadside interviews and questioning several trips per driver; no weighting or different weighting (not population-based, but road/week based).
- **Period-prevalence survey** (8 countries; 9 datasets): Min. requirements are generally well met. All countries used online surveys, of which 5 ESRA3. Always a subset of at least occasional car drivers was used from a representative population sample. The min. total sample (N 750) is not met by 3 countries. Subsamples (e.g. youngest or oldest age group) are mostly below N 250 but not below N 100. KPIs by road type and week period are not delivered by all countries and some countries did not use the correct reference group for calculation. As the road and week related indicators are also calculated, in a uniform way, within ESRA3, it was decided to include these also in this report (only for the countries that used ESRA3 for KPI Alcohol).
- Two countries delivered several datafiles, based on different methods: **FI (1) trip-prevalence survey**; FI (2) period-prevalence survey; FI (3) random breath tests; **NL (1) period-prevalence survey 12 months' period**; NL (2) period-prevalence survey 30 days' period ESRA3. The official KPIs are "(1)" (**bold**).

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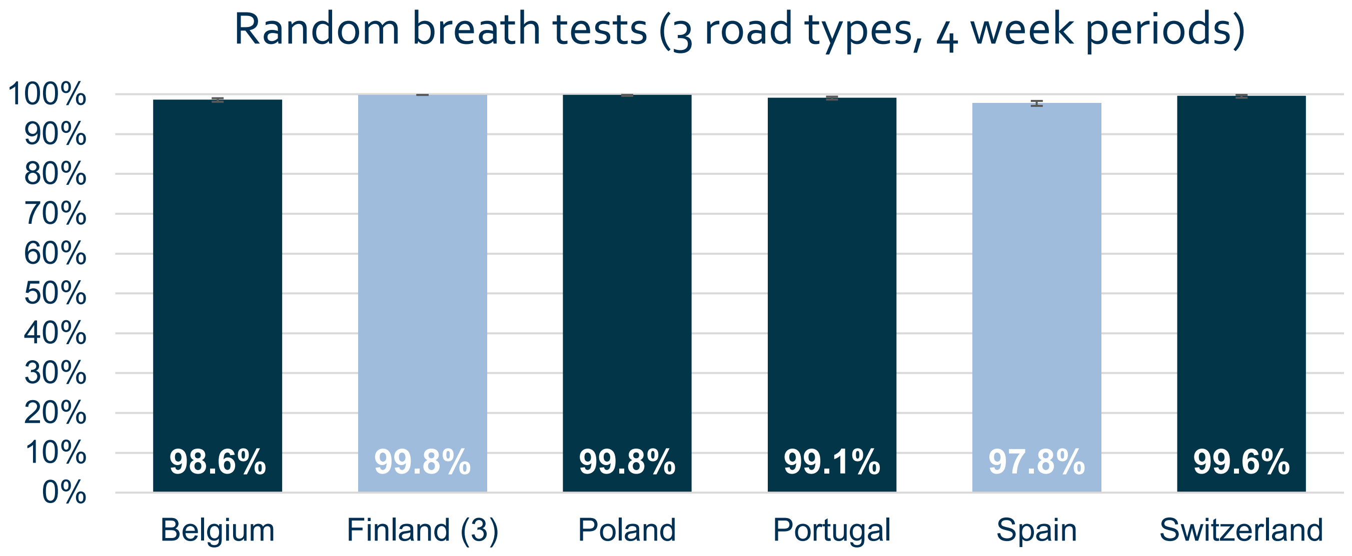
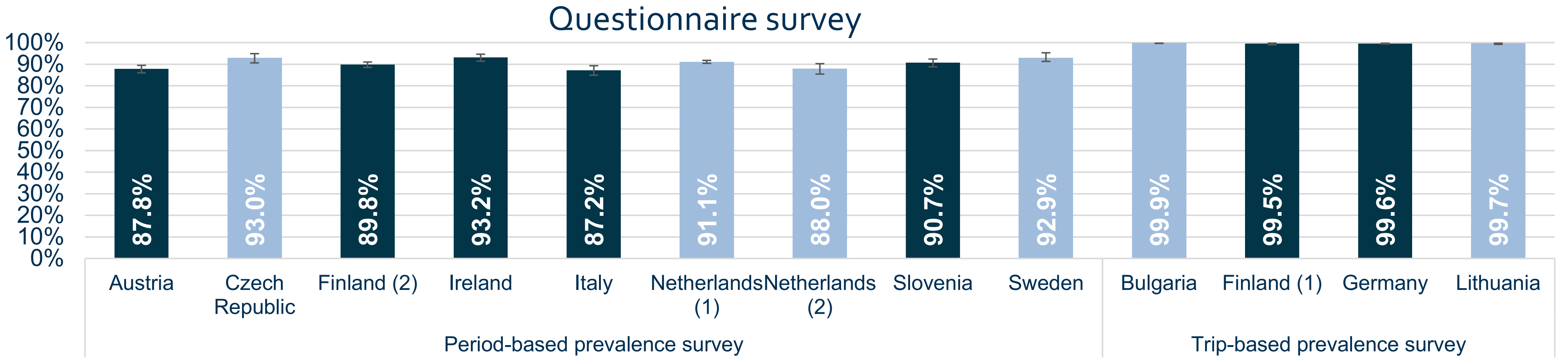
Key results: country level KPI Alcohol

- Based on **RBT** more than 98% of car drivers drive within the legal BAC-limit in most countries. The highest % is found in Poland (99,8%), also the country with the lowest general BAC-limit (0,2 g/l), and the lowest in Spain (97,8%). The BAC-limit in the other countries is 0,5 g/l.
- The KPIs based on the **trip-prevalence** survey are more than 99,5%. When a random recent trip of a car driver is selected in a representative population sample, the average DUI incidence is generally low.
- The KPIs based on the **period-prevalence** survey range between 87,2% (IT) and 93,2% (IE). For IT this means that 12,8% of regular car drivers indicated to have driven with a BAC probably above the limit in the last 30 days. Two countries have a BAC-limit <0,5 g/l (CZ, SE) with a KPI-value among the highest ones.

