



FEDERATION INTERNATIONALE DE L'AUTOMOBILE
REGION I - EUROPE, THE MIDDLE EAST AND AFRICA

Will AI Controlled Automated Vehicles Be Safe for Road Users?

ITU UNECE - 13 March 2023



Photo source: Samuele Piccarini via Unsplash



Agenda

Consumer expectations

FIA Region I position

Outlook

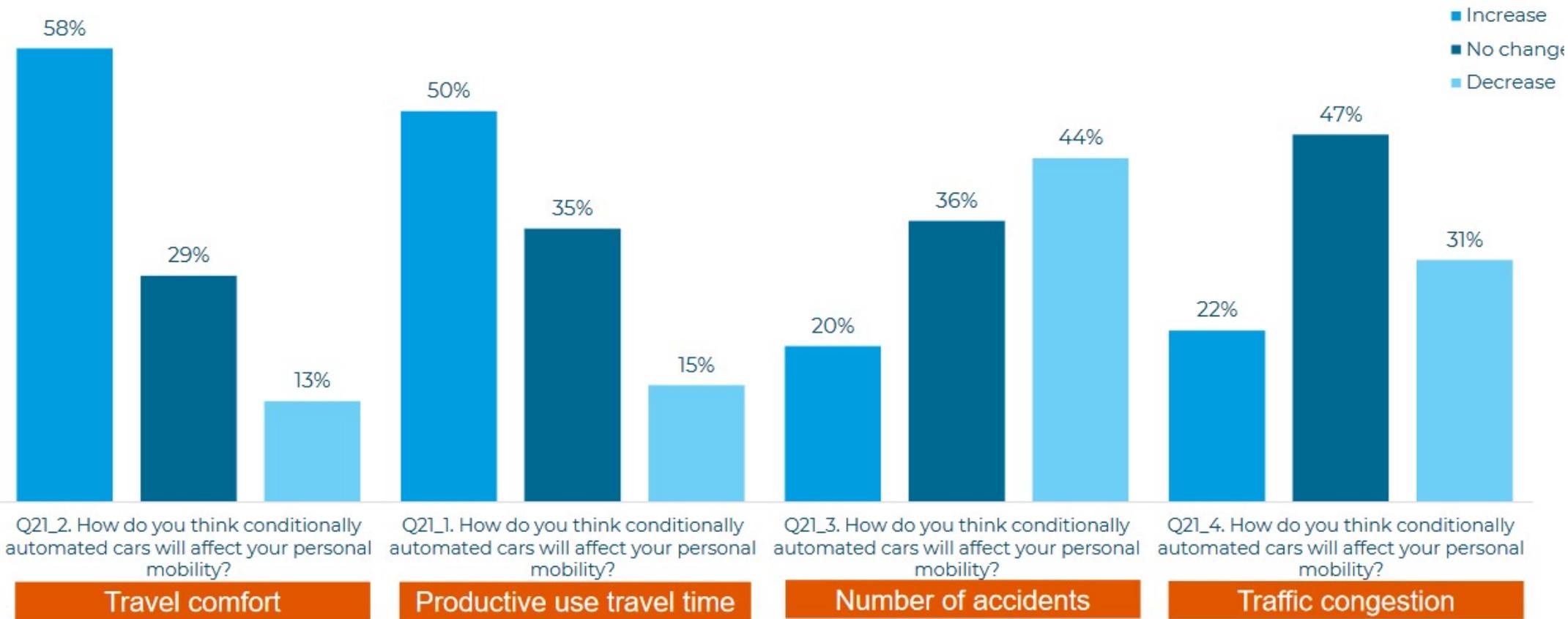
Facts & Figures: Global User Acceptance Survey



- Online survey on user acceptance of SAE Level 3: Conditionally automated cars
- long term perspective study // global
- 5 continents, 17 countries
- Data Collection in 3 waves:
05-06/2019 | 02-03/2020 | 01-02/2021
- 27,970 car drivers surveyed
 - Wave 1 n = 9,118
 - Wave 2 n= 9,513
 - Wave 3 n= 9,339



What are the expectations towards L3 cars?



Interpretation

44%

No change of
number of
accidents

20%

Increase of
number of
accidents

The primary benefit of partly automated transport systems to improve safety for all road users is seen with some doubts.

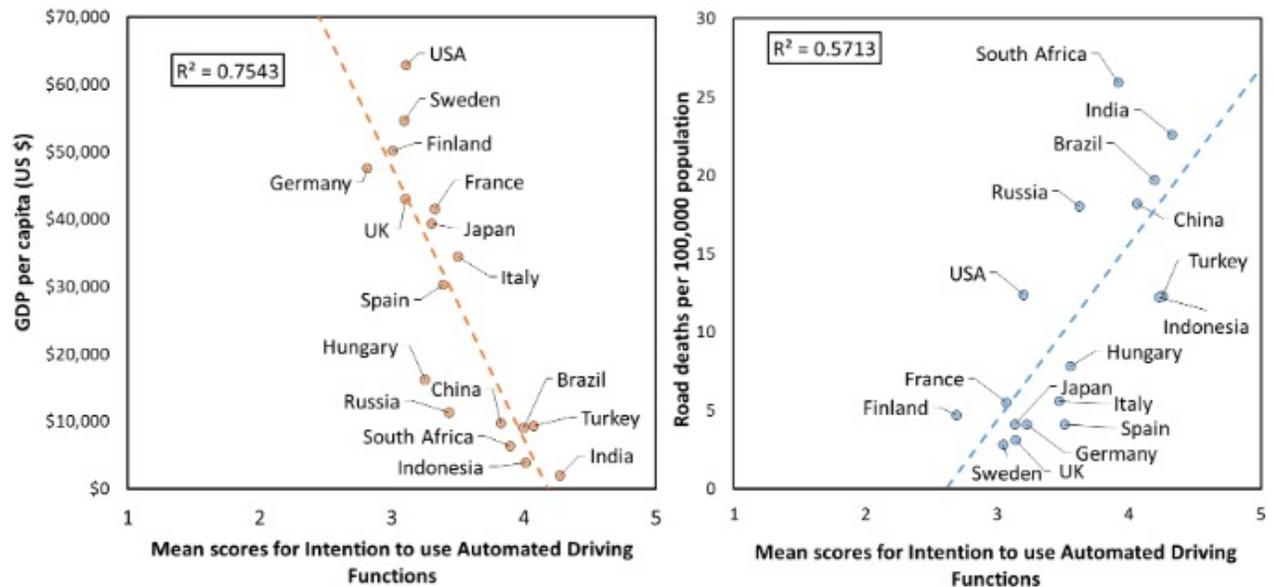


Reservations about automated driving safety improvements may result in

- Mass media coverage of accidents with automated vehicle and its frequency of reporting (USA where the first tragic reminders of the remaining challenges took place is among the countries with the lowest trust in safety improvements).
- Lack of long-term safety records / detailed safety impact assessment reassuring the users and thus building confidence.
- AD systems as part of a safer system: AD vehicles in transport system not yet ready for it in terms of street design, traffic conditions, signs and signals.

How does intention to use vary by a countries GDP and road death rate? 

Correlation between 17 countries overall mean scores for intention to use L3 cars across all environments, and their respective GDP per capita (left), and estimated road deaths per 100,000 population (right, WHO, 2018). Higher score = greater intention to use.



Intention to use L3 cars is strongly related to both GDP and road death rate. Countries with lower GDP per capita, and higher road death rates, generally have higher intentions to use an L3 car. These results highlight the relevance of cross-national and socio-demographic differences when investigating acceptance of potential future users of L3 cars, and their role in the development and deployment of L3 cars.



FIA Position on Automated Driving



Our recommendations



Focus efforts on **establishing good human-machine interaction** to prevent critical decrease of attention and misuse of automated functions

Promote the **education, training, and awareness** of driving assistance technologies, including the safe use of the systems' functionalities



Our recommendations



Design automated functionalities with **user-friendly Human Machine Interfaces** and sufficient lead time for drivers to resume driving if necessary

Encourage data sharing between private and public actors to make up-to-date, standardised digital maps available

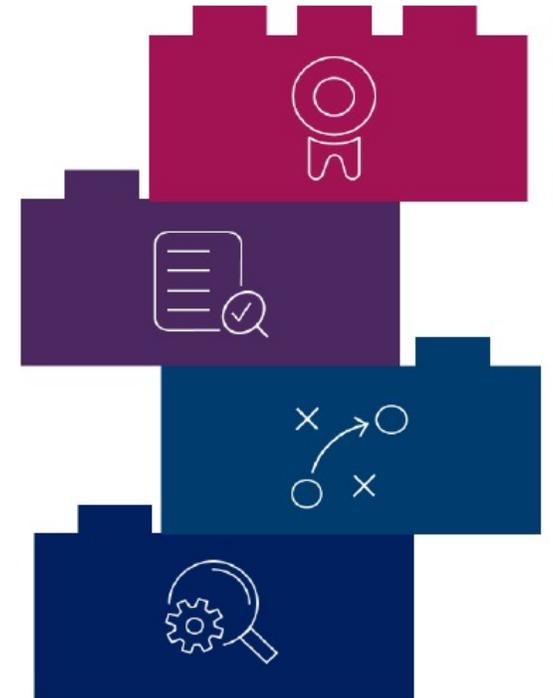


FIA Preference

Build transparency to foster consumers' trust in AI

Why? Because some AI systems and models are opaque, where decisions are not explainable

How? Through certification by type, real world testing and regulatory requirements





FIA Preference





Minimum Requirements on AI in Technology Neutral Mode

AI learning that derives from the driver must be **resettable/changeable**

AI related **software updates must be transparent and user-friendly**. The driver must be able to agree to updates which are not related to safety, security and environmental performance.

It should be possible to **test during the whole lifetime of the vehicle**, if valid AI software is installed. Detection of illegal cycle beating by AI software shall be possible.



Minimum Requirements on AI in Technology Neutral Mode

AI development should **take into account ethical aspects**. The AI software shall treat all persons in the same ethical correct way.

Any AI **should not harm people** and should always act in such a way as to avoid and if not possible to avoid, then minimise damage.



Narrow Intelligence; task specific

Supervised learning; develop predictive models

Self-learning functions in operation not allowed

The Black Box approach is a critical methodology for safety

Type approval approach with real world testing, simulations and audits

Transparency for consumers on the AI capabilities

AI use must follow ethical and defensive approaches



Thank you for your attention!



Photo source: Samuele Piccarini via Unsplash