

# Development of Indicators Related to Road User Behaviour and Culture, Based on the European Survey of Road Users' Attitudes Towards Road Safety

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TITLE: Development of Indicators Related to Road User Behaviour and Culture, Based on the European Survey of Road Users' Attitudes Towards Road Safety (File no.: 3DGT6A000040)  
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CONTENT: This technical report has three objectives:

1. To review the main results obtained by the initiative's studies in Spain and compare them to the results for the rest of Europe and countries in Latin America, over the course of the periods in question, in order to determine the level of compliance and the attitudes expressed by Spanish road users with regard to road behaviour and the existing regulations governing road traffic and safety.
2. To propose improvements designed to optimise the evaluation that is currently carried out by means of the ESRA.
3. To develop new indicators that will need to be included in future studies in order to evaluate all of the aspects that have not been covered in previous editions of the study, based on the specific characteristics and needs identified in relation to road safety in Spain.

KEY WORDS: ESRA, attitudes, road safety, risky behaviours, speed, alcohol use, drugs, distractions, fatigue

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## Contents

- 5** 1. Introduction
- 7** 2. Methodological features of the ESRA 1 and ESRA 2 studies in Spain
  - 2.1. Sampling procedure, sample size, and characteristics of the Spanish participants
  - 2.2. Comparison groups
- 9** 3. Preliminary questions: Concerns regarding road safety, modes of transport and involvement in traffic accidents in Spain
- 13** 4. Current situation: review of the results obtained in the 2015-2017 and 2018-2020 editions of the ESRA for each of the behaviours and attitudes related to road safety analysed in Spain, and comparison with the rest of the groups
  - 4.1. Speed
  - 4.2. Distractions while driving (use of mobile phones)
  - 4.3. Fatigue
  - 4.4. Driving under the influence of alcohol and other drugs
  - 4.5. Seatbelts and child restraint systems
  - 4.6. Riders of two-wheeled vehicles: motorcyclists
  - 4.7. Riders of two-wheeled vehicles: cyclists
  - 4.8. Pedestrians
  - 4.9. Gender-based analysis for the Spanish population
  - 4.10. Summary of the main results for Spain in ESRA 2
- 79** 5. Analysis of needs and proposed indicators
  - 5.1. Analysis of indicators already included in the ESRA and suggestions for improvement
  - 5.2. Proposal of new indicators
- 93** 6. Conclusions and future prospects
- 99** 7. References



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# 1

## Introduction

The E-Survey of Road Users' Attitudes (hereinafter, the ESRA) is a joint initiative organised by various organisations, road safety institutes, research centres, public services and private sponsors from around the world. Its central aim is to compile data (at both the national and international level) on road users' opinions, attitudes and behaviour regarding road safety risks, in order to enable comparisons between countries and regions and comparisons over time, and so that the resultant data may be used as a basis for the design of public policies on road safety at both the national and international level (Meesmann, Torfs, Nguyen & Van den Berghe, 2017; Meesmann, Torfs, Wardenier & Van den Berghe, 2018).

In order to summarise the main features of the fieldwork carried out as part of these studies, we should note that there have been two editions of the ESRA to date. The first (hereinafter, ESRA 1) was carried out between 2015 and 2017 and involved a total of 38 countries. The most recent (hereinafter, ESRA 2) involved a total of 48 countries (only some of which coincide with those involved in ESRA 1) and was carried out between 2018 and 2019. It was completed in 2020.

With regard to the evaluation tool used for each edition, a common survey was drawn up and translated into the relevant languages (or variations thereof, depending on the country), then administered online to a sample of at least 1000 subjects in each of the participating countries. This procedure was followed for both editions. Although ESRA 1 and ESRA 2 are not identical, they both include indicators for evaluating a series of shared aspects that – as demonstrated below – enable them to be compared over time, in many cases. Among these aspects, the following should be noted in view of the fact that they are analysed in this report: self-declared (risky) road behaviours, acceptance of risky behaviours, attitudes towards risky behaviour while driving, subjective safety and risk perception, the application of traffic rules and penalties, and support for policy measures. All of these aspects were evaluated in relation to certain issues of interest, which included: excess speed, the use of mobile phones while driving, driving while tired, driving while under the influence of alcohol or other drugs, and the use of seatbelts and child restraint systems. The survey also includes items designed to specifically evaluate those of the aforementioned aspects that apply to users of two-wheeled vehicles.

This technical report has been prepared based on the results obtained following the administration of ESRA 1 and ESRA 2, in line with two main objectives:

1. To provide a summary of the results obtained by the surveys conducted in Spain and published in the main, thematic and national reports for ESRA 1 and ESRA2 (available at [https://www. Esranet.eu/en/publications/](https://www.Esranet.eu/en/publications/)) and compare them to the results for the rest of Europe and countries in Latin America, and also to compare them over time, in order to determine the level of compliance and the attitudes expressed by Spanish road users with regard to road behaviours and the current regulations governing road traffic and safety.
2. To design and propose improvements aimed at optimising the evaluation that is currently carried out by means of the ESRA.
3. Based on the specific characteristics and needs identified with regard to road safety in Spain, develop new indicators that will need to be included in future studies in order to evaluate all of the aspects that have not been covered in previous editions of the study.

Below we describe some of the methodological features of the two studies carried out in Spain, such as the characteristics of the participants and the countries comprising the groups that will be presented in the summary of results, so that they can be compared to the results obtained at the national level for Spain.

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# 2

## Methodological features of the ESRA 1 and ESRA 2 studies in Spain

### 2.1. Sampling procedure, sample size, and characteristics of the Spanish participants

To select the participants, both editions of the survey used a sampling procedure based on online panels, through which the survey was presented to the participants in a self-administered format.

Each country surveyed a representative sample (numbering around 1,000 participants) of their adult populations, covering all types of road user: car drivers, motorcyclists, cyclists and pedestrians.

With regard to the Spanish samples, table 2.1 presents details of the sample sizes and socio-demographic characteristics of the participants in each edition of the ESRA (the main results of which are presented in section 3 of this report). As we can see in the distribution by age, for ESRA 2 older participants enjoyed a higher level of representation.

**Table 2.1.1**  
Sizes and characteristics of the Spanish samples for ESRA 1 and ESRA 2\*

Spain	Sample size	Distribution by gender		Distribution by age group		
		M	F	18-34	35-54	55+
ESRA 1	1,021	50%	50%	44%	44%	12%
ESRA 2	980	54%	46%	24%	34%	41%

\* In the methodological report for ESRA 2 (Meesmann, Torfs, Wardenier & Van den Berghe, 2021), the participants are distributed by age group in accordance with the following categories: 18-24 (9%), 25-34 (15%), 35-44 (22%), 45-54 (12%), 55-64 (17%) and 65+ (24%).

## 2.2. Comparison groups

Below, we specify the countries that comprise each comparison group, whose results are presented in the tables in this report. Although the general report on the results for 2017 includes data for the Europe group (comprising the 20 countries that ultimately took part), we decided to include the results obtained by this group in 2015, in which 17 of said countries took part, as that is when the thematic reports – which present a more complete set of results for each of the thematic areas analysed – were published. It should also be noted that, even though a total of 48 countries took part in ESRA 2 across the three years of the study (2018-2020), the thematic reports only include the results for those that took part in 2018 (EUROPE<sup>20</sup>, NORTH AMERICA<sup>2</sup>, ASIA & OCEANIA<sup>5</sup> and AFRICA<sup>5</sup>). So that Spain's results could also be compared with those of the Latin American countries, the results obtained for Colombia (the only country in the LATAM group that took part in ESRA 2, and whose survey was carried out in 2019) have also been reviewed and included.

In summary, the groups that are mentioned in the results discussed in this report are as follows:

**EUROPA:** In ESRA 1 (thematic reports for 2015), this group includes the following 17 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland and the United Kingdom. In ESRA 2 (thematic reports for 2018), this group includes the following 20 countries: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

**LATAM:** In ESRA 1 (main report for 2017), this group includes the following countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Paraguay, Peru, Uruguay and Venezuela.

**NORTH AMERICA<sup>3</sup>:** In ESRA 2 (thematic reports for 2018), this group includes the following countries: Canada and the USA.

**ASIA & OCEANIA:** In ESRA 2 (thematic reports for 2018), this group includes the following countries: Australia, India, Israel, Japan and South Korea.

**ÁFRICA:** In ESRA 2 (thematic reports for 2018), this group includes the following countries: Egypt, Kenya, Morocco, Nigeria and South Africa.

**ESRA<sup>6</sup>:** Relating solely to ESRA 1 and including all of the countries in the EUROPE<sup>1</sup> and LATAM<sup>2</sup> groups for ESRA 1, as well as: Denmark, Hungary, the Czech Republic, Australia, Canada, Israel, South Korea and the USA (2015-2017 period).

# 3

## Preliminary questions:

### Concerns regarding road safety, modes of transport and involvement in traffic accidents in Spain

In this section we present the results obtained in relation to the participants' concerns regarding road safety, along with those relating to usage and the subjective safety assessment for each mode of transport.

In ESRA 1 the participants were asked about their level of concern regarding different issues, including some related to road safety. Although, in the majority of cases, a high number of participants stated that they were concerned about these issues (Furian, Brandstätter, Kaiser & Witzik, 2016), traffic jams and even traffic accidents were not among the issues eliciting the greatest amount of concern: they ranked below issues such as unemployment, healthcare quality and pollution; and in Spain, concern regarding traffic accidents only ranked above concern over crime levels (table 3.1). As this item was not included in ESRA 2, it is impossible to know whether these percentages have changed over time.

**Table 3.1**

Percentages of Spanish participants concerned about particular issues (calculated based on the scores of 1 and 2 on the response scale, where 1 = *Very concerned* and 4 = *Not at all concerned*)

ESRA 1					
Crime levels	Pollution	Traffic accidents	Healthcare quality	Traffic jams	Unemployment
71%	79%	75%	81%	54%	86%

With regard to the most frequently used modes of transport and the perceived level of safety when using them, the results for the Spanish participants are presented in table 3.2. By comparing the results over time, we can affirm that travelling by car as a driver has undergone a slight decrease in frequency in comparison to the data for ESRA 1, while travelling by car as a passenger has undergone an increase. Significant increases can also be observed in all of the

other modes of transport, particularly in the use of bicycles (which is now closer to the European average: (EUROPE<sup>1</sup> average = 60.8%), public transport and powered two-wheeled vehicles.

**Table 3.2**

Percentages of Spanish participants who used different modes of transport in the last 12 months, and their perceived level of safety when using them (% use: calculated based on a score ranging from 2 (*Some days during the year*) to 5 on the response scale, where 1 = *Never* and 5 = *At least four days per week*. Level of safety: average score based on a response scale where 0 = *Very unsafe* and 10 = *Very safe*)

	ESRA 1					
	Pedestrian	Car, as driver	Car, as passenger	Public transport	Bicycle	Moped/motorcycle
% use	84%	88%	75%	71%	35%	11%
Level of safety	7.2	7.1	6.7	7.6	5.2	5.6
	ESRA 2					
	Pedestrian	Car, as driver	Car, as passenger	Public transport	Bicycle	Moped/motorcycle
% use	96.4%	84.2%	93.9%	95.3%	56.8%	26.6%
Level of safety	7.7	7.4	6.9	7.7	6	5.2

In terms of perceived level of safety, the Spanish participants view public transport as the safest mode. In general, the perceived level of safety for the Spanish participants when using each mode of transport has increased, with the exception of mopeds/motorcycles, whose perceived safety level fell in ESRA 2 in comparison to the Spanish responses for the first edition of the study.

The results presented in table 3.3 show the proportion of participants who were involved in at least one traffic accident, whether in the last three months (ESRA 1) or the last year (ESRA 2). It should be noted that while ESRA 1 asked participants about their general experience, without specifying the seriousness of the accident (at least initially; participants were subsequently asked for this information, although the published reports do not contain national-level data for this item), in ESRA 2 the “traffic accident” concept was defined and presented to the participants more clearly: they were specifically asked about accidents in which they had been involved, and about accidents in which someone (whether the participant themselves or other individuals involved in the accident) had needed to be taken to hospital. Subsequently, they were also asked about accidents that had only resulted in minor or material damage, although they were not asked to specify the mode of transport involved.

The results show that in Spain, car accidents are the most common type. However, these figures cannot be directly compared to one another in order to draw reliable conclusions regarding their evolution over time, given that they refer to different time periods and accidents of varying levels of seriousness.

**Table 3.3**

Percentage of Spanish participants involved in traffic accidents while using different modes of transport (calculated based on the number of participants stating that this had happened at least once)

ESRA 1: without specifying the level of seriousness and in the last three months				
Pedestrian	Car, as driver	Car, as passenger	Bicycle	Moped/motorcycle
1.8%	5.9%	1.9%	2.6%	3.6%
ESRA 2: with hospitalisation and in the last 12 months				
Pedestrian	Car, as driver	Car, as passenger	Bicycle	Moped/motorcycle
1.4%	12.1%	4.1%	2%	3%

Lastly, and in addition to analysing the use, perceived level of safety and number of traffic accidents related to traditional modes of transport, ESRA 2 also evaluated the participants' interest in autonomous and semi-autonomous vehicles and the perceived benefits of their use (Woods-Fry, Vanlaar, Robertson, Lyon, Cools & BAST, 2021). Taking into account only those participants who responded with a score of between 5 and 7, on a scale where 1 = *Not at all interested* and 7 = *Very interested*, the percentage of Spaniards interested in autonomous vehicles was 39.7%, rising to 46.8% for semi-autonomous vehicles. Although fewer than half of the Spanish participants expressed an interest in these types of vehicle, the results were above the European average for both autonomous vehicles (EUROPE I = 33%) and semi-autonomous vehicles (EUROPE I = 40.7%).

With regard to the perceived benefits of using these types of vehicle, and although the survey included items designed to evaluate aspects related to journey time, comfort and emissions, at the national level the reports present the results for two aspects directly related to road safety: namely, reducing the number of accidents, and reducing their severity (Furian, Kaiser, Senitschnig & Soteropoulos, 2021). Based on the number of participants who gave a score of between 5 and 7 on a response scale where 1 = *Very unlikely* and 7 = *Very likely*, with regard to the use of autonomous vehicles some 51.9% of Spaniards think that fewer accidents would be likely to occur (EUROPE I average = 49.4%), while 51.2% think that their use would reduce the severity of accidents (EUROPE I average = 48.7%). With regard to the perceived benefits of semi-autonomous vehicles, 53.7% of Spanish participants think that their use would likely reduce the number of accidents (EUROPE I average = 49.2%), while 52.6% think that their use would also likely reduce the severity of accidents (EUROPE I average = 48.2%). It would appear that the Spanish population is a little less sceptical regarding the benefits of these types of vehicle than the European average.



# 4

## Current situation:

### review of the results obtained in the 2015-2017 and 2018-2020 editions of the ESRA for each of the road safety behaviours and attitudes analysed in Spain, and comparison with the rest of the groups

13

Below, we present the main results for ESRA 1 (2015-2017) and ESRA 2 (2018-2020) with regard to each of the driving behaviours included in the surveys, along with those related to the behaviour of the users of two-wheeled vehicles and risky behaviour on the part of pedestrians. These are followed by a series of gender-based comparisons of the Spanish participants with regard to a number of the issues evaluated in relation to road safety.

## 4.1. Speed

### 1. Self-declared road behaviours: self-reported breakage of speed limits

Among all of the risky behaviours evaluated in the ESRA, breakage of speed limits is the one that the highest percentage of participants admit to having committed while driving. However, although the results for the Spanish sample in relation to the three types of road are higher than those for all of the countries in the LATAM group (except for Mexico, where a slightly higher percentage of drivers admit to breaking the speed limit on motorways/dual carriageways) in both the first and second editions of the study, these percentages are lower than the European average in all cases (table 4.1.1). Only the averages for the ASIA & OCEANIA<sup>4</sup> and AFRICA<sup>5</sup> groups in ESRA 2 have lower percentages of participants who admit to engaging in this type of risky behaviour on the different types of road, in comparison to Spain.

In addition to the results presented in ESRA 2 regarding self-reported breakage of the speed limit on different types of road in the last month, the survey included an item that asked participants how often they had broken the speed limit on conventional roads and in the last 12 months. The results for this item may be used to compare the changes experienced by each country between the two editions of the study, with regard to self-reported breakage of the speed limit.