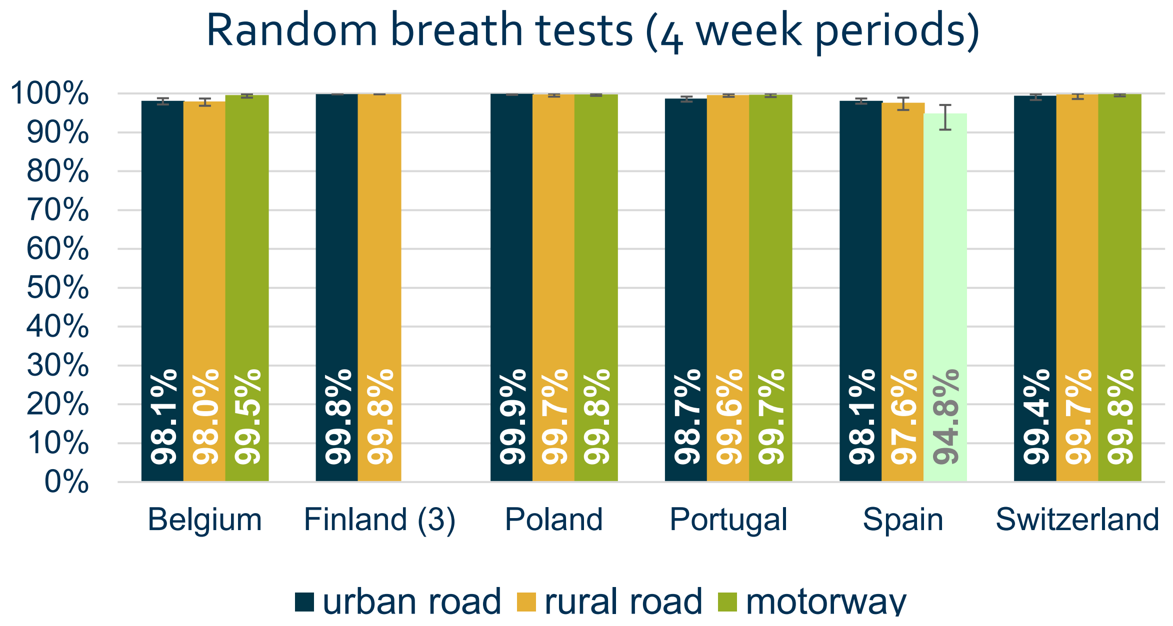


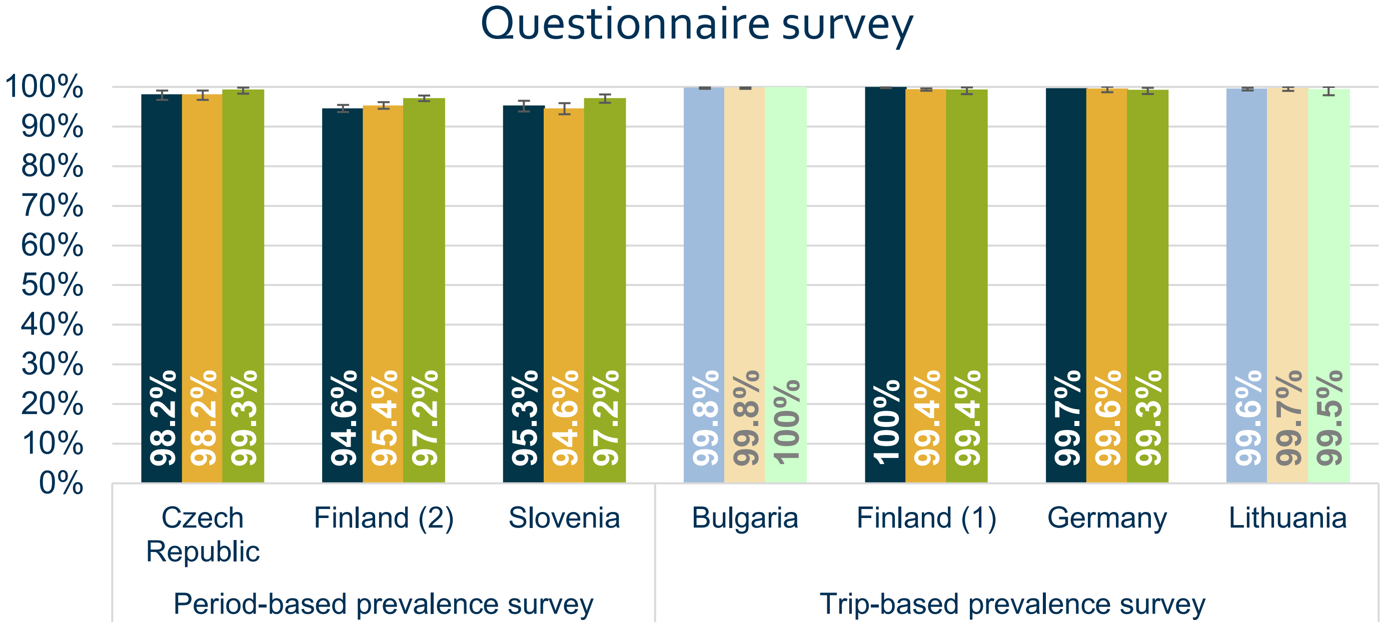


Light coloured: deviations (FI(3): no motorways; ES: motorway and weeknight N<250; CZ, NL(2), SE: total N<750; NL(1): 12 months' period; BU: different sampling method, no weighting; LT: different weighting (not population-based). Period-based prevalence KPIs based on ESRA3 data: AT, CZ, IT, NL2, SE. Official KPIs for NL and FI are NL(1) and FI(1).

Key results: KPI Alcohol by road type

- Min. KPI for RBT and trip-prevalence survey; optional for period-survey (in ESRA3 survey).
- In most of countries that delivered road type KPIs based on period-survey (last 30 days), as well as in BE (RBT), a pattern of **less driving above the legal limit on motorways** is seen (period: 97,2%-99,3%; BE RBT: 99,5%), without much difference or with varying % for urban and rural roads (period: 94,6-98,2%; BE RBT: 98%).
- In PT and CH (RBT), the % on motorways and rural roads is almost equal, and both higher (less DUI) than on urban roads (more DUI).
- In FI(1) and DE (trip), the highest % (least DUI) is on the other hand on urban roads, but the differences are rather small. In this method main road type, i.e. longest distance of the trip, was indicated. In PL (RBT) also no clear difference is found.
- Considering urban and rural roads, there is no clear road type with a higher DUI incidence – it varies per country (almost same % in BE, FI(3), CZ, BU, DE, LT).





Light coloured: deviations (ES: motorway and weeknight N<250; BU: different sampling method, no weighting; LT: different weighting (not population based)

KPI Alcohol by road type based on ESRA3 period-prevalence survey

One of the recommendations of Baseline was to include a filtered question on road types in ESRA3. For uniformity, the respective ESRA3 road type indicators are presented here for the Trendline countries that used ESRA3 for KPI Alcohol

% at least once in the last 30 days; inverse formulation from Trendline

- In correspondence with the previous slide, a pattern is seen in the countries that used ESRA3 for KPI Alcohol: car driver respondents that drove at least once **over the legal BAC-limit** in the last 30 days drove the **least on motorways** while being above the limit (lower % compared to urban/rural roads in 4 of the 5 countries).
- There is no clear pattern between urban vs rural roads.
- The road types most often indicated while being above the legal limit are rural roads in AT, and urban roads in IT and NL (all 4,1%).

You said that you have driven a car when you may have been over the legal limit for drinking and driving. Was this ...? (you can indicate multiple answers)				
Reference population: all car drivers at least a few days a month				
Country	**weighted sample**	**on urban roads**	**on rural roads**	**on motorways**
Austria	1 420	2.4%	4.1%	1.6%
Czech Republic	597	1.8%	1.8%	0.7%
Italy	906	4.1%	3.5%	1.8%
Netherlands (2)	700	4.1%	2.6%	1.9%
Sweden	633	0.9%	1.2%	2.1%

ESRA3 (2024) https://www.esranet.eu

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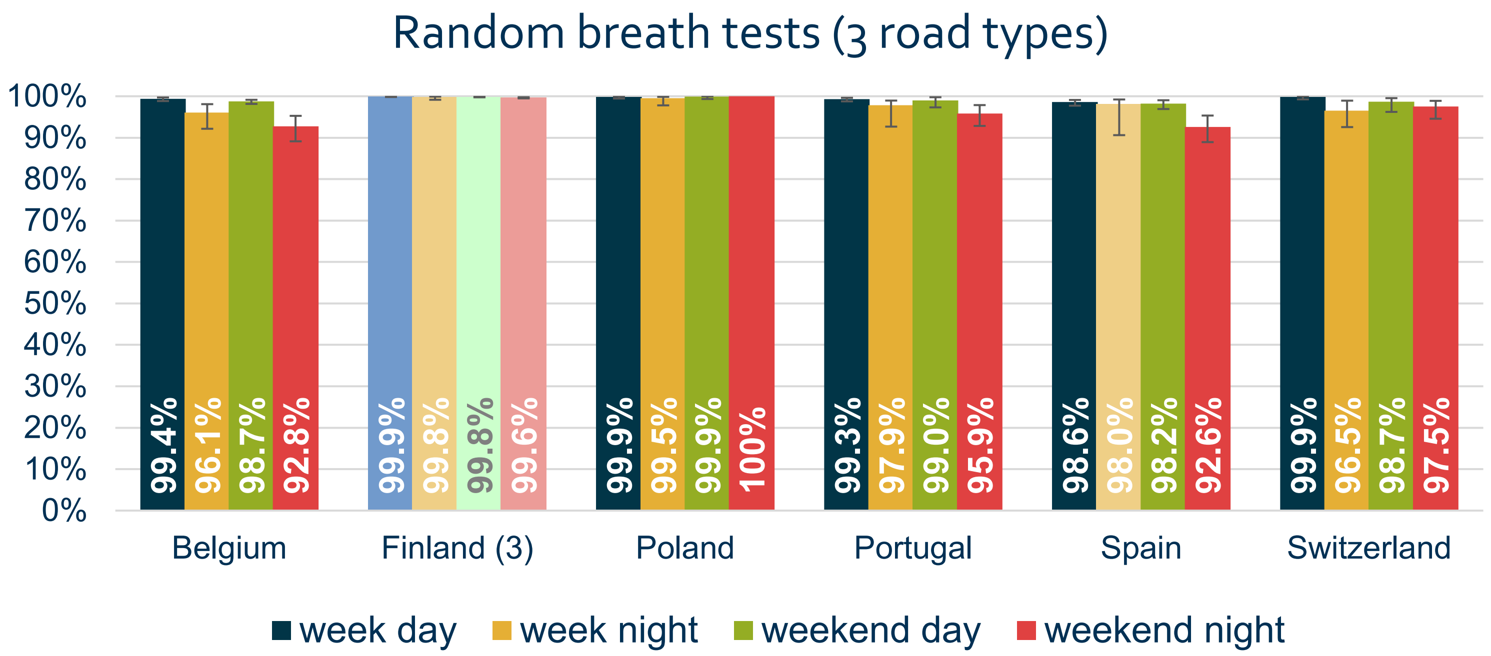
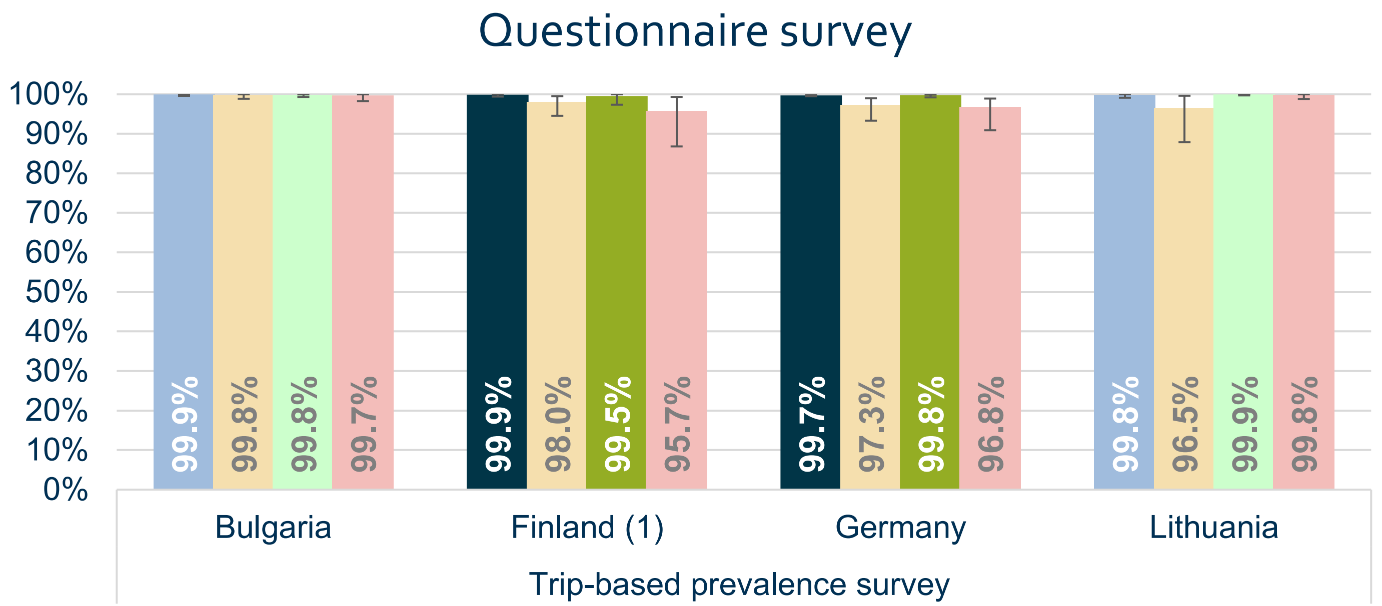
Key results: KPI Alcohol by week period

