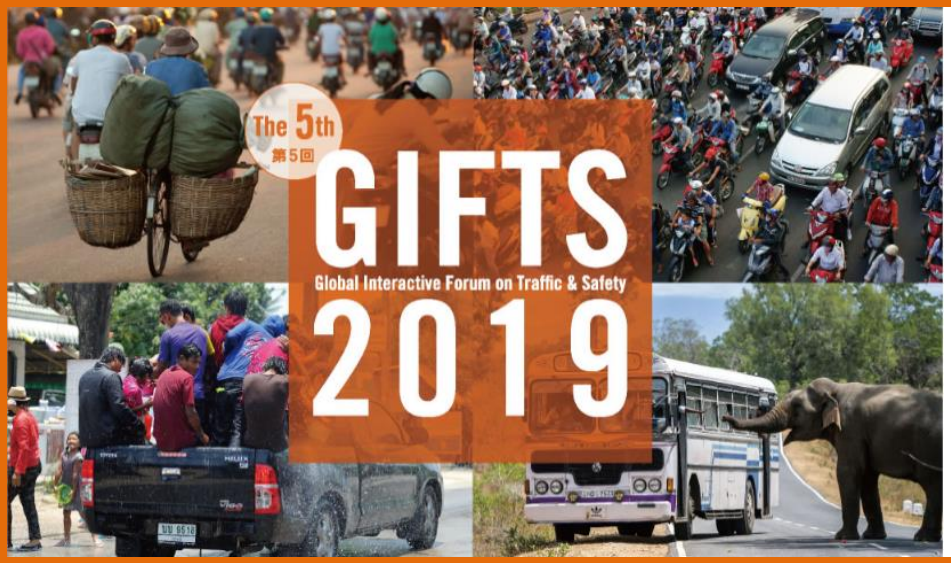
International Association of Traffic and Safety Sciences

ESRA
E-Survey of Road users' Attitudes



Research report

Attitudes Towards Traffic Safety in Japan

-from ESRA2-

October 28, 2019

GIFTS seminar
@ Station Conference Tokyo

Department of Environmental Engineering and Architecture (Traffic Engineering),
Graduate School of Environmental Studies,
Nagoya University
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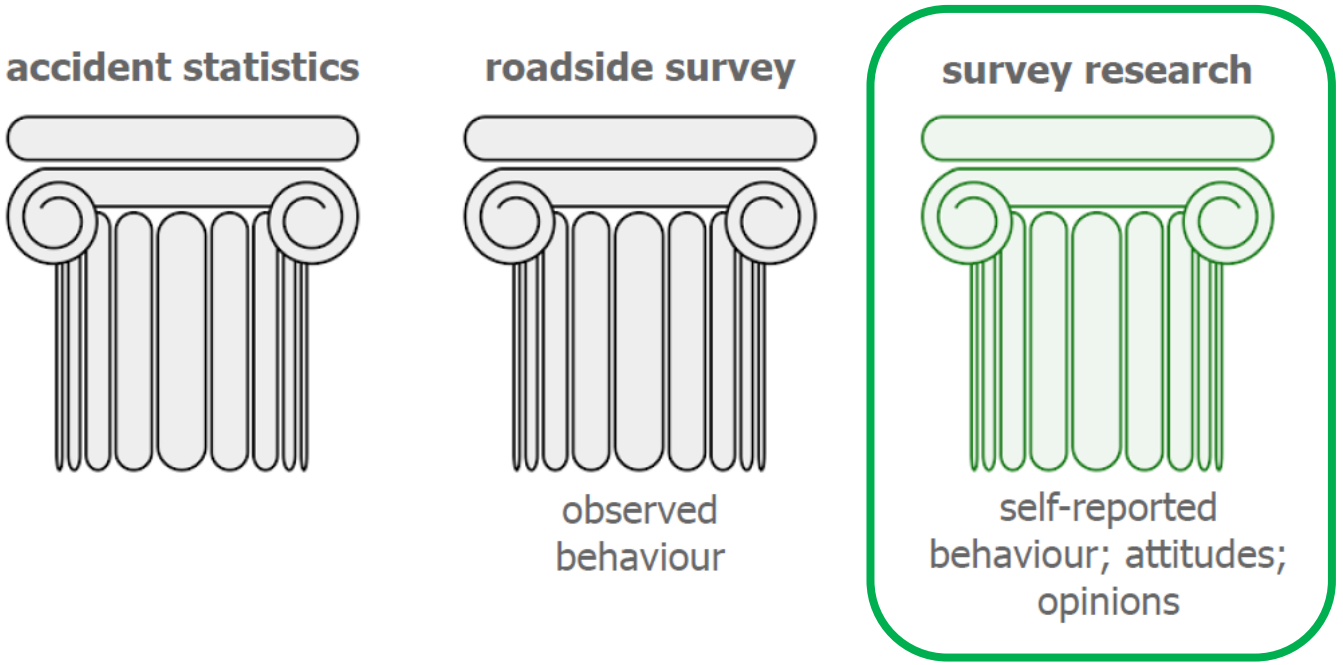
Content

*This presentation is provided except the slides not shown in the forum. (Secretariat)

1. Overview of ESRA2

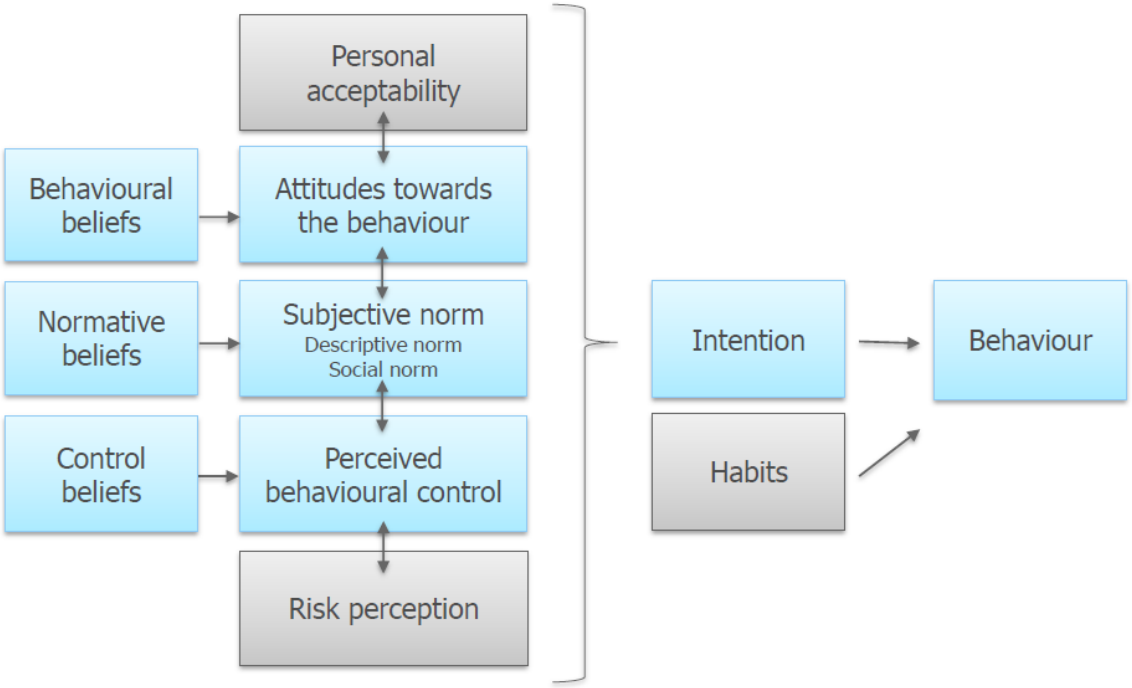
- ESRA2 (E-Survey of Road users' Attitudes)
  - E-survey of road users' attitudes by a joint initiative of road safety institutes, research centres, public services, and private sponsors from all over the world
- Objective
  - Collect and analyze comparable data on road safety performance, in particular road safety culture and behaviour of road users.
  - The ESRA data is used as a basis for a large set of road safety indicators. These provide scientific evidence for policy making at national and international levels.
- Coordinator
  - Vias institute (Belgium)
- Participating Countries: 32
  - Regions (number of participating countries): Europe (20), North America (2), Asia and Oceania (5), Africa (5)
- Results
  - The results are available on: www.esranet.eu
  - The country fact sheet is translated into country-language versions

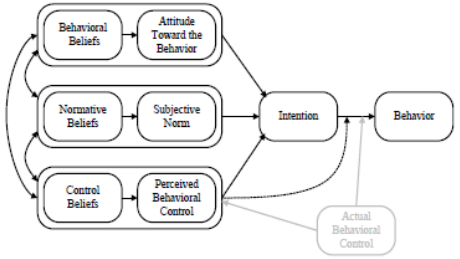
Monitoring road safety situation



Theoretical Model on Socio-Cognitive Concepts

Motivational models - ESRA2 theoretical model on socio-cognitive concepts

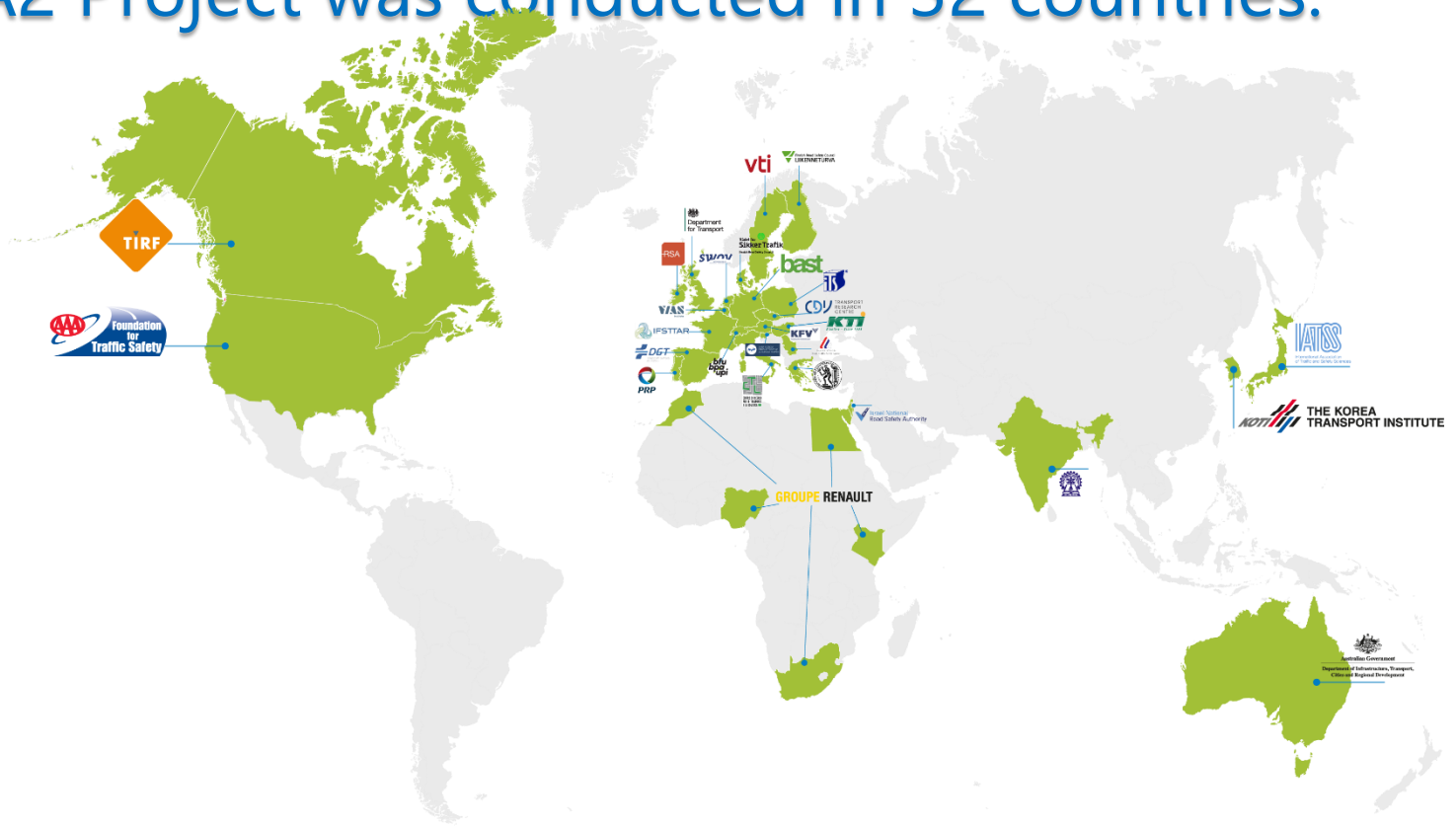




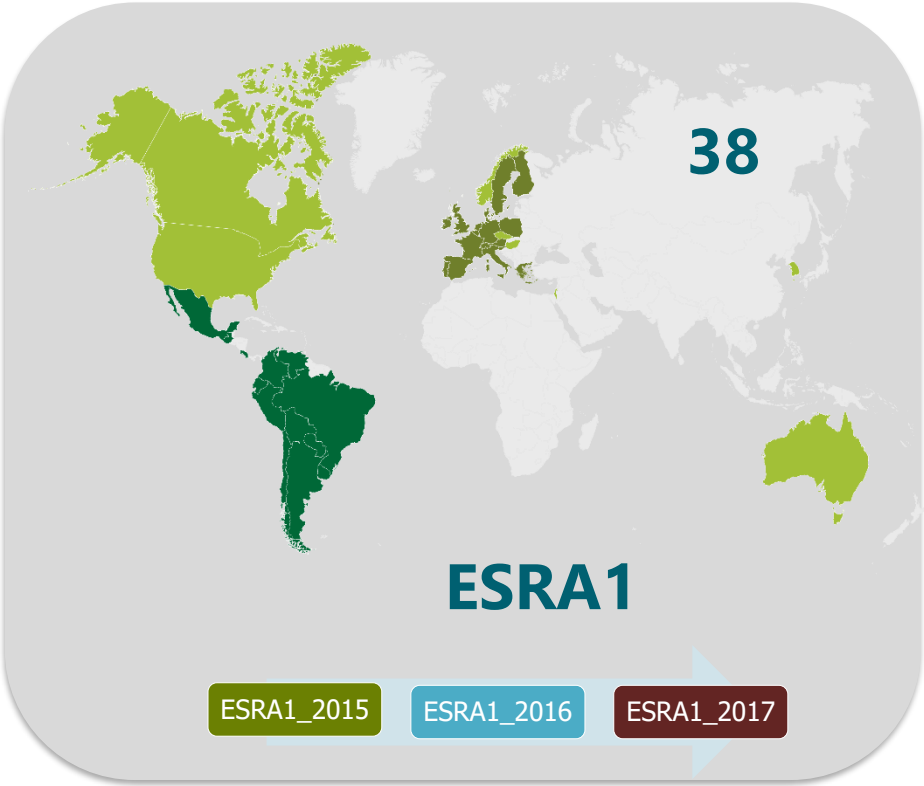
Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-Ten

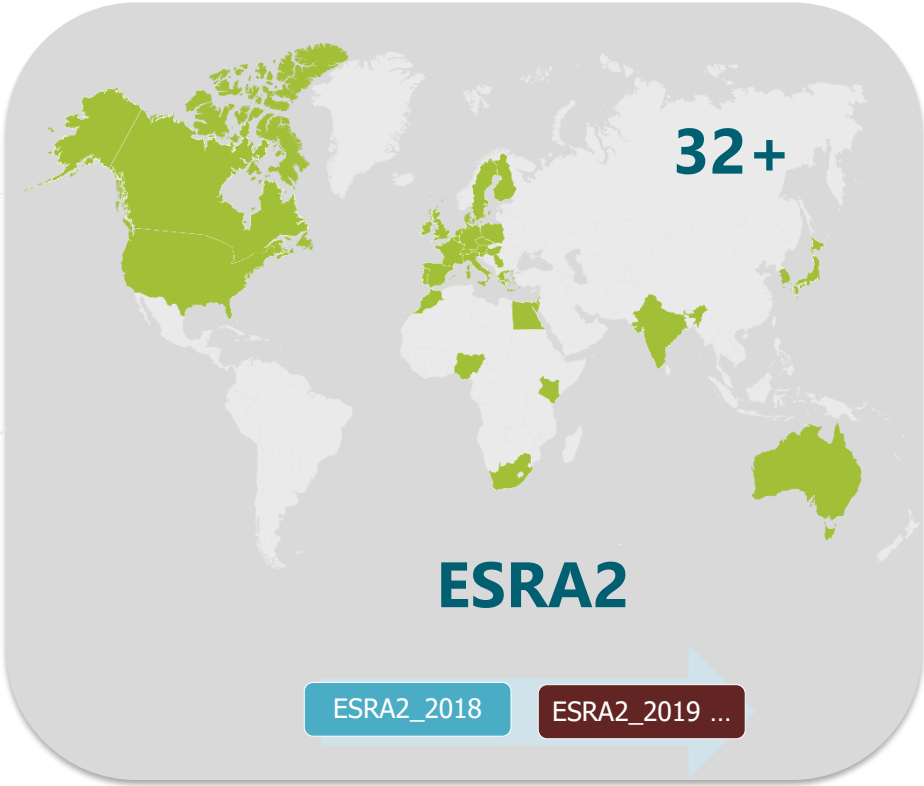
Countries Where ESRA2 in 2018 Was Conducted and ESRA2 Partners

- ESRA2 Project was conducted in 32 countries.