Despite the fact that, at first glance, it may seem as though the results for Spain in table 4.1.1 show a reduction in this type of risky behaviour between one study and the next, the time period specified in the question is key. If we compare the percentage of participants who admit to breaking the speed limit on conventional roads in the last year, the results show that this type of risky behaviour has not actually decreased over time; in fact, it has slightly increased (ESRA 1 = 64% while ESRA 2 = 67%).

**Table 4.1.1**

Frequencies of self-declared breakage of speed limits (based on a score of between 2 (At least once) and 5 on a response scale where 1 = Never and 5 = (nearly) Always)\*

Country/region		ESRA 1 (2015-2017): last 12 months			ESRA 2 (2018-2020): last 30 days					
		Urban road	Conventional road	Motorway/dual carriageway	Urban road	Conventional road	Motorway/dual carriageway			
SPAIN		<b>64%</b>	<b>64%</b>	<b>74%</b>	<b>49.7%</b>	<b>58.8%</b>	<b>61.3%</b>			
LATAM	Argentina	49%	51%	52%						
	Bolivia	58%	61%	60%						
	Brazil	48%	47%	51%						
	Chile	56%	57%	64%						
	Colombia	52%	51%	60%				38.7%	48.1%	48.9%
	Costa Rica	52%	60%	63%						
	Ecuador	51%	55%	56%						
	Guatemala	53%	57%	61%						
	Mexico	53%	55%	76%						
	Paraguay	57%	62%	61%						
	Peru	54%	52%	56%						
	Uruguay	50%	54%	62%						
Venezuela	47%	52%	62%							
EUROPE <sup>1</sup> AVERAGE		<b>68%</b>	<b>73%</b>	<b>73%</b>	<b>56.3%</b>	<b>67.5%</b>	<b>61.5%</b>			
LATAM <sup>2</sup> AVERAGE		<b>50%</b>	<b>51%</b>	<b>56%</b>						
NORTH AMERICA <sup>3</sup> AVERAGE					58.9%	65.9%	71.6%			
ASIA & OCEANIA <sup>4</sup> AVERAGE					42.9%	45.4%	46.4%			
AFRICA <sup>5</sup> AVERAGE					42.7%	49.9%	51.2%			
ESRA <sup>6</sup> AVERAGE		61%	65%	68%						

\* ESRA 1 does not differentiate between drivers and riders. ESRA 2 specifically refers to car drivers.

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Lastly, although the general results for the entire ESRA<sup>6</sup> group are provided in the main report published for ESRA 1 (Meesmann, Torfs, Nguyen & Van den Berghe, 2018), the absence of an equivalent report with the results for all of the 48 countries that took part in the second edition of the study has prevented us from including this information; not only with regard to speed, but also in the rest of the tables of results in this report, given that the thematic reports published for ESRA 2 only include data for the countries and groups that took part during the first year in which administration of the survey began (2018).

## 2. Acceptance of risky road behaviour in relation to speed limits

Here, we have chosen to present the results for Spain and those for the rest of the countries and groups separately, as the items in ESRA 2 used to evaluate the level of acceptance of risky road behaviour related to excess speed differed significantly from those used in ESRA 1.

Additionally, the main report on the results for ESRA 1 (Meesmann, Torfs, Nguyen & Van den Berghe, 2018) only includes, at the national (and group) level, those results related to personal acceptance and perceived acceptance on the part of others regarding the three types of violation whose data are presented in table 4.1.2; the results for excess speed near schools, or for exceeding the speed limit by 10 km/h, are not included. The table does present the full set of results obtained in Spain and the EUROPE<sup>group</sup>, as these are included in the thematic report on speed that was prepared using the data collected in 2015 (Yannis, Laiou, Theofilatos & Dragomanovits, 2016).

In line with the behaviours most frequently demonstrated by Spanish drivers, as detailed in the previous section, the type of risky behaviour most widely accepted across the sample is excess speed on motorways/dual carriageways, in contrast to the level of acceptance for excess speed on urban roads (table 4.1.2). For Spain, the percentages of acceptance for excess speed on this type of road are very similar to the European averages, although they are higher (in both general and average terms) than the equivalent percentages for the countries in the LATAM group. However, with regard to excess speed in different environments within the general context of urban roads, the Spanish participants' level of acceptance does not exceed the European average at any point, and is fairly similar to the results obtained in the Latin American countries.

In both Spain and the rest of Europe, on average (table 4.1.2), the type of behaviour with the highest level of acceptance, in percentage terms, is that of exceeding the indicated speed limit by 10 km/h.

As we can see by comparing the level of personal acceptance and perceived acceptance on the part of others in each case, the results provide evidence of a perceptual bias known as the "third-person effect". This phenomenon refers to the human tendency to consider ourselves superior to others with regard to positive, socially desirable or normative aspects (e.g. Alicke & Govorun, 2005; Meirick, 2005). In recent decades, the scientific literature has demonstrated that this is a robust perceptual bias (e.g. Falces, Bautista & Sierra, 2011) that has also been observed in previous research conducted in Spain on compliance with road safety rules (e.g. Bautista, 2012; Bautista & Miró-Llinares, 2015; Miró-Llinares & Bautista, 2013).

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**Table 4.1.2**

Percentages of acceptance, both personal and perceived acceptance on the part of others, for each of the speed-limit violations a driver could commit\* (ESRA 1) (calculated based on the scores of 4 and 5 on the response scale used, where 1 = *Unacceptable* and 5 = *Acceptable*)

Country/region	Exceeding the speed limit by 20 km/h on the motorway/dual carriageway		Exceeding the speed limit by 20 km/h on a residential road		Exceeding the speed limit by 20 km/h in an urban area		Exceeding the speed limit by 20 km/h near a school		Exceeding the speed limit by 10 km/h	
	Others	Personal	Others	Personal	Others	Personal	Others	Personal	Others	Personal
SPAIN	33%	14%/24%**	8%	4%	12%	6%	6%	4%	37%	25%
LATAM	Argentina	22%	12%	13%	5%	15%	6%			
	Bolivia	24%	12%	16%	7%	18%	8%			
	Brazil	16%	11%	12%	5%	11%	6%			
	Chile	17%	10%	7%	4%	9%	5%			
	Colombia	19%	12%	9%	4%	9%	4%			
	Costa Rica	17%	10%	8%	4%	9%	3%			
	Ecuador	16%	10%	11%	4%	10%	4%			
	Guatemala	22%	12%	13%	4%	14%	4%			
	Mexico	23%	15%	11%	6%	13%	7%			
	Paraguay	24%	14%	16%	7%	15%	6%			
	Peru	16%	8%	11%	4%	11%	4%			
Uruguay	23%	16%	9%	3%	9%	4%				
Venezuela	26%	16%	13%	4%	15%	6%				
EUROPE <sup>1</sup> AVERAGE	33%	25%	13%	7%	13%	8%	8%	4%	40%	29%
LATAM <sup>2</sup> AVERAGE	19%	12%	11%	5%	12%	6%				
ESRA <sup>6</sup> AVERAGE	26%	19%	12%	7%	13%	8%				

\* Without differentiating between drivers and riders.

\*\* The reported percentage of personal acceptance in the thematic report on speed (Yannis, Laiou, Theofilatos & Dragomanovits, 2016) is 14%, while in the main report on results (Meesmann, Torfs, Nguyen & Van den Berghe, 2018) it is given as 24%.

For its part, ESRA 2 did a good job in simplifying the evaluation of this aspect, by asking participants to indicate their level of personal acceptance regarding excess speed on different types of road, and only including a single item designed to evaluate the level of perceived acceptance among others for breaking the speed limit on conventional roads (table 4.1.3).

In line with ESRA 1, this second edition of the study also shows that the Spanish participants feel this risky behaviour to be more acceptable on motorways/dual carriageways (although the percentage is lower in comparison to ESRA 1) than on other types of road. The type with the lowest level of acceptance is excess speed on urban roads. For the majority of cases, in Spain these percentages of acceptance are lower than the average for the EUROPE group and all of the other groups, with the exception of Colombia (whose participants are less accepting of all of the behaviours described) and the average percentage of personal acceptance for ASIA & OCEANIA<sup>4</sup> with regard to excess speed on motorways/dual carriageways, which is lower than the equivalent figure for Spain.

**Table 4.1.3**

Percentages of acceptance, both personal and perceived acceptance on the part of others, for each of the speed-limit violations a car driver could commit (ESRA 2) (calculated based on the scores of 4 and 5 on the response scale used, where 1 = *Unacceptable* and 5 = *Acceptable*)

Country/region	Exceeding the speed limit on conventional roads		Exceeding the speed limit on urban roads	Exceeding the speed limit on motorways/dual carriageways
	Others	Personal	Personal	Personal
SPAIN	11.7%	6.6%	4%	10.2%
COLOMBIA	8.7%	5.5%	2.5%	6%
EUROPE <sup>1</sup> AVERAGE	15.1%	10.6%	5%	14.3%
NORTH AMERICA <sup>3</sup> AVERAGE	18%	11.1%	6.7%	17.6%
ASIA & OCEANIA <sup>4</sup> AVERAGE	12.1%	7.7%	6.7%	9.5%
AFRICA <sup>5</sup> AVERAGE	15.5%	9.3%	6.2%	12.1%

### 3. Attitudes towards excess speed while driving

As we found with the evaluation of the level of acceptance for breaking speed limits, the items used to evaluate the participants' attitudes towards excess speed are different in each survey. For this reason, the results obtained in each country and group for this indicator are presented in separate tables.

With regard to ESRA I, the thematic report on speed only includes the results for the European countries that took part in the study in 2015. The main report on the results only includes the averages for the LATAM and ESRA groups in two of the six items contained in the survey; and at the national level, it only presents the results for one of them. Consequently, in table 4.1.4 it has not been possible to include the complete results for all of the countries and groups for all of the items used in the survey to evaluate attitudes towards excess speed while driving.

Table 4.1.4

Percentages of participants who agree with each of the statements designed to evaluate attitudes towards excess speed while driving and its influence on road safety (ESRA I) (calculated based on the scores of 4 and 5 on the response scale used, where 1 = *Disagree* and 5 = *Agree*)

Country/region		Driving above the speed limit makes it harder to react appropriately in a dangerous situation	Driving fast means risking my own life and the lives of others	I have to drive fast, otherwise I feel as though I am wasting time	Most of my friends/acquaintances think that speed limits should be respected	The established speed limits are normally acceptable	If you increase your speed by 10 km/h, you are much more likely to be involved in a traffic accident
SPAIN		73%	75%	13%	63%	51%	38%
LATAM	Argentina	83%					
	Bolivia	86%					
	Brazil	78%					
	Chile	85%					
	Colombia	84%					
	Costa Rica	89%					
	Ecuador	84%					
	Guatemala	87%					
	Mexico	80%					
	Paraguay	90%					
	Peru	86%					
	Uruguay	82%					
Venezuela	86%						
EUROPE <sup>1</sup> AVERAGE		72%	76%	15%	60%	51%	45%
LATAM <sup>2</sup> AVERAGE		81%			71%		
ESRA <sup>6</sup> AVERAGE		76%			65%		

In general, most of the Spanish participants' responses are in agreement with certain beliefs regarding the dangers posed by excess speed, e.g. that it makes it harder to react, and that it can pose a risk to the respondent's own life and the lives of others. However, this level of agreement falls below the European average when the participants are asked how acceptable they find the established speed limits, and about the impact that increasing one's speed by 10 km/h might have on the likelihood of having an accident (table 4.1.4).

When comparing the results to the data obtained for the countries in the LATAM<sup>4</sup> group, we can affirm that the latter have a higher perception of risk with regard to the impact of excess speed on the capacity to react in a dangerous situation; moreover, a higher proportion of Latin American participants believe that the majority of their friends agree with the established speed limits, in comparison to the equivalent proportion in Spain and the European average.

**Table 4.1.5**

Percentages of participants who agree with each of the statements designed to evaluate the following constructs: perceived descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions regarding speed while driving (ESRA 2) (calculated based on the scores of 4 and 5 on the response scale used, where 1 = *Disagree* and 5 = *Agree*)

Country/region	Descriptive norm	Beliefs and attitudes		Self-efficacy		Habits		Intentions
	Most of my friends would drive 20 km/h above the speed limit in a residential area	I have to drive fast, otherwise I feel as though I am wasting time	Respecting the speed limits is boring or dull	I am confident in my ability to drive significantly faster than the speed limit	I am capable of driving fast around sharp bends	I often drive faster than the speed limit	I like to drive in a fast, sporty manner around sharp bends	I will do my best to respect the speed limits over the next 30 days
SPAIN	15.5%							
EUROPE <sup>1</sup> AVERAGE	14.3	5.6%	12.3%	15.9%	11.3%	11.7%	7.4%	70.8%
NORTH AMERICA <sup>3</sup> AVERAGE	17%	5.5%	8.3%	16.3%	7.7%	20.8%	5%	72.8%
ASIA & OCEANIA <sup>4</sup> AVERAGE	24.7%	8.2%	9.7%	23%	10.7%	11.5%	6.5%	74.7%
AFRICA <sup>5</sup> AVERAGE	15.4%	9.2%	9.5%	12.8%	8.3%	9.3%	7.2%	75.9%

For its part, in ESRA 2 changes were made in order to evaluate attitudes by including items to measure the perceived descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions regarding excess speed while driving.

In terms of the results for the evaluation of these constructs presented in table 4.1.5, it seems strange that in the absence of the publication of a main report on the results of ESRA 2, neither the thematic report on speed (Holocher & Holte, 2019) nor the country reports include any breakdowns of results by country other than those concerning the descriptive norm. This is particularly odd given that the central focus of the study is (presumably) attitudes, as indicated by the title of the survey itself. For this reason, only the results obtained for this one indicator are

presented for Spain, while those obtained for the rest of the items are not included. Additionally, no results for this construct are presented in the national reports (Vias Institute, 2020), meaning that it has not been possible to include the results for Colombia in table 4.1.5.

Consequently, and with specific regard to Spain, we can only affirm that for the descriptive norm evaluated using the item stating that the majority of the respondent's friends would drive 20 km/h above the speed limit in a residential area, the percentage of agreement among the Spanish participants is slightly higher than the European average (although it is not the highest percentage overall, as the averages for the NORTH AMERICA<sup>3</sup> and ASIA & OCEANIA<sup>4</sup> groups are both higher).

#### 4. Perception of traffic accident risk: excess speed

With regard to the perception of excess speed as a cause of traffic accidents, the results obtained in ESRA 1 and ESRA 2 are presented in table 4.1.6. For ESRA 1, an analysis of the results regarding the participants' perception of risk in relation to speed and other factors can only be found in a thematic report prepared using the data from the countries that took part in the study in 2015 (Furian, Brandstätter, Kaiser & Witzik, 2016). As this indicator was not included in the general report on the main results, the data for the Latin American countries and the LATAM and ESRA<sup>6</sup> groups are not available. Moreover, the absence of results for this indicator in the reports for each country prepared after ESRA 2 was carried out means that it has not been possible to report on the perceived risk of excess speed as a cause of traffic accidents in Colombia.

With regard to the interpretation of the results, in ESRA 1 the perceived risk of excess speed as a cause of traffic accidents is lower among the Spanish participants than the European average; however, this trend is reversed in the second edition of the study, as the results obtained in ESRA 2 indicate that Spain, in comparison to the averages for the rest of the groups, has the highest perceived level of risk. Although it is tempting to suggest that, over time, the perceived risk posed by excess speed has increased among the Spanish population, we cannot affirm this with confidence, as each study used different items that evaluated different dimensions of the perception of this risk.

20

**Table 4.1.6**

Perceived risk of excess speed as a cause of traffic accidents (ESRA 1: averages calculated based on a response scale of 0% to 100%; ESRA 2: calculated based on the scores of 4 to 6 on the response scale used, where 0 = *Never* and 6 = *Nearly always*)

Country/region	ESRA 1 In your opinion, out of every 100 accidents, how many of them are caused by driving too fast?	ESRA 2 How often do you think driving faster than the speed limit is the cause of a traffic accident involving a car?
SPAIN	26.9%	79.3%
EUROPE <sup>1</sup> AVERAGE	32.5%	74.8%

Country/region	ESRA 1 In your opinion, out of every 100 accidents, how many of them are caused by driving too fast?	ESRA 2 How often do you think driving faster than the speed limit is the cause of a traffic accident involving a car?
NORTH AMERICA <sup>3</sup> AVERAGE		71.6%
ASIA & OCEANIA <sup>4</sup> AVERAGE		56.8%
AFRICA <sup>5</sup> AVERAGE		68.1%

## 5. Application of traffic rules and penalties in relation to excess speed

With regard to the perceived risk of being subjected to a speed check during a habitual journey, the results in table 4.1.7 indicate that, over time, the percentage of Spanish participants who consider it likely has varied extremely little (also taking into account the fact that different samples were surveyed and different response scales were used in each edition). Although these percentages equate to a little less than half the sample, they are higher than the averages for Europe and all of the Latin American countries, as well as the LATAM2 group; moreover, in ESRA 2 they are only exceeded by the figures for Colombia and the average for the AFRICA<sup>5</sup> group, where the perceived risk of being caught by a police or radar-based check is somewhat higher.

