Driver attitudes towards vehicle automation.
International comparison based on ESRA2 data from 32 countries

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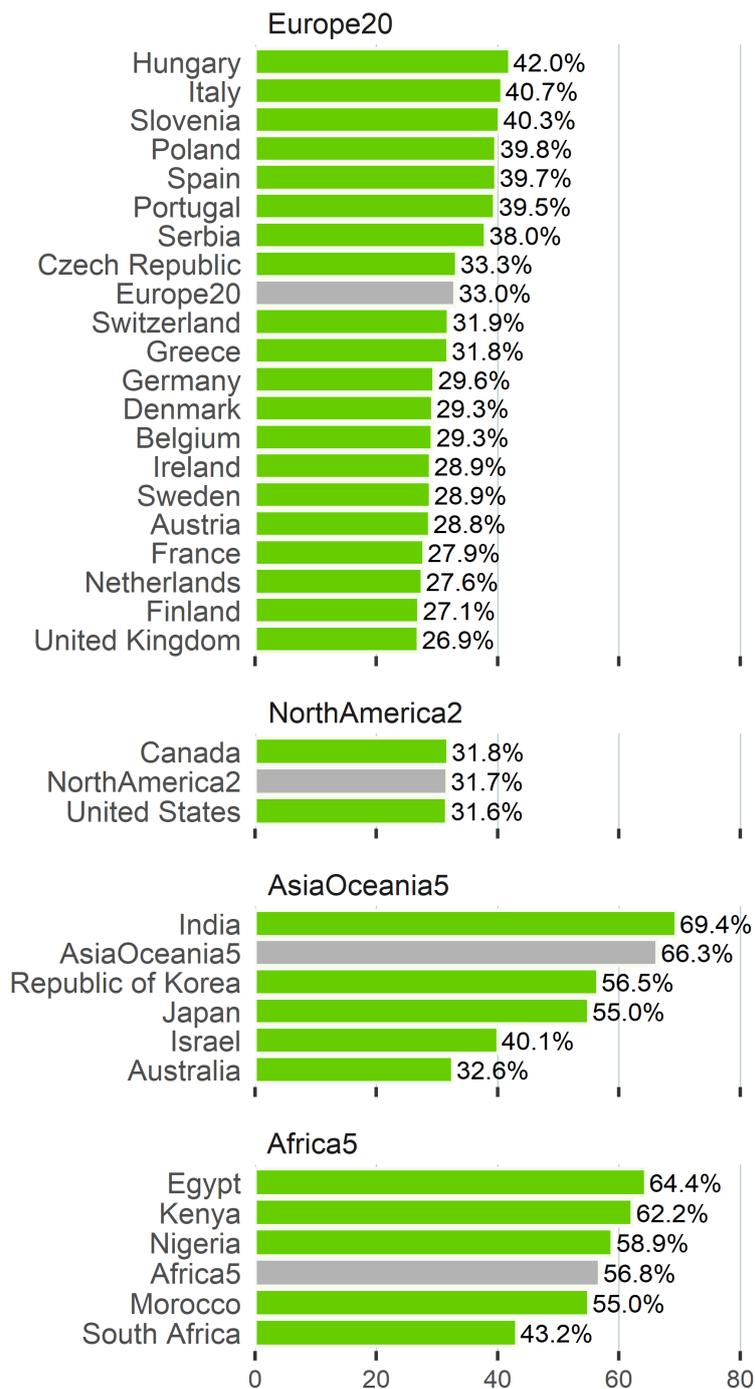**Keywords:** ESRA; vehicle automation; driver attitudes

Context and scope

ESRA (E-Survey of Road users' Attitudes) is a joint initiative of road safety institutes, research organisations, public services and private sponsors, aiming at collecting comparable (inter)national data on road users' opinions, attitudes and behaviour with respect to road traffic risks. The basis is a jointly developed questionnaire which is translated into national language versions (Meesmann et al., 2021). The research results presented are based on the first wave of the second ESRA edition, which was conducted in 2018 (ESRA2_2018). In this wave data from more than 35,000 road users were collected across 32 countries across the world.