Evolution of ESRA 2015 - 2018

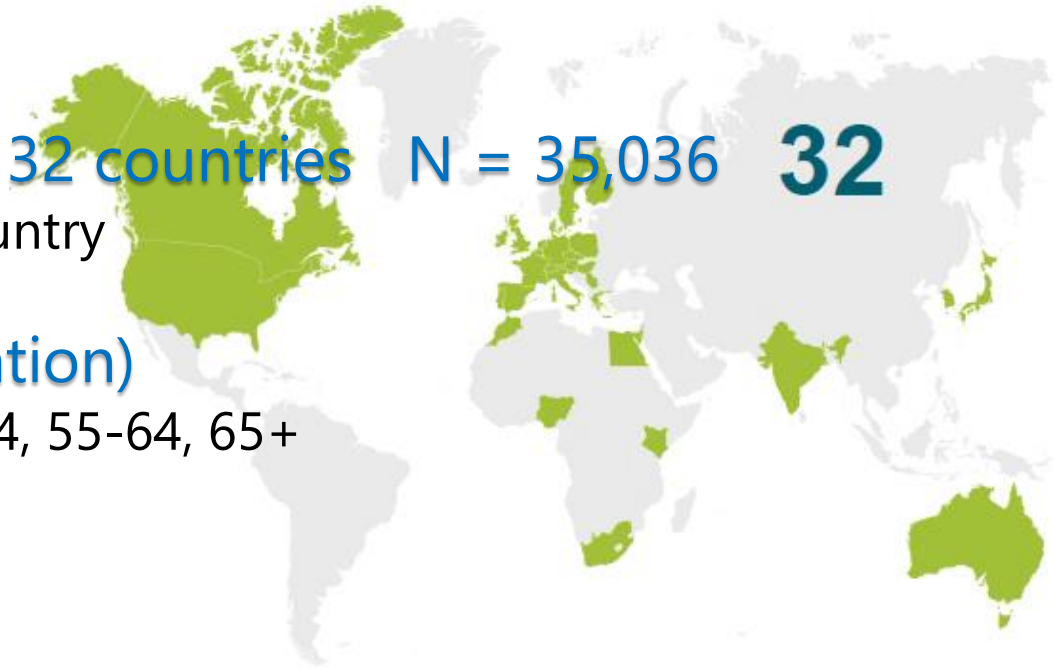




Since 2019
+ Vietnam, Malaysia, Thailand

ESRA2 Methodology

- Online panel survey
- Total sample size across 32 countries N = 35,036



  - At least N = 1,000 per country
- Age groups (18+ population)
  - 18-24, 25-34, 35-44, 45-54, 55-64, 65+
- 42 languages
- 28 question themes
- Length of interview
  - LOI = 20 minutes

- Year and month of survey
  - December 2018

ESRA2 Main Topics & Themes *(over 300 variables collected)*

support for road safety policy measures	self-reported behaviour in traffic	acceptability of safe and unsafe traffic behaviour
attitudes, towards safe and unsafe traffic behaviour	subjective safety and risk perception	involvement in road crashes
enforcement of traffic laws	vehicle automation (new)	2 bonus questions (new)

*Questionnaire: most questions use 5 - 7 point Likert scale

NEW

Contextual data from

- external databases
- expert survey

Overview of ESRA2 Questions (Japan Version)

	Q	Theme
Basic Attribute	1	Country of residence
	2	Gender
	3	Year and month of birth
	4	Highest qualification or educational certificate (respondent or his/her mother)
	5	Professional occupation and whether professional activity involves car driving
	6	Postal code
	7	Prefecture of residence
	8	Public transport convenience at region of residence
Mobility	9	Whether the respondent holds a driving license
	10	Frequency of use of transport modes
	11	Whether the respondent transports a child<18y in a car
Self-Declared Safe and Unsafe Traffic Behaviour	12	Drink-driving, speeding, taking drug, seatbelt, helmet, mobile phone, social media, drive when sleepy
Acceptability of Safe and Unsafe Traffic Behaviour	13	Others': same text as Q12
	14	Personal: same text as Q12
Attitudes Towards Safe and Unsafe Traffic Behaviour	15	Drink-driving, speeding, seatbelt, mobile phone, social media, drive when sleepy

	Q	Theme
Subjective Safety/ Risk Perception	16	Transport modes
	17	Drink-driving, taking drug, speeding, mobile phone, drive while tired
Support for Policy Measures	18	Interlock, 0‰Alc.. ISA, dynamic speed warning, seatbelt, helmet, hands-free mobile phone, headphones, etc.
	19	Traffic rules and penalties
Likelihood of Enforcement of Traffic Laws	20	Drink-driving, drug, speeding, seatbelt, mobile phone
Experience of Being Checked for Traffic Violation	21	Breathalyser test
	22	Check for use of illegal drugs
Involvement in Road Crashes	23	Times, transport mode, severity
Vehicle Automation	24	Whether or not interested
	25	Benefits of semi-/fully-automated passenger car
Bonus Questions	26	(Japan) Acceptability of Pedestrian Behaviour
	27	Intention to Respect Legal Regulations
Socially Desirable Behaviour	28	Respecting legal regulations, composure, etc.

2.1 Basic Attributes of Survey Respondents in Japan (Age/Gender/Region)

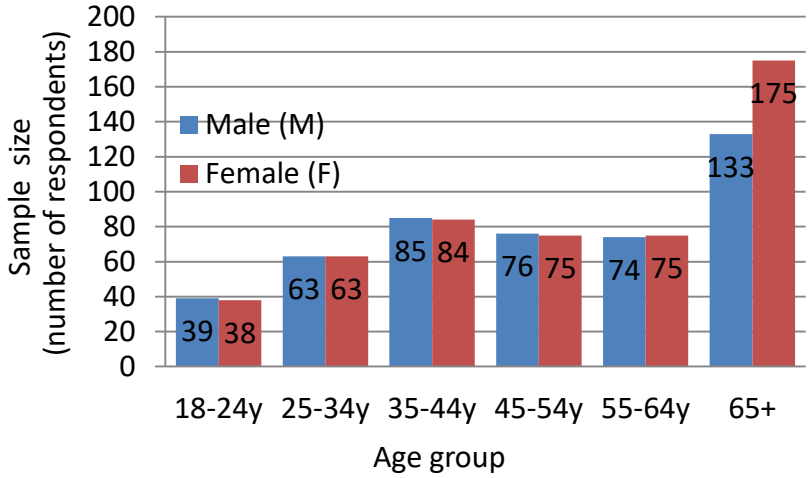
Survey in Japan (conducted by IATSS)

- Period: December 14 to 25, 2018

Sampling method

- Sampled so as to achieve gender and age group constitutions and population distribution among prefectures close to those of actual statistical data of Japan.
- Sample size: 980

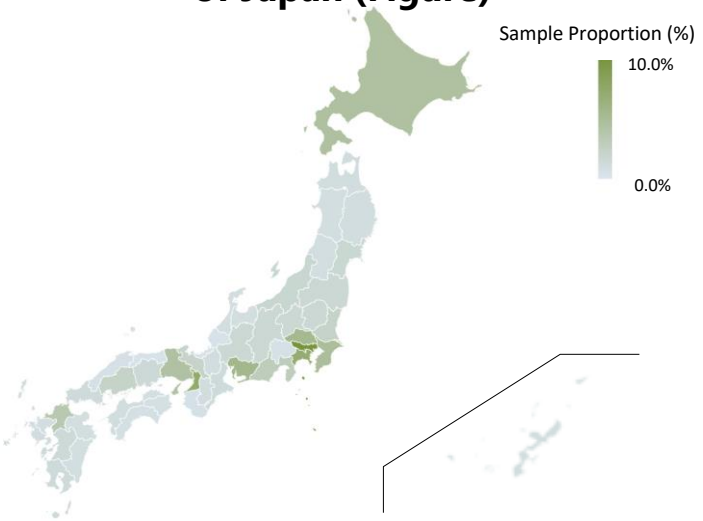
Samples by Q2. gender and Q3. age group



Q7. Sample distribution across prefectures of Japan (Table)

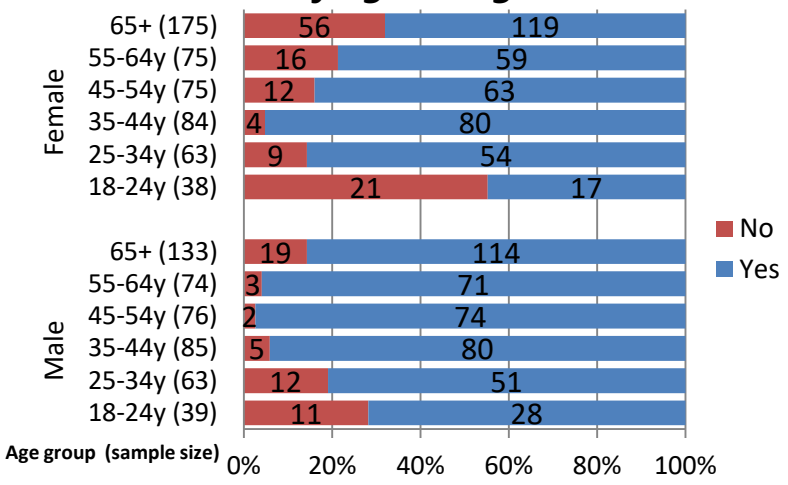
Sample size by prefecture (%) (Total: 980)					
Hokkaido	4.5%	Ishikawa	0.9%	Okayama	1.5%
Aomori	1.1%	Fukui	0.5%	Hiroshima	2.2%
Iwate	1.1%	Yamanashi	0.6%	Yamaguchi	1.3%
Miyagi	1.7%	Nagano	1.6%	Tokushima	0.7%
Akita	0.9%	Gifu	1.6%	Kagawa	0.8%
Yamagata	1.0%	Shizuoka	3.0%	Ehime	1.1%
Fukushima	1.6%	Aichi	5.5%	Kochi	0.7%
Ibaraki	2.2%	Mie	1.3%	Fukuoka	3.6%
Tochigi	1.6%	Shiga	1.1%	Saga	1.0%
Gunma	1.6%	Kyoto	2.1%	Nagasaki	1.1%
Saitama	5.3%	Osaka	7.1%	Kumamoto	1.4%
Chiba	4.8%	Hyogo	4.3%	Oita	1.0%
Tokyo	9.9%	Nara	1.1%	Miyazaki	0.9%
Kanagawa	7.0%	Wakayama	0.6%	Kagoshima	1.3%
Niigata	1.8%	Tottori	0.5%	Okinawa	1.1%
Toyama	0.9%	Shimane	0.6%	Total: 100% (980)	

Sample distribution across prefectures of Japan (Figure)

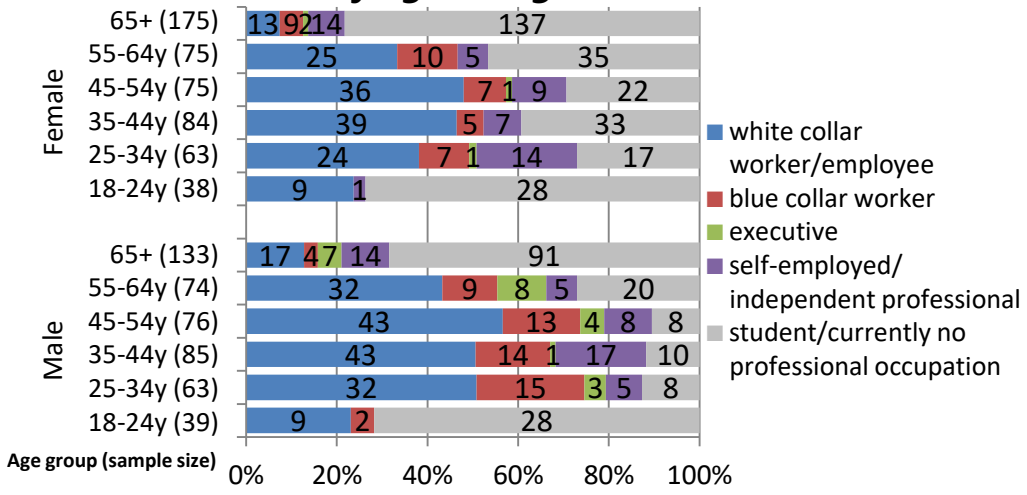


2.2 Basic Attributes of Survey Respondents in Japan
(Car Driving Licence/Professional Occupation/Educational Background)

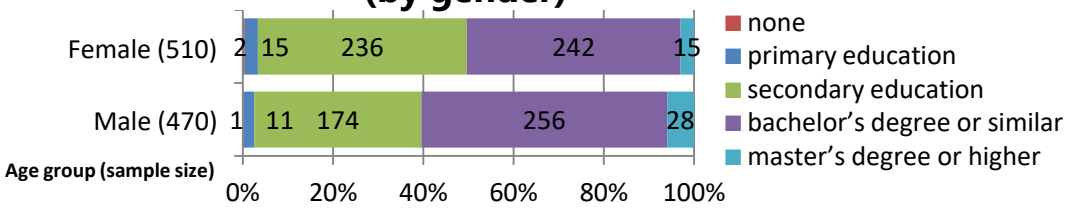
Q9. Do you have a car driving licence? (by age and gender)



Q5. Professional occupation (by age and gender)



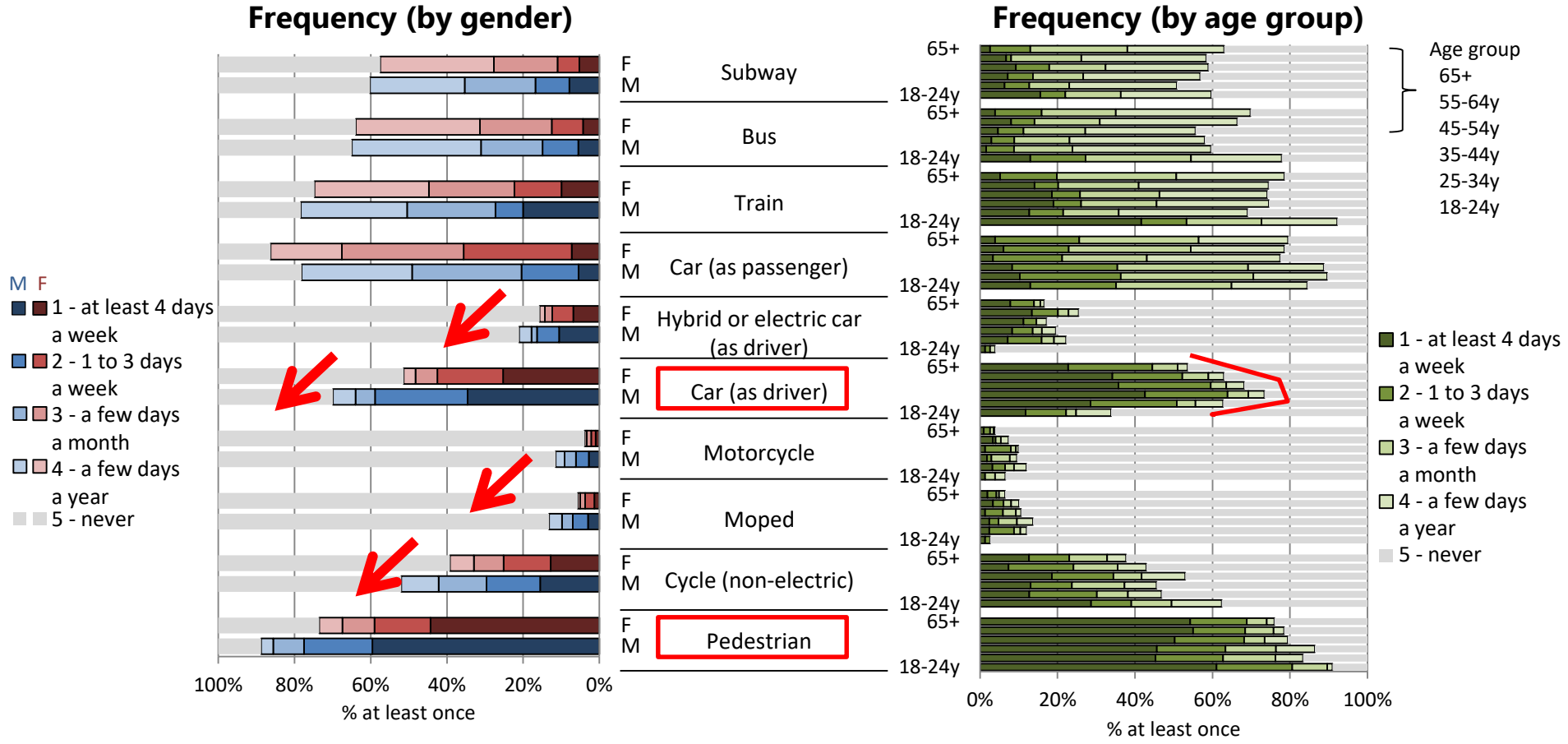
Q4. Highest qualification or educational certificate (by gender)



- Percentage of young people and senior women who do not have a driving licence is high.
- Percentage of white or blue collar workers is high in the 25-64y group, while percentage of students/unemployed is high in the 18-24y and 65+ groups.
- Percentage of secondary education graduates and bachelor's degree holder is high.

2.3 Basic Attributes of Survey Respondents in Japan (Transport Modes)

➢ Q10. During the past 12 months, how often did you use each of the following transport modes in Japan? (5-point scale from 1=never to 5=at least 4 days a week)

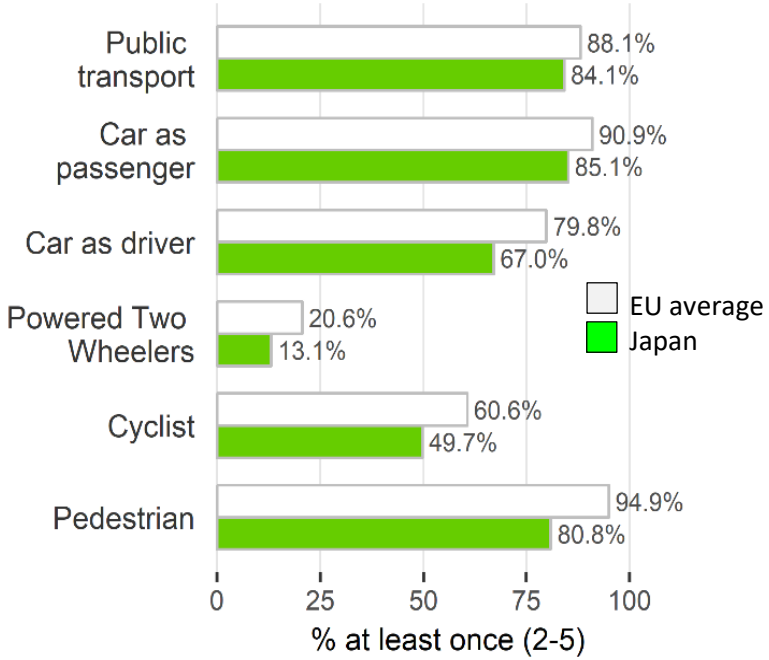


- Percentage of the respondents who walk or drive a car at least 4 days a week is high.
- Percentage of males in drivers of a car, a motorcycle, etc. is high.
- Percentage of the 25-64y working generation in car drivers is high.