With regard to the ESRA 1 study, of the total number of penalties imposed upon the Spanish participants for each of the violations while driving specified in the survey, **70%** of them were due to excess speed (EUROPE<sup>1</sup> average = 63%). Specifically, **12%** of the Spanish sample were penalised for this reason (EUROPE<sup>1</sup> average = 15%), while **2%** were imprisoned for breaking the speed limit (EUROPE<sup>1</sup> average = 2%).

In ESRA 2 the participants were not asked about this aspect directly; instead, the European Transport Safety Council or the participating partners' experts provided information on the penalties imposed for excess speed in 2017, with specific regard to the 20 European countries that completed the study in 2018 (the EUROPE<sup>1</sup> group). For Spain, this figure was 21 penalties per 1000 inhabitants, which places it at the bottom of the ranking (led by Austria and the Netherlands with 592 and 547 penalties per 1000 inhabitants, respectively). However, and as stated in the thematic report on speed (2018), where these data are presented, making comparisons between countries is rather complicated due to the fact that they each have different traffic rules and formal penalties applied for breaking them.

**Table 4.1.7**

Perceived likelihood among the participants of being subjected to police/radar-based speed checks during a habitual journey (ESRA 1: calculated based on the scores of 4 and 5 on the response scale used, where 1 = *Very low* and 5 = *Very high*. ESRA 2: calculated based on the scores of 5 to 7 on the response scale used, where 1 = *Very unlikely* and 7 = *Very likely*)\*

Country/region		PERCEIVED LIKELIHOOD OF BEING SUBJECTED TO A SPEED CHECK	
		ESRA 1	ESRA 2
SPAIN		42%	42.4%
LATAM	Argentina	29%	47.3%
	Bolivia	15%	
	Brazil	20%	
	Chile	36%	
	Colombia	34%	
	Costa Rica	27%	
	Ecuador	51%	
	Guatemala	28%	
	Mexico	29%	
	Paraguay	24%	
	Peru	27%	
	Uruguay	34%	
Venezuela	12%		
EUROPE <sup>1</sup> AVERAGE		36%	37.2%
LATAM <sup>2</sup> AVERAGE		25%	
NORTH AMERICA <sup>3</sup> AVERAGE			28.7%
ASIA & OCEANIA <sup>4</sup> AVERAGE			34.9%
AFRICA <sup>5</sup> AVERAGE			44.8%
ESRA <sup>6</sup> AVERAGE		32%	

\* ESRA 1 does not differentiate between drivers and riders. ESRA 2 specifically refers to car drivers.

In light of these results, we can hypothesise that compliance with speed limits may be more influenced by considerations related to the acceptance of these types of behaviour (which, as we have also seen in the specific case of excess speed on motorways/dual carriageways, is higher among Spanish drivers than Latin American drivers) than by the perceived threat of potential consequences in the form of penalties or a prison sentence.

## 6. Support for policy measures related to speed limit violations

Table 4.1.8 shows the percentages of participants who support the policy measures related to traffic rules and the penalties for violating them. As the main report on the results for ESRA 1 does not contain a breakdown of these results at the

national level, it has not been possible to include the results for each country in the LATAM<sup>2</sup> group. Nor does the report provide the averages for the LATAM<sup>2</sup> and ESRA<sup>6</sup> groups regarding the percentage of agreement among the participants with the assertion that these rules and penalties should be stricter. Additionally, the lack of data for these indicators in the national reports prepared after ESRA 2 was carried out has prevented us from including the results regarding support among the Colombian participants for the policy measures that have been applied in relation to excess speed.

**Table 4.1.8**

Percentages of participants who agree with the traffic rules and penalties that are applied for breaking the speed limit (ESRA 1: calculated based on the affirmative responses given on the response scale *Yes-No-Don't know/no answer*\*; ESRA 2: calculated based on the responses expressing agreement on the response scale *Agree-Disagree*)

Country/region	ESRA 1			ESRA 2		
	They should be stricter	There are not enough checks on compliance with traffic rules	The penalties are too severe	They should be stricter	There are not enough checks on compliance with traffic rules	The penalties are too severe
SPAIN	48%	45%	46%	69.8%	73.3%	36.4%
EUROPE <sup>1</sup> AVERAGE	47%	46%	33%	75.4%/57.4%**	68.4%	31.4%
LATAM <sup>2</sup> AVERAGE		64%	28%			
NORTH AMERICA <sup>3</sup> AVERAGE				47.6%	62.2%	29.1%
ASIA & OCEANIA <sup>4</sup> AVERAGE				90.6%	76.1%	36.1%
AFRICA <sup>5</sup> AVERAGE				47%	52.5%	45.6%
ESRA <sup>6</sup> AVERAGE		55%	30%			

\* The response options in ESRA 1 for these items are as indicated (*Yes-No-Don't know/no answer*). However, the thematic report on speed states that a five-point response scale was used (where 1 = *Disagree* and 5 = *Agree*), and that the results were obtained based on the number of scores of 4 and 5 given. For this reason, we decided to include the results for Spain and EUROPE<sup>1</sup> provided in the thematic report on the application of rules and support for policy measures related to road safety (Buttler, 2016), which used the survey's original scale, in view of the fact that the results vary from one report to the next.

\*\* In the thematic report on speed (ESRA 2), the percentage of participants who agree that the rules and penalties for excess speed should be stricter is 75.4%, while in the report on the application of rules and road safety violations (Goldenbeld & Buttler, 2021), this figure is given as 57.4%.

Just as nearly half of the Spanish participants affirm that the rules governing excess speed should be stricter and that not enough checks are carried out in relation (thereby concurring with the European average for these statements), in view of the results from the ESRA 1 study we can conclude that a similar percentage of Spaniards believe that the penalties applied to this type of violation are too severe. The corresponding percentage is a great deal higher than the average for both the EUROPE<sup>1</sup> and LATAM<sup>2</sup> groups. However, in the second edition of the study, this trend is significantly reversed: the most recent results show that the majority of

Spanish participants think the rules should be stricter, and only a significantly lower percentage than that recorded in ESRA 1 considers the penalties to be too severe (although this percentage remains higher than the European average recorded in ESRA 2).

With regard to the installation of devices to control excess speed while driving, ESRA 1 did not include items to evaluate the level of support for such measures; consequently, table 4.1.9 only includes the results obtained in ESRA 2 regarding the level of support for these measures (Van den Berghe, Sgarra, Usami, González-Hernández & Meesmann, 2020).

**Table 4.1.9**

Percentages of support for the installation of intelligent speed assistance (ISA) devices in new cars and dynamic speed-warning signs in ESRA 2 (calculated based on the scores of 4 and 5 on the response scale, where 1 = *I am opposed* and 5 = *I am in support*)

Country/region	Intelligent speed assistance	Dynamic speed-warning signs
SPAIN	<b>76.4%</b>	<b>79.7%</b>
EUROPE <sup>1</sup> AVERAGE	<b>60.8%</b>	<b>67.6%</b>
NORTH AMERICA <sup>3</sup> AVERAGE	44.4%	56.7%
ASIA & OCEANIA <sup>4</sup> AVERAGE	78.7%	80.7%
AFRICA <sup>5</sup> AVERAGE	77.2%	83.8%

In general, there is a high level of support among the Spanish sample for the installation of ISA devices, and an even higher level of support for dynamic speed-warning signs. In both cases, the percentages are a great deal higher than the averages for the EUROPE<sup>1</sup> group, and even higher in comparison to the percentage of participants in the NORTH AMERICA<sup>3</sup> group who indicated their agreement with these measures.

24

## 4.2. Distractions while driving (use of mobile phones)

### 1. Self-declared road behaviours: self-reported use of mobile phones while driving

With regard to risky behaviours related to the use of mobile phones while driving, a high percentage of Spanish, Latin American and other drivers in the various groups surveyed all admit to answering phone calls using hands-free technology on a recurring basis (table 4.2.1). For its part, the behaviour that involves the greatest amount of risk among the different behaviours analysed (namely, sending messages or emails while driving) is also the one that, at least according to the self-reported responses, is the least common; not only in Spain but also in the rest of the countries analysed.

In comparison to the rest of the countries and groups in table 4.2.1, and with the exception of the use of hands-free technology, in Spain a lower percentage of participants engage in the rest of the phone-related behaviours described in the two editions of the study. In this respect, the country's results are fairly similar to the European average (particularly in ESRA 1) and significantly lower than the figures reported by the participants in the Latin American countries and the LATAM<sup>2</sup> group average.

As well as asking the participants to self-report any violations committed during the last month, ESRA 2 included an item that asked them how often they had read messages or emails while driving in the last 12 months. This question was included in order to enable the comparison of these results with those obtained in ESRA 1. In the case of Spain, in ESRA 1 some 36% (table 4.2.1) of participants admitted to committing this violation at least once in the last year; while in ESRA 2, the equivalent figure was 29.5%, thereby demonstrating a fall in this self-declared risky behaviour over time. However, in Spain, the percentage of participants who admit to these behaviours is sufficiently high for such behaviours to still be considered a significant risk while driving.

**Table 4.2.1**

Frequencies of self-declared mobile phone use while driving (calculated based on a score of between 2 (*At least once*) and 5 on a response scale where 1 = *Never* and 5 = *(nearly) Always*)\*

Country/region	ESRA 1 (2015-2017): last 12 months			ESRA 2 (2018-2020): last 30 days					
	Talking without using hands-free technology	Talking using hands-free technology	Reading/sending messages or emails	Talking without using hands-free technology	Talking using hands-free technology	Reading/sending messages or emails, or checking social media			
SPAIN	<b>35%</b>	<b>56%</b>	<b>36%-26%</b>	<b>21.6%</b>	<b>55.4%</b>	<b>22.8%</b>			
LATAM	Argentina	36%	46%						
	Bolivia	51%	60%						
	Brazil	46%	55%						
	Chile	42%	64%						
	Colombia	40%	65%				36.1%	67.4%	41.6%
	Costa Rica	50%	68%						
	Ecuador	50%	63%						
	Guatemala	59%	71%						
	Mexico	45%	64%						
	Paraguay	54%	61%						
	Peru	38%	56%						
	Uruguay	32%	48%						
Venezuela	50%	64%							
EUROPE <sup>1</sup> AVERAGE	<b>38%</b>	<b>51%</b>	<b>36%-27%</b>	<b>28.6%</b>	<b>47.7%</b>	<b>24.2%</b>			
LATAM <sup>2</sup> AVERAGE	<b>45%</b>	<b>58%</b>	<b>43%-34%</b>						
NORTH AMERICA <sup>3</sup> AVERAGE				37.7%	50.5%	35.7%			
ASIA & OCEANIA <sup>4</sup> AVERAGE				38.3%	54.5%	36.9%			
AFRICA <sup>5</sup> AVERAGE				54.1%	66.8%	46.9%			
ESRA <sup>6</sup> AVERAGE	43%	55%	40%-32%						

\* ESRA 1 does not differentiate between drivers and riders. ESRA 2 specifically refers to car drivers.

## 2. Acceptance of risky road behaviours related to the use of mobile phones while driving

The report on the main results for ESRA I does not include the results related to acceptance (whether personal, or perceived societal acceptance) of the use of hands-free technology to talk on the phone, or the practice of checking social media, while driving. Consequently, it has not been possible to include the corresponding survey responses for the Latin American countries in table 4.2.2.

**Table 4.2.2**

Percentages of acceptance, both personal and perceived acceptance on the part of others, for the types of mobile phone use a driver could engage in\* (ESRA I) (calculated based on the scores of 4 and 5 on the response scale, where 1 = *Unacceptable* and 5 = *Acceptable*)

COUNTRY/REGION		Talking without using hands-free technology		Talking using hands-free technology**		Writing messages or emails		Checking/updating social media	
		Others	Personal	Others	Personal	Others	Personal	Others	Personal
SPAIN		9%	5%	36%	30%	5%	4%	5%	3%
26 LATAM	Argentina	14%	6%			10%	3%		
	Bolivia	13%	5%			9%	2%		
	Brazil	10%	6%			7%	5%		
	Chile	7%	4%			5%	2%		
	Colombia	7%	4%			4%	2%		
	Costa Rica	8%	2%			6%	1%		
	Ecuador	7%	3%			4%	1%		
	Guatemala	13%	5%			7%	2%		
	Mexico	12%	6%			8%	5%		
	Paraguay	14%	5%			9%	3%		
	Peru	9%	3%			6%	2%		
	Uruguay	8%	3%			5%	1%		
Venezuela	15%	5%	10%	3%					
EUROPE <sup>1</sup> AVERAGE		16%	7%	47%	38%	8%	4%	8%	4%
LATAM <sup>2</sup> AVERAGE		11%	5%			7%	4%		
ESRA <sup>6</sup> AVERAGE		14%	8%			9%	5%		

\* Without differentiating between drivers and riders.

\*\* Although the thematic report on the use of mobile phones while driving (Trigoso, Areal & Pires, 2016) presents the results obtained in Spain and Europe regarding the personal and perceived acceptance of talking on the phone using hands-free technology while driving, **this item does not appear in the survey.**

In line with the previous section, the risky behaviour most frequently engaged in by Spanish drivers – namely, talking on the phone using hands-free technology – is also significantly more acceptable on a personal level to both Spanish drivers and, on average, European drivers, according to the results for ESRA I. However, if we compare these results to the self-reported data on the proportion of drivers that engage in this risky behaviour (table 4.2.1), in all cases the figures for the latter are much higher than those related to personal acceptance of said behaviour as reported

by the survey participants. One of the reasons for this inconsistency may be the difficulty of directly admitting that certain risky behaviours are acceptable.

With regard to the Spanish sample, the percentages of acceptance for the rest of the behaviours are much lower; indeed, they are also lower, in all cases, than the equivalent figures for the rest of the groups included in table 4.2.2. And, as in the case of risky behaviours related to speed, when asked about the different types of mobile phone use while driving, the level of personal acceptance among the participants is lower than their perceived acceptance of these behaviours on the part of others. Thus, once again we see a “third-person effect”, not only in these results but also in those presented in table 4.2.3 in relation to ESRA 2.

**Table 4.2.3**

Percentages of acceptance, both personal and perceived acceptance on the part of others, for different types of mobile phone use while driving a car (ESRA 2) (calculated based on the scores of 4 and 5 on a response scale where 1 = *Unacceptable* and 5 = *Acceptable*)

Country/region	Talking without using hands-free technology		Reading or sending messages or emails, or checking social media		Talking using hands-free technology
	Others	Personal	Others	Personal	Personal
SPAIN	9.5%	3.4%	7%	3.9%	25.9%
COLOMBIA	5.7%	2%	6.7%	2.1%	
EUROPE <sup>1</sup> AVERAGE	8%	3.5%	5.7%	2.2%	33.8%
NORTH AMERICA <sup>3</sup> AVERAGE	11.9%	7.1%	5.2%	2%	32.6%
ASIA & OCEANIA <sup>4</sup> AVERAGE	10.6%	5.3%	11.9%	6.8%	16.1%
AFRICA <sup>5</sup> AVERAGE	15.3%	8.3%	13%	7.1%	30.9%

In ESRA 2, for its part, we see a reduction in the percentage of Spanish participants with regard to the level of personal acceptance for behaviours such as talking on mobile phones using – and not using – hands-free technology. However, personal acceptance of other behaviours, such as using the phone while driving to perform other tasks such as reading, sending messages or checking social media, appears to have slightly increased (although, in ESRA 2, participants were asked about these behaviours separately, rather than in the same item), along with perceived acceptance of such behaviours on the part of others and acceptance of talking without using hands-free technology.

