



Editorial

The ESRA initiative: growing insights on global monitoring of road safety performance and road safety culture[☆]

1. Monitoring road safety performance and road safety culture

Monitoring road safety performance is essential for understanding trends and evaluating the effectiveness of policy measures. Road safety performance indicators (SPIs) are commonly used for this purpose and can be based on accident statistics, roadside observations, or questionnaire surveys [1]. Roadside observations are often considered the gold standard for producing SPIs because they are based on observed traffic behaviour. However, this method has also limitations. The number and nature of variables that are observable are limited, and these studies require complex designs, are time-consuming, and involve high costs. In addition, methodological differences often make it difficult to compare results across countries [2,3]. Questionnaire surveys are based on self-reports but can offer a valuable and complementary alternative. When properly designed and based on representative samples, they can provide reliable data and additional information on road safety performance and road safety culture. Furthermore, online surveys are relatively fast and cost-efficient. Importantly, questionnaires enable the inclusion of non-observable aspects, such as psychosocial constructs (shared beliefs, e.g., norms, attitudes, perceived behavioural control, intentions [4]), which help explain unsafe road behaviour [2,3]. In line with Ward et al. [5,6], road safety culture can be defined as shared beliefs of a group that affect their behaviour related to road safety. Understanding the relationship between road safety culture (shared beliefs) and road safety performance (behaviour) supports the development of targeted education, communication, and policy interventions.

Many countries have a high interest in comparing their national road safety performance and road safety culture, because they want to learn from each other. To ensure comparability across countries, consistent study designs and questionnaires are essential. The SARTRE project (Social Attitudes to Road Traffic Risk in Europe), launched by the European Commission in 1991, was a pioneering effort in this regard. A common questionnaire and study design was developed to collect comparable data via face-to-face interviewing across several European countries. Four editions were conducted between 1991 and 2010 [7]. In 2015, the Vias institute (Belgium) launched the ESRA survey (*E-Survey of Road Users' Attitudes*) to fill the gap that emerged after the SARTRE project. The ESRA initiative builds on this experience and extends it globally, demonstrating the feasibility and added value of harmonised international data collection on road safety performance and road safety

culture [3].

2. The ESRA approach

ESRA (*E-Survey of Road Users' Attitudes*) is a joint initiative of road safety institutes, research centres, public services, and private sponsors worldwide. Its aim is to collect and analyse comparable data on road safety performance and road safety culture, providing evidence to support policymaking at both national and international levels. Although ESRA was initially a European initiative, it rapidly evolved into a global monitoring system. Already three editions of the ESRA survey have been conducted in a total of 68 countries worldwide (ESRA1: 2015–2018; ESRA2: 2018–2021; ESRA3: 2022–2024). The latest edition of the ESRA survey collected data from more than 37,000 road users across 39 countries [3].

At the heart of ESRA is a jointly developed online panel survey using a representative sample of the national adult population in each participating country. A common questionnaire is developed and translated into national language versions. In ESRA3 there were 49 national language versions. The survey covers self-reported behaviour, attitudes, and opinions regarding unsafe traffic practices, as well as experiences with enforcement and support for road safety policies. It covers various road safety topics, such as driving under the influence of alcohol, drugs or medication, speeding, and distracted driving. The survey targets all types of road users, including car occupants, moped and motorcycle riders, cyclists, pedestrians, and e-scooter riders. In ESRA3, questions on vulnerable road users were expanded, and questions on e-scooters and infrastructure were added.

ESRA is funded by resources from partners or regional sponsors and includes countries from around the world. In each participating country, a national or regional partner supports the initiative by funding the survey, translating the questionnaire, and interpreting the results. The survey is centrally coordinated by the Vias Institute (Belgium) in close collaboration with ten steering group partners: BASt (Germany), DTU (Denmark), IATSS (Japan), ITS (Poland), KFV (Austria), NTUA (Greece), PRP (Portugal), SWOV (Netherlands), TIRF (Canada), and University Gustave Eiffel (France) [3].

3. Relevance and importance of ESRA3 in IATSS activities

The International Association of Traffic and Safety Sciences (IATSS),

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which is a unique interdisciplinary academic society in the field of traffic safety research, has participated in ESRA as a representative organisation of Japan and one of the steering group partners since 2018.

In one of the strategic projects of IATSS, the latest three-year international collaborative research program (2022–2024) in which traffic safety researchers from ten countries participated, ESRA data was extensively utilized to present the casual structure between traffic safety culture and road crashes based on structural equation modelling (SEM). By combining ESRA data with statistical data opened by world organizations such as WHO and World Bank, the developed model appropriately explains the Theory of Planned Behaviour on traffic safety and found a common structure among the countries. In particular, one of the interesting findings through this modelling is that the mechanism differences can be well presented by grouping the countries into three groups: pre-motorisation, controlled safety, and self-disciplined countries. ESRA enables to carry out this kind of analysis on presenting cross-national differences with a sufficient number of samples. IATSS will continue to place emphasis on research activities related to elucidating the relationship between traffic safety culture and road crash risk, and involvement in ESRA is expected to play a central role in their research activities.

4. Importance of the research presented in this special issue

This special issue of IATSS Research highlights the third edition of the ESRA survey, which collected responses from over 37,000 road users in 39 countries in 2023. Seven articles were selected to illustrate the opportunities and challenges of studying road safety behaviour and culture using online panel surveys. They provide examples of research questions that can be explored with the ESRA data. The following articles are included:

1. Measuring Road Safety Performance and Culture: A Comparative Study of 39 Countries
2. Exploring Cross-National Variations in Traffic Safety Culture: Insights into Mobile Phone Use and Shared Beliefs across 31 Countries
3. E-scooter Riders: A Cross-Cultural Analysis of Traffic Safety Attitudes and Behaviours
4. Cross-cultural perspectives of Vulnerable Road User safety performance based on evidence from 39 countries
5. Infrastructure use and related safety feeling of different road user types globally
6. How to improve public support for a 30 km/h speed limit in built-up areas?
7. Gender Differences in Drivers' Road Risks and Gender Equality Policies: A Gender Paradox? Comparative Analysis Of 39 Countries

The first article gives an overview of the ESRA survey methodology and key descriptive results from 37,000 road users in 39 countries. It examines perceptions of unsafe traffic behaviour, including risk awareness and personal and social acceptability, self-reported unsafe behaviours, and opinions on regulations and policy measures. Only a minority accept unsafe traffic behaviour, while most support rules that reduce risky driving. Speeding (37–47%) and mobile phone use (22–32%) are the most common risky behaviours. Among vulnerable road users, main risks are distraction for pedestrians, no helmet for cyclists, and speeding for motorcyclists. These findings provide valuable benchmarks for policymakers to compare a country's road safety situation to that of other countries.

The second article explores cross-national differences in traffic safety culture. It focuses on self-reported mobile phone use while driving and related shared beliefs across 31 countries. The ESRA questionnaire captures common psychological constructs, such as those from the Theory of Planned Behaviour [2]. Results show that norms, perceived behavioural control, attitudes, and intentions explain 37–63% of self-reported behaviour, with norms as the strongest predictor. Large

national differences suggest that cultural and psychological factors influence drivers' choices, and the precise influence is country specific. These findings help designing interventions and campaigns, which are tailored to the most relevant motivational factors in each country. They can help improve the effectiveness of safety programs and reduce risky driving behaviours.

The third article focuses on e-scooter riders, a new target group within ESRA. The results show that use of e-scooters is higher among young and male respondents, who are also more likely to engage in risky behaviours. Common risks include riding without helmets, carrying passengers, and riding under the influence of alcohol. Risk-taking is linked to previous crash history, being a student, and permissive attitudes towards unsafe traffic actions. Regional differences indicate that safety interventions should be adapted to local cultural and regulatory contexts.

The fourth article is dedicated to vulnerable road users (VRUs), pedestrians, cyclists, and powered two-wheeler riders, who are at a higher risk of injury in crashes. Information on this group is rather scarce. The study shows that VRUs' safety perceptions vary widely across regions, with European pedestrians feeling safer than others. Helmet use among cyclists and alcohol or drug use are key safety concerns. Risky behaviours are lower among older VRUs compared to younger ones. Using SOM analysis, VRUs are categorized into risk clusters, revealing that most follow low-risk patterns, while some younger users take higher risks.

The fifth article explores how people perceive the safety of the roads they use. The focus is on car drivers and VRUs from 39 countries. Moderate to weak linear relationships were found between perceived safety and fatality rates, indicating that perceptions do not always match real risks. The ESRA survey provides unique, large-scale data that cannot be obtained from other sources.

The sixth article examines public attitudes towards the 30 km/h speed limit in built-up areas in Europe, an increasingly implemented measure in many European cities. It examines beliefs that influence support for or opposition to this policy measure. These insights can improve communication strategies to increase acceptance and compliance. Overall support was relatively low and was highest among urban residents, cyclists, women, older people, and those with comfortable household incomes. Supporters emphasised the positive effects of lower speeds, whereas opponents focused on perceived negative side effects. The main identified obstacles to supporting a 30 km/h speed limit in built-up areas were beliefs that the measure would be a burden, would be difficult to enforce, and would limit people's mobility. Policymakers can use these findings when developing strategies to increase support for lower speed limits, as support is associated with compliance with the speed limit.

The seventh article explores the important role of gender in traffic safety. Men are more affected by traffic fatalities than women. Using data from 39 countries, it examines how gender interacts with national gender equality levels to influence drivers' behaviours and perceptions. Results indicate that men consistently engage in more risky driving behaviours and attitudes than women, regardless of a country's gender equality level. Gender equality policies seem to increase risky behaviours and attitudes among male and female drivers. High levels of gender equality are associated with greater gender differences in risky attitudes and perceptions. The article discusses this gender paradox as a result of gender stereotypes and the impact of safety culture on men and women. These findings can be used to better frame road safety campaigns and education within the safe system approach.

5. Closing remarks

The ESRA data provide a unique opportunity for understanding how traffic safety culture and behaviour vary across countries and what can be learned from these differences. The ESRA initiative was originally established to collect reliable and comparable data on people's

behaviour and attitudes towards road safety across European countries. This goal has been achieved and exceeded, as ESRA has evolved into a global initiative which already conducted surveys in more than 60 countries across the world. ESRA has proven the feasibility and added value of joint data collection on road safety culture, and performance by partner organizations all over the world. The ESRA data now form key components of international road safety monitoring systems, such as the Global Status Report on Road Safety (GSRRS) of the WHO [8], or the country profiles and thematic reports of the European Road Safety Observatory (ERSO) of the European Commission [9–11]. Conducted every three to four years, the survey retains a consistent core set of questions to allow comparisons over time and between countries. These results support both national policies and global monitoring efforts. The data collection of the next edition, ESRA4, will take place between May and June 2026. For more information, please visit www.esranet.eu.

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