3.1 Comparison Between Japan and EU Average (1)

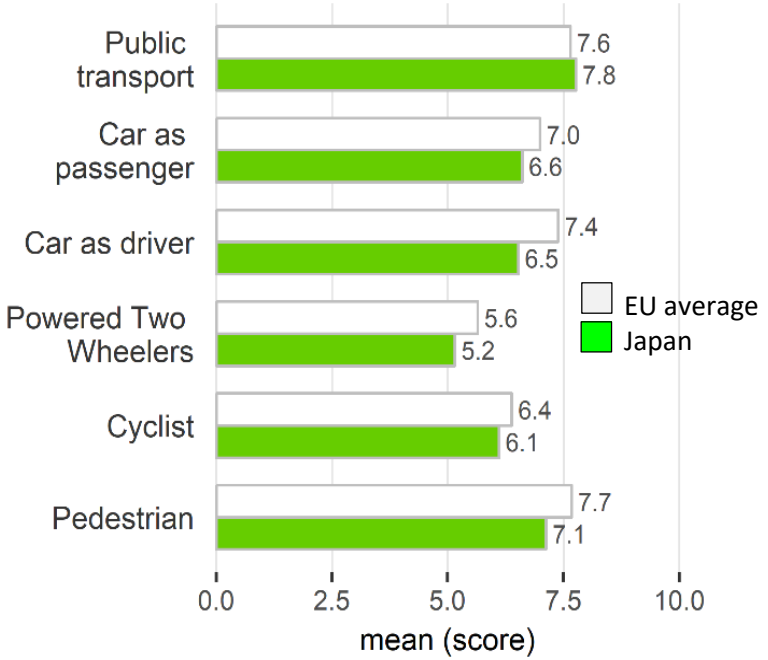
Mode of transportation

During the past 12 months, how often did you use the following transport modes (5-point scale from 1=never to 5=at least 4 days week)



Safety feeling

How safe or unsafe do you feel when using the following transport modes (11-point scale from 0=very unsafe to 10=very safe)

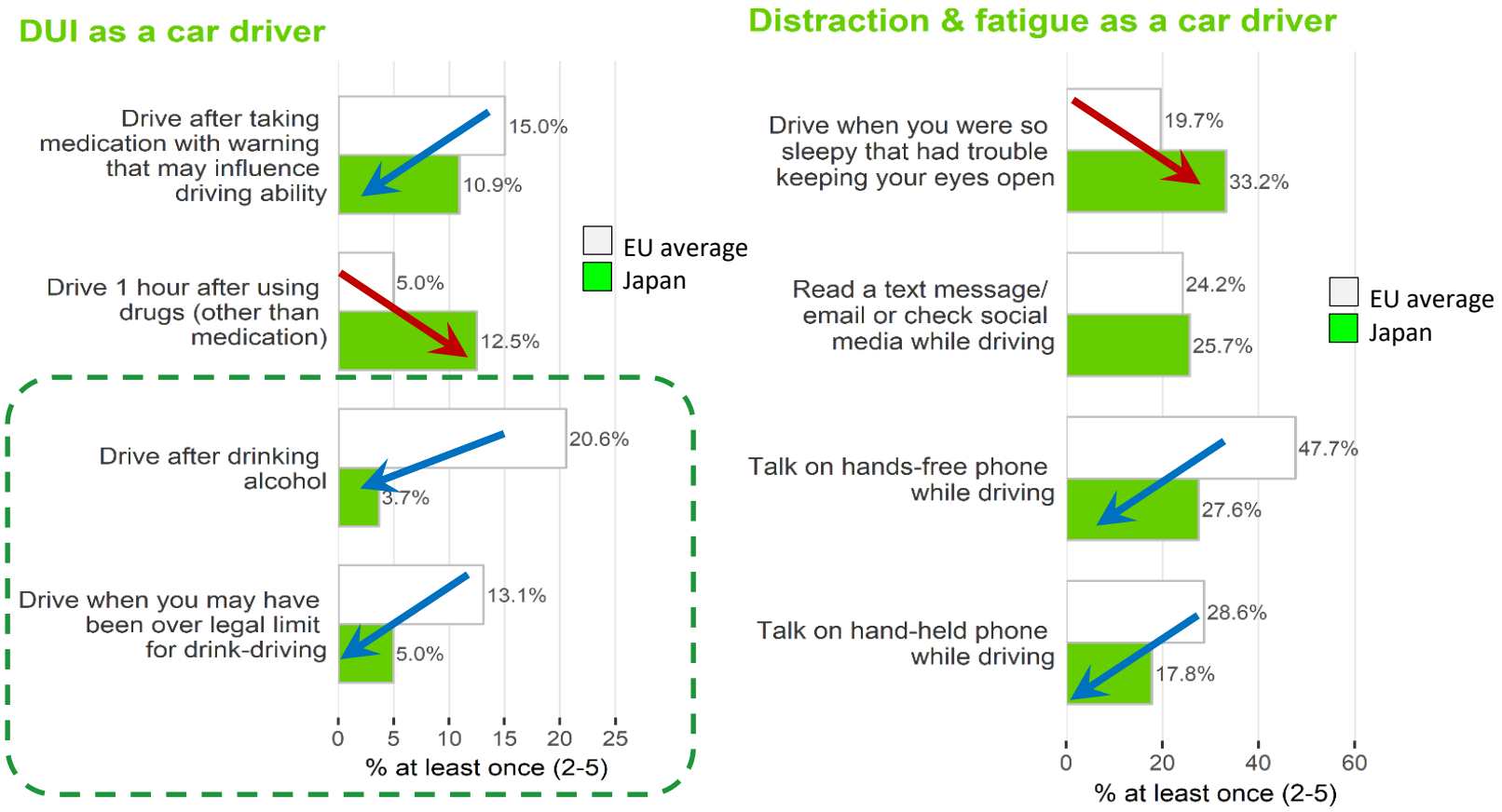


- Mode of transportation: public transport, car, and pedestrian are frequently used.
- Safety feeling: safety feeling of powered two wheelers is low.

- Both traffic frequency and safe feeling are generally low in Japan when compared with EU average.

3.2.1 Self-Declared Behaviour (1)

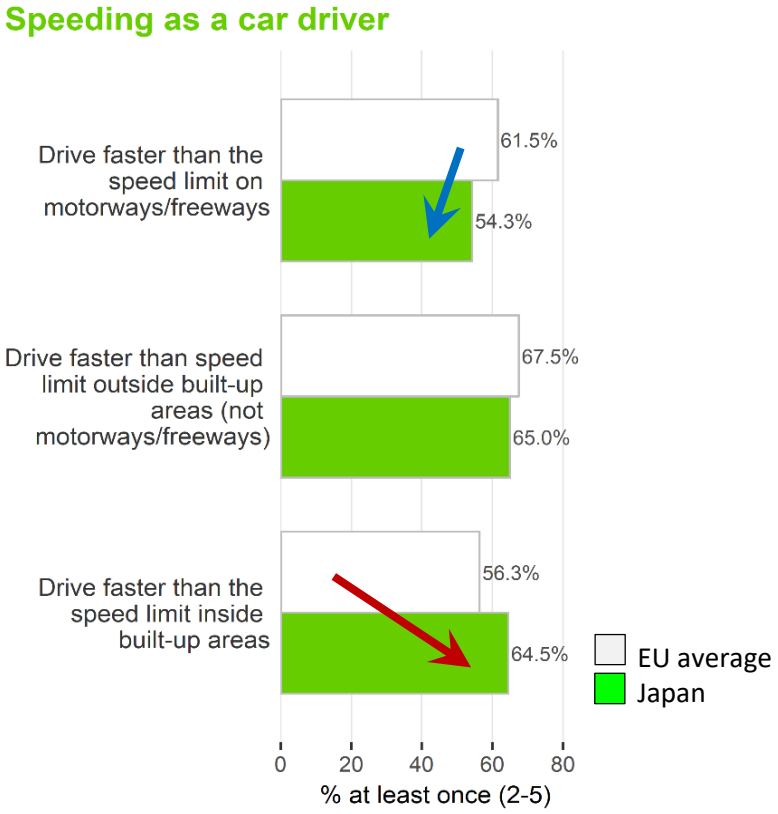
- Over the last 30 days, how often did you…?
  (5-point scale from 1=never to 5=(almost) always)

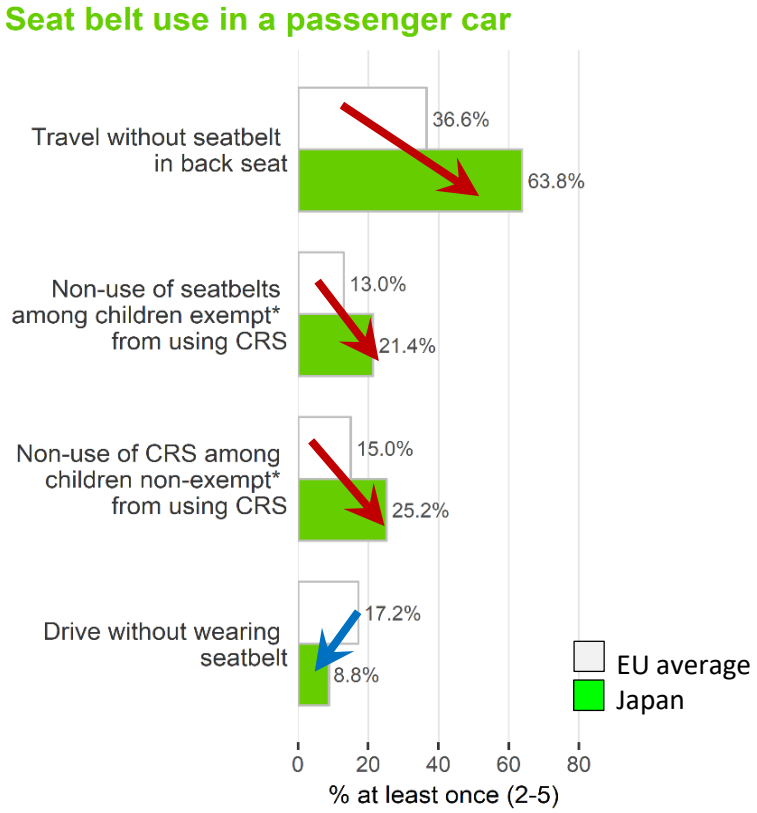


- In Japan, when compared with the EU average,
  - drivers who drive after drinking alcohol or while talking on a mobile phone are less, but
  - drive after taking drugs or while tired more frequently.

3.2.2 Self-Declared Behaviour (2)

- Over the last 30 days, how often did you...?
  (5-point scale from 1=never to 5=(almost) always)

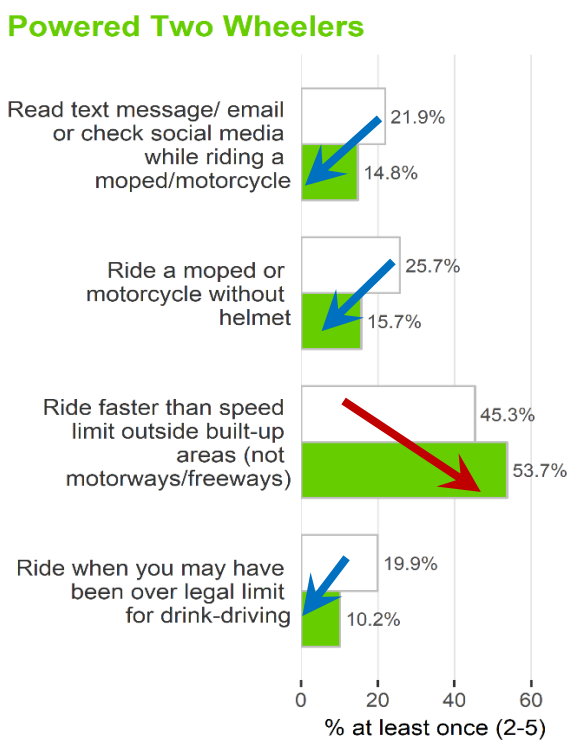


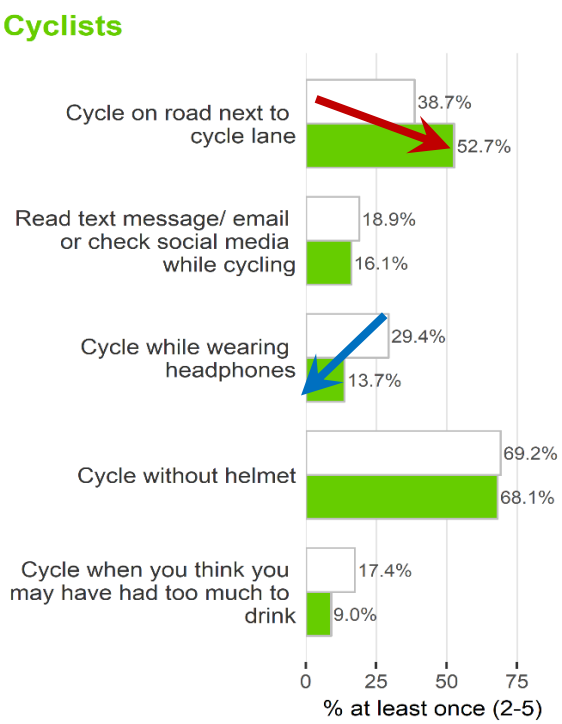


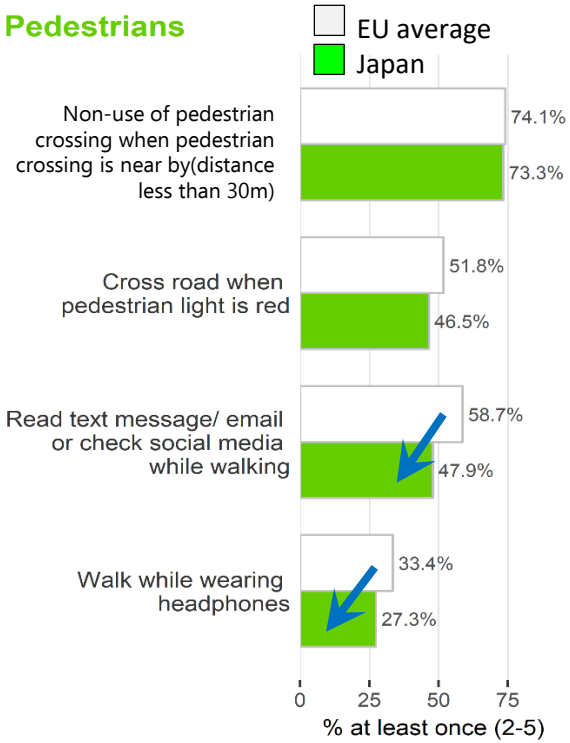
- In Japan, percentages of car drivers who drive faster than the speed limit inside built-up areas and car passengers who do not use a seatbelt or a child restraint system (CRS) are higher than the EU average.

3.2.3 Self-Declared Behaviour (3)

- Over the last 30 days, how often did you...?
  (5-point scale from 1=never to 5=(almost) always)





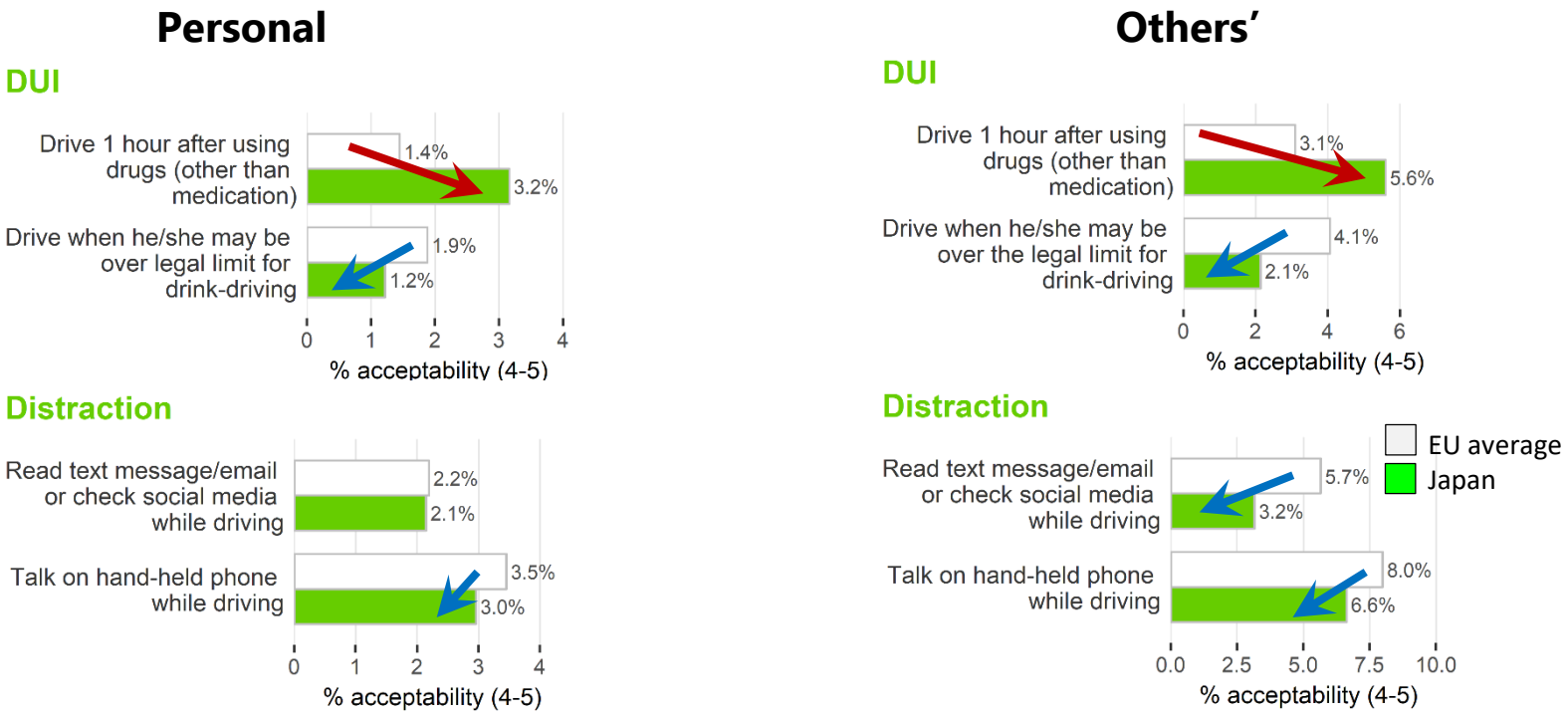


- In Japan, when compared with the EU average,
  - percentage of traffic behaviours while using a mobile phone or wearing headphones and drink-driving is low in any of powered two wheelers, cyclists, and pedestrians
  - percentages of those who drive faster than speed limit and those who cycle on road next to cycle lane are high

3.3.1 Personal/Others' Acceptability of Behaviour (1)

- How acceptable do you (personally) feel (Personal) / how acceptable would most other people say (Others') it is for a CAR DRIVER to...