Except for the use of hands-free technology to talk on the phone while driving, acceptance of which is lower in Spain than the average for the rest of Europe, the Spanish participants are generally more accepting of these risky behaviours than their counterparts in Europe and Colombia. (As the national report for the latter does not include data on personal acceptance of talking on the phone using hands-free technology while driving, these results could not be included in table 4.2.3.) Lastly, depending on the type of behaviour described in the question, the results for Spain are either higher or lower than those for other groups; consequently, at sample level there does not appear to be a particular trend with regard to acceptance of these risky behaviours based on country group or region.

### 3. Attitudes towards the use of mobile phones while driving

For Spain, the results obtained in ESRA I (table 4.2.4) show that a large majority of the Spanish participants feel that talking on the phone without using hands-free technology while driving reduces the amount of attention paid to traffic and increases the risk of accidents. However, when asked about the level of attention paid to traffic when using hands-free technology, the percentage of agreement falls. Additionally, an even lower percentage of Spanish participants agree with the statement that almost all drivers, at some point, talk on the phone without using hands-free technology while driving (these results are consistent with the idea that this is a high-risk behaviour).

Furthermore (and given that we can only compare the results regarding agreement with the statements that are available in the published reports), we can observe that, compared to Spain, a higher percentage of drivers in the LATAM<sup>2</sup> group feel that using a mobile phone in one's hand while driving reduces the amount of attention paid to traffic and poses an accident risk. The average percentages for Europe, however, are lower in all cases, except for those obtained in response to the question of whether the participants believe that almost all drivers, at some point, use their phone without hands-free technology: the resultant percentage for this question, in line with the results obtained for the rest of the items, is higher than the equivalent figure for Spain.

**Table 4.2.4**

Percentages of participants who agree with each of the statements designed to evaluate attitudes towards the use of mobile phones while driving and its influence on road safety (ESRA I) (calculated based on the scores of 4 and 5 on the response scale, where 1 = Disagree and 5 = Agree)

Country/region	People who talk on a mobile phone without using hands-free technology while driving are at a higher risk of being involved in a traffic accident	The level of attention I pay to traffic is reduced when I talk on a mobile phone without using hands-free technology while driving	The level of attention I pay to traffic is reduced when I talk on a mobile phone using hands-free technology while driving	Almost all car drivers, at some point, talk on a mobile phone without using hands-free technology while driving
SPAIN	<b>82%</b>	<b>76%</b>	<b>61%</b>	<b>49%</b>
LATAM	Argentina	85%		
	Bolivia	90%		
	Brazil	86%		
	Chile	85%		
	Colombia	87%		
	Costa Rica	92%		
	Ecuador	87%		
	Guatemala	90%		
	Mexico	85%		
	Paraguay	91%		
	Peru	88%		
	Uruguay	87%		
Venezuela	90%			

Country/region	People who talk on a mobile phone without using hands-free technology while driving are at a higher risk of being involved in a traffic accident	The level of attention I pay to traffic is reduced when I talk on a mobile phone without using hands-free technology while driving	The level of attention I pay to traffic is reduced when I talk on a mobile phone using hands-free technology while driving	Almost all car drivers, at some point, talk on a mobile phone without using hands-free technology while driving
EUROPE <sup>1</sup> AVERAGE	82%	74%	56%	51%
LATAM <sup>2</sup> AVERAGE	86%	81%		
ESRA <sup>6</sup> AVERAGE	83%	75%		

With regard to ESRA 2, and although the survey included items designed to evaluate habits and intentions, the thematic report on the use of mobile phones (Pires, Areal & Acher, 2019) only presents the results obtained for the “beliefs and attitudes” and “self-efficacy” constructs, as shown in table 4.2.5. Moreover, as the country reports do not include the results for these constructs, it has not been possible to include the results for Colombia.

In terms of interpreting these results, and unlike the items used in the first edition of the survey, in ESRA 2 all of the corresponding items are worded in a way that suggests a positive view of the use of mobile phones while driving. The percentage of Spanish participants expressing agreement with each of the statements is fairly low, and in all cases lower than the average for Europe and the rest of the groups, in terms of both the evaluation of beliefs and attitudes, and the evaluation of self-efficacy when engaging in these types of risky behaviour while driving. Therefore, from a Spanish perspective, these results are positive, if we posit that a favourable attitude towards mobile phone use while driving constitutes a risk factor that increases the likelihood of being involved in a traffic accident.

**Table 4.2.5**

Percentages of participants who agree with each of the statements designed to evaluate the following constructs: perceived descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions regarding mobile phone use while driving (ESRA 2) (calculated based on the scores of 4 and 5 on the response scale, where 1 = *Disagree* and 5 = *Agree*)

Country/region	Beliefs and attitudes		Self-efficacy		
	I use my mobile phone while driving because I want to be available at all times	I often use my mobile phone while driving, in order to save time	I am confident in my ability to check my messages on my mobile phone while driving	I am able to write messages on my mobile phone while driving	I am able to talk while holding my mobile phone when driving
SPAIN	3.4%	3.9%	5.3%	3.5%	5%
EUROPE <sup>1</sup> AVERAGE	4.8%	3.9%	5.5%	4.9%	7.9%

Country/region	Beliefs and attitudes		Self-efficacy		
	I use my mobile phone while driving because I want to be available at all times	I often use my mobile phone while driving, in order to save time	I am confident in my ability to check my messages on my mobile phone while driving	I am able to write messages on my mobile phone while driving	I am able to talk while holding my mobile phone when driving
NORTH AMERICA <sup>3</sup> AVERAGE	5.4%	6.1%	7.6%	5.5%	15.4%
ASIA & OCEANIA <sup>4</sup> AVERAGE	6.7%	6.6%	10.6%	6.8%	9%
AFRICA <sup>5</sup> AVERAGE	9.9%	8.5%	8%	7.2%	12.5%

#### 4. Perception of traffic accident risk: use of mobile phones

The main report on the results for ESRA1 does not include the results for the LATAM countries, nor the averages for the LATAM<sup>2</sup> and ESRA<sup>6</sup> groups, with regard to the perceived risk of traffic accidents due to mobile phone use while driving. For ESRA 2, the national reports do not include the results pertaining to the evaluation of the perception of traffic accident risk (Vias Institute, 2020; 2021). Consequently, it has not been possible to include the results for any of the Latin American countries, for either edition of the study, in table 4.2.6.

Given the differences between the two editions in terms of the content of the items and the response scale used, the results must be interpreted separately for each study. With regard to ESRA 1, the Spanish sample estimates that a little less than 20% of traffic accidents are caused by risky behaviour such as sending a text message while driving. On average, the European participants perceive the risk posed by this behaviour as somewhat higher.

In ESRA 2, this trend is reversed when the participants are asked about reading messages or checking social media while driving, or the use of mobile phones without hands-free technology, as potential causes of accidents. The Spanish participants feel that the risk is higher in both cases (particularly with regard to holding a mobile phone while driving), in comparison to the European average and the results for the rest of the groups comprised of countries in other continents.

**Table 4.2.6**

Perceived risk of mobile phone use while driving as a cause of traffic accidents (ESRA 1: averages calculated based on a response scale of 0% to 100%; ESRA 2: frequencies calculated based on the scores of 4 to 6 on the response scale, where 0 = *Never* and 6 = *Nearly always*)

Country/region	ESRA 1 In your opinion, out of every 100 accidents, how many of them are caused by sending a text message while driving?	ESRA 2	
		How often do you think using a hand-held mobile phone is the cause of a traffic accident involving a car?	How often do you think reading a message/email or checking social media while driving is the cause of a traffic accident involving a car?
SPAIN	18.8%	79.9%	61.4%
EUROPE <sup>1</sup> AVERAGE	22.2%	75.8%	50.9%
NORTH AMERICA <sup>3</sup> AVERAGE		70.8%	45.6%
ASIA & OCEANIA <sup>4</sup> AVERAGE		53.6%	48.1%
AFRICA <sup>5</sup> AVERAGE		61.9%	47.5%

## 5. Application of traffic rules and penalties related to mobile phone use while driving

ESRA 1 did not evaluate the participants' perception of the risk of being caught by the police when using a mobile phone while driving; consequently, table 4.2.7 only contains the corresponding results for ESRA 2.

While almost 26% of Spanish participants feel that being caught by the police using a hand-held mobile phone during a habitual journey (including talking on the phone without using hands-free technology, and writing messages) is likely, the average percentages for the rest of the groups are lower, with the exception of Colombia and the AFRICA<sup>5</sup> group, where they are higher than the equivalent figures for Spain.

With regard to the percentage of penalties imposed for talking while holding a mobile phone when driving, the results for ESRA 1 indicate that this behaviour accounted for 7% of all of the penalties imposed upon the Spanish sample in the last year (EUROPE<sup>1</sup> average = 6%).

ESRA 2 did not ask the participants directly about the penalties they received; nor are there any data on the number of penalties imposed in each country or group as a result of mobile phone use while driving. This information was obtained from other sources (Adminaite, Jost, Stipdonk & Ward, 2016), for the purpose of analysing the correlation between the number of penalties imposed for mobile phone use while driving and both the likelihood of being caught by the police and the frequency with which these behaviours occurred. The results published in the thematic report (Pires, Areal & Trigo, 2019) indicate that, in general, the application of current traffic rules and penalties related to the use of mobile phones while driving does not influence the self-reported perpetration of such behaviour, although the specific results related to this question are not available for Spain.

**Table 4.2.7**

Perceived likelihood among the participants of being caught by the police using a hand-held mobile phone while driving a car during a habitual journey (ESRA 2) (calculated based on the scores of 5 to 7 on the response scale, where 1 = *Very unlikely* and 7 = *Very likely*)

Country/region	Perceived likelihood of being caught by the police while talking on a hand-held mobile phone or writing a message while driving a car
SPAIN	25.8%
COLOMBIA	30.9%
EUROPE <sup>1</sup> AVERAGE	18.9%
NORTH AMERICA <sup>3</sup> AVERAGE	12.7%
ASIA & OCEANIA <sup>4</sup> AVERAGE	25.2%
AFRICA <sup>5</sup> AVERAGE	31.7%

#### 6. Support for policy measures related to mobile phone use while driving

In ESRA 1, participants were not asked to evaluate the rules and penalties that apply in their respective countries to mobile phone use while driving. Table 4.2.8 presents the results for this aspect obtained in ESRA 2, with regard to both car drivers and motorcycle riders. Additionally, the national reports that were prepared after ESRA 2 was carried out do not include the results regarding support for the rules and penalties related to mobile phone use while driving; consequently, table 4.2.8 does not include the results corresponding to Colombia.

The majority of the Spanish participants (exceeded only, in percentage terms, by the average for the ASIA & OCEANIA<sup>4</sup> group) feel that the traffic rules governing mobile phone use while driving a car or riding a motorcycle should be stricter. Most of the Spanish participants, and in a higher proportion than the rest of the groups, also agree that not enough checks are carried out to ensure compliance with these rules. However, in somewhat of a contrast to the results for the previous two items, almost 30% of the Spanish sample feel that the penalties imposed for this type of risky behaviour are too severe. Although the participants in the ASIA & OCEANIA<sup>4</sup> and AFRICA<sup>5</sup> groups agree with them (and in a higher proportion than their Spanish counterparts), lower percentages of agreement are recorded for Europe and the NORTH AMERICA<sup>3</sup> group.

**Table 4.2.8**

Percentages of participants who agree with the traffic rules and penalties for mobile phone use while driving a car or riding a motorcycle (ESRA 2) (calculated based on the responses expressing agreement on the response scale *Agree-Disagree*)

Country/region	ESRA 2		
	They should be stricter	There are not enough checks on compliance with traffic rules	The penalties are too severe
SPAIN	<b>81.9%</b>	<b>79.9%</b>	<b>28.7%</b>
EUROPE <sup>1</sup> AVERAGE	<b>73.1%</b>	<b>79.5%</b>	<b>22.6%</b>
NORTH AMERICA <sup>3</sup> AVERAGE	67%	75.9%	20.1%
ASIA & OCEANIA <sup>4</sup> AVERAGE	92%	79.7%	34.2%
AFRICA <sup>5</sup> AVERAGE	50.3%	54.6%	46%

With regard to the percentages of participants who support a zero-tolerance approach – for both drivers and riders – to any type of mobile phone use while driving (whether hand-held or hands-free; see table 4.2.9), in Spain the level of support for such a measure rose between the first edition of the study and the second. Moreover, in both studies these percentages are higher than the European average and the averages for the NORTH AMERICA<sup>3</sup>, ASIA & OCEANIA<sup>4</sup> and AFRICA<sup>5</sup> groups in ESRA 2, although they are lower than the percentage of support for the measure reported by the Latin American countries (and the average for the LATAM<sup>2</sup> group as a whole) that took part in ESRA 1.

The national reports for ESRA 2 do not present any data related to support for this measure; consequently, in table 4.2.9 we could not include the corresponding results for Colombia, which would otherwise have enabled us to determine whether the Latin American countries had maintained their high level of support for the measure over time.

**Table 4.2.9**

Percentages of participants who support the policy measure of zero tolerance for any type of mobile phone use (whether hand-held or hands-free) while driving, for both drivers and riders (ESRA 1: calculated based on the responses in favour using the response scale *In favour-Against-No opinion*; ESRA 2: calculated based on scores 4 and 5 on the response scale, where 1 = *I oppose it* and 5 = *I support it*)

Country/region		ESRA 1	ESRA 2
SPAIN		<b>54%</b>	<b>68.2%</b>
LATAM	Argentina	71%	
	Bolivia	76%	
	Brazil	70%	
	Chile	61%	
	Colombia	62%	
	Costa Rica	66%	
	Ecuador	68%	
	Guatemala	67%	
	Mexico	71%	
	Paraguay	70%	
	Peru	72%	
	Uruguay	68%	
Venezuela	68%		
EUROPE <sup>1</sup> AVERAGE		<b>47%</b>	<b>54%</b>
LATAM <sup>2</sup> AVERAGE		<b>69%</b>	
NORTH AMERICA <sup>3</sup> AVERAGE			51.8%
ASIA & OCEANIA <sup>4</sup> AVERAGE			67.1%
AFRICA <sup>5</sup> AVERAGE			56.2%
ESRA <sup>6</sup> AVERAGE		56%	

### 4.3. Fatigue

#### 1. Self-declared road behaviours: driving while tired

The main report on the results for ESRA 1 does not include the national-level results regarding how often the participants stopped to rest while driving. Consequently, table 4.3.1 does not include the stopping frequencies for any of the LATAM countries, nor the averages for this group or the ESRA<sup>6</sup> group.

**Table 4.3.1**

**Frequency** with which the participants have driven while tired (calculated based on a score of between 2 (*At least once*) and 5 on a response scale where 1 = *Never* and 5 = (*nearly*) *Always*)\*

Country/region		ESRA 1 (2015-2017): last 12 months		ESRA 2 (2018-2020): last 30 days
		I realised that I was too tired to drive	I stopped and rested because I was too tired to drive	I drove when I was so tired that I struggled to keep my eyes open
SPAIN		<b>66%</b>	<b>86%</b>	<b>20.7%</b>
LATAM	Argentina	70%		
	Bolivia	76%		
	Brazil	61%		
	Chile	73%		
	Colombia	73%		
	Costa Rica	73%		
	Ecuador	76%		
	Guatemala	79%		
	Mexico	70%		
	Paraguay	74%		
	Peru	76%		
	Uruguay	65%		
Venezuela	74%			
EUROPE <sup>1</sup> AVERAGE		<b>60%</b>	<b>84%</b>	<b>19.7%</b>
LATAM <sup>2</sup> AVERAGE		<b>67%</b>		
NORTH AMERICA <sup>3</sup> AVERAGE				21.9%
ASIA & OCEANIA <sup>4</sup> AVERAGE				23.4%
AFRICA <sup>5</sup> AVERAGE				24.6%
ESRA <sup>6</sup> AVERAGE		62%		

\* ESRA 1 does not differentiate between drivers and riders. ESRA 2 specifically refers to car drivers.

The results for ESRA 1 show that, in the most recent year of the survey, over half of the Spanish participants experienced a situation in which they realised, while driving, that they were too tired to drive. Although, for this item, the average percentage for the EUROPE<sup>1</sup> group is lower, the percentages for the Latin American countries are higher than both the European average and the figures for Spain (in most cases). With regard to the adoption of safe behaviours, such as stopping to rest when too tired to continue driving, the percentage for Spain is fairly high; higher, in fact, than the European average, which is an extremely positive result.