Interest in vehicle automation

Automated passenger vehicles were categorized into semi- and fully-automated vehicles for the purposes of this research. Automated passenger vehicles are categorized into semi- and fully-automated vehicles for the purposes of this research. Semi-automated passenger vehicles are defined as a vehicle that can control all critical driving functions, under limited circumstances, but the operator is required to respond when prompted to resume control of the vehicle. Fully-automated passenger vehicles are defined as a vehicle that controls all critical driving functions and monitors all traffic situations, under defined circumstances, and the operator is not prompted to resume control of the vehicle. Interest in using semi-automated and fully automated vehicles varies considerably across countries (see Figure 1 for fully-automated vehicles), with highest interest in some Asian countries and lowest in North America. In general, males are more interested in using semi-automated vehicles then females. Interest in using such vehicles is highest among younger age groups, and generally decreases with increasing age.

Figure 1 – Interest in using a fully-automated passenger car

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Europe20

Country	Percentage
Hungary	42.0%
Italy	40.7%
Slovenia	40.3%
Poland	39.8%
Spain	39.7%
Portugal	39.5%
Serbia	38.0%
Czech Republic	33.3%
Europe20	33.0%
Switzerland	31.9%
Greece	31.8%
Germany	29.6%
Denmark	29.3%
Belgium	29.3%
Ireland	28.9%
Sweden	28.9%
Austria	28.8%
France	27.9%
Netherlands	27.6%
Finland	27.1%
United Kingdom	26.9%

NorthAmerica2

Country	Percentage
Canada	31.8%
NorthAmerica2	31.7%
United States	31.6%

AsiaOceania5

Country	Percentage
India	69.4%
AsiaOceania5	66.3%
Republic of Korea	56.5%
Japan	55.0%
Israel	40.1%
Australia	32.6%

Africa5

Country	Percentage
Egypt	64.4%
Kenya	62.2%
Nigeria	58.9%
Africa5	56.8%
Morocco	55.0%
South Africa	43.2%

Perceptions about the potential benefits of using automated passenger vehicles

The likelihood of certain benefits occurring if everyone were to use an automated passenger vehicle was examined. Across all regions, male respondents were more likely to perceive that semi-automated or fully automated passenger vehicles would result in fewer crashes. In general, the oldest age group (65+) were least likely to believe this benefit would occur if everyone used a semi-automated vehicle. Similar patterns were found in relation to the perceived reduced severity of the crashes with (semi)-automated vehicles. Again, these beliefs were strongest in some Asian countries. So overall,

people tend to thank that vehicle automation will improve road safety – but the belief in this varies considerably across countries, gender and age categories.

Other potential benefits analysed included less traffic congestion, shorter travel time, lower vehicle emissions, better fuel economy, more time for functional activities, and more time for recreational activities. In general a pattern emerged for these perceived potential effects that was similar to that for the road safety effects, with stronger expectations and beliefds that the benefits suggested would actually occur. It needs to be pointed out that in some African countries, contrary to the pattern observed in most other countries, women's beliefs in some of the benefits were similar or even stronger than those of men.

Statistical information

Detailed statistical information is available in a report (Woods-Fry et al., 2021) that can be downloaded from the ESRA website (www.esranet.eu). During the presentation, examples will be provided on the differences between the perceptions of countries, regions, age categories and gender – and combinations thereof.

Policy recommendations

It is important to continue to study the impact of age and gender on interest in automated passenger vehicles and ensure that public education of automated vehicle technology is tailored to the specific cohort of drivers. As a result of the different driving behaviours and habits of distinct populations of drivers, public education must be responsive to the specific needs of each cohort. It is also important to begin conversations with drivers in advance of publicly available automated passenger vehicles. Although trust is important, drivers must first have a proper understanding of the capabilities and limitations of the technology, and misconceptions about the role of the driver must be dispelled.

References

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