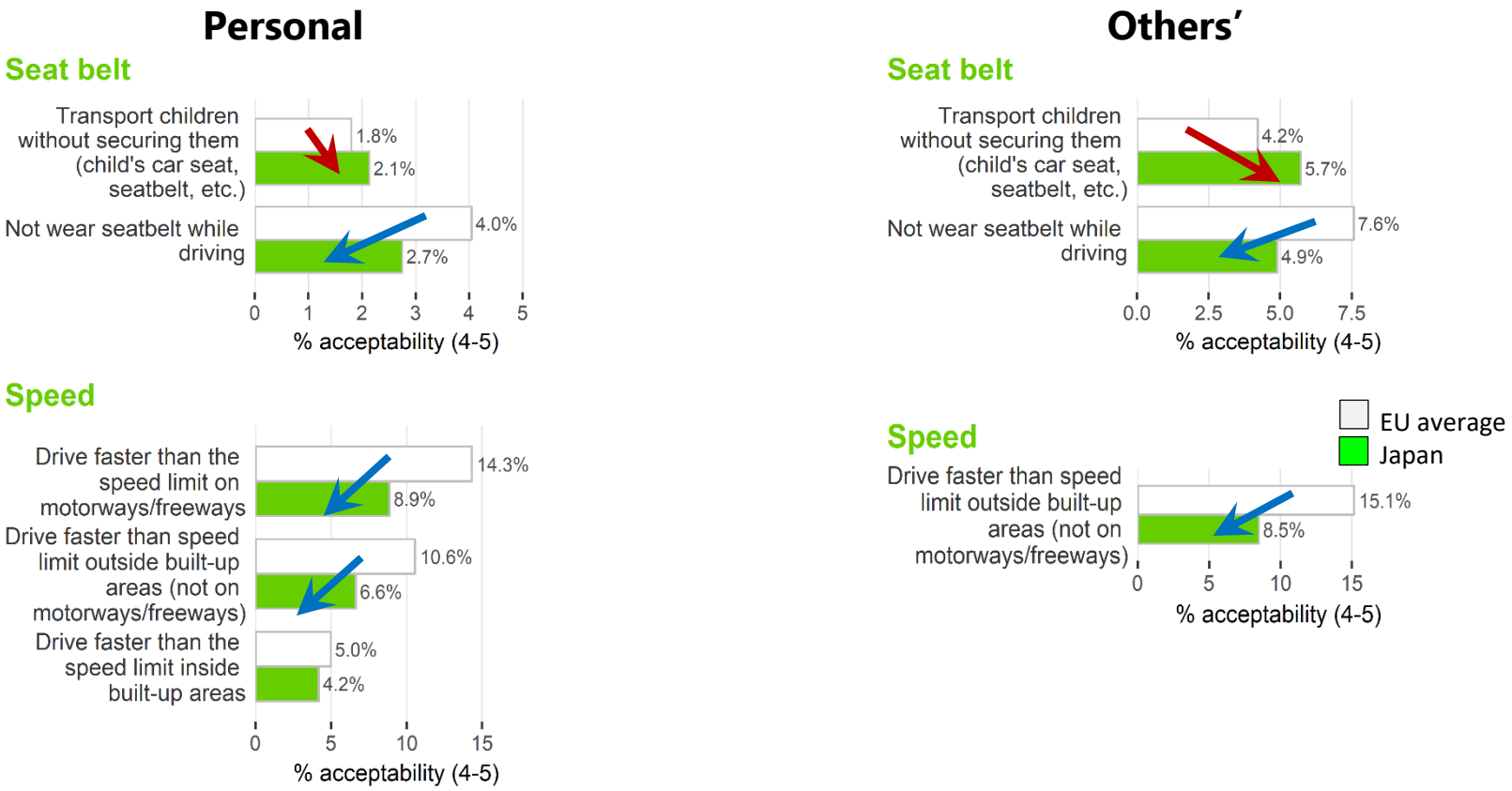
  (5-point scale from 1=acceptable to 5=unacceptable)



- Others' acceptability is higher than personal acceptability in both Japan and the EU average.
- Acceptability of drive after using drugs in Japan is high relative to the EU average.

3.3.2 Personal/Others' Acceptability of Behaviour (2)

- How acceptable do you (personally) feel (Personal) / how acceptable would most other people say (Others') it is for a CAR DRIVER to...
- (5-point scale from 1=acceptable to 5=unacceptable)

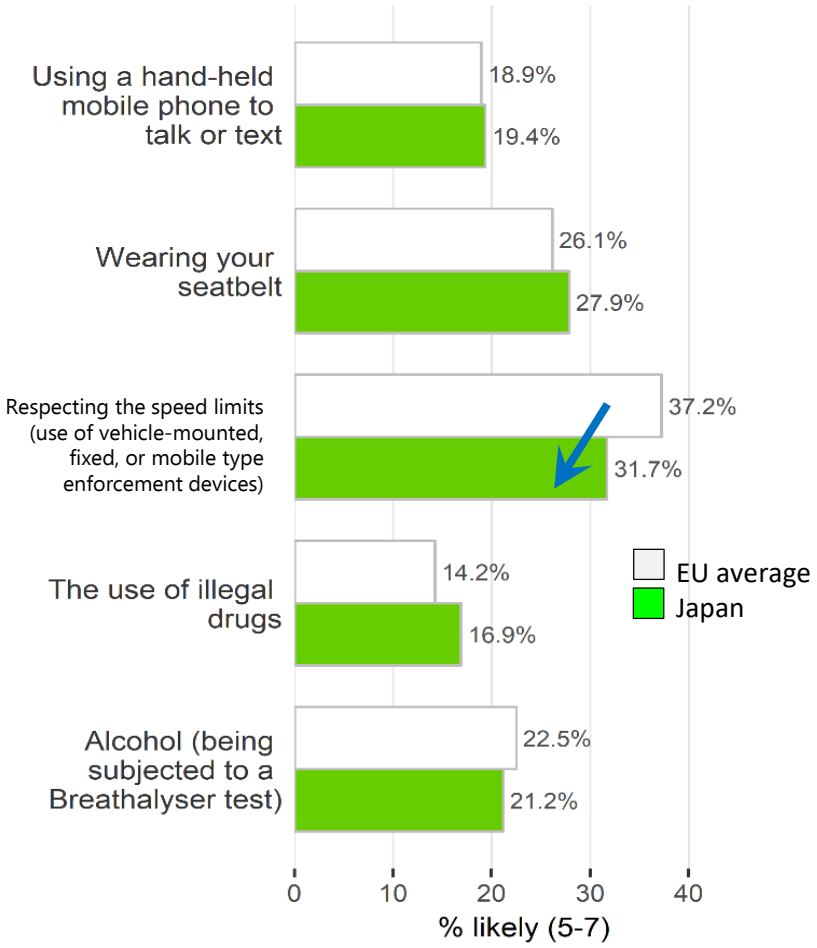


- In Japan, when compared with the EU average,
  - acceptability of drivers who do not wear a seatbelt or drive faster than speed limit is low
  - acceptability of transporting children without using child restraint systems (CRS) is slightly high

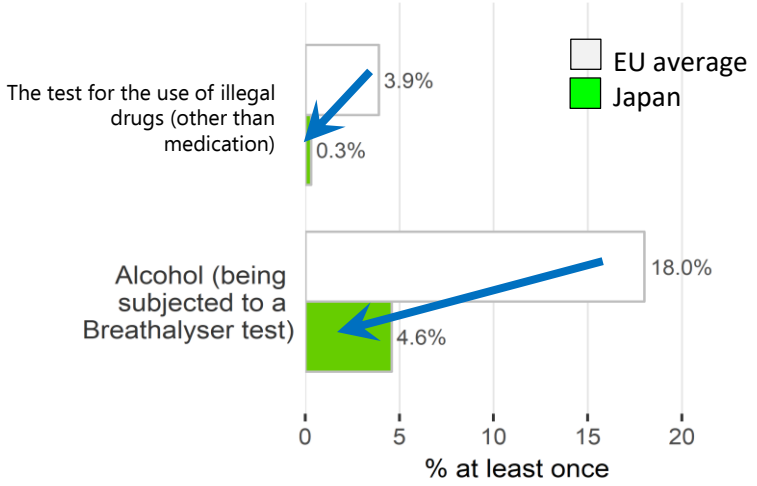
3.4.1 Enforcement of Traffic Laws

Enforcement

On a typical journey, how likely is it that you (as CAR DRIVER) will be checked by police for… (7-point scale from 1=very unlikely to 7=very likely)



In the past 12 months, how many times (as a CAR DRIVER) have you been checked by the police for… (number)

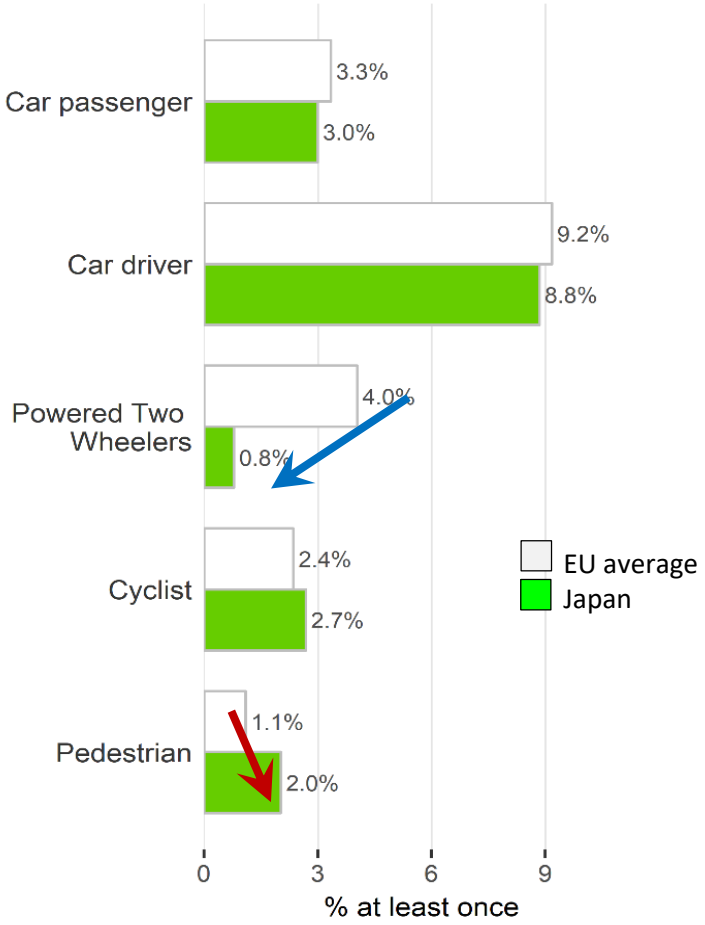


- Likelihood of enforcement of speed limit is higher than that of other traffic rules in both Japan and the EU average.
- Drivers in Japan have been checked for the use of illegal drugs or alcohol less than the EU average.

3.5.1 Involvement in Road Crashes/Vehicle Automation

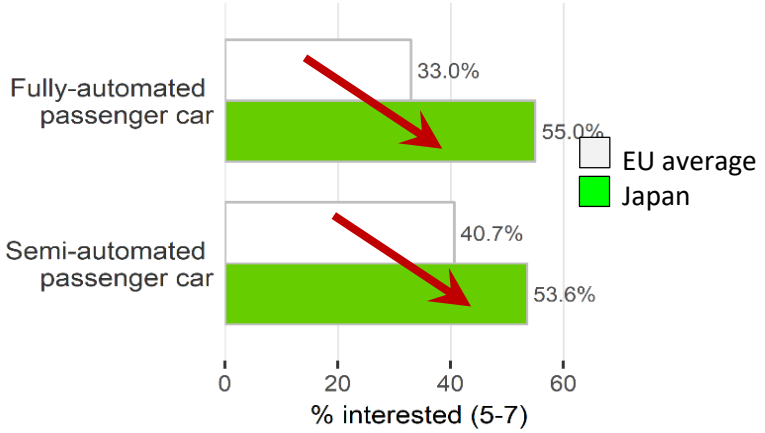
Involvement in road crashes

In the past 12 months, how many times have you personally been involved in road crashes as… (number)



Vehicle automation

How interested would you be in using a… (7-point scale from 1=not at all interested to 7=very interested)

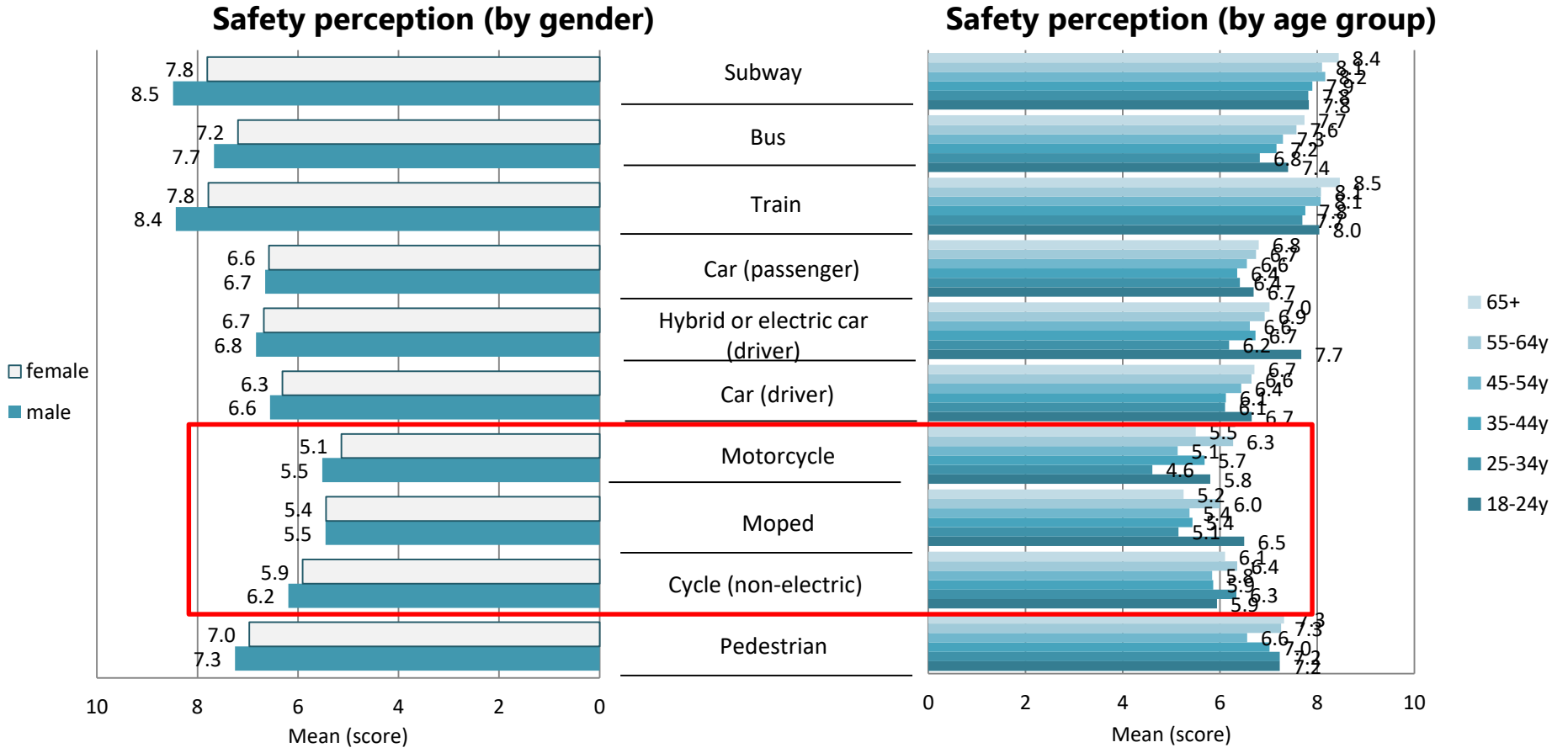


- In Japan, road crashes of cars and, in particular, motorcycles are less than the EU average. However, more people have experienced road crashes during cycling or walking.
- In Japan, interest in vehicle automation is higher than the EU average. Fully-automated passenger cars and semi-automated passenger cars attract the same level of interest.