However, in the second edition of the survey, participants were asked about a situation posing an extremely high risk to road safety: namely, whether during the last month they had driven while feeling so tired they struggled to keep their eyes open. Almost 21% of the Spanish participants affirmed that they had been in such a situation (Goldenbeld & Nikolaou, 2019); this percentage was not only higher than the European average, but also higher than the average for Colombia, and is therefore a very concerning result from the perspective of road safety in Spain.

## 2. Acceptance of risky road behaviours: driving while tired

As ESRA 2 only evaluated the level of personal acceptance for this behaviour, and as the national report for Colombia does not include any data on personal acceptance of driving while tired, it was not possible to include these results in table 4.3.2.

**Table 4.3.2**

Percentages of acceptance, both personal and perceived acceptance on the part of others, for the behaviour of a driver who drives while feeling so tired they struggle to keep their eyes open (ESRA 1 and ESRA 2\*) (calculated based on the scores of 4 and 5 on the response scale, where 1 = *Unacceptable* and 5 = *Acceptable*)

Country/region		ESRA 1		ESRA 2
		Others	Personal	Personal
SPAIN		5.2%	2.8%	2.3%
LATAM	Argentina	7%	3%	
	Bolivia	8%	3%	
	Brazil	7%	4%	
	Chile	4%	3%	
	Colombia	3%	1%	
	Costa Rica	5%	1%	
	Ecuador	4%	1%	
	Guatemala	6%	1%	
	Mexico	6%	4%	
	Paraguay	5%	3%	
	Peru	5%	2%	
	Uruguay	4%	1%	
Venezuela	6%	2%		
EUROPE <sup>1</sup> AVERAGE		7.3%	3.5%	1.6%
LATAM <sup>2</sup> AVERAGE		6%	3%	
NORTH AMERICA <sup>3</sup> AVERAGE				1.2%
ASIA & OCEANIA <sup>4</sup> AVERAGE				5.4%
AFRICA <sup>5</sup> AVERAGE				4.3%
ESRA <sup>6</sup> AVERAGE		7%	4%	

\* ESRA 1 does not differentiate between drivers and riders. ESRA 2 specifically refers to car drivers.

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Although the levels of acceptance – both personal and perceived acceptance on the part of others – are very low for this high-risk behaviour, it is notable that in ESRA 1, the percentage of Spanish participants who agree with this behaviour is lower than the averages for Europe and LATAM<sup>2</sup>; however, while in ESRA 2 the level of acceptance for this behaviour falls at the European level, a similar decrease is not recorded for Spain. Indeed, in ESRA 2 the percentage of Spaniards who personally accept the behaviour of driving while tired is higher than the European average, which for its part has undergone a significant reduction over time.

### 3. Attitudes towards driving while tired

As with the rest of the thematic areas, the national-level analysis of the participants' attitudes in the main report on the results for ESRA 1 focuses on risk perception. For this reason, it does not include the results obtained for the countries in the LATAM<sup>2</sup> group, nor the averages for the LATAM<sup>2</sup> or ESRA<sup>2</sup> groups with regard to the rest of the items concerning attitudes towards driving while tired (table 4.3.3).

ESRA 2 did not evaluate the participants' attitudes using the indicators that were employed for other thematic areas and risky behaviours included in the survey, such as perceived descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions related to driving while tired. Consequently, table 4.3.3 only shows the results obtained in the evaluation carried out in the first study (ESRA 1).

In line with the trend observed in the results for other risky behaviours, such as those related to mobile phone use while driving (as discussed in the previous section), the percentage of participants who agree that tiredness poses an accident risk is very high – higher, in fact, than the European average – but still lower than the vast majority of the Latin American countries and the average for the LATAM<sup>2</sup> group. With regard to the last two items used to evaluate the participants' attitudes, in both cases the results obtained for Spain suggest that more Spaniards consider fatigue to be a risk factor while driving, and have a lower tendency to drive while tired, than their European counterparts on average (although the corresponding percentages for Europe are only slightly higher than their Spanish equivalents).

**Table 4.3.3**

Percentages of participants who agree with each of the statements presented in order to evaluate attitudes towards driving while tired and its influence on road safety (ESRA 1) (calculated based on scores 4 and 5 on the response scale, where 1 = *Disagree* and 5 = *Agree*)

Country/region	If I feel tired while driving, the risk of having an accident increases	When I feel tired, I shouldn't drive a car	Even if I feel tired while driving a car, I will continue to drive
SPAIN	<b>87%</b>	<b>85%</b>	<b>11%</b>
LATAM	Argentina	88%	
	Bolivia	91%	
	Brazil	87%	
	Chile	89%	
	Colombia	91%	
	Costa Rica	95%	
	Ecuador	91%	
	Guatemala	93%	
	Mexico	88%	
	Paraguay	96%	
	Peru	90%	
	Uruguay	90%	
Venezuela	92%		
EUROPE <sup>1</sup> AVERAGE	<b>85%</b>	<b>84%</b>	<b>12%</b>
LATAM <sup>2</sup> AVERAGE	<b>89%</b>		
ESRA <sup>6</sup> AVERAGE	<b>86%</b>		

#### 4. Perception of traffic accident risk: driving while tired

In the main report on the results for ESRA 1, there is no information regarding the results obtained for the Latin American countries, nor for the LATAM<sup>2</sup> and ESRA<sup>6</sup> groups, with regard to driving while tired as a cause of traffic accidents. Consequently, this information has not been included in table 4.3.4. The national reports prepared after ESRA 2 was carried out do not include the results related to the perception of the risk of being involved in a traffic accident when driving while tired; therefore, the corresponding results for Colombia have not been included either.

**Table 4.3.4**

Perceived risk of driving while tired as a cause of traffic accidents (ESRA 1: averages calculated based on a response scale of 0% to 100%; ESRA 2: frequencies calculated based on the scores of 4 to 6 on the response scale, where 0 = *Never* and 6 = *Nearly always*)

Country/region	ESRA 1	ESRA 2
	In your opinion, out of every 100 accidents, how many of them are caused by driving while tired?	How often do you think driving while tired is the cause of a traffic accident involving a car?
SPAIN	17.4%	75%
EUROPE <sup>1</sup> AVERAGE	20.4%	74.4%
NORTH AMERICA <sup>3</sup> AVERAGE		68.9%
ASIA & OCEANIA <sup>4</sup> AVERAGE		52.8%
AFRICA <sup>5</sup> AVERAGE		64.3%

With regard to ESRA 1, the Spanish participants estimate that 17.4% of traffic accidents are caused by driving while tired. This percentage is lower than the European average. However, their perception of risk appears to have increased somewhat over time. In ESRA 2, not only do the great majority of the Spanish sample believe that driving while tired could cause an accident; the corresponding percentage is also higher than the equivalent for the rest of the groups surveyed, including EUROPE<sup>1</sup> and LATAM<sup>2</sup>.

## 4.4. Driving under the influence of alcohol and other drugs

### 1. Self-declared road behaviours: driving under the influence of alcohol and other drugs

Table 4.4.1 compares the results obtained in ESRA 1 and ESRA 2 for various risky behaviours related to driving under the influence of alcohol and other drugs, as self-reported by the participants. The most frequent risky behaviour among the Spanish participants is driving after drinking alcohol. In both editions of the survey, the results for this item are higher than the equivalent percentages for all of the Latin American countries and the comparison groups, including the European average. The percentage of participants who admit to getting behind the wheel after taking medication that could affect their driving may also be considered high; indeed, not only higher than the averages for the EUROPE<sup>1</sup> and LATAM<sup>2</sup> groups (as well as Colombia in ESRA 2) in both editions of the study, but also in view of the fact that the proportion of drivers who habitually take such medication will always be lower than the total size of the sample. Lastly, the least common risky behaviour among the Spanish participants is driving after consuming illegal drugs. The percentages for this item are similar to the averages for the EUROPE<sup>1</sup> and LATAM<sup>2</sup> groups (although the percentage for Colombia in ESRA 2 is somewhat lower), and lower than the figures for the NORTH AMERICA<sup>3</sup>, ASIA & OCEANIA<sup>4</sup> and AFRICA<sup>5</sup> groups, according to the results obtained in ESRA 2.

**Table 4.4.1**

Frequencies of self-declared behaviour consisting of driving while under the influence of alcohol and other drugs (calculated based on a score of between 2 (*At least once*) and 5 on a response scale where 1 = *Never* and 5 = (*nearly*) *Always*)\*

Country/region	ESRA 1 (2015-2017): last 12 months			ESRA 2 (2018-2020): last 30 days				
	After consumin g alcohol	After consuming illegal drugs	After taking medication that could affect driving ability	After potentially exceeding the drink- drive limit	After consuming alcohol	One hour after consuming drugs (other than medication)	After taking medication that could affect driving ability	
SPAIN	<b>35%</b>	<b>12%</b>	<b>24%</b>	<b>17.1%</b>	<b>24.7%</b>	<b>5.9%</b>	<b>19.7%</b>	
LATAM	Argentina	28%	9%	18%	11%	13.6%	4.4%	10.2%
	Bolivia	33%	8%	22%				
	Brazil	29%	16%	25%				
	Chile	24%	12%	20%				
	Colombia	18%	7%	12%				
	Costa Rica	27%	7%	18%				
	Ecuador	33%	6%	15%				
	Guatemala	29%	6%	20%				
	Mexico	32%	11%	22%				
	Paraguay	30%	6%	17%				
	Peru	27%	11%	24%				
	Uruguay	18%	7%	12%				
	Venezuela	32%	7%	15%				
EUROPE <sup>1</sup> AVERAGE	<b>31%</b>	<b>11%</b>	<b>22%</b>	<b>13.1%</b>	<b>20.6%</b>	<b>5%</b>	<b>15.2%</b>	
LATAM <sup>2</sup> AVERAGE	<b>29%</b>	<b>12%</b>	<b>21%</b>					
NORTH AMERICA <sup>3</sup> AVERAGE				11.4%	21.7%	12.2%	15.2%	
ASIA & OCEANIA <sup>4</sup> AVERAGE				17.4%	14.3%	18.3%	23.8%	
AFRICA <sup>5</sup> AVERAGE				15.5%	18.7%	18%	20.9%	
ESRA <sup>6</sup> AVERAGE	30%	14%	25%					

\* ESRA 1 does not differentiate between drivers and riders. ESRA 2 specifically refers to car drivers.

For the item designed to evaluate how often drivers may have driven while over the drink-drive limit in the last month (ESRA 2), in general terms Spain has the highest percentage for this behaviour in comparison to the rest of the countries and groups (matched only by the average percentage for the ASIA & OCEANIA<sup>4</sup> group), which is a concerning result from the perspective of road safety in Spain.

ESRA 1 also included an equivalent item asking participants whether they had driven while over the drink-drive limit in the last 30 days, with results based on the responses between 1 and 30 on a quantitative scale where 0 = *Never* and 30 = *Every day*. However, as the results for the Latin American countries are not included in the main report on the results, the only source of data is the thematic report on driving under the influence of alcohol and other drugs (Achermann Stürmer, 2016), for the purposes of comparing the evolution of this frequency over time in Spain and relative to the European average.

It is notable that in Spain, when asked as part of ESRA 2, some 17.1% of drivers admitted to driving while over the drink-drive limit during the last month prior to completing the survey; this percentage represents an increase over the equivalent figure (13%) for the Spanish sample in ESRA 1 when the latter survey was carried out in 2015.

This increase can also be seen in the averages for the EUROPE<sup>1</sup> group over time, albeit to a less pronounced extent (ESRA 1 = 12%, ESRA 2 = 13.1%).

ESRA 2 also included an item referring to drink-driving in the last year, thus enabling the results to be compared with those obtained in ESRA 1. In this case, while 35% of the Spanish participants admitted to engaging in this behaviour in 2015, this percentage fell to 26.9% when they were asked the same question in 2018. However, a steeper reduction is recorded by the EUROPE<sup>1</sup> group, whose results fell from 31% in 2015 to just 18% in 2018.

## 2. Acceptance of risky road behaviours related to driving under the influence of alcohol and other drugs

Starting with ESRA 1, the percentages of acceptance for each risky behaviour are very low in each case, although the figures are always somewhat higher for perceived acceptance on the part of others (another example of the “third-person effect”, which we have discussed above and is replicated in each of the thematic areas covered by this report). In Spain, these percentages of acceptance are lower for all of the specified behaviours in comparison to the averages for Europe and for the Latin American countries as a whole. In terms of personal acceptance, the behaviour with the lowest percentage is “driving when I think I have had too much to drink”, which is slightly lower than the figures for the other risky behaviours, including the consumption of illegal drugs (table 4.4.2).

Lastly, it should be noted that, in addition to the subject of driving under the influence of alcohol, participants are only asked about the acceptability of driving under the influence of illegal drugs, even though legal medications may also affect a driver’s abilities and present just as much of a danger. This omission is all the more surprising when we consider that the participants are asked about the consumption of such medications in the evaluation of self-declared behaviours. In ESRA 2, however, the participants are asked about the acceptability of driving while under the influence of both types of substances (table 4.4.3). We consider this approach to be more appropriate, in line with the critical evaluation we are conducting in this report.

**Table 4.4.2**

Percentages of acceptance, both personal and perceived acceptance on the part of others, for behaviours that a driver\* could engage in while under the influence of alcohol or other drugs (ESRA 1) (calculated based on the scores of 4 and 5 on the response scale, where 1 = *Unacceptable* and 5 = *Acceptable*)

Country/region		Driving when I think I have had too much to drink		Driving one hour after consuming drugs (not medication)		Driving after consuming drugs (not medication) or alcohol	
		Others	Personal	Others	Personal	Others	Personal
SPAIN		<b>4.7%</b>	<b>2.4%</b>	<b>4.9%</b>	<b>2.6%</b>	<b>3.9%</b>	<b>2.8%</b>
LATAM	Argentina	8%	3%	7%	4%	6%	2%
	Bolivia	5%	3%	7%	3%	7%	3%
	Brazil	6%	4%	6%	5%	6%	4%
	Chile	4%	3%	5%	2%	3%	2%
	Colombia	3%	1%	4%	2%	3%	1%
	Costa Rica	4%	2%	5%	2%	4%	1%
	Ecuador	4%	1%	3%	2%	3%	2%
	Guatemala	7%	1%	6%	2%	5%	1%
	Mexico	7%	4%	6%	4%	6%	4%
	Paraguay	7%	2%	7%	3%	6%	3%
	Peru	5%	2%	5%	2%	4%	2%
	Uruguay	4%	1%	6%	2%	4%	1%
Venezuela	8%	2%	8%	2%	8%	2%	
EUROPE <sup>1</sup> AVERAGE		<b>5.6%</b>	<b>3.5%</b>	<b>5.2%</b>	<b>3.4%</b>	<b>5%</b>	<b>3%</b>
LATAM <sup>2</sup> AVERAGE		<b>6%</b>	<b>3%</b>	<b>6%</b>	<b>4%</b>	<b>6%</b>	<b>3%</b>
ESRA <sup>6</sup> AVERAGE		7%	4%	7%	5%	6%	4%

\* Without differentiating between drivers and riders.

With regard to the results obtained in the second edition of the survey (table 4.4.3), the level of acceptance for the risky behaviours specified is once again lower in Spain than in the rest of the comparison groups (with the exception of Colombia, whose national report does not include the percentage of personal acceptance for driving a car after taking medication that could affect driving ability; consequently, this result could not be included in table 4.4.3).

We also see a reduction over time in the percentages of acceptance for the only behaviour that was included in both editions of the ESRA: namely, driving an hour after consuming illegal drugs.

**Table 4.4.3**

Percentages of acceptance, both personal and perceived acceptance on the part of others, for behaviours that a driver\* could engage in while under the influence of alcohol or other drugs (ESRA 2) (calculated based on the scores of 4 and 5 on the response scale, where 1 = *Unacceptable* and 5 = *Acceptable*)

Country/region	Driving while potentially being over the drink-drive limit		Driving one hour after consuming drugs (not medication)		Driving after taking medication that could affect driving ability
	Others	Personal	Others	Personal	Personal
SPAIN	4.3%	1.4%	3.4%	1.1%	2.8%
COLOMBIA	2.9%	1.1%	2.5%	0.9%	
EUROPE <sup>1</sup> AVERAGE	4.1%	1.9%	3.1%	1.4%	2.2%
NORTH AMERICA <sup>3</sup> AVERAGE	4.2%	1.6%	3.8%	2.2%	1.2%
ASIA & OCEANIA <sup>4</sup> AVERAGE	9.2%	6.1%	6.4%	4.9%	7.2%
AFRICA <sup>5</sup> AVERAGE	7.4%	4.8%	9.8%	5.9%	4.9%

It is surprising to see that the Spanish participants, generally speaking, are less accepting of these risky behaviours related to the consumption of alcohol and other drugs while driving, yet at the same time have the highest self-reported frequencies for these types of risky behaviour in comparison to the rest of the countries and groups, as discussed in the previous section.