- Min. KPI for RBT and trip-survey. Optional for period-survey (in ESRA3)
- KPIs based on RBT and trip-survey show in almost all countries a **higher incidence of driving above the legal limit during night-time, especially during weekend nights.**
- Based on RBT, the lowest KPIs during weekend nights are found in ES (92,6%) and BE (92,8%) and, and on weeknights in BE (96,1%) and CH (96,5%).
- The trip-prevalence KPIs in weekend- and weeknights are 1 to 4% lower than during daylight hours in DE and FI (1).
- In CH, PL (RBT) and LT (trip) the KPI is lowest during weeknights; in all other countries this is during weekend nights.
- In 8 of the 10 countries shown, the KPI for weekend day is (slightly) lower than for weekday.





Light coloured: deviations (FI: no motorways; ES: motorway, weeknight N< 250; BU: different sampling method, no weighting; LT: no population-based weighting; DE, FI, LT: nights N<250)

KPI Alcohol by week period based on ESRA3 period-prevalence survey

One of the recommendations of Baseline was to include a filtered question on road types in ESRA3. For uniformity, the respective ESRA3 week period indicators are presented here for the Trendline countries that used ESRA3 for KPI Alcohol

% at least once in the last 30 days; inverse formulation from Trendline

- In correspondence with the previous slide, a pattern is seen in the countries that used ESRA3 for KPI Alcohol: car driver respondents that drove at least once **over the legal BAC-limit** in the last 30 days drove **most often during weekend nights** (higher % compared to the other periods in 4 of the 5 countries).
- In 4 of the 5 countries the **lowest % is during weekdays**. There is a less clear pattern for weeknights compared to the other KPI-methods: the ranking varies between weeknights and weekend days, or they have a same incidence.

You said that you have driven a car when you may have been over the legal limit for drinking and driving. Was this …? (you can indicate multiple answers)					
Reference population: all car drivers at least a few days a month					
Country	**weighted sample**	**In the week during daytime**	**In the week during night-time**	**In the weekend during daytime**	**In the weekend during night-time**
Austria	1 420	2.6%	3.5%	2.7%	6.9%
Czech Republic	597	2.7%	1.5%	2.4%	2.3%
Italy	906	3.0%	3.6%	3.6%	5.3%
Netherlands	700	2.8%	3.0%	3.0%	5.9%
Sweden	633	1.6%	1.9%	3.0%	2.6%

ESRA3 (2024) https://www.esranet.eu

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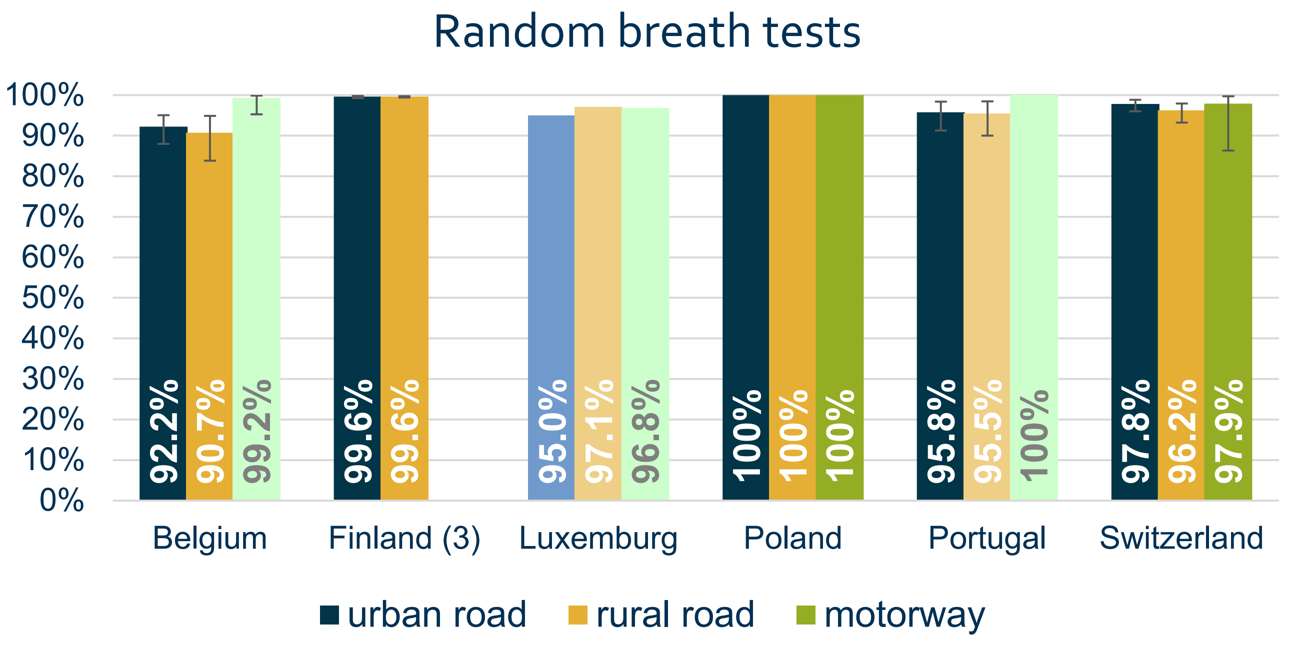
Key results: KPI Alcohol on weekend night by road type

Focussing on weekend nights by road type, there is no clear pattern:

- Higher KPI (less drivers above the limit) on motorways in BE and PT
- (slightly) Lower KPI (more drivers above the limit) on rural roads in BE, CH and PT
- In LU the KPI for urban roads is lowest
- Same KPI-values for urban and rural roads in FI (3)
- In PL, the weekend night KPI is 100% on each road type



Light coloured: deviations (LU: no 95%CI, no weighting; weekend night is the only stratum for which a sufficient location/driver sample is obtained; BE and PT: small subsamples N<250)