4.0 Subjective Safety/Risk Perception

- Q16. How safe or unsafe do you feel when using the following transport modes in Japan?

  (11-point scale from 0=very unsafe to 10=very safe)



- Motorcycles, mopeds, and cycles are perceived to be more dangerous than the other transport modes.
- Generally, males and the 18-24y group feel safe; the older the age group, the more they feel safe.

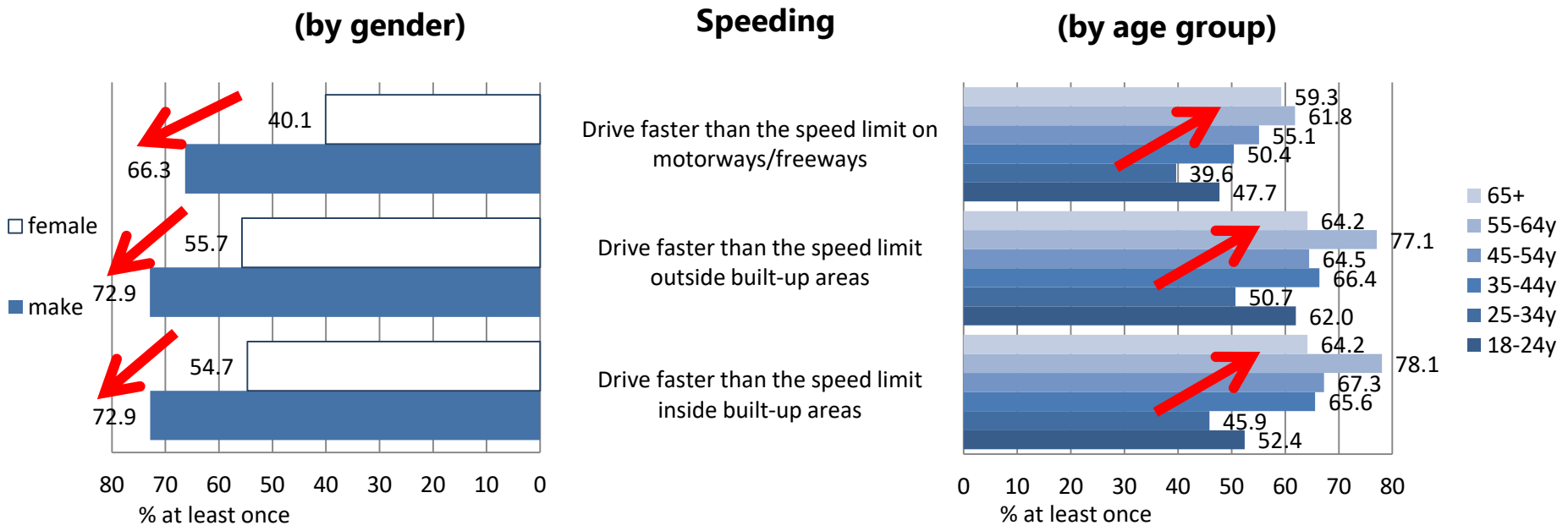
4.1.1 Self-Declared Behaviour (Drive After Taking Alcohol/Drugs)

- Q12. Over the last 30 days, how often did you as a CAR DRIVER …?
  (5-point scale from 1=never to 5=(almost) always)

- Drive after taking drugs: frequently done by male drivers and 35-44y drivers.
- Drink-driving: frequently done by male drivers and 18-44y drivers.

4.1.2 Self-Declared Behaviour (Speeding)

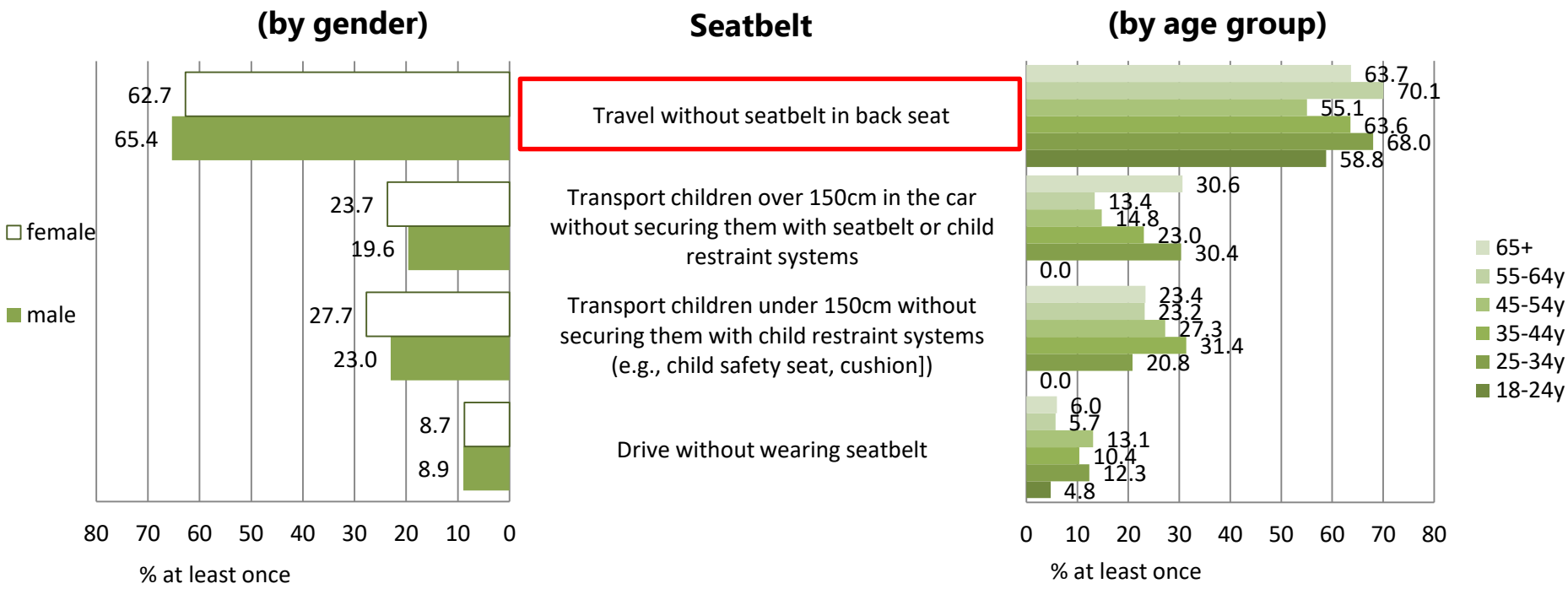
- Q12. Over the last 30 days, how often did you as a CAR DRIVER …?
  (5-point scale from 1=never to 5=(almost) always)



- Percentages of drivers who drive faster than the speed limit are generally high.
- Male drivers and middle-aged and late middle-aged (55-64y) drivers are more likely to drive faster than the speed limit.

4.1.3 Self-Declared Behaviour (Seatbelt and CRS)

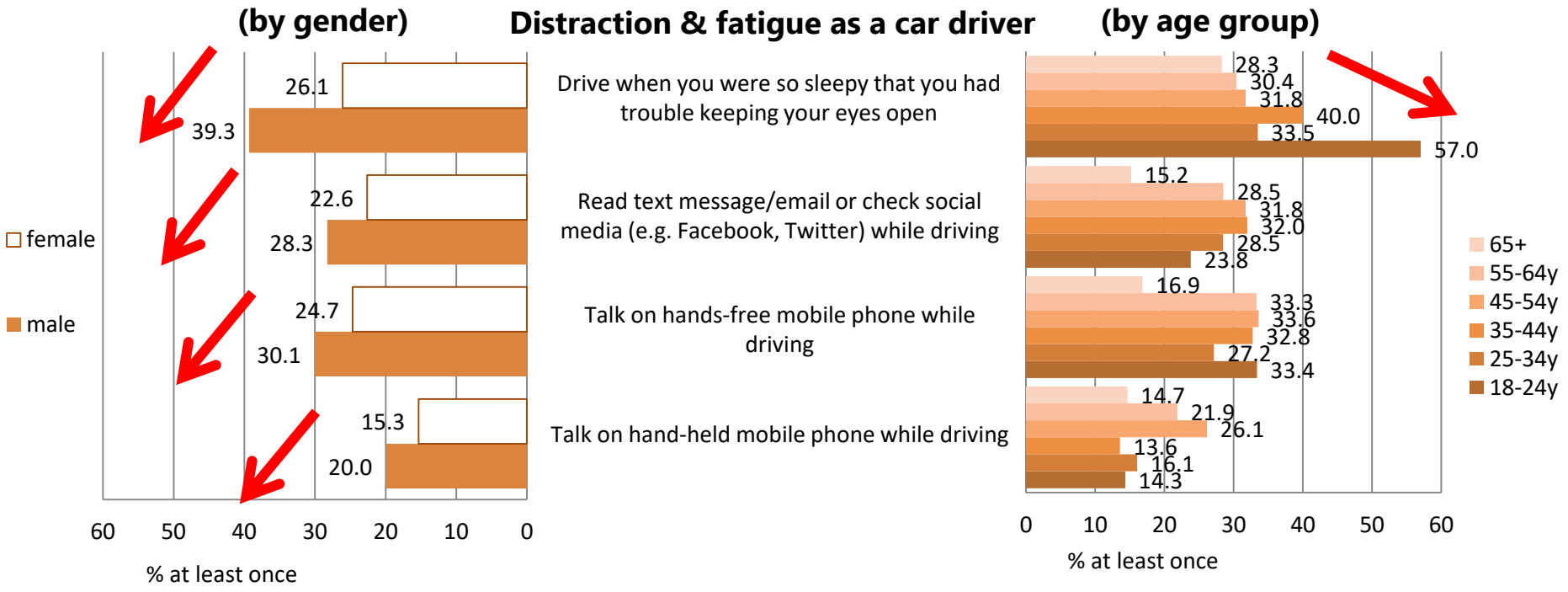
- Q12. Over the last 30 days, how often did you as a CAR DRIVER …?
  (5-point scale from 1=never to 5=(almost) always)



- Driver's seatbelt wearing rate is 90% or higher.
- Seatbelts in the back seats are worn less than drivers' seatbelts and CRS.

4.1.4 Self-Declared Behaviour (Distraction & Fatigue as Car Driver)

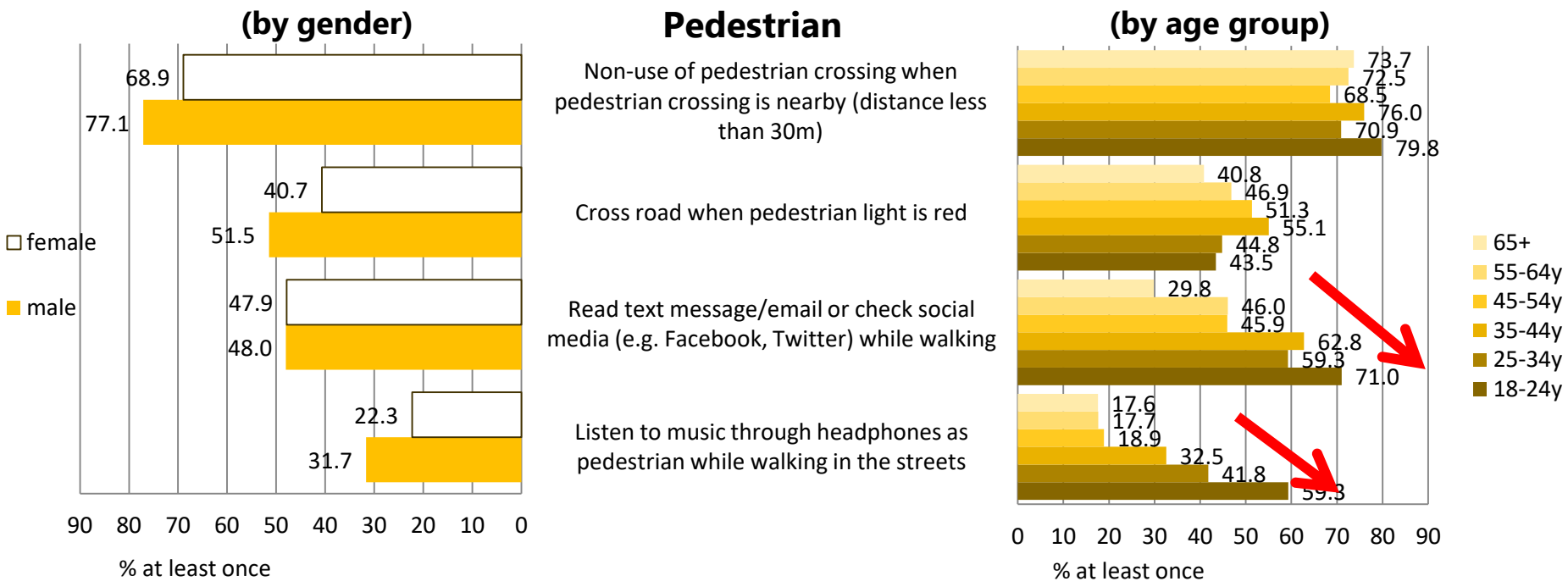
➢ Q12. Over the last 30 days, how often did you as a CAR DRIVER …?
(5-point scale from 1=never to 5=(almost) always)



- Young generation is more likely to drive when they are so sleepy that have trouble keeping their eyes open.
- The 65+ group uses mobile phone while driving least.
- Males are more likely to use mobile phone while driving.

4.1.7 Self-Declared Behaviour (Pedestrian)

- Q12. Over the last 30 days, how often did you as a PEDESTRIAN …?
  (5-point scale from 1=never to 5=(almost) always)

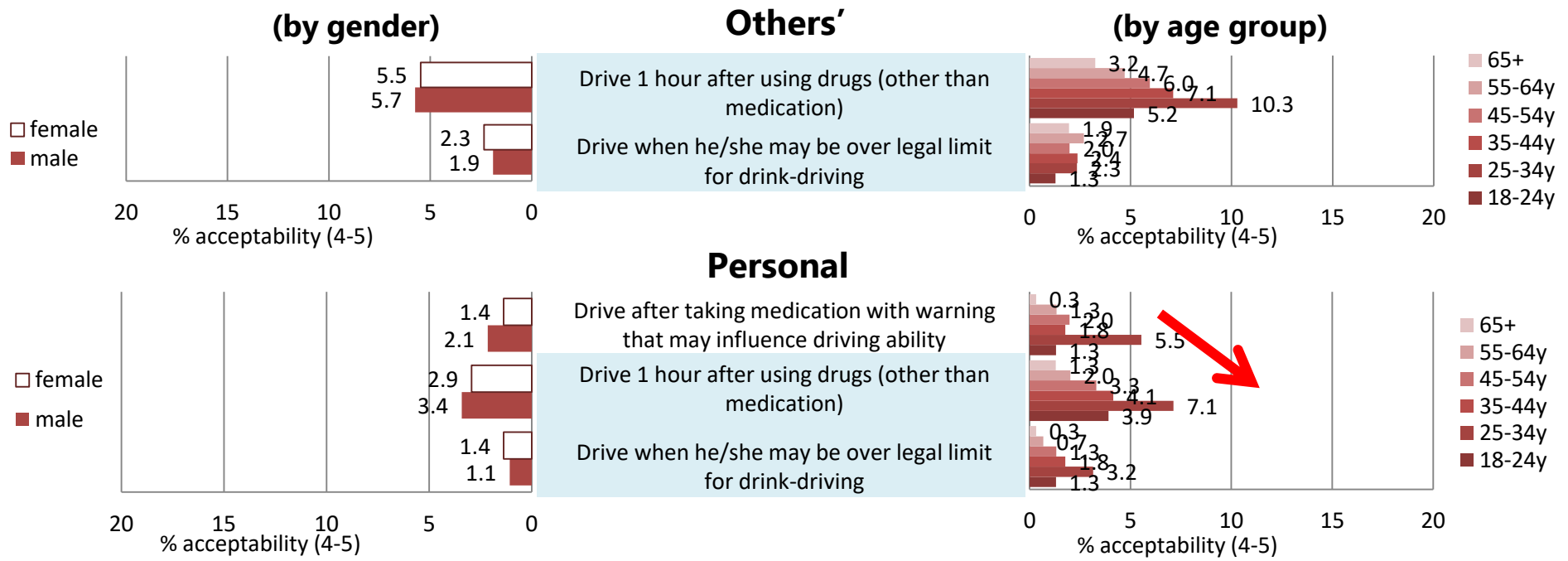


- The younger the generation, the more they watch mobile phone screens or use headphones while walking.

4.2.1 Acceptability of Unsafe Traffic Behaviour (Drive After Taking Alcohol/Drugs)

- Q13. Where you live, how acceptable would most other people say it is for a car driver to….? (Others')
- Q14. How acceptable do you, personally, feel it is for a CAR DRIVER to…? (Personal)

(5-point scale from 1=unacceptable to 5=acceptable)



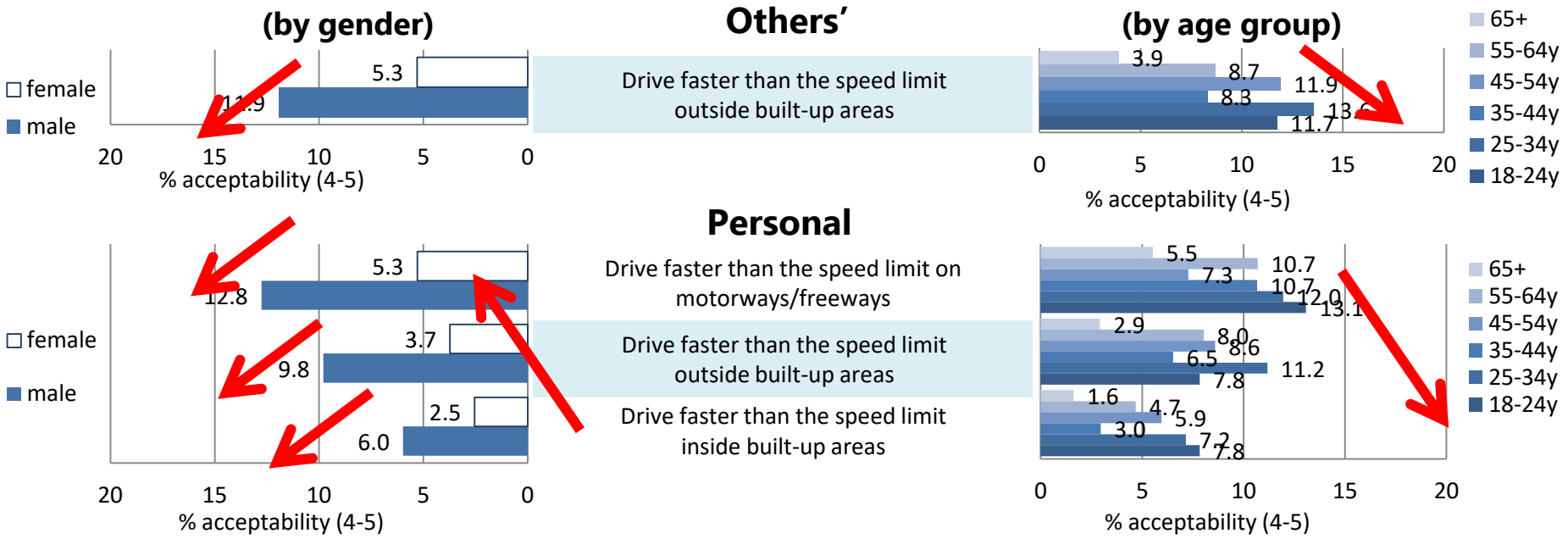
- Generally, significantly low.
- Others' acceptability is higher than personal acceptability.
- The younger the age group, the higher the acceptability.

*Questions common to Others' and Personal

4.2.2 Acceptability of Unsafe Traffic Behaviour (Speeding)

- Q13. Where you live, how acceptable would most other people say it is for a car driver to….? (Others')
- Q14. How acceptable do you, personally, feel it is for a CAR DRIVER to…? (Personal)

(5-point scale from 1=unacceptable to 5=acceptable)



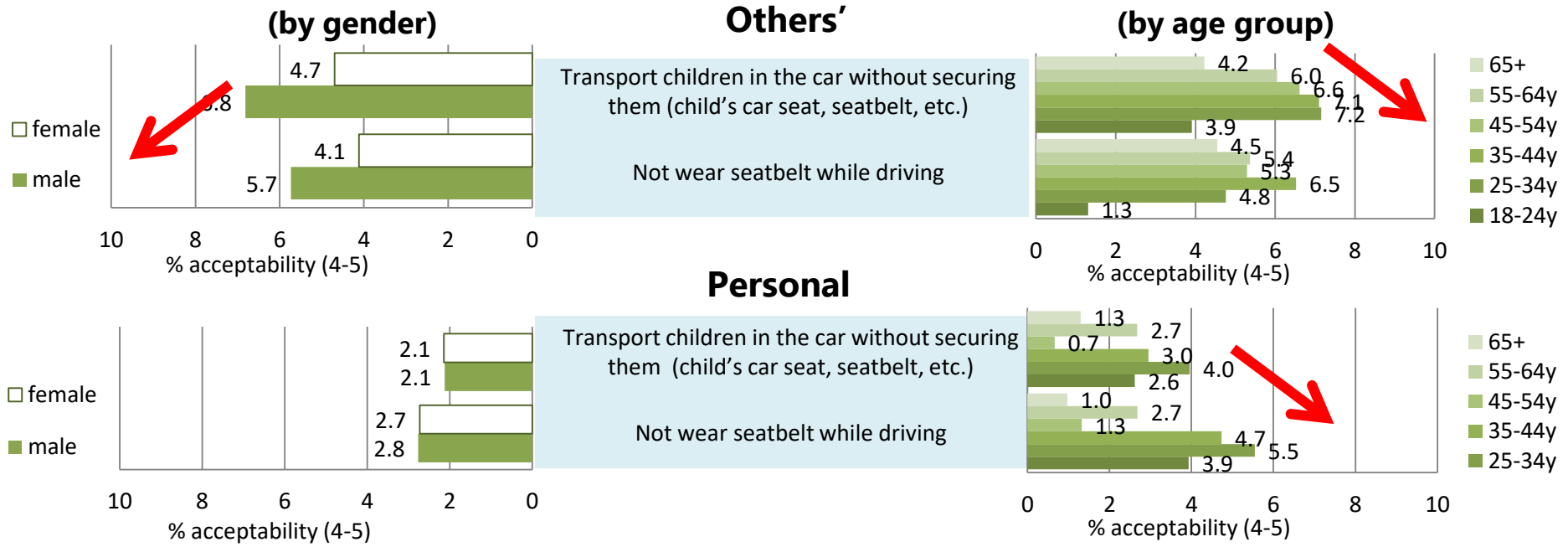
- Others' acceptability is higher than personal acceptability.
- The higher the hierarchy level of the road, the higher the acceptability.
- Males and younger age groups show high acceptability.

*Questions common to Others' and Personal

4.2.3 Acceptability of Unsafe Traffic Behaviour (Seatbelt and CRS)

- Q13. Where you live, how acceptable would most other people say it is for a car driver to….? (Others')
- Q14. How acceptable do you, personally, feel it is for a CAR DRIVER to…? (Personal)

(5-point scale from 1=unacceptable to 5=acceptable)



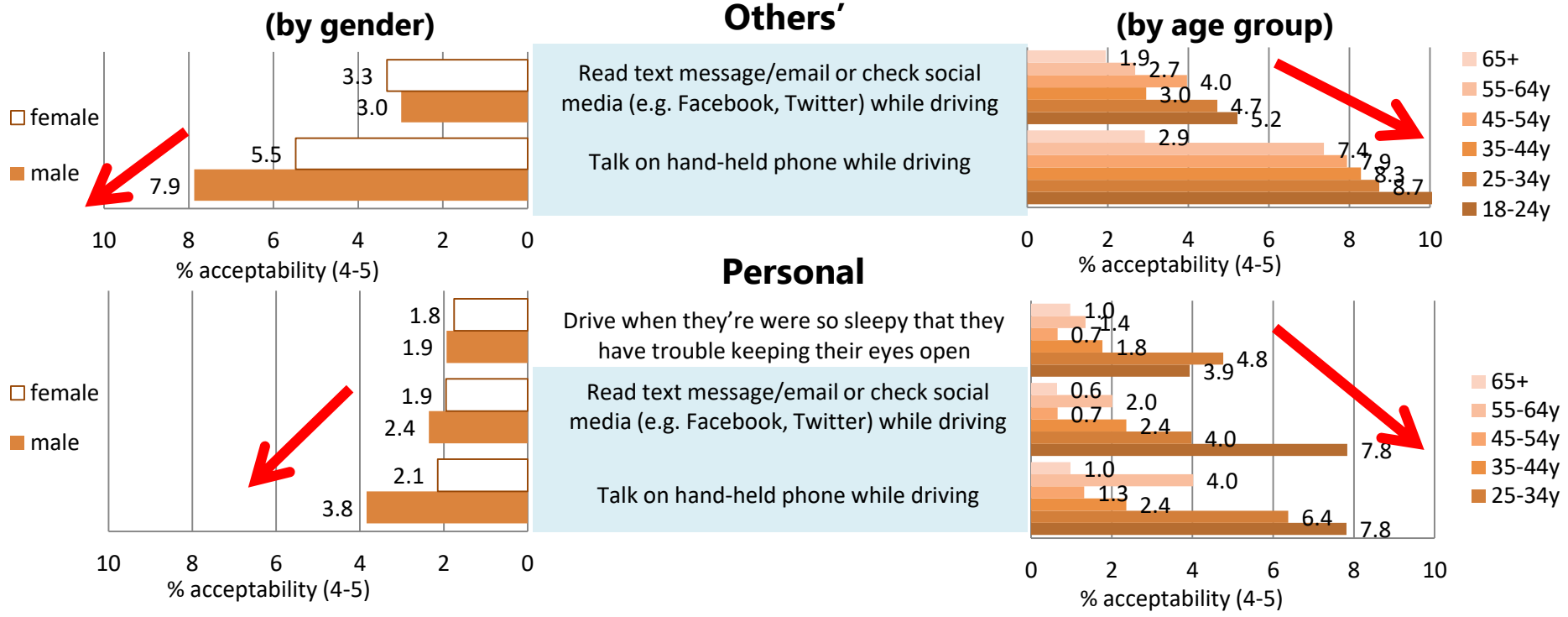
- Others' acceptability is higher than personal acceptability.
- The younger the age group, the higher the acceptability.

*Questions common to Others' and Personal

4.2.4 Acceptability of Unsafe Traffic Behaviour (Distraction & Fatigue as Car Driver)

- Q13. Where you live, how acceptable would most other people say it is for a car driver to….? (Others')
- Q14. How acceptable do you, personally, feel it is for a CAR DRIVER to…? (Personal)

  (5-point scale from 1=unacceptable to 5=acceptable)

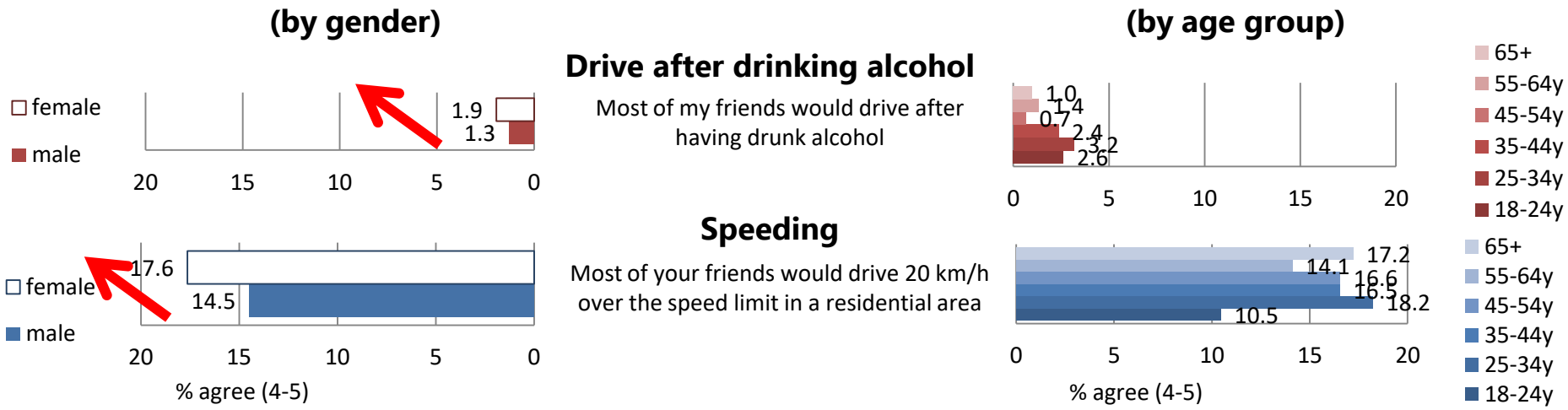


- Others' acceptability is higher than personal acceptability.
- Males and younger age groups show higher acceptability.

*Questions common to Others' and Personal

4.3.1 Attitudes Towards Safe and Unsafe Traffic Behaviour

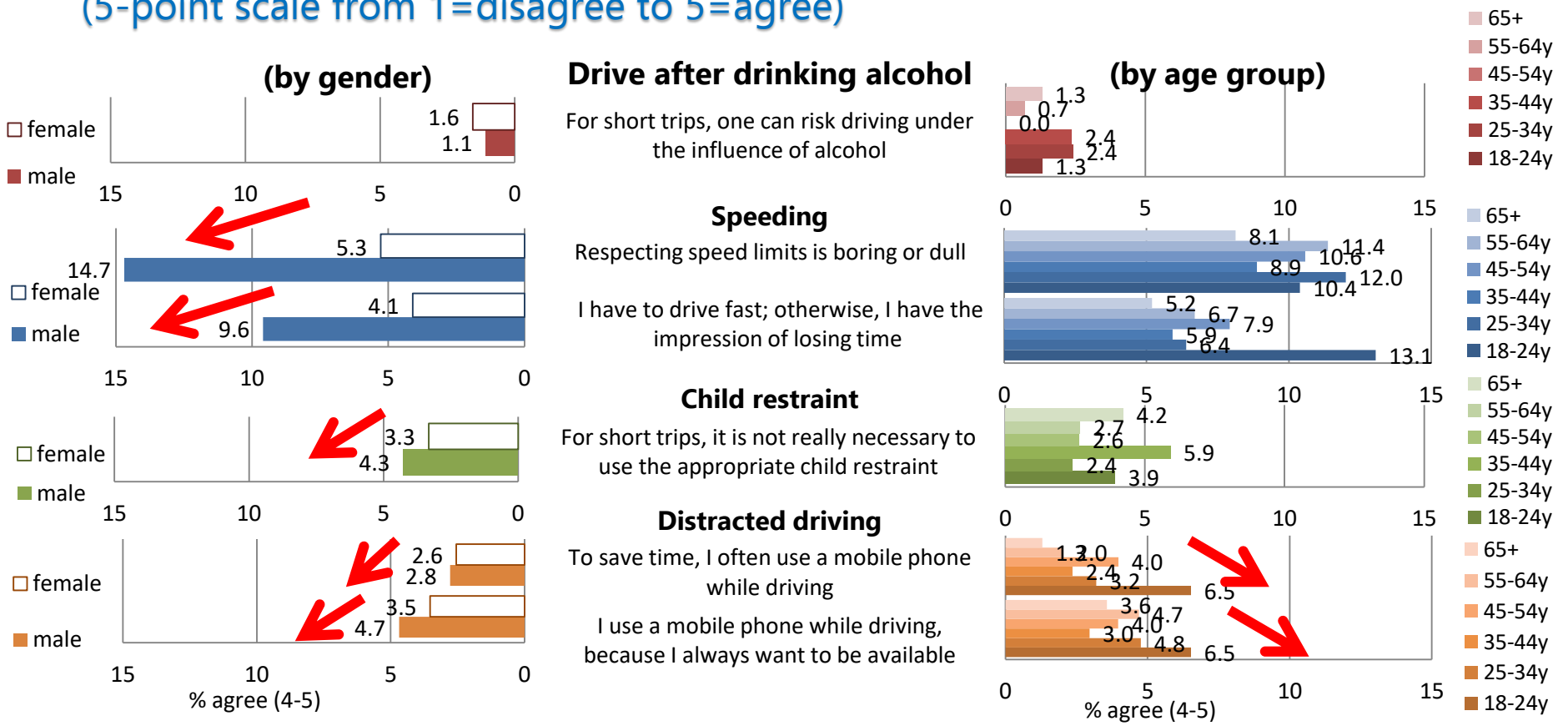
- Q15. To what extent do you agree with each of the following statements? (5-point scale from 1=disagree to 5=agree)



- Females perceive frequency of others' violation of traffic regulations higher than males.

4.3.2 Attitudes Towards Safe and Unsafe Traffic Behaviour

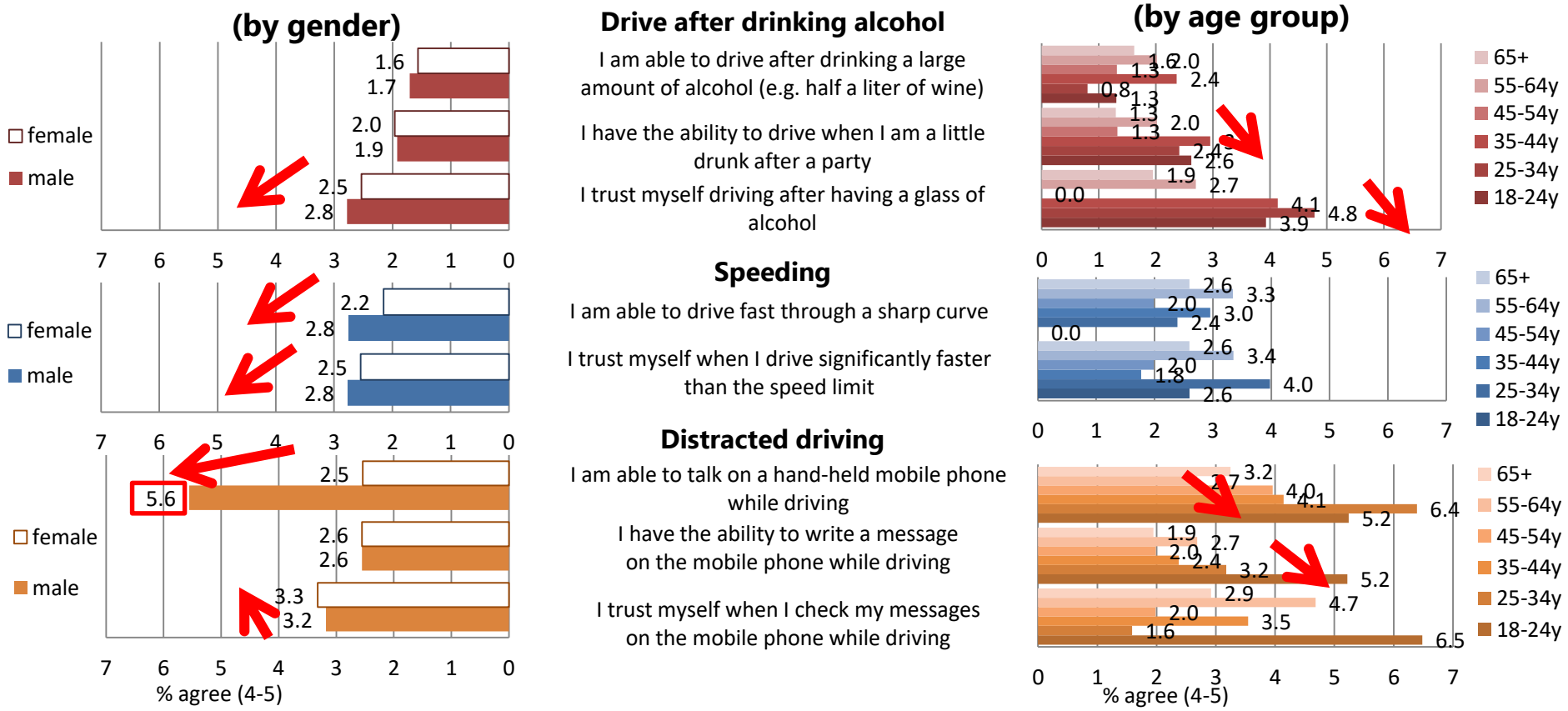
- Q15. To what extent do you agree with each of the following statements? (5-point scale from 1=disagree to 5=agree)



- Males and younger age groups highly agree to unsafe traffic behaviours.
- More respondents agree with the speeding items than those to the other items.