### 3. Attitudes towards driving under the influence of alcohol and other drugs

Although ESRA I included six items designed to evaluate attitudes towards driving while under the influence of alcohol and other drugs, the thematic reports on these types of behaviour only include data for Spain and the EUROPE<sup>1</sup> group in relation to five of these items. For its part, and with specific reference to the countries in the LATAM<sup>2</sup> group and the averages for the LATAM<sup>2</sup> and ESRA<sup>6</sup> groups, the main report on the results of the survey only presents the percentages of agreement with the statement that driving under the influence of alcohol considerably increases the risk of having an accident (table 4.4.4).

**Table 4.4.4**

Percentages of participants who agree with each of the statements designed to evaluate attitudes towards driving while under the influence of alcohol and other drugs, and its influence on road safety (ESRA 1) (calculated based on the scores of 4 and 5 on the response scale used, where 1 = *Disagree* and 5 = *Agree*)

Country/region		Driving under the influence of alcohol considerably increases the risk of having an accident	The majority of my friends/acquaintances think that it's unacceptable to drive under the influence of alcohol	Driving under the influence of alcohol makes it harder to react appropriately in a dangerous situation	Driving under the influence of drugs considerably increases the risk of having an accident	The majority of my friends/acquaintances think that it's unacceptable to drive under the influence of drugs
SPAIN		<b>84%</b>	<b>78%</b>	<b>84%</b>	<b>86%</b>	<b>79%</b>
LATAM	Argentina	88%				
	Bolivia	92%				
	Brazil	87%				
	Chile	91%				
	Colombia	91%				
	Costa Rica	95%				
	Ecuador	90%				
	Guatemala	93%				
	Mexico	89%				
	Paraguay	94%				
	Peru	90%				
	Uruguay	89%				
Venezuela	91%					
EUROPE <sup>1</sup> AVERAGE		<b>88%</b>	<b>78%</b>	<b>87%</b>	<b>88%</b>	<b>79%</b>
LATAM <sup>2</sup> AVERAGE		<b>89%</b>	<b>72%</b>			
ESRA <sup>6</sup> AVERAGE		<b>88%</b>	<b>76%</b>			

In general, and in both Spain and the rest of the countries and comparison groups, there is a high level of agreement with each of the statements regarding the danger posed by driving under the influence of alcohol or other drugs, and the level of social disapproval of such behaviour on the part of one's friends. However, and as demonstrated in the thematic report presenting the results for driving under the influence of alcohol and other drugs, Spain is one of the countries with the lowest percentages of agreement (compared to the rest of the countries in the EUROPE<sup>1</sup> group, with the exception of France) with the statements affirming that driving under the influence of alcohol considerably increases the risk of having an accident and makes it harder for a driver to react appropriately in a dangerous situation. This trend can also be observed if we compare the results of the Spanish sample to those for the countries in the LATAM<sup>2</sup> group, as shown in table 4.4.4.

For ESRA 2, the thematic report on driving under the influence of alcohol and drugs only includes the results for two of the nine items designed to evaluate each of the constructs related to this type of driving behaviour. Specifically, and as shown in table 4.4.5, results are only presented for one of the items included in the survey to evaluate self-efficacy, along with the item for evaluating the participants' intentions.

**Table 4.4.5**

Percentages of participants who agree with each of the statements designed to evaluate the following constructs: perceived descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions with regard to driving under the influence of alcohol and other drugs (ESRA 2) (calculated based on the scores of 4 and 5 on the response scale used, where 1 = *Disagree* and 5 = *Agree*)

Country/region	Self-efficacy	Intentions
	I am confident in my ability to drive after having one alcoholic drink	Over the next 30 days, I will do my best to avoid driving after drinking alcohol
SPAIN	8.9%	80.7%
EUROPE <sup>1</sup> AVERAGE	13%	75.7%
NORTH AMERICA <sup>3</sup> AVERAGE	15.3%	78.8%
ASIA & OCEANIA <sup>4</sup> AVERAGE	7.5%	71.3%
AFRICA <sup>5</sup> AVERAGE	11.2%	73.1%

Looking at these results, the Spanish participants' level of confidence in their ability to drive after drinking alcohol is among the lowest. Moreover, in comparison to the rest of the groups, they have the highest percentage of agreement with the item that measures the intention to refrain from driving after consuming alcohol over the next month. These results are indicative of a favourable attitude towards avoiding driving after drinking alcohol, and are therefore very positive with regard to road safety in Spain.

#### 4. Perception of traffic accident risk: driving under the influence of alcohol and other drugs

With regard to the perceived risk of driving under the influence of alcohol and other drugs as a cause of traffic accidents, the results obtained in ESRA 1 and ESRA 2 are shown in table 4.4.6. In ESRA 1, the only analysis of the results related to the participants' perceived risk of driving under the influence of alcohol, illegal drugs, and medications with side effects affecting the central nervous system is to be found in the thematic report on subjective safety and risk perception, which was prepared using the data collected from the countries that took part in the study during the first year, i.e. 2015 (Furian, Brandstätter, Kaiser & Witzik, 2016). As this indicator was not included in the main report on the results, the data for the Latin American countries and the LATAM and ESRA<sup>1</sup> groups are not available. Moreover, the absence of results for this indicator in the national reports prepared after ESRA 2 was carried out means that it has not been possible to report on the perceived risk of driving under the influence of alcohol as a cause of traffic accidents in Colombia.

In both studies, driving under the influence of alcohol is the behaviour perceived as the leading cause of accidents, followed by driving after consuming illegal drugs. In fact, among all of the behaviours analysed in ESRA and in this report, drink-driving is the one viewed as the most dangerous by the Spanish sample. In ESRA 2, moreover, and with specific regard to the perceived risk for the two behaviours evaluated in relation to the consumption of alcohol and other drugs, the percentages recorded for Spain are higher than those for all of the other groups. Although the content of the items and the response scales used in each edition of the study were different, it would appear that, from a Spanish perspective, the perceived risk posed by these behaviours has increased over time.

**Table 4.4.6**

Perceived risk of driving under the influence of alcohol and other drugs as a cause of traffic accidents (ESRA 1: averages calculated based on a response scale of 0% to 100%; ESRA 2: calculated based on the scores of 4 to 6 on the response scale used, where 0 = *Never* and 6 = *Nearly always*)

Country/region	ESRA 1 In your opinion, out of every 100 accidents, how many of them are caused by the following?			ESRA 2 How often do you think the following are the cause of a traffic accident involving a car?	
	Driving under the influence of alcohol	Driving after taking psychoactive medication	Driving after taking drugs	Driving after consuming alcohol	Driving after consuming drugs (not medication)
SPAIN	32.3%	17.3%	27.7%	83%	80.6%
EUROPE <sup>1</sup> AVERAGE	32.9%	18.9%	25.4%	80.6%	74.8%
NORTH AMERICA <sup>3</sup> AVERAGE				74.6%	67.1%
ASIA & OCEANIA <sup>4</sup> AVERAGE				54.6%	51.4%
AFRICA <sup>5</sup> AVERAGE				68.5%	63.2%

## 5. Application of traffic rules and penalties related to driving under the influence of alcohol and other drugs

In each edition of the survey, the perceived risk of being subjected to an alcohol or drugs check during a habitual journey is higher for the Spanish participants than the European average and the averages for the rest of the country groups. The only exceptions are the average for the Latin American countries, which perceive the risk to be higher in both cases (alcohol and drugs), and the percentage for Colombia in ESRA 2, which is also higher than the equivalent figure for Spain. In fact, and with the exception of Colombia, as shown in the thematic report on alcohol and drugs for ESRA 2 (Achermann Stürmer, Meesmann & Berbatovci, 2019), Spain is the country with the highest perceived risk of being subjected to a drugs check, in comparison to the rest of the European countries.

**Table 4.4.7**

Perceived likelihood among the participants of being subjected to alcohol and drugs checks during a habitual journey (ESRA 1: calculated based on the scores of 4 and 5 on the response scale used, where 1 = *Very low* and 5 = *Very high*. ESRA 2: calculated based on the scores of 5 to 7 on the response scale used, where 1 = *Very unlikely* and 7 = *Very likely*)\*

Country/region		ESRA 1: perceived likelihood		ESRA 2: perceived likelihood	
		ALCOHOL CHECK	DRUGS CHECK	ALCOHOL CHECK	DRUGS CHECK
SPAIN		<b>23.7%</b>	<b>13%</b>	<b>35%</b>	<b>26%</b>
LATAM	Argentina	15%	15%		
	Bolivia	17%	17%		
	Brazil	14%	14%		
	Chile	16%	16%		
	Colombia	17%	17%	42.7%	27.3%
	Costa Rica	17%	17%		
	Ecuador	26%	26%		
	Guatemala	15%	15%		
	Mexico	19%	19%		
	Paraguay	18%	18%		
	Peru	21%	21%		
	Uruguay	12%	12%		
Venezuela	11%	11%			
EUROPE <sup>1</sup> AVERAGE		<b>17.9%</b>	<b>11%</b>	<b>22.5%</b>	<b>14.2%</b>
LATAM <sup>2</sup> AVERAGE		<b>25.3%</b>	<b>16%</b>		
NORTH AMERICA <sup>3</sup> AVERAGE				10.5%	9.3%
ASIA & OCEANIA <sup>4</sup> AVERAGE				31.1%	22.8%
AFRICA <sup>5</sup> AVERAGE				27.8%	23.3%
ESRA <sup>6</sup> AVERAGE		21.5%	15%		

\* ESRA 1 does not differentiate between drivers and riders. ESRA 2 specifically refers to car drivers.

It would be interesting to carry out a more detailed analysis of the factors that influence these risk perceptions, which play such an important role in deterring these types of behaviour in Spain. One hypothesis is that a key factor in increasing these risk perceptions may be the existence of a greater number of police checks and the drivers' own experience of having been caught; however, the correlation between the general data on the proportion of drivers subjected to alcohol checks, and the perceived likelihood of being subjected to a check during a habitual journey, according to the results presented in the thematic report on the application of traffic rules and support for public measures in ESRA 1 (Buttler, 2016), is low ( $r = 0.246$ ;  $p < 0.01$ ).

Perhaps this perceived risk may be influenced by other factors related to the moral reproachability and danger levels associated with these risky behaviours; however, the corresponding data are required in order to test this and other hypotheses that may be derived from these studies.

**Table 4.4.8**

Percentages of participants who have been subjected at least once to an alcohol or drugs check in the last year while driving a car (ESRA 1: calculated based on the responses indicating one or more checks, and only among those participants who previously stated they had driven a car in the last year; ESRA 2: calculated based on the responses of *Once* and *At least twice* on the following response scale: *Never-Once-At least twice-Prefer not to answer*)

Country/region		ESRA 1: drivers subjected		ESRA 2: drivers subjected			
		ALCOHOL CHECK	DRUGS CHECK	ALCOHOL CHECK	DRUGS CHECK		
SPAIN		29%	5%	30.3%	9.7%		
LATAM	Argentina	32%	9%				
	Bolivia	29%	11%				
	Brazil	10%	5%				
	Chile	22%	5%				
	Colombia	31%	12%			33%	10%
	Costa Rica	8%	5%				
	Ecuador	17%	13%				
	Guatemala	9%	6%				
	Mexico	36%	12%				
	Paraguay	39%	10%				
	Peru	24%	11%				
	Uruguay	19%	6%				
Venezuela	5%	4%					
EUROPE <sup>1</sup> AVERAGE		19%	4%	18%	3.9%		
LATAM <sup>2</sup> AVERAGE		21%	8%				
NORTH AMERICA <sup>3</sup> AVERAGE				3.2%	2%		
ASIA & OCEANIA <sup>4</sup> AVERAGE				31.6%	10.5%		
AFRICA <sup>5</sup> AVERAGE				16.1%	10.2%		
ESRA <sup>6</sup> AVERAGE		19%	7%				

Table 4.4.8 presents the percentages of participants who were subjected, as drivers, to at least one alcohol or drugs check in the last year. In Spain, almost one third of the drivers surveyed had been subjected to such checks, and the percentage barely differs from one survey to the next; moreover, the percentages are higher than those for the rest of the groups, except for certain Latin American countries such as Colombia.

In the first edition of the study, the percentage of Spanish participants who report that they have been subjected to drugs checks is considerably lower than those who have been subjected to alcohol checks. A similar average percentage can be seen for Europe. However, for Spain, this percentage rises significantly in ESRA 2: among all of the European countries (whose average, as a whole, barely changes between the two studies), Spain has the highest percentage of participants subjected to drugs checks, as shown in the thematic report on the results of the survey (Achermann Stürmer, Meesmann & Berbatovci, 2019).

According to the ESRA I study, of all the penalties imposed upon the Spanish participants in the last year for the driving-related violations specified in the survey, **4%** were for driving under the influence of alcohol (EUROPE<sup>1</sup> average for alcohol = 3%) and **4%** were for driving under the influence of illegal drugs (EUROPE<sup>1</sup> average for drugs = 3%).

In ESRA 2, participants were not asked about any penalties imposed due to driving under the influence of alcohol or other drugs.

## 6. Support for policy measures related to driving under the influence of alcohol and other drugs

Table 4.4.9 presents the results for ESRA I regarding the evaluation of the rules and penalties for driving under the influence of alcohol and other drugs. As the report on the main results for ESRA I does not include those related to support for said rules and penalties at the national level, it was not possible to include the results for each country in the LATAM<sup>2</sup> group in table 4.4.9. Nor does the report give the averages for the LATAM<sup>2</sup> and ESRA<sup>6</sup> groups with regard to the percentages of participants who agreed with the statement that these rules and penalties should be stricter.

Table 4.4.9

Percentages of participants who agree with the traffic rules and penalties related to driving under the influence of alcohol and other drugs (ESRA I) (calculated based on the affirmative responses given on the response scale *Yes-No-Don't know/no answer*)

Country/region	ESRA I: alcohol			ESRA I: drugs		
	They should be stricter	There are not enough checks on compliance with traffic rules	The penalties are too severe	They should be stricter	There are not enough checks on compliance with traffic rules	The penalties are too severe
SPAIN	<b>83%</b>	<b>57%</b>	<b>17%</b>	<b>90%</b>	<b>61%</b>	<b>15%</b>
EUROPE <sup>1</sup> AVERAGE	<b>80%</b>	<b>64%</b>	<b>12%</b>	<b>87%</b>	<b>68%</b>	<b>10%</b>
LATAM <sup>2</sup> AVERAGE		67%	25%		65%	22%
ESRA <sup>6</sup> AVERAGE		64%	18%		65%	16%

Unlike other behaviours analysed in the ESRA and in this report, the vast majority of the Spanish participants (more than the European average) feel that the rules related to driving under the influence of alcohol and other drugs should be stricter. In line with this result, only a small percentage of the sample feel that the penalties imposed for driving under the influence of alcohol or other drugs are too severe. However, the European averages in both cases are even lower than the percentages for Spain. Although there are no data on the opinions of the Latin American participants as to whether these traffic rules should be stricter, a significantly higher percentage of participants in the LATAM<sup>2</sup> group agree with the statement that the penalties are too severe in both cases, in comparison to the equivalent percentages for Spain and the EUROPE<sup>1</sup> group.

For its part, ESRA 2 only evaluated the participants' level of agreement with the rules and penalties imposed for driving under the influence of alcohol, and not other drugs. Consequently, the lack of data for this indicator in the national reports prepared after ESRA 2 was carried out has prevented us from including in table 4.4.10 the results regarding support among the Colombian participants for the policy measures that have been applied in relation to drink-driving.