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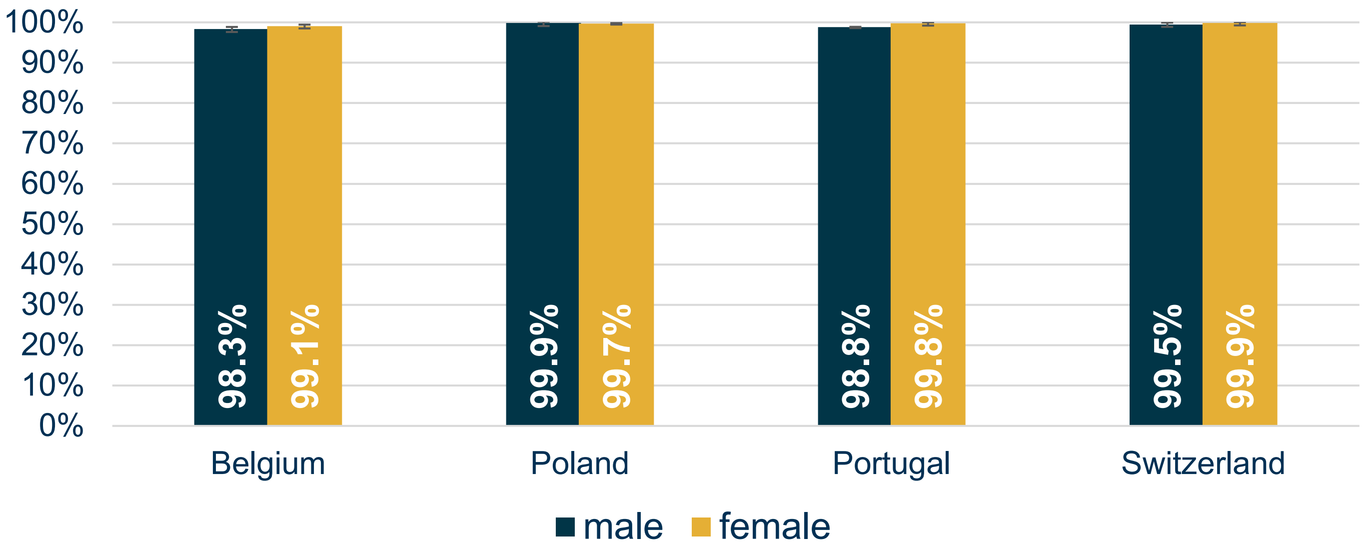
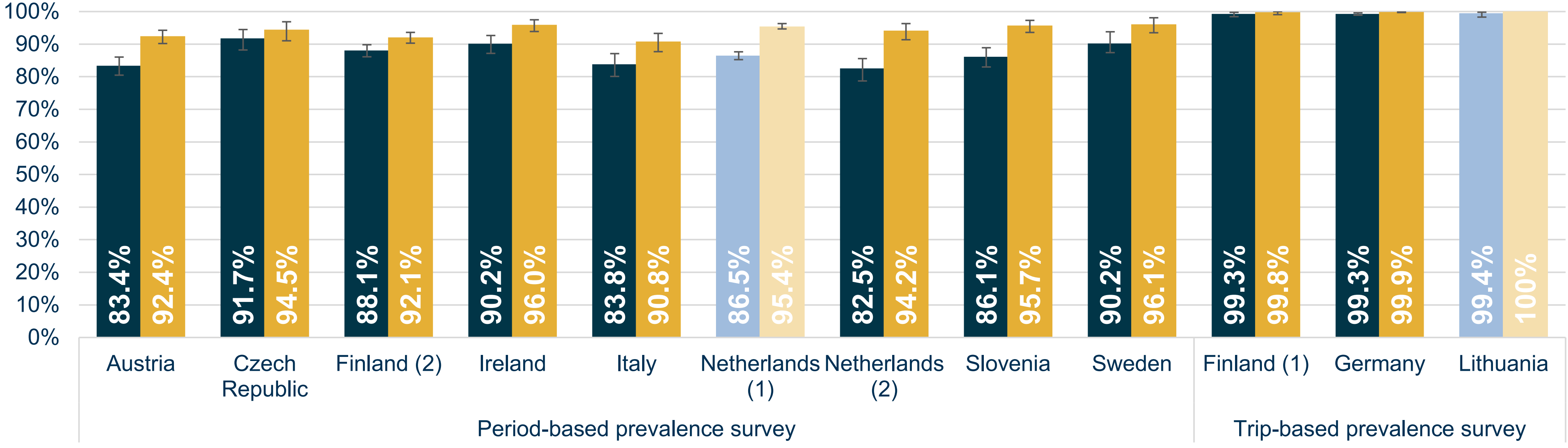
Key results: KPI Alcohol by gender

- Min. KPI for period-prevalence survey, optional for RBT and trip-survey
- In all but 1 (PL) countries (13 of 14), over all methods, the **percentage driving within the legal BAC limit is higher in female car drivers** than in male car drivers.
- The difference is biggest (up to 9%) based on period-prevalence data (self-reported driving above the legal limit over the last 30 days).

Random breath tests (3 road types, 4 week periods)



Questionnaire survey



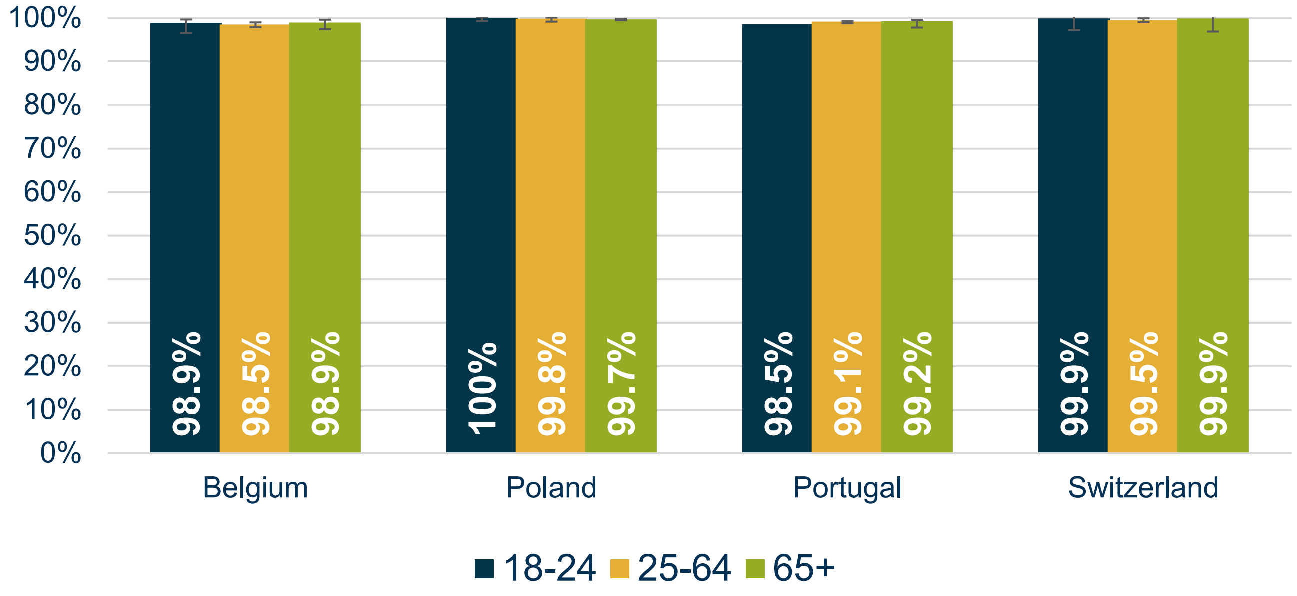
Light coloured: deviations (NL(1): 12 months' period; LT: no population-based weighting)

Key results: KPI Alcohol by age group

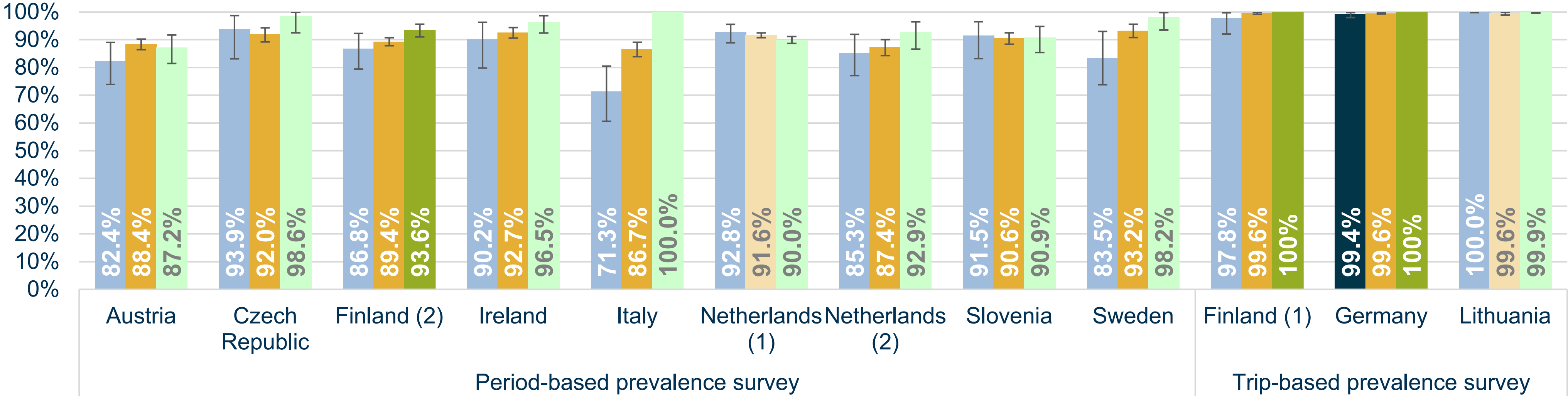
- Min. KPI for period-survey, optional for RBT and trip-survey
- For the countries that conducted **RBT** the KPIs among the 3 age groups are quite similar. In PT, the KPI for the 18-24-year-old group is lower (more above the limit) than for the two older groups (similar); in PL this is the opposite; in BE and CH the KPI is lowest for the middle-aged (25-64) group.

For most countries using **self-report** the sample of 18-24 and 65+ is small (N<250). In 6/9 period-surveys, the **youngest have the lowest KPI** and the oldest the highest. In DE and FI(1) (trip) most reported DUI is also among the youngest.

Random breath tests (3 road types, 4 week periods)



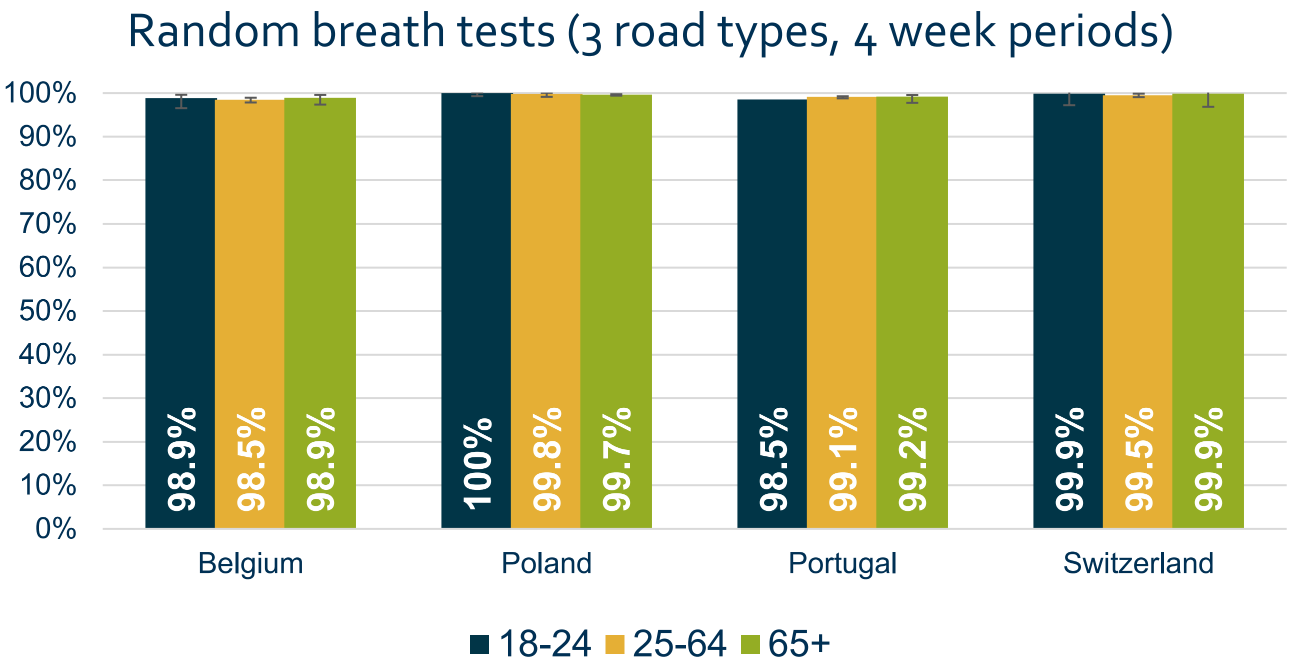
Questionnaire survey

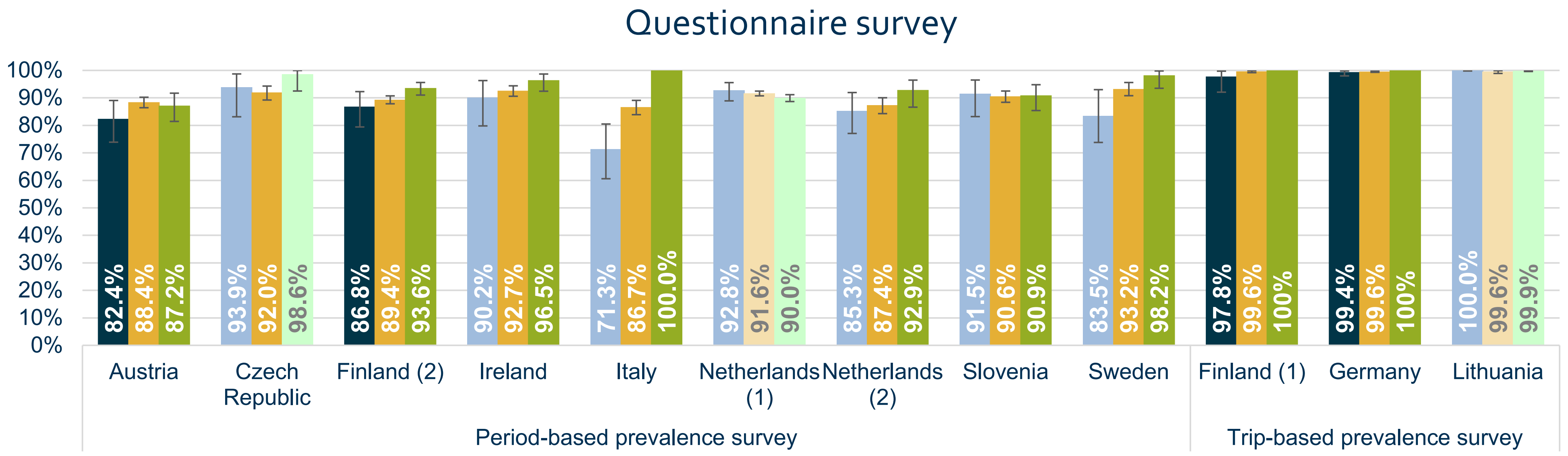


Light coloured: deviations (AT, CZ, FI(2), IE, IT, NL(1), NL(2), SE, SL, FI(1), LT: subsamples N<250; NL(1): 12 months' period; LT: no population-based weighting)

Key results: KPI Alcohol by age group

If we indicate small subsamples as N<100 – i.e. the threshold used in ESRA3 – instead of N<250, then only 7 age groups remain marked (instead of 16)





Light coloured: deviations (AT, CZ, FI(2), IE, IT, NL(1), NL(2), SE, SL, FI(1), LT: subsample N<100; NL(1): 12 months' period; LT: no population-based weighting)

Comparability of KPI results across countries

International comparability of the Alcohol KPIs in Europe is **challenged** due to methodological differences:

- **Three different main methods**, resulting in incomparable KPIs, are allowed.
- **Within a same method, differences remain**

  e.g. minimum requirements not always complied with, differences in operationalisations, in data weighting procedures - also related to availability of national traffic volume data.

Random breath tests on a representative location sample is the golden standard method for KPI Alcohol. Detailed methodological guidelines are developed in Trendline (Baseline). Most of the countries using RBT (4 of 7) complied fully with the minimum requirements, even with stratum sample sizes all above N500, leading to a rather **good international comparability**. In Baseline, 8 countries used RBT. Ideally, in future, more countries choose the method of RBT (again), **if legally possible and feasible.**

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Comparability of results across countries

Trip-prevalence survey:

This is the **golden standard method for countries where RBT are not legally possible or feasible**. Two of the 4 countries comply well with the minimum methodological guidelines while the 2 other countries differ more of less in several ways (e.g. sampling stratification based on road types and week periods, not on population statistics; no or different (week/road based, not population-based) weighting procedure; different data collection method (roadside face-to-face interviews with several recent trips per driver being questioned, instead of online survey and selection of 1 random trip), leading to a **currently** still rather **low international comparability** (except for the 2 complying countries). Also, generally, the night samples are small.

For better international comparability, a sufficiently comparable method should be used by all countries choosing the trip-prevalence survey for KPI Alcohol. It is **recommended that in future editions, countries align with the proposed method in the KPI guidelines and with the complex survey approaches currently used in Germany and Finland**. Ideally, the night samples are boosted.

Trend line

Comparability of results across countries

Period-prevalence survey:

Five countries provided ESRA3 (2024) based Alcohol KPIs and 3 countries conducted a separate survey using the ESRA3 questioning. This is **good for international comparability** because a same/similar basic method is being used. **Period-prevalence KPIs provide additional information to point-prevalence KPIs and are recommended to be collected in addition to the KPIs based on RBT or trip-prevalence survey.**

The country samples generally refer to a selection (of regular car drivers) of a representative population sample. The size of the total sample of regular car drivers and of subsamples (e.g. age groups) are often small, so ideally (sub)samples are boosted to allow the calculation of indicator values with smaller error margins. The filtered questions for week period and road type led to miscalculations (reference group to be used); therefore, we included in this report the (inverse) road and week Alcohol KPIs calculated in ESRA3. The lack of frequency info related to road types and week periods provides only a rough general indication of more risky strata though; theses are not comparable to the stratum KPIs of the other two methods.

Additional results

Trend line

Key results: optional RBT KPIs based on BAC category

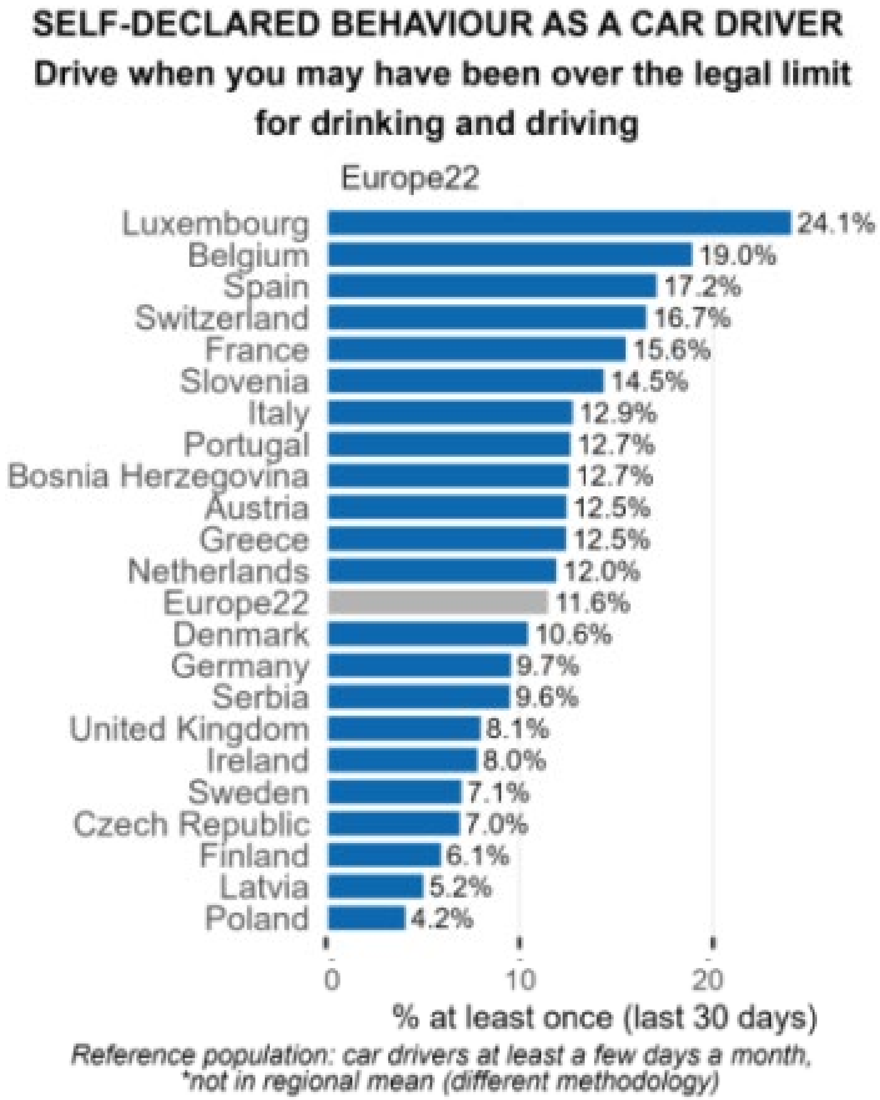
- Ideally **inverse %** are used for ease of interpretation: % drivers within different BAC categories
- **Related to relative risk level** of getting seriously injured or killed in an accident
- **Not subject to legal changes and differences** within/between countries

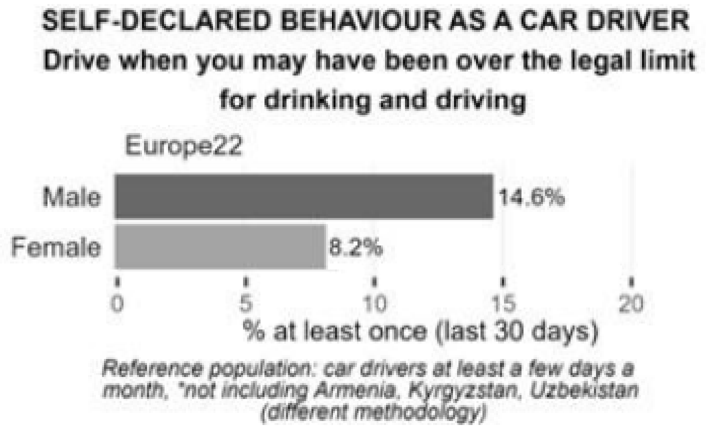
	BAC ≥ 0.5 g/l	BAC 0.5-0.79 g/l (Medium increased risk)	BAC 0.8-1.19 g/l (Highly increased risk)	BAC 1.2+ g/l (Extremely increased risk)
Belgium	1.4% (1.0% - 1.9%)	0.6% (0.4% - 0.8%)	0.4% (0.3% - 0.8%)	0.4% (0.2% - 0.6%)
Poland	0.1% (0.0% - 0.3%)	0.1% (0.0% - 0.2%)	0.0% (0.0% - 0.2%)	0.0% (0.0% - 0.1%)
Portugal	0.8% (0.6% - 1.3%)	0.5% (0.3% - 0.9%)	0.1% (0.0% - 0.2%)	0.2% (0.1% - 0.6%)
Switzerland	0.4% (0.2%-0.9%)	0.3% (0.1%-0.8%)	0.1% (0.0%-0.3%)	0.0% (0.0%-0.1%)

Most DUI offenders fall in BAC category 0,5-0,79 g/l. Belgium has more high-risk offenders (0,8% ≥ 0,8 g/l). In Poland and Switzerland no offenders were tested with a BAC ≥ 1,2g/l.

Trend line

ESRA3: Self-declared behaviour as a car driver (% at least once in the last 30 days)

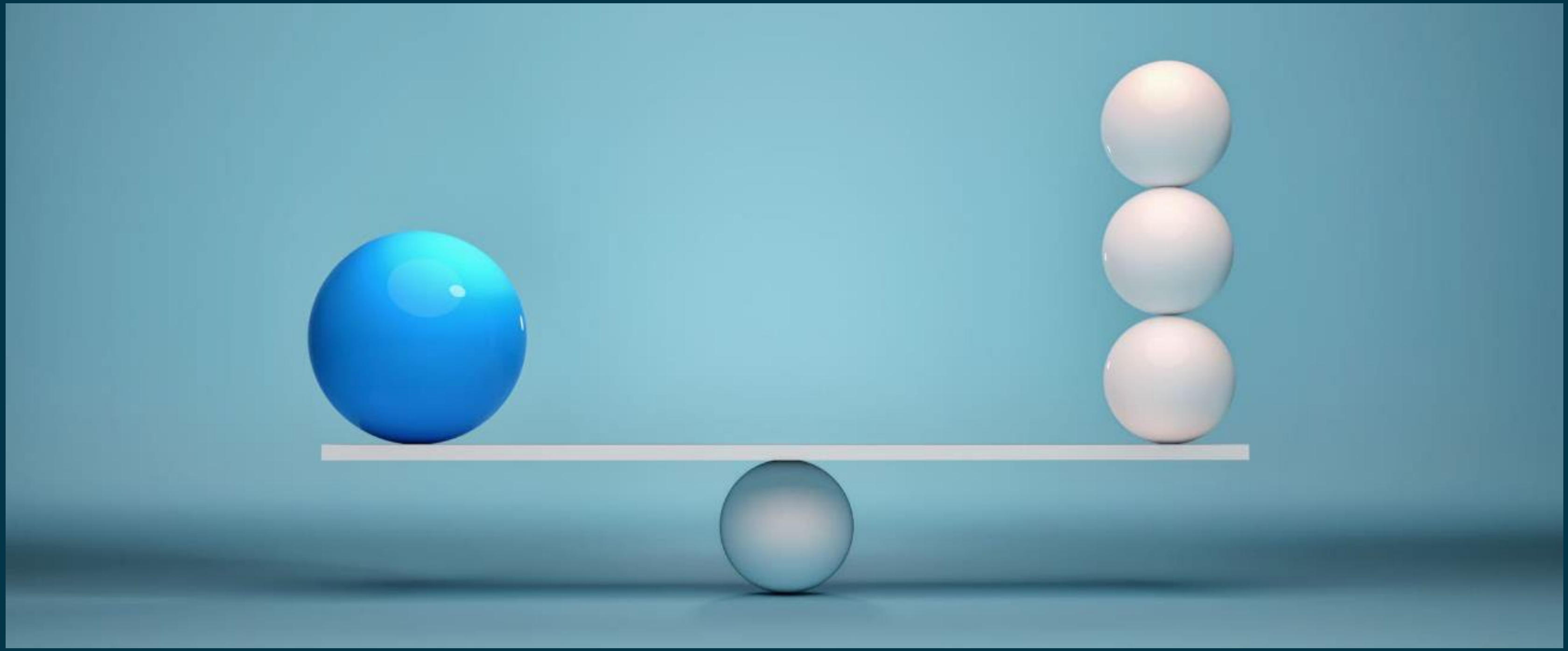




Meesmann, U., Pires, C., Wardenier, N. (2024). Driving under the influence of alcohol, drugs or medication. ESRA3 Thematic report Nr. 10. ESRA project (E-Survey of Road users' Attitudes). (2024-R-31-EN). Vias institute. https://www.esranet.eu/storage/minisites/esra2023thematicreportno10drivingundertheinfluenceofalcoholdrugsormedication.pdf

Trendline

Comparison with Baseline



Trend line

Methods used in Baseline vs. Trendline

Baseline

- Participating: 15 countries
- 8 RBT: BE, ES, GR, LV, LU, PL, PT
- 2 trip-prevalence survey: BU, DE
- 4 period-prevalence survey: AT, FI, IE, SE (12m)
- 1 enforcement database: CZ

Trendline

- Participating: 18 countries
- 7 RBT: BE, CH, ES, FI (3), LU, PL, PT
- 4 trip-prevalence survey: BU, DE, FI (1), LT
- 7 period-prevalence survey: AT (ESRA3), CZ, FI (2), IE, IT, NL (1), NL (2), SE (ESRA3, 30 days) , SL
- enforcement database: excluded method

For countries using a different basic method in Trendline vs. Baseline, no historical comparisons can be made.
If a same basic method was used, careful comparisons are made, acknowledging that any, even small, methodological change impacts comparability.
Green: same basic method ; Orange: same basic method but different survey scope (ESRA3)

Trend line

Comparison of random breath test KPIs

Roadside random breath tests: National KPI (95% CI) (3 road types, 4 week periods)

Country	Baseline	Trendline
Belgium	98.4% (97.9% - 98.8%)	98.6% (98.1% - 99.0%)
Poland	99.7% (99.4% - 100%)	99.8% (99.6% - 99.9%)
Portugal	99.2% (98.6% - 99.6%)	99.1% (98.6% - 99.4%)
Spain	97.6% (96.9% - 98.2%)	97.8% (97.1% - 98.3%)
	PL: No motorways	PL: Including motorways

National KPI: relative status-quo in Trendline compared to Baseline; small increase of KPI in Belgium and Spain; small decrease of KPI in Portugal; Polish national KPI not comparable.

Comparison of random breath test KPIs

		BASELINE	95% CI		TRENDLINE	95% CI	
Belgium	Urban roads	**98.4%**	97.7%	98.8%	**98.1%**	97.2%	98.8%
	Rural roads	**98.1%**	97.2%	98.8%	**98.0%**	96.8%	98.7%
	Motorway	**98.7%**	97.5%	99.4%	**99.5%**	98.9%	99.8%
Poland	Urban roads	**99.8%**	99.5%	100%	**99.9%**	99.6%	100%
	Rural roads	**99.5%**	99.0%	100%	**99.7%**	99.2%	100%
	Motorway				**99.8%**	99.4%	100%
Portugal	Urban roads	**98.8%**	97.8%	99.4%	**98.7%**	97.9%	99.2%
	Rural roads	**99.6%**	98.4%	99.9%	**99.6%**	99.1%	99.8%
	Motorway	**99.7%**	98.6%	100%	**99.7%**	99.1%	99.9%

		BASELINE	95% CI		TRENDLINE	95% CI	
Belgium	Weekday	**99.0%**	98.3%	99.5%	**99.4%**	98.8%	99.7%
	Weeknight	**96.3%**	93.1%	98.0%	**96.1%**	92.2%	98.1%
	Weekend day	**98.9%**	98.1%	99.3%	**98.7%**	98.1%	99.1%
	Weekend night	**92.7%**	90.2%	94.6%	**92.8%**	89.1%	95.3%
Poland	Weekday	**99.6%**	98.9%	100%	**99.9%**	99.4%	100%
	Weeknight	**100%**	-	-	**99.5%**	98.8%	99.9%
	Weekend day	**99.9%**	99.7%	100%	**99.9%**	99.3%	100%
	Weekend night	**98.7%**	97.5%	99.8%	**100.0%**	-	-
Portugal	Weekday	**99.7%**	99.2%	99.9%	**99.3%**	98.8%	99.6%
	Weeknight	**98.6%**	95.4%	99.7%	**97.9%**	96.2%	99.0%
	Weekend day	**99.5%**	98.0%	99.9%	**99.0%**	97.3%	99.8%
	Weekend night	**96.5%**	92.8%	98.5%	**95.9%**	92.8%	97.9%

Road type KPIs: relative status-quo; higher motorway KPI in Belgium

Week period KPIs: relative status-quo; small differences; all week period KPIs in Portugal decreased, increased weekday KPI in Belgium; all week period KPI increased in Poland except for weeknight.

The night KPIs remain lowest in Belgium and Portugal; in Poland the weeknight KPI decreased from 100% and the weekend night KPI increased up to 100%.

Trendline

Comparison of questionnaire KPIs

Trip-prevalence survey: National KPI (95% CI)

Country	Baseline	Trendline
Germany	99.7% (99.4% - 99.8%)	99.6% (99.4% - 99.7%)
Bulgaria	99.4% (99.1%-99.7%)	99.9% (99.7%-100%)

Small decrease of the national KPI in Germany.
Small increase of the national KPI in Bulgaria.

Period-prevalence survey: National KPI (95% CI)

Country	Baseline	Trendline
Austria	91.9% (90.7% - 93.1%)	87.8% (86.0% - 89.5%)
Finland	96.1% (95.1% - 97.2%)	89.8% (88.5% - 91.0%)
Ireland	96.0% (93.0%-99.0%)	93.2% (91.4%-94.6%)
Sweden	94.3% (92.7% - 96.0%)	92.9% (91.3% - 95.3%)
	AT, FI, IE: N-over legal limit-never (30 days) / FI: no weighting / SE: N-over legal limit-never (12 months)	N-over legal limit-never (30 days) / AT, SE: ESRA3

Generally decreased KPIs but most are not comparable due to methodological changes.

Trend line

Comparison – general remarks

- Overall trend comparisons are complicated by a shift away from RBT in some countries due to resource or legal constraints. The Alcohol KPI shows a relative status quo in Trendline compared to Baseline
- Like in Baseline for almost all countries the KPI values are lower during night-time, with the lowest KPIs being observed during weekend nights. Additionally, like in Baseline, during daytime hours, fewer drivers are driving within the legal BAC limit in the weekend compared to on weekdays in most countries.
- Unlike in Baseline, we see in a small majority of countries less driving above the legal limit on motorways, compared to urban/rural roads.
- Like in Baseline, the Alcohol KPIs for female car drivers are higher than for male drivers in Belgium, Portugal (RBT), Austria, Finland and Sweden (period-prevalence).
- The period-prevalence KPIs by age group in Trendline show clearly lower KPIs for the youngest age group (18-24) compared to the older groups, compared to a smaller or no difference in Baseline, for Austria, Finland and Sweden.

Recommendations

Recommendations / Questions

- **International comparability**: Different data collection methods do not allow direct comparisons among all countries. Even within a same basic method, KPIs may not be fully comparable, due to methodological differences or deviations (e.g. varying operationalisations, small strata samples, no or different weighting, etc.).
  - Most countries provided period-prevalence KPIs (most based on ESRA3). The **golden standard method for comparability and objectivity for KPI Alcohol is the use of roadside random breath testing** though (most accurate view on the problem), so ideally more countries consider this method (again) in future. **If RBT is not legally possible or not feasible, then trip-prevalence survey is the closest method to RBT.**
  - Intra-method lack of international comparability is especially an issue for the trip-prevalence survey method (2 of the 4 countries are comparable). A **common operationalisation should be used for trip-prevalence surveys**, based on the methodological guidelines and the examples of the complex survey designs in DE and FI(1)). Ideally the period-prevalence question is also included, allowing provision of both trip- and period-prevalence indicators.
  - Four of the 5 countries using RBT provided **BAC risk related indicators**. Ideally more countries using RBT provide these in future editions. These allow international comparability, regardless of legal limit differences (17 participating countries: most have a general legal limit of 0,5 g/l BAC, except for: CZ (0,0 g/l), PL and SE (0,2 g/l), and LT (0,4 g/l); 12/17 also lower limits for novice and/or professional drivers.

Trend line

Recommendations / Questions

- **Small samples in period-prevalence surveys**: recommendation to boost the sample to reach the min. 750 regular car drivers. Most countries did not reach 250 car drivers for each age group. We propose to set the minimum at N 100 for subsamples, like in ESRA. There is no need to have the same minimum strata sample sizes (as for RBT/trip) because the period-prevalence is generally higher. **Small night samples in trip-surveys**: recommendation to oversample night trips (to be corrected afterwards with weighting).

- Some countries used no data weighting to correct disproportionate sampling (deviation), and differences in data **weighting** procedures remain, also related to the availability of national **traffic volume data**. There remains a need for official traffic volume estimates in countries.

- **ESRA-based indicators could be obtained directly via ESRA**, ensuring an identical analytical approach and international comparability.

Recommendations on future scope

For more and better international comparability:

- The golden standard method for KPI Alcohol is the use of **random breath tests** on a representative location sample.
- If this is not legally possible or feasible, then the use of **trip-prevalence survey** – following the complex survey design from the KPI guidelines and used within DE and FI (1) – is recommended.
- Countries using random breath tests should additionally provide **indicators by BAC risk level** (inverse formulation), independent of different or changing legal limits in countries.

Trendline

Recommendations on methodology

Recommended ranking of the possible methods for KPI Alcohol:

1. Golden standard: **random breath tests** on a representative location sample
2. If RBT are not legally possible or feasible, then: **trip-prevalence survey**
3. For additional information on the risk behaviour: **period-prevalence survey**

International comparability: For each method used, comply with all minimum requirements in the methodological guidelines (most detailed for RBT). For the complex survey design of the trip-prevalence survey, countries can also align with the studies used in Trendline in Germany or Finland.

Historical comparability: Ideally countries use the same method(s) in following editions.

Trendline

Recommendations on policy integration

- Monitoring uniform KPIs on a regular base is part of evidence-based policy-making: it provides knowledge on the problem situation and risk factors/predictors of the risk behaviour, and it allows evaluating policies and monitoring progress over time.
- Monitor the KPI Alcohol in time, following the Trendline minimum requirements and recommendations for international comparability and using the same method over time for historical comparability.
- Set national short- and long-term targets based on the KPI Alcohol results.
- Integrate the KPI results in road safety policies and in decision-making processes for actions and countermeasures. Focus extra on high-risk situations (nights, especially weekend nights) and risk groups (e.g. male drivers; young drivers) based on the KPI Alcohol results, next to general deterrence (social norm).
- International benchmarking allows identifying better/good performing countries

Trendline

Annexes

Annex 1 National legislation (ascending order according to the legal limits)

Countries	KPI alcohol related legislation: legal BAC limit
Czech Republic	0,0 g/l
Poland	0,2 g/l
Sweden	0,2 g/l
Lithuania	0,4 g/l, novice/professional: 0,0 g/l
Switzerland	0,5 g/l, novice/professional: 0,1 g/l
Slovenia	0,5 g/l, novice/professional: 0,0 g/l
Germany	0,5 g/l, novice/young: 0,0 g/l
Italy	0,5 g/l, novice/young/professional: 0,0 g/l
Austria	0,5 g/l, novice: 0,1 g/l
Belgium	0,5 g/l, professional: 0,2 g/l
Ireland	0,5 g/l, novice/professional: 0,2 g/l
Luxembourg	0,5 g/l, novice/professional: 0,2 g/l
Netherlands	0,5 g/l, novice: 0,2 g/l
Portugal	0,5 g/l, novice/professional: 0,2 g/l
Spain	0,5 g/l, novice/professional: 0,3 g/l
Bulgaria	0,5 g/l
Finland	0,5 g/l

Trend line

Annex 2 Meta-data: random breath testing

Countries	Method	Stratifications required & delivered	Delivered datasets (raw data/weighted results)
Belgium	**Police alcohol checks**, **random** sample of locations, random breath tests	Min: national level, road type, week period + age, gender, BAC level (country, road, week)	**Weighted**: guideline version 1 (counts, national traffic volume estimates)
Finland (3)	**Police alcohol checks**, **all** drivers stopped and tested, **representative** location sample *Carried out by the Finnish police as part of data collection for their own drink driving prevalence time series, which has been updated systematically every year for several decades.*	Min. without motorways: national level, road type (2), week period, road (2) x week	**Weighted:** national traffic volume estimates (road types, week periods)
Luxemburg	**Police alcohol checks**, on the orders of the State Prosecutor on specified location and time, **all** drivers stopped and tested	Min: national level, road type, week period + road x week. *Too small location and driver sample: only sufficient driver sample for weekend night x road type and weekend day x urban; no valid aggregated KPIs*	**Calculated** not weighted results, 95%CI/SE missing
Poland	**Police alcohol checks**, **random** sample of locations, random breath tests	Min: national level, road type, week period + road x week, age, gender, age x gender, BAC level (country, road, week, road x week) + 4-level-crossings	**Weighted**: guideline version 1 (counts, national traffic volume estimates)
Portugal	**Police alcohol checks**, **random** sample of locations, random breath tests	Min: national level, road type, week period + road x week, age, gender, age x gender, BAC level (country, road, week, road x week)	**Weighted**: guideline version 2 (counts, road length estimates)
Spain	**Police alcohol checks**, **random** sample of locations, random breath tests	Min: national level, road type (expressways merged with motorways), week period, (also week periods for motorcycle), age, gender, age x gender	**Weighted**: traffic counts, traffic intensity estimates
Switzerland	**Police alcohol checks**, **random** sample of locations, random breath tests	Min: national level, road type, week period + road x week, age, gender, age x gender, BAC level (country, road, week)	**Weighted**: guideline version 1 (counts, national traffic volume estimates)

Annex 3 Meta-data: trip-prevalence survey

Countries	Method	Stratifications required & delivered	Delivered datasets (raw data/weighted results)
Bulgaria	**Roadside face-to-face interviews** on 3 road types (random? 30 locations) and 4 week periods (hours deviate), quotas based on previous nationally representative surveys of motor vehicle drivers, drivers, drivers are asked to provide info on **all trips made in the last 24h**.	Min: national level, road type, week period	**Calculated results:** sampling quota for age and gender (population-based) and for road type and week period (minimum sample requirements?); no post-stratification weighting Measurement unit = all last 24-hour trips of interviewed drivers (nested). *“The sample was randomly selected and is nationally representative of drivers in Bulgaria”*
Finland (1)	**Online panel survey**, representative regarding age, gender and region (drove a car at least once during the previous 3 days), **random selection of a trip in last 3 days**	Min: national level, road type, week period + road*week, age, gender, age*gender	**Weighted** results: **population-based and trip-based** weights - mileage road type, traffic proportion by week period * road type
Germany	**Online panel survey**, representative regarding age*sex, region, education (quota), **random selection of a trip in last 7 days,** oversampling nights	Min: national level, road type, week period + road*week, age, gender, age*gender + 4-level-crossings	**Weighted** results: **population-based and trip-based** weights - correction for oversampling of night trips
Lithuania	**Online panel survey**, no population-based sampling quota (no representative population sample), selection criterion was whether a person drives a car, **last trip**	Min: national level, road type, week period + road*week, age, gender, age*gender	**Weighted** results: **no population-based quota/weighting** but weights for road types - share of road type length within the whole road network - and week periods - share of week period time length within the whole week

Annex 4 Meta-data: period-prevalence survey

Countries	Method	Stratifications required & delivered	Delivered datasets (raw data/weighted results)
Austria	**ESRA3** survey: online panel, sampling **quota** (age*gender, region) and post-stratification weighting to achieve a representative sample based on national adult population statistics. KPI results from subsample occasional car drivers. KPI: % not driven with a BAC > legal limit in the last 30 days.	Min: national, age, gender + age *gender	**Weighted** results (**population-based**) - ESRA3 nationally representative samples: KPI results for subsample of respondents at least occasionally driving a car
Czech Republic		Min: national level, age, gender + age*gender, road, time	
Italy		Min: national level, age, gender + age*gender, road type, week period, age*gender*time, road*time	
Netherlands (2)		Min: national level, age, gender + age*gender	
Sweden		Min: national level, age, gender + gender*age	
Finland (2)	Online panel survey: sampling **quota** (age*gender, region) and post-stratification weighting to achieve a representative sample based on national adult population data. From this sample a subgroup was filtered (drove a car at least once during the last 3 days) leading to proportions that slightly deviate from the population data. KPI: % not driven with a BAC > legal limit in the last 30 days.	Min: national level, age, gender + age*gender, road type, week period, age*gender*time, road*week	**Weighted** results (**population-based**) - KPI results for a selection of the representative sample (drove a car at least once during the last 3 days)
Ireland	Online panel survey: sampling **quota** based on national adult population data (age, gender, region, area) to achieve a representative sample of motorists who are regular drivers (at least a few days a month). KPI: % not driven with a BAC > legal limit in the past 30 days.	Min: national level, age, gender + age*gender	**Calculated** results (**quota - population-based)** - KPI results for a representative regular motorist sample (drove a car at least a few days a month)
Netherlands (1)	Online panel survey: sampling **quota** (age, gender, province) and post-stratification weighting to achieve a representative sample based on national adult population data. From this sample a subgroup was filtered (drove a car at least multiple times a year) which was weighted again according to national population statistics. KPI: % not driven with a BAC > legal limit in the **past 12 months.**	Min: national level, age, gender + age*gender	**Weighted** results (**population-based**) - KPI results for a subset of the representative sample (drove a car at least at least multiple times a year)
Slovenia	Online panel survey: sampling **quota** to achieve a representative sample based on national adult population data (age*gender, region). From this sample a subgroup was filtered (drove a car at least a few times in the last 12 months) leading to proportions that slightly deviate from the population data.	Min: national level, age, gender + age*gender, road type, week period, age*gender*week	**Calculated** results (**quota - population-based)** - KPI results for a selection of the sampling quota-based representative sample (drove a car at least a few times in the last 12 months)

Annex 5 Driver sample size RBT: total, per road type

Countries	Total driver sample (location sample)	Driver sample per road type (location sample)		
		Urban	Rural	Motorway
Belgium	8 370 (411)	3 917 (192)	2 958 (146)	1 495 (73)
Finland (3)	60 605 (* 299 sessions, unknown N locations)	1 9621 (* 87 sessions, unknown N locations)	40 984 (* 212 sessions, unknown N locations)	0
Luxemburg	2 942 (23)	434 (19)	237 (2)	2 271 (2)
Poland	4 604 (96)	1 633 (32)	1 531 (32)	1 440 (32)
Portugal	5 068 (317)	2 748 (214)	1 410 (102)	910 (55)
Spain	2 143 (312)	1 593 (157)	351 (99)	200 (56)
Switzerland	4 847 (85)	1 968 (41)	1 396 (26)	1 483 (18)

Annex 6 Driver sample size RBT: per week period

Countries	Driver sample per week period (location sample)			
	Weekday	Weeknight	Weekend day	Weekend night
Belgium	3 452 (147)	649 (61)	3 044 (133)	1 225 (70)
Finland (3)	27 951 (* 123 sessions; unknown N locations)	7 500 (* 50 sessions, unknown N locations)	18 076 (* 61 sessions, unknown N locations)	7 078 (* 65 sessions, unknown N locations)
Luxemburg	0 (0)	372 (1)	1 143 (5)	1 427 (17)
Poland	1 448 (48)	1 035 (48)	1 218 (48)	903 (48)
Portugal	2 690 (229)	660 (61)	1 018 (97)	700 (68)
Spain	1 164 (102)	109 (62)	614 (77)	257 (71)
Switzerland	1 755 (27)	939 (22)	905 (20)	1 248 (22)

Trend line

Annex 7 Driver sample size questionnaire surveys

Countries	Period-prevalence	Sampling strata	Countries	Trip-prevalence	Sampling strata
Austria	1 421	Population data (ERSA3)	Bulgaria	2 901 *no driver sample but trip sample: all 24h trips of interviewed drivers on the road	1) Road type, week period, 2) population data (quota)
Czech Republic	598	Population data (ERSA3)	Finland (1)	2 503	Population data
Finland (2)	2 503	Population data	Germany	4 827	Population data
Ireland	1 007	Population data	Lithuania	2 510	Road type, week period
Italy	905	Population data (ERSA3)			
Netherlands (1)	6 463	Population data			
Netherlands (2)	700	Population data (ERSA3)			
Slovenia	1 073	Population data			
Sweden	630	Population data (ERSA3)			

References and further reading

Trendline

Key documents and links

- Baseline report on KPI Alcohol
- Methodological Guidelines KPI Alcohol
- ESRA3 Thematic Report on Alcohol
- ERSO Thematic Report on Alcohol
- Final report on Trendline
- Trendline Dashboard

Trendline

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