4.3.3 Attitudes Towards Safe and Unsafe Traffic Behaviour (Confidence)

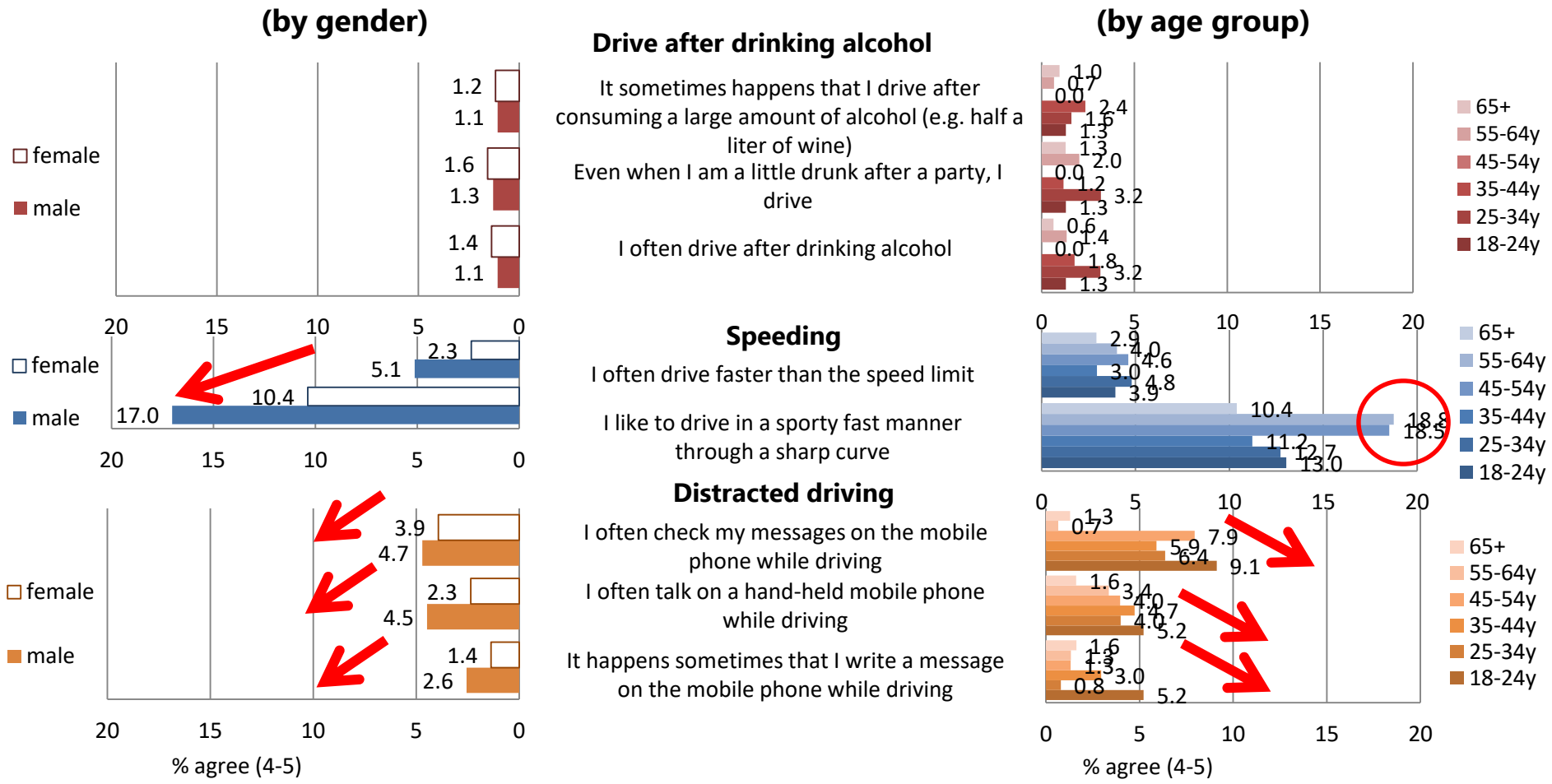
- Q15. To what extent do you agree with each of the following statements? (5-point scale from 1=disagree to 5=agree)



- Males and younger age groups are generally more confident in their abilities at unsafe traffic behaviours.
- Percentage of females who agree with watching mobile phone screen while driving is slightly higher than that of males.

4.3.4 Attitudes Towards Safe and Unsafe Traffic Behaviour (Habits)

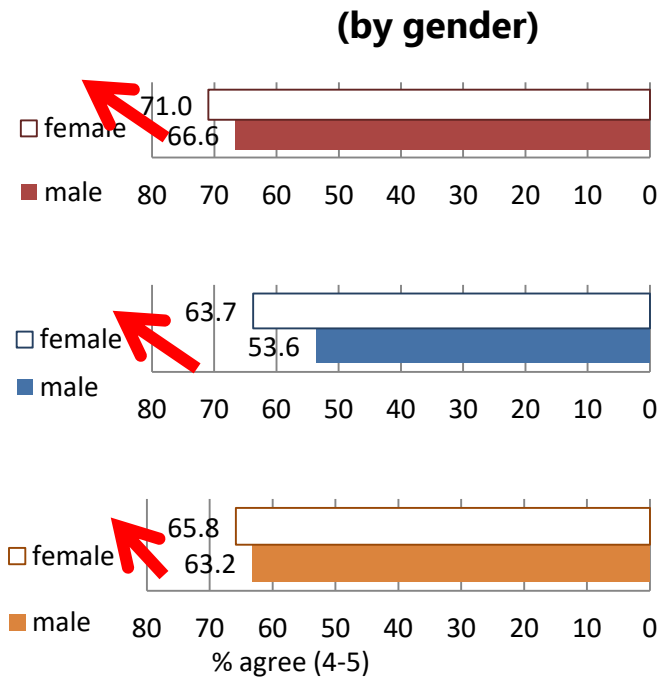
- Q15. To what extent do you agree with each of the following statements? (5-point scale from 1=disagree to 5=agree)



- Speeding: female < male; Drive in sporty fast manner: highly agreed by 45-64y group
- Males and younger age groups are more likely to agree to distracted driving.

4.3.5 Attitudes Towards Safe and Unsafe Traffic Behaviour (Intention Towards Improvement)

- Q15. To what extent do you agree with each of the following statements? (5-point scale from 1=disagree to 5=agree)



Drive after drinking alcohol

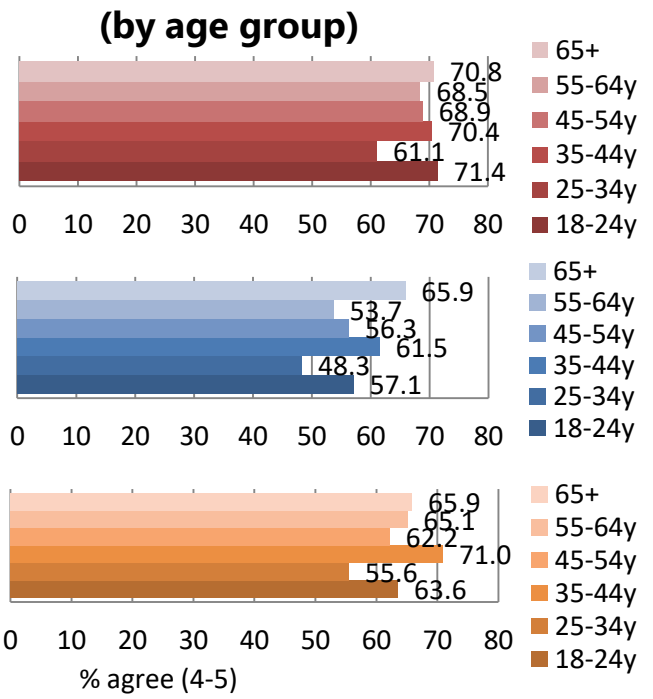
I will do my best not to drive after drinking alcohol in the next 30 days

Speeding

I will do my best to respect speed limits in the next 30 days

Distracted driving

I will do my best not to use my mobile phone while driving in the next 30 days

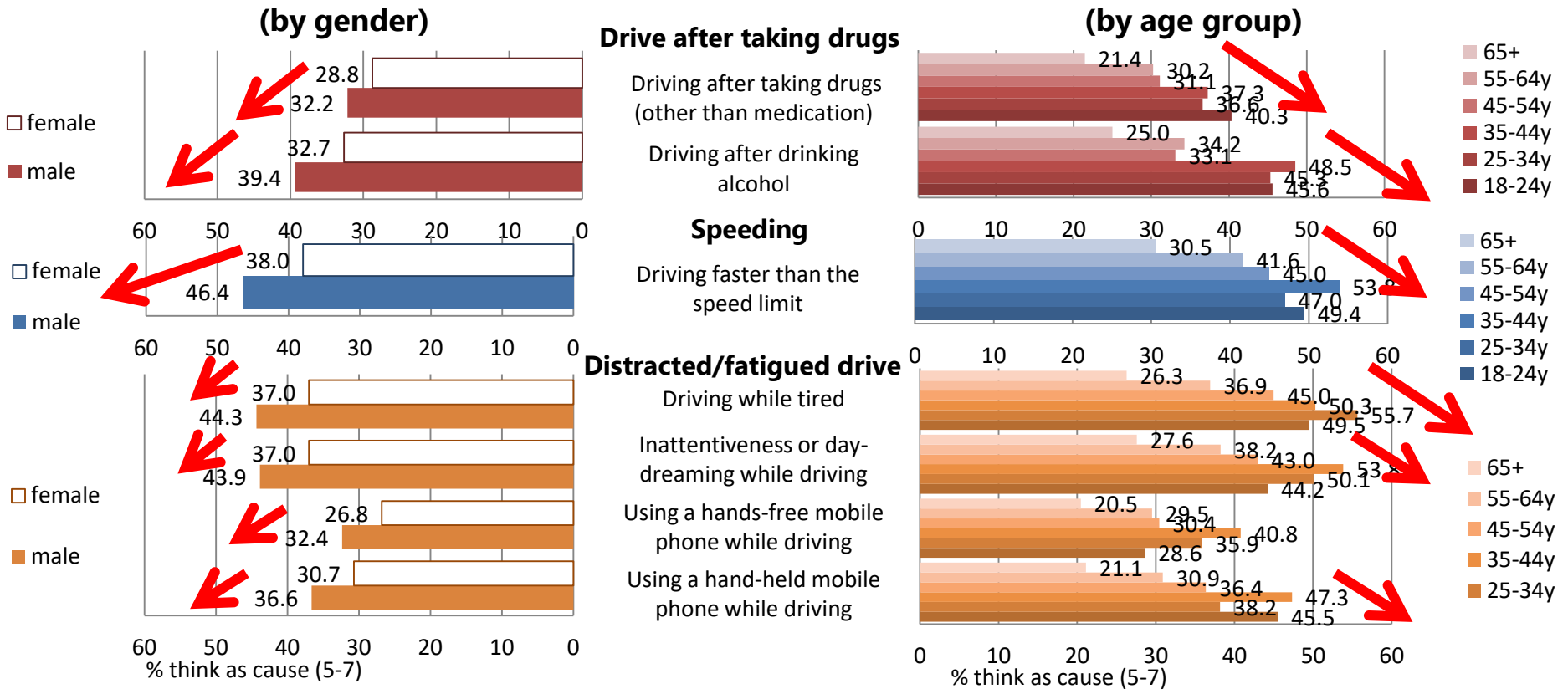


- Females are more likely to have intention towards improvement.

4.4.1 Subjective Risk Perception

- Q16. How often do you think each of the following factors is the cause of a road crash involving a car?

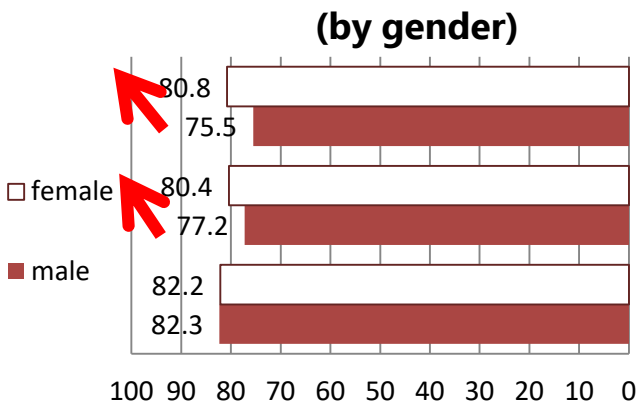
  (7-point scale from 1=never to 7=(almost) always)



- Percentages of males and young to middle-aged generations that feel that unsafe traffic behaviour is the cause of a road crash are high.

4.5.1 Support for Policy Measures (Drive After Drinking Alcohol/Speeding)

➢ Q18. Do you oppose or support a legal obligation to …?
(5-point scale from 1=oppose to 5=support)

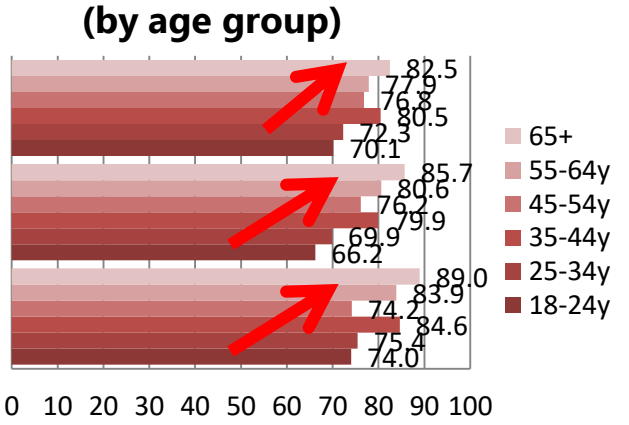


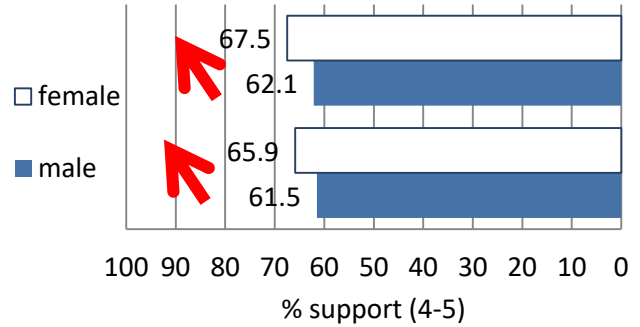
Drive after drinking alcohol

Have zero tolerance (0,0 ‰) for alcohol for all drivers

Have zero tolerance for alcohol (0,0 ‰) for novice drivers (licence obtained less than 2 years)

Install an alcohol "interlock" for drivers who have been caught for drunk driving on more than one occasion

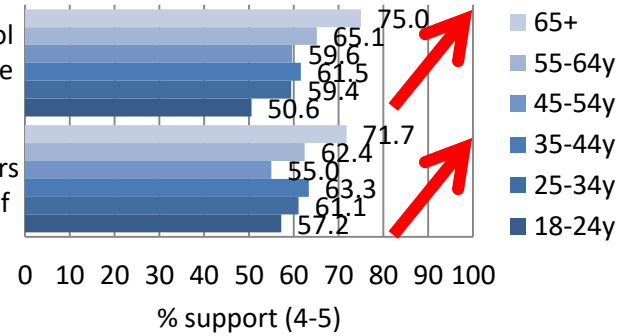




Speeding

Install Dynamic Speed Warning signs (traffic control devices that are programmed to provide a message to drivers exceeding a certain speed threshold)

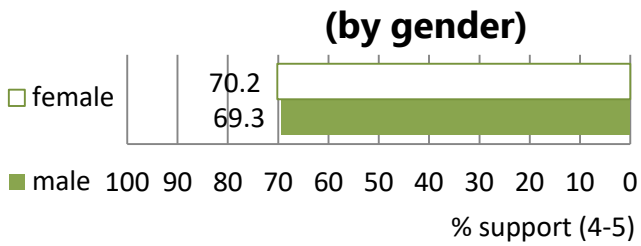
Install Intelligent Speed Assistance (ISA) in new cars (which automatically limits the maximum speed of the vehicle and can be turned off manually)

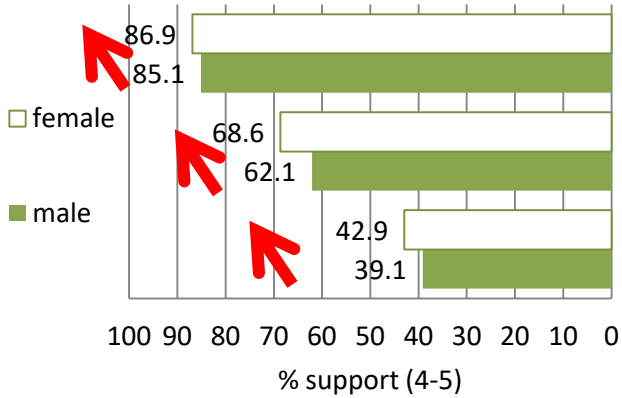


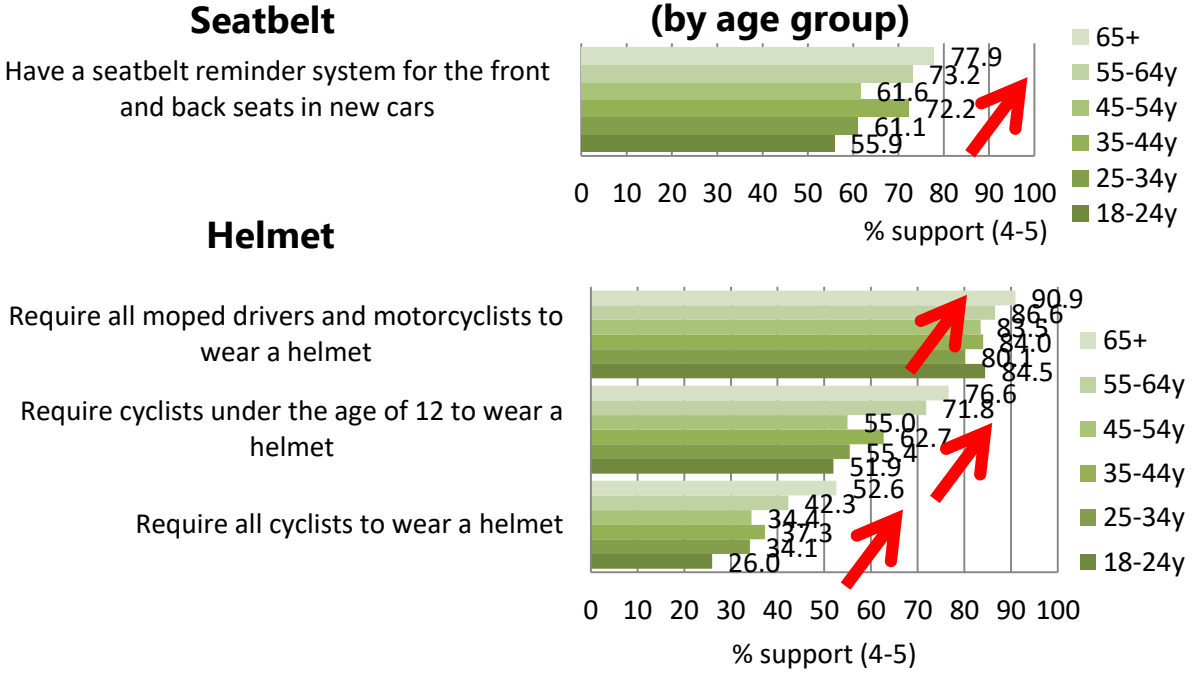
- Policy measures for preventing drive after drinking alcohol is highly supported
- Females and older age groups are more supportive of the policy measures

4.5.2 Support for Policy Measures (Seatbelt/Helmet)

- Q18. Do you oppose or support a legal obligation to …?
  (5-point scale from 1=oppose to 5=support)



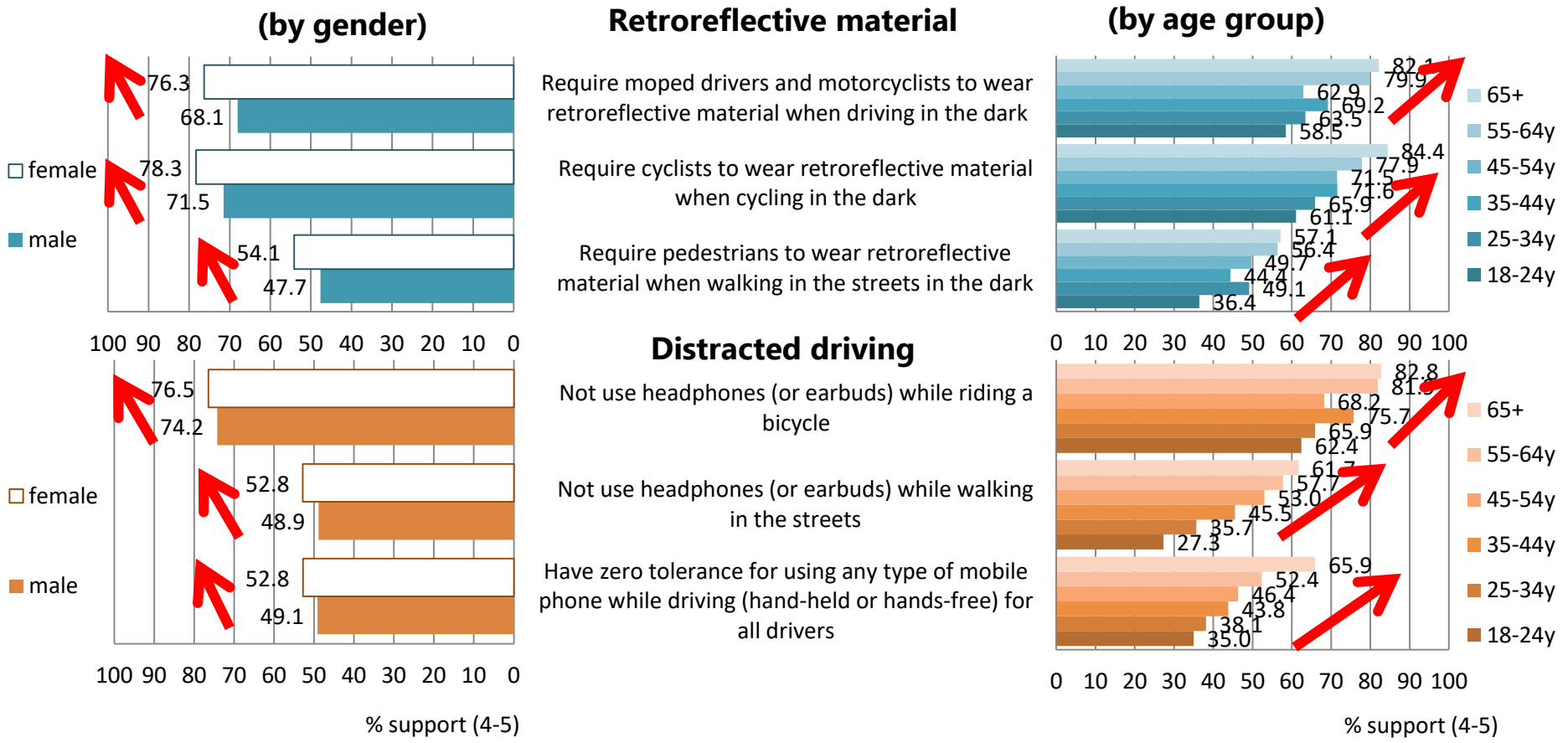




- Females and older age groups are more supportive of the policy measures.
- Requiring all cyclists under the age of 12, and moped drivers and motorcyclists to wear a helmet is highly supported.

4.5.3 Support for Policy Measures (Powered Two Wheeler/Cyclist/Pedestrian)

➢ Q18. Do you oppose or support a legal obligation to …?
(5-point scale from 1=oppose to 5=support)

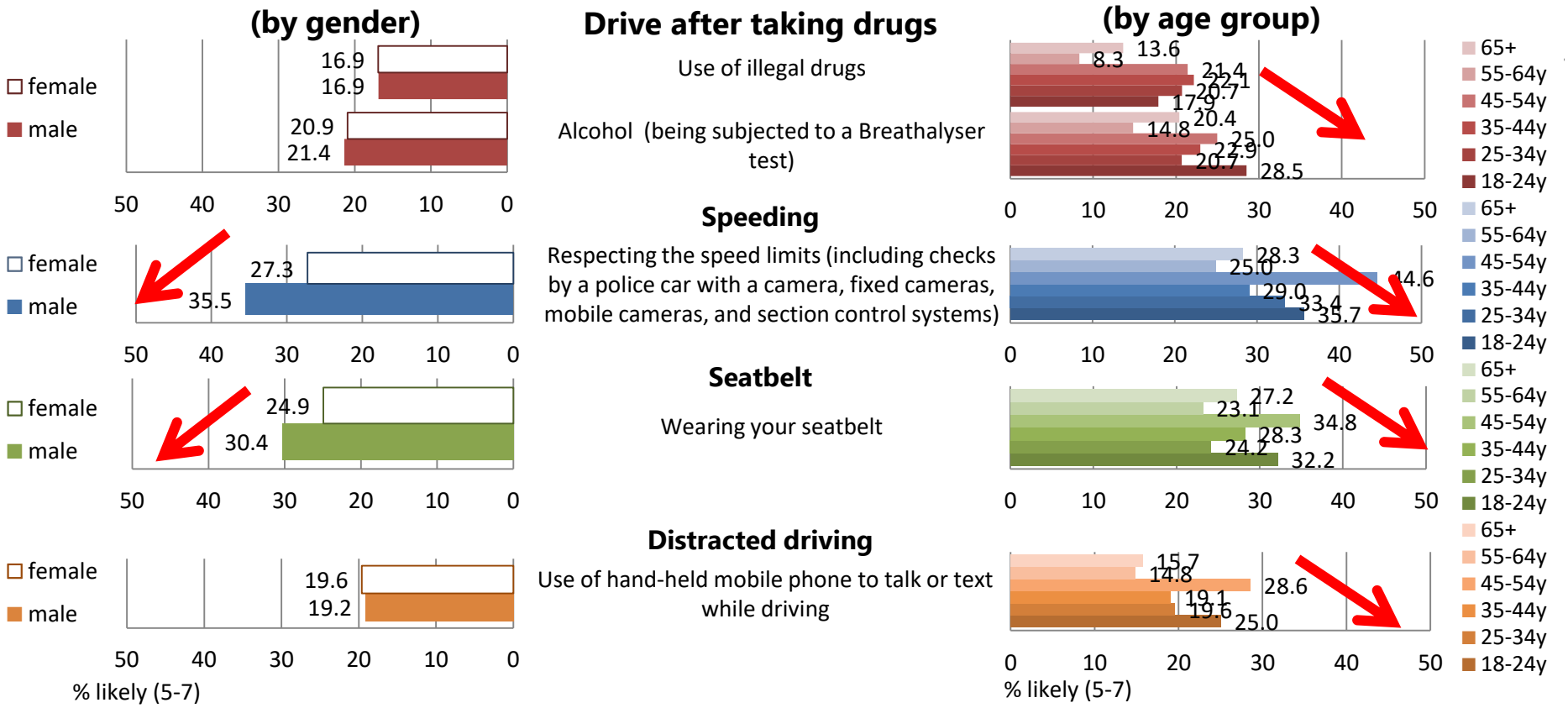


- Females and older age groups are more supportive of the policy measures.
- Requiring cyclists and motorcyclists to wear retroreflective material is more supported than requiring pedestrians walking in the dark the same.

4.6.1 Enforcement of Traffic Laws (Likelihood)

- Q20. On a typical journey, how likely is it that you (as a car driver) will be checked by the police for…

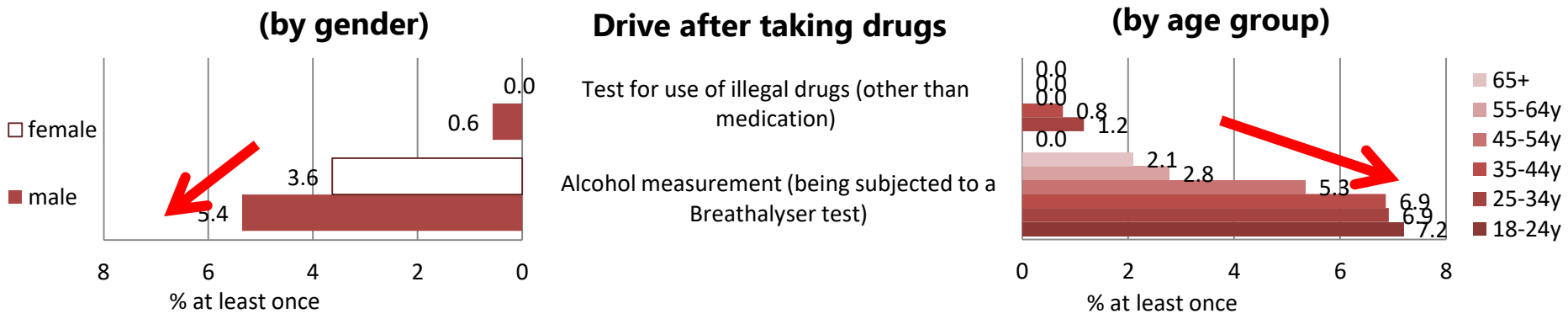
  (7-point scale from 1=very unlikely to 7=very likely)



- Males, and middle-aged and young generations perceive likelihood of being checked high.
- Perceived likelihood of being checked for speeding or not wearing a seatbelt is higher than that for the other items.

4.6.2 Enforcement of Traffic Laws (Check)

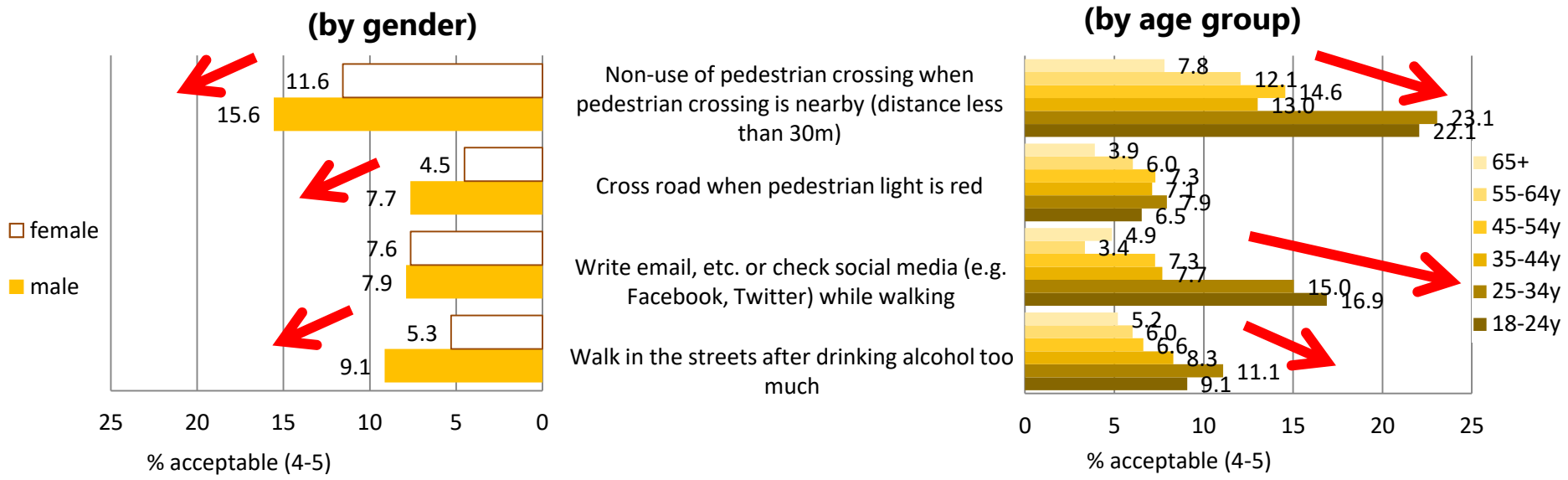
- Q21, Q22. In the past 12 months, how many times have you been checked by the police?
  (never/1 time/at least 2 times/I prefer not to respond to this question)



- Generally low.
- The younger the age group, the larger the number of times having been checked.

4.9.1 Bonus Question (Acceptability of Pedestrian Behaviour)

- Q26. How acceptable do you, personally, feel it is for a PEDESTRIAN to…?
  (5-point scale from 1=unacceptable to 5=acceptable)



- Proportions of males and younger age groups that accept the behaviours are generally large.

4.9.2 Bonus Question (Intention to Respect Legal Regulations)

- Q27. To what extent do you agree with each of the following statements? (5-point scale from 1=disagree to 5=agree)

- Females and older age groups are more likely to respect legal regulations

5. Summary (Comparison with EU Average)

➢ Comparison between Japan and EU Average

- Safety feeling towards transport modes except public transports is relatively low
- Both past frequency and acceptability of drive after drinking alcohol are significantly low
- Both past frequency and acceptability of use of a mobile phone while driving are low
- Both past frequency and acceptability of not wearing a seatbelt as a driver are low

- Both past frequency and acceptability of drive after taking drugs other than medication are relatively high
- Drive when so sleepy as to have trouble keeping eyes open is relatively frequent
- Both past frequency and acceptability of not wearing a seatbelt in the back seat are high
- Past frequency of drive faster than the speed limit is similar to EU, but acceptability of the same is low

- Number of times having been subjected to alcohol check is low
- Highly interested in vehicle automation

5. Summary

Self-Declared Behaviour

- Males and young drivers are more likely to drive after taking drugs/alcohol
- Male and middle-aged and late middle-aged drivers are more likely to drive faster than the speed limit
- Motorcyclists, in particular young and late middle-aged motorcyclists, are likely to drive faster than the speed limit
- Many pedestrians, in particular young generation, check social media or wear headphones while walking

Acceptability of Unsafe Traffic Behaviour

- Personal < Others'
- Female < Male
- The younger, the higher the acceptability
- Acceptability of speeding is high (inside built-up areas < outside built-up areas < motorways)

5. Summary

Attitudes

- Males, and young and 45-64y groups are more likely to have speeding habit
- Males and young people are more confident in their abilities to take unsafe traffic behaviours
- Males assess contribution of various unsafe traffic behaviours to traffic accidents higher
- Females are more likely to have intention towards safe traffic behaviours
- Females and elder people are more likely to respect legal regulations

Support for Policy Measures

- Percentage of those who support measures for preventing drive after drinking alcohol is as high as about 80% and increases with age
- Requiring cyclists under the age of 12 to wear a helmet is highly supported
- Prohibiting use of earbuds while riding a bicycle is also highly supported

Likelihood of Enforcement

- Likelihood of being checked for speeding or not wearing a seatbelt is perceived high, in particular by males and young people

6. Future Challenges

- Comparison with other statistical data
  - Number of road crashes, number of enforcement cases, etc.
- Cross-tabulation across themes
- Attitudes and normative beliefs → intention and habits → analysis of causality between behaviours and road crashes
  - Difference of influence among age groups

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