In general, we can see a slight change in the trend over time with regard to the evaluation of rules and penalties in ESRA 2. Firstly, in comparison to the previous edition of the study, a smaller percentage of participants feel that the rules related to driving under the influence of alcohol should be stricter. This decrease is less pronounced in Spain, but much greater in the EUROPE<sup>1</sup> group. Additionally, and as one might expect based on these results, the percentage of participants (both in Spain and the European average) who feel that the penalties for driving under the influence of alcohol are too severe has increased significantly, albeit not to levels as high as those recorded for the ASIA & OCEANIA<sup>4</sup> or AFRICA<sup>5</sup> groups). Perhaps the reason for this change lies in the assertion that there are not enough checks on compliance with traffic rules; in ESRA 2, the percentage of Spanish participants who agree with this statement rose in comparison to the previous edition of the survey, as did the European average.

**Table 4.4.10**

Percentages of participants who agree with the traffic rules and penalties for driving while under the influence of alcohol (ESRA 2) (calculated based on the responses expressing agreement on the response scale *Agree-Disagree*)

Country/region	ESRA 2: alcohol		
	They should be stricter	There are not enough checks on compliance with traffic rules	The penalties are too severe
SPAIN	81.1%	78.8%	27.7%
EUROPE <sup>1</sup> AVERAGE	74.5%	77.4%	20.6%
NORTH AMERICA <sup>3</sup> AVERAGE	71.1%	70.5%	18.3%
ASIA & OCEANIA <sup>4</sup> AVERAGE	93.8%	78.9%	34.1%
AFRICA <sup>5</sup> AVERAGE	48.9%	54.2%	43.6%

Lastly, with regard to the participants' support for certain policy measures designed to tackle driving under the influence of alcohol – and as shown in table 4.4.11 – the percentage of Spanish participants supporting these actions has increased more sharply over time, in comparison with the European average. The measure receiving the most support in Spain is that of a zero-tolerance approach to alcohol consumption for new drivers, followed by the installation of “alcolocks” for drink-drivers who reoffend. In both cases, the percentages of support among the Spanish participants are higher than in the rest of the groups. For its part, the least popular measure among the participants is a zero-tolerance approach to alcohol consumption for all drivers; however, in Spain the level of support for this measure is a great deal higher than the averages for the EUROPE and NORTH AMERICA<sup>3</sup> groups.

Table 4.4.11

Percentages of support for different policy measures to tackle driving while under the influence of alcohol (ESRA 1: calculated based on the responses in favour on the response scale *In favour-Against-No opinion*; ESRA 2: calculated based on the scores of 4 and 5 on the response scale, where 1 = *I am opposed* and 5 = *I am in support*)

Country/region		Installation of “alcolocks” for reoffending drink-drivers		Zero-tolerance (0.0%) approach to alcohol consumption for new drivers		Zero-tolerance (0.0%) approach to alcohol consumption for all drivers	
		ESRA 1	ESRA 2	ESRA 1	ESRA 2	ESRA 1	ESRA 2
SPAIN		80%	87.3%	82%	89.4%	71%	80.9%
LATAM	Argentina	85%		86%		81%	
	Bolivia	92%		86%		84%	
	Brazil	72%		88%		83%	
	Chile	90%		87%		88%	
	Colombia	89%		83%		88%	
	Costa Rica	93%		86%		83%	
	Ecuador	89%		80%		83%	
	Guatemala	94%		89%		85%	
	Mexico	84%		83%		80%	
	Paraguay	93%		87%		84%	
	Peru	93%		87%		90%	
	Uruguay	86%		82%		77%	
Venezuela	90%		82%		84%		
EUROPE <sup>1</sup> AVERAGE		76%	78.7%	80%	77.9%	60%	67.3%
LATAM <sup>2</sup> AVERAGE		82%		85%		83%	
NORTH AMERICA <sup>3</sup> AVERAGE			80.4%		79.9%		62%
ASIA & OCEANIA <sup>4</sup> AVERAGE			83.7%		80.2%		80.5%
AFRICA <sup>5</sup> AVERAGE			84.9%		81.7%		82.2%
ESRA <sup>6</sup> AVERAGE		79%		81%		69%	

Owing to the lack of data for this indicator in the national reports published after ESRA 2 was carried out, it was not possible to include the results for support among the Colombian participants for the aforementioned measures in table 4.4.11.

## 4.5. Seatbelts and child restraint systems

### 1. Self-declared road behaviours: use of seatbelts and child restraint systems

Here, we have decided to present the results for ESRA 1 and ESRA 2 separately, as each edition of the study uses different items and contrasting approaches to measure the frequency of the various uses of seatbelts and child restraint systems.

**Table 4.5.1**

Frequencies of use for seatbelts and child restraint systems in the last 12 months (ESRA1) (calculated based on a score of 5 (i.e. *(nearly) Always*) on the response scale, where 1-4 = *Not always* and 5 = *(nearly) Always*)

Country/region	How often have you done the following?					
	Worn a seatbelt while travelling in the back seat	Worn a seatbelt while travelling in the passenger seat	Worn a seatbelt while driving	Ensured that younger children travelling with you have used a child restraint system	Ensured that older children travelling with you have worn a seatbelt	
SPAIN	<b>70%</b>	<b>81%</b>	<b>80%</b>	<b>62%</b>	<b>69%</b>	
LATAM	Argentina	43%	65%	76%	46%	67%
	Bolivia	17%	43%	67%	33%	50%
	Brazil	44%	73%	74%	34%	36%
	Chile	39%	78%	78%	57%	65%
	Colombia	30%	80%	83%	41%	61%
	Costa Rica	49%	86%	91%	77%	79%
	Ecuador	29%	78%	87%	43%	65%
	Guatemala	40%	75%	79%	51%	64%
	Mexico	40%	71%	78%	47%	66%
	Paraguay	40%	85%	89%	55%	70%
	Peru	30%	77%	85%	40%	69%
	Uruguay	42%	81%	82%	61%	70%
Venezuela	33%	71%	73%	50%	67%	
EUROPE <sup>1</sup> AVERAGE	<b>62%</b>	<b>84%</b>	<b>80%</b>	<b>62%</b>	<b>65%</b>	
LATAM <sup>2</sup> AVERAGE	<b>39%</b>	<b>73%</b>	<b>77%</b>	<b>42%</b>	<b>54%</b>	
ESRA <sup>6</sup> AVERAGE	52%	78%	79%	55%	62%	

With regard to the use of seatbelts in ESRA 1, the behaviour most frequently reported by the Spanish sample is that of wearing a seatbelt while travelling in the passenger seat (table 4.5.1). This is closely followed by wearing a seatbelt while driving (whose frequency is lower than the European average, however), and lastly by wearing a seatbelt while travelling in the back seat. Although the results for the Latin American countries vary, generally speaking the averages for the LATAM<sup>2</sup> group with regard to seatbelt use are, in each of the three cases, lower than the results for Spain and the EUROPE<sup>1</sup> group (Trotta, Meesmann, Torfs, Van den Berghe, Shingo Usami & Sgarra, 2017).

When it comes to child restraint systems, these percentages decrease, although the frequency with which the Spanish participants ensure that older children wear seatbelts is somewhat higher than the European average, and significantly higher than the average for the LATAM<sup>2</sup> group. Despite these differences, which suggest that the protective measures in question are adopted more frequently in Spain than in other countries, the Spanish participants are more assiduous about wearing a seatbelt themselves (whether as a driver or passenger) than they are about ensuring the use of appropriate restraint systems for children (or seatbelts, in the case of older children) (table 4.5.1).

**Table 4.5.2**

Frequencies of use for seatbelts and child restraint systems on the part of car drivers and passengers in the last 30 days (ESRA 2) (calculated based on the scores between 2 (At least once) and 5 on the response scale, where 1 = Never and 5 = (nearly) Always)

Country/region	As a car driver, how often have you done the following?			As a car passenger, how often have you done the following?
	Driven without wearing a seatbelt	Transported young children without using a child restraint system	Travelled with older children without ensuring they wore a seatbelt	Travelled in the back seat without wearing a seatbelt
SPAIN	12.1%	13%	13.7%	36.9%
COLOMBIA	20.4%	33%	23.2%	76.7%
EUROPE <sup>1</sup> AVERAGE	17.2%	15%	13%	36.6%
NORTH AMERICA <sup>3</sup> AVERAGE	18.2%	10.5%	10.1%	31.8%
ASIA & OCEANIA <sup>4</sup> AVERAGE	34.6%	43.7%	46.6%	68.3%
AFRICA <sup>5</sup> AVERAGE	43.9%	46.8%	48.4%	66.3%

In light of the results for ESRA 2 (Nakamura, Alhajyaseen, Kako & Kakinuma, 2020) presented in table 4.5.2, it would appear that over time, the frequency with which these protective measures are adopted in Spain has increased. Although 12.1% of the Spanish participants admit to driving without wearing a seatbelt in the last month, the percentages for the rest of the comparison groups, including the European average, are higher.

With regard to child restraint systems, the percentage of Spaniards who admit to not using them is among the lowest, as is the European average. The only group to obtain a lower average percentage is NORTH AMERICA<sup>3</sup>. In fact, the only risky behaviour that still occurs at a higher frequency among the Spanish participants is that of travelling in the back seat without wearing a seatbelt. More participants engage in this behaviour than any other, although the percentage is still very close to the European average. This behaviour is also observed – and at a higher frequency – in the rest of the comparison groups and especially in Colombia, which has the highest percentage in this category.

## 2 Acceptance of risky road behaviours: not using seatbelts or child restraint systems

In ESRA I, the percentages of acceptance for each of the risky behaviours related to non-use of seatbelts or child restraint systems are, in all cases, lower in Spain than in the Latin American countries and comparison groups (table 4.5.3).

**Table 4.5.3**

Percentages of acceptance, both personal and perceived acceptance on the part of others, for behaviours that a driver\* could engage in with regard to non-use of seatbelts or child restraint systems (ESRA I) (calculated based on the scores of 4 and 5 on the response scale, where 1 = *Unacceptable* and 5 = *Acceptable*)

Country/region	Not wearing a seatbelt while travelling in the back seat		Not wearing a seatbelt while travelling in the front seats		Transporting children in the car without using a restraint system (child seat, seatbelt, etc.)		
	Others	Personal	Others	Personal	Others	Personal	
SPAIN	<b>11%</b>	<b>6%</b>	<b>6%</b>	<b>4%</b>	<b>6%</b>	<b>3%</b>	
LATAM	Argentina	23%	10%	13%	6%	14%	5%
	Bolivia	29%	15%	22%	9%	26%	8%
	Brazil	19%	10%	9%	5%	9%	5%
	Chile	17%	10%	6%	3%	9%	4%
	Colombia	22%	14%	6%	3%	10%	4%
	Costa Rica	19%	9%	6%	2%	8%	2%
	Ecuador	18%	10%	5%	3%	12%	5%
	Guatemala	23%	9%	13%	4%	16%	5%
	Mexico	22%	11%	11%	7%	15%	6%
	Paraguay	25%	14%	12%	4%	19%	9%
	Peru	17%	8%	6%	3%	13%	3%
	Uruguay	21%	11%	8%	3%	10%	2%
Venezuela	27%	13%	16%	6%	17%	6%	
EUROPE <sup>1</sup> AVERAGE	<b>21%</b>	<b>12%</b>	<b>10%</b>	<b>6%</b>	<b>8%</b>	<b>3%</b>	
LATAM <sup>2</sup> AVERAGE	<b>21%</b>	<b>11%</b>	<b>10%</b>	<b>5%</b>	<b>12%</b>	<b>5%</b>	
ESRA <sup>6</sup> AVERAGE	21%	12%	11%	7%	10%	5%	

At the personal level, the least acceptable behaviour is travelling with children without using the appropriate child restraint system. This is followed by not wearing a seatbelt in the front seats, and lastly by not wearing a seatbelt while travelling in the back seat, which has a somewhat higher level of acceptance. This latter behaviour is also seen as the most acceptable by the other groups.

It should be pointed out that in ESRA 1, as the group of items is designed to evaluate the level of acceptance for behaviours that a driver might engage in (without specifying further), the examples given for the use of seatbelts and child restraint systems should refer to behaviours that can be carried out by drivers. Otherwise, it is strange to simply ask generic questions regarding the wearing of seatbelts in the back or front seats. The statements presented in ESRA 2 to evaluate the level of acceptance for these types of behaviours on the part of drivers (see table 4.5.4 below) make much more sense.

**Table 4.5.4**

Percentages of acceptance, both personal and perceived acceptance on the part of others, for behaviours that a car driver\* could engage in with regard to non-use of seatbelts or child restraint systems (ESRA 2) (calculated based on the scores of 4 and 5 on the response scale, where 1 = *Unacceptable* and 5 = *Acceptable*)

Country/region	Driving without wearing a seatbelt		Transporting children in the car without using a restraint system (child seat, seatbelt, etc.)	
	Others	Personal	Others	Personal
SPAIN	5.2%	3.2%	6.1%	2.7%
COLOMBIA	8.3%	2.4%	10.4%	3.2%
EUROPE <sup>1</sup> AVERAGE	7.6%	4%	4.2%	1.8%
NORTH AMERICA <sup>3</sup> AVERAGE	6.3%	4.8%	2.7%	1%
ASIA & OCEANIA <sup>4</sup> AVERAGE	13.5%	6.8%	13%	6.4%
AFRICA <sup>5</sup> AVERAGE	17.4%	9.5%	17%	7%

With regard to the results obtained in ESRA 2, the trend is somewhat different to that observed in the results for the first edition of the study. In Spain, the percentages of acceptance (both personal and perceived acceptance on the part of others) for behaviours such as driving a car without wearing a seatbelt, or transporting children without using an appropriate restraint system, are low. However, while the results regarding personal acceptance of risky behaviours related to seatbelt use are, in general, lower than in the rest of the groups (except for Colombia, which has the lowest level of acceptance), in terms of behaviour related to child safety – and although the results for Spain are lower than those pertaining to seatbelt use – the percentage of acceptance for this behaviour among the Spanish participants is higher than the averages for the EUROPE<sup>1</sup> and NORTH AMERICA<sup>3</sup> groups.

The results for both ESRA 1 and ESRA 2, in which the level of personal acceptance for the risky behaviours presented is lower in all cases than the level of perceived acceptance on the part of others, once again reveal the existence of a “third-person effect”, as we have already observed and discussed in relation to the levels of acceptance for different types of behaviour in other thematic areas.

### 3. Attitudes towards the use of seatbelts and child restraint systems within the context of road safety

As shown in table 4.5.5, the Spanish participants, along with those in the rest of the countries and groups for which results are available, have low percentages of agreement with the statements related to risky behaviour involving the use of seatbelts, such as the assertion that it is not necessary to wear a seatbelt while travelling in the back seat, or use a child restraint system on short journeys. In contrast, they express high levels of agreement with the statements related to protective behaviours, such as asking the passengers in one’s car to wear seatbelts, or considering it to be dangerous to transport children in one’s car without them wearing a seatbelt or using an appropriate child restraint system. There are no major differences between the results of the Spanish sample and the averages for Europe and the rest of the countries and groups, except in the level of agreement with the statement that it is not necessary to wear a seatbelt in the back seat: the corresponding percentage for the Spanish participants is the lowest among all those surveyed.

It is also notable that between the two editions of the ESRA (and regarding not only Spain, but also the European average), there has been a highly significant decrease in the percentage of agreement with the statement that child restraint systems are not necessary for short journeys. This decrease is a very positive sign from a road-safety perspective.

**Table 4.5.5**

Percentages of participants who agree with each of the statements designed to evaluate attitudes towards the use of seatbelts and child restraint systems, and their influence on road safety (calculated based on the scores of 4 and 5 on the response scale used, where 1 = Disagree and 5 = Agree)

Country/region	ESRA 1					ESRA 2
	<i>It is not necessary to wear a seatbelt while travelling in the back seat</i>	<i>I always ask the passengers in my car to wear a seatbelt</i>	<i>The information regarding the use of child restraint systems is not very clear</i>	<i>It is dangerous to transport children without ensuring that they are wearing a seatbelt or using an appropriate child restraint</i>	<i>For short journeys, it's not really necessary to use an appropriate child restraint system</i>	<i>For short journeys, it's not really necessary to use an appropriate child restraint system</i>
SPAIN	<b>12%</b>	<b>79%</b>	<b>32%</b>	<b>84%</b>	<b>13%</b>	<b>3.8%</b>
LATAM	Argentina	13%				
	Bolivia	14%				
	Brazil	18%				
	Chile	15%				
	Colombia	21%				
	Costa Rica	14%				
	Ecuador	19%				
	Guatemala	14%				
	Mexico	16%				
	Paraguay	16%				
	Peru	16%				
	Uruguay	16%				
Venezuela	16%					
EUROPE <sup>1</sup> AVERAGE	<b>15%</b>	<b>79%</b>	<b>27%</b>	<b>87%</b>	<b>13%</b>	<b>4.4%</b>
LATAM <sup>2</sup> AVERAGE	<b>17%</b>	<b>80%</b>				
NORTH AMERICA <sup>3</sup> AVERAGE						3.2%
ASIA & OCEANIA <sup>4</sup> AVERAGE						9.5%
AFRICA <sup>5</sup> AVERAGE						12.3%
ESRA <sup>6</sup> AVERAGE	17%	80%				

#### 4. Application of traffic rules and penalties related to seatbelt use

Although different response scales were used in each edition of the survey to evaluate the perceived likelihood among the participants of being caught not wearing a seatbelt by the police during a habitual journey, they nonetheless refer to the same behaviour and enable a more direct comparison than in the case of other constructs.

**Table 4.5.6**

Perceived likelihood among the participants of being caught not wearing a seatbelt by the police during a habitual journey (ESRA 1: calculated based on the scores of 4 and 5 on the response scale used, where 1 = *Very low* and 5 = *Very high*.

ESRA 2: calculated based on the scores of 5 to 7 on the response scale used, where 1 = *Very unlikely* and 7 = *Very likely*)\*

Country/region		Perceived likelihood of being caught not wearing a seatbelt by the police	
		ESRA 1	ESRA 2
SPAIN		<b>17.7%</b>	<b>35.8%</b>
LATAM	Argentina	27%	
	Bolivia	20%	
	Brazil	18%	
	Chile	28%	
	Colombia	30%	
	Costa Rica	31%	
	Ecuador	42%	
	Guatemala	19%	
	Mexico	29%	
	Paraguay	33%	
	Peru	33%	
	Uruguay	24%	
Venezuela	25%		
EUROPE <sup>1</sup> AVERAGE		<b>19%</b>	<b>26.1%</b>
LATAM <sup>2</sup> AVERAGE		<b>25%</b>	
NORTH AMERICA <sup>3</sup> AVERAGE			23.6%
ASIA & OCEANIA <sup>4</sup> AVERAGE			34.6%
AFRICA <sup>5</sup> AVERAGE			44.3%
ESRA <sup>6</sup> AVERAGE		24%	

\* ESRA 1 does not differentiate between drivers and riders. ESRA 2 specifically refers to car drivers.

As we can see in the results presented in table 4.5.6, in comparison to ESRA 1 the perceived risk has significantly increased in Spain. Where it was previously the lowest, in comparison to the percentages for the Latin American countries and the averages for the rest of the groups, in ESRA 2 it is now among the highest, second only to the average for the AFRICA<sup>5</sup> group.

Additionally, and with regard to the penalties imposed upon the Spanish participants, of the 12% who stated that they had been penalised for traffic violations (excluding parking fines) in the last year, 1% of those penalties were related to seatbelt use (EUROPE<sup>1</sup> = 7%, of the 15% of participants who had been penalised), while 1% were related to the use of child restraint systems (EUROPE<sup>1</sup> = 3%).

ESRA 2 did not collect data on penalties related to the use of seatbelts or child restraint systems.

## 5. Support for policy measures related to the use of seatbelts and child restraint systems

Given that ESRA 2 did not ask for the participants' opinions regarding the rules and penalties for the (non) use of seatbelts and child restraint systems, table 4.5.7 only includes the results obtained in ESRA 1. Moreover, as the main report on the results for ESRA 1 does not include those related to support for said rules and penalties, it was not possible to include the results for each country in the LATAM<sup>2</sup> group in table 4.5.7. Nor does the report give the averages for the LATAM<sup>2</sup> and ESRA<sup>6</sup> groups with regard to the percentages of participants who agreed with the statement that these rules and penalties should be stricter.

Table 4.5.7

Percentages of participants who agree with the traffic rules and penalties related to non-use of seatbelts and child restraint systems (ESRA 1) (calculated based on the affirmative responses given on the response scale *Yes-No-Don't know/no answer*)

Country/region	They should be stricter	There are not enough checks on compliance with traffic rules	The penalties are too severe
SPAIN	70%	53%	31%
EUROPE <sup>1</sup> AVERAGE	61%	54%	24%
LATAM <sup>2</sup> AVERAGE		63%	27%
ESRA <sup>6</sup> AVERAGE		57%	27%

With regard to the traffic rules governing the use of seatbelts and child restraint systems, a high percentage (higher than the European average) of the Spanish participants feel that the rules should be stricter. This result is striking, as when the participants were asked to evaluate the penalties imposed for breaking these rules, more than 30% of the Spanish sample felt that they were too severe. Indeed, this percentage is higher than in any of the comparison groups.

Lastly, as ESRA 1 did not evaluate the level of support for any policy measures related to the use of seatbelts and child restraint systems, table 4.5.8 only includes the results obtained in ESRA 2 regarding support for such measures. Specifically, when asking the participants about the legally mandated inclusion of seatbelt-warning systems (for both front and back seats) in new cars, almost 90% of the Spanish sample supported this measure. This percentage is higher than the averages for all of the other comparison groups, including the EUROPE<sup>1</sup> group. As the national report for Colombia does not contain the results for this item, the corresponding percentage could not be included in table 4.5.8.

**Table 4.5.8**

Percentages of support for the legally mandated inclusion of a seatbelt-warning system, for the front and back seats, in new cars (ESRA 2) (calculated based on the scores of 4 and 5 on the response scale, where 1 = *I am opposed* and 5 = *I am in support*)

Country/region	Seatbelt-warning system
SPAIN	89.1%
EUROPE <sup>1</sup> AVERAGE	78.8%
NORTH AMERICA <sup>3</sup> AVERAGE	74.4%
ASIA & OCEANIA <sup>4</sup> AVERAGE	84.9%
AFRICA <sup>5</sup> AVERAGE	83.2%

## 4.6. Riders of two-wheeled vehicles: motorcyclists

### 1. Self-declared risky road behaviours while riding a moped/motorcycle

With regard to moped/motorcycle riders, while ESRA 1 only asked participants how often they engaged in the risky behaviour of riding without a helmet, ESRA 2 added a series of other risky behaviours related to speeding, alcohol consumption and mobile phone use (Yannis, Laiou, Nikolaou, Usami, Sgarra & Azarko, 2020), as shown in table 4.6.1.

**Table 4.6.1**

Frequencies of risky behaviours while riding a moped/motorcycle (calculated based on a score of between 2 (*At least once*) and 5 on the response scale, where 1 = *Never* and 5 = (*nearly*) *Always*)

Country/region		ESRA 1 (2015-2017): last 12 months	ESRA 2 (2018-2020): last 30 days			
		Riding without a helmet	Riding without a helmet	Riding while potentially being over the drink- drive limit	Riding faster than the speed limits (conventional roads)	Reading messages or emails, or checking social media, while riding
SPAIN		<b>29%</b>	<b>21.1%</b>	<b>20.1%</b>	<b>38.6%</b>	<b>20.3%</b>
LATAM	Argentina	50%	34.3%	9.7%	38.7%	21.5%
	Bolivia	58%				
	Brazil	37%				
	Chile	36%				
	Colombia	39%				
	Costa Rica	53%				
	Ecuador	46%				
	Guatemala	63%				
	Mexico	65%				
	Paraguay	74%				
	Peru	61%				
	Uruguay	47%				
Venezuela	65%					
EUROPE <sup>1</sup> AVERAGE		<b>27%</b>	<b>25.7%</b>	<b>19.9%</b>	<b>45.3%</b>	<b>21.9%</b>
LATAM <sup>2</sup> AVERAGE		<b>46%</b>				
NORTH AMERICA <sup>3</sup> AVERAGE			39.1%	24.4%	48.7%	32.7%
ASIA & OCEANIA <sup>4</sup> AVERAGE			46.2%	17.8%	41.8%	29.1%
AFRICA <sup>5</sup> AVERAGE			48.5%	20.7%	47.7%	37.2%
ESRA <sup>6</sup> AVERAGE		47%				

As each edition of the ESRA asked the participants about a different period of time, we cannot know for sure whether, over time, riding without a helmet has truly decreased in Spain and (less markedly) in the EUROPE<sup>1</sup> group. What we can say for sure is that over 20% of Spanish motorcyclists still admit to engaging in the risky behaviour of riding without wearing a helmet in the last 30 days. This behaviour appears to be even more common amongst Latin American motorcyclists, as demonstrated by the high self-declared frequencies for each of the countries in the LATAM<sup>2</sup> group and the average for this group.

The most frequent risky behaviour among Spanish motorcyclists is speeding, although the percentage of participants who engage in this behaviour is lower than the averages for Europe and the rest of the comparison groups. Lastly, around 20% of the Spanish participants

who ride motorcycles admit that they rode while potentially over the drink-drive limit during the last month, and virtually the same percentage of respondents admit to reading messages/emails or checking social media on their phone while riding. These frequencies are quite similar to the average for the EUROPE group, while there is a greater amount of variation among the rest of the groups for both of these behaviours. For example, while less than 10% of the Colombian participants state that they rode after drinking (a lower percentage than in any of the other countries or groups), the AFRICA<sup>5</sup> group has the highest average percentage with regard to the use of mobile phones while riding.

## 2. Support for policy measures that apply to motorcyclists

Table 4.6.2 presents the results obtained in ESRA 2 regarding support for policy measures that apply to motorcyclists (ESRA 1 did not evaluate the level of support for any policy measures related to the use of mopeds/motorcycles).

**Table 4.6.2**

Percentages of support for different measures that apply to motorcyclists (ESRA 2) (calculated based on the scores of 4 and 5 on the response scale, where 1 = *I am opposed* and 5 = *I am in support*)

Country/region	Require all motorcyclists to wear a helmet	Require all motorcyclists to wear reflective material when visibility is reduced
SPAIN	93.9%	84.7%
EUROPE <sup>1</sup> AVERAGE	89.6%	83.1%
NORTH AMERICA <sup>3</sup> AVERAGE	80.4%	79.7%
ASIA & OCEANIA <sup>4</sup> AVERAGE	90.1%	78.3%
AFRICA <sup>5</sup> AVERAGE	85.3%	81.9%

Spain has the highest level of support for measures requiring the use of reflective material when riding in areas with reduced visibility, and for measures requiring the use of a helmet (of the two measures, this one has the highest level of support). Spain is followed by the EUROPE<sup>1</sup> group, with slightly lower levels of support, while the group with the least amount of support for mandatory helmet use is NORTH AMERICA<sup>3</sup>.

## 4.7. Riders of two-wheeled vehicles: cyclists

### 1. Self-declared risky road behaviours while riding a bicycle

With regard to bicycle riders, and with specific reference to the first edition of the study, the risky behaviour that the participants in Spain – as well as the rest of the countries and comparison groups – engaged in most frequently over the last year is that of riding without a helmet. The next most frequent behaviour is that of riding on the road without using the cycle lane, while the two least frequent behaviours are listening to music on headphones and running

a red traffic light (although we cannot be entirely sure which of these two behaviours is the least common among the participants, owing to the errors identified in the data obtained from the published reports, as indicated in table 4.7.1). This makes it difficult to compare how often Spanish cyclists engage in each of these behaviours in comparison to the European averages.

**Table 4.7.1**

Frequencies of risky behaviours while riding a bicycle (ESRA I) (calculated based on a score of between 2 (*At least once*) and 5 on the response scale, where 1 = *Never* and 5 = (*nearly Always*))

Country/region	ESRA I (2015-2017): last 12 months				
	Not wearing a helmet	Listening to music on headphones	Riding on the road instead of the cycle lane	Running a red traffic light	
SPAIN	<b>72%</b>	<b>35%</b>	<b>45%</b>	<b>26%-42%*</b>	
LATAM	Argentina	83%	45%	57%	44%
	Bolivia	83%	56%	73%	54%
	Brazil	72%	52%	35%	52%
	Chile	77%	51%	57%	43%
	Colombia	72%	57%	62%	40%
	Costa Rica	70%	41%	72%	42%
	Ecuador	72%	53%	69%	51%
	Guatemala	75%	51%	64%	39%
	Mexico	77%	53%	59%	48%
	Paraguay	68%	52%	65%	33%
	Peru	77%	66%	66%	46%
	Uruguay	86%	50%	60%	41%
	Venezuela	76%	50%	69%	44%
EUROPE <sup>1</sup> AVERAGE	<b>80%-77%**</b>	<b>29%-28%**</b>	<b>47%-44%**</b>	<b>27%-36%**</b>	
LATAM <sup>2</sup> AVERAGE	<b>75%</b>	<b>52%</b>	<b>50%</b>	<b>48%</b>	
ESRA <sup>6</sup> AVERAGE	75%	42%	51%	45%	

\* In the main report on the results published in 2016 (Torfs, Meesmann, Van den Berghe & Trotta, 2016), this percentage is given as 26%, while in the report published in 2018 (Meesmann, Torfs, Nguyen & Van den Berghe, 2018) it is given as 42%, even though both reports are supposedly talking about the same set of data collected in Spain as part of ESRA I in 2015.

\*\* The first main report on the results (Torfs, Meesmann, Van den Berghe & Trotta, 2016) cites the first percentages shown in table 4.7.1 (marked with two asterisks), which correspond to the European averages for each of the risky behaviours evaluated. However, the thematic report on the application of rules and support for road policies (Buttler, 2016) gives a different set of results (the second set of percentages presented).

**Table 4.7.2**

Frequencies of risky behaviours while riding a bicycle (ESRA 2) (calculated based on a score of between 2 (*At least once*) and 5 on the response scale, where 1 = *Never* and 5 = (*nearly*) *Always*)

Country/region	ESRA 2 (2018-2020): last 30 days				
	Not wearing a helmet	Riding after having had too much to drink	Listening to music on headphones	Riding on the road instead of the cycle lane	Reading messages or emails, or checking social media, while cycling
SPAIN	<b>53.6%</b>	<b>11.5%</b>	<b>32.3%</b>	<b>38.7%</b>	<b>21.1%</b>
COLOMBIA AVERAGE	54.6%	12.8%	57.7%	57.1%	21.9%
EUROPE <sup>1</sup> AVERAGE	<b>69.2%</b>	<b>17.4%</b>	<b>29.4%</b>	<b>38.7%</b>	<b>18.9%</b>
NORTH AMERICA <sup>3</sup> AVERAGE	51%	16.5%	35.4%	36.2%	22.4%
ASIA & OCEANIA <sup>4</sup> AVERAGE	71.2%	18.4%	41.8%	56.5%	30%
AFRICA <sup>5</sup> AVERAGE	57.7%	17.4%	52.8%	52.7%	33.9%

For the second edition of the study, the results presented in table 4.7.2 show that, as in ESRA 1, the most frequent risky behaviour among Spanish cyclists is riding without a helmet (although this percentage is lower than the average for Europe as a whole). Similarly, the second most frequent risky behaviour among Spanish cyclists – and with the same percentage as the European average – is riding without using the cycle lane. A third of Spanish cyclists ride while listening to music on their headphones, while a smaller percentage use their mobile phone to read messages or check social media while riding. ESRA 2 also included an item asking the participants how often, in the last month, they had cycled after having had too much to drink. Among the Spanish participants, this is the least frequent risky behaviour, with a lower percentage than the rest of the groups (including EUROPE<sup>1</sup>) and similar results to those for Colombia.

64

## 2. Support for policy measures that apply to cyclists

With regard to the level of support expressed by the participants for the various measures aimed at cyclists, the measure with the most support among the Spanish sample is that of mandatory helmet use. However, this measure is less popular in Europe, where the percentage in favour is lower than the equivalent figure for Spain. In contrast, the level of support for mandatory helmet use in the Latin American countries is significantly higher. Regarding the measure that would allow cyclists to run red traffic lights, the level of support is much lower in Europe and lower still in Spain (the main report on the results does not include any data on this aspect for the Latin American countries or the average for the LATAM<sup>2</sup> group as a whole).

**Table 4.7.3**

Percentages of support for different measures that apply to cyclists (ESRA1) (calculated based on the affirmative responses given on the response scale *Yes-No-Don't know/no answer*)

Country/region		Mandatory use of helmets	Allow cyclists to run red traffic lights when permitted by specific road signs	Mandatory use of reflective vests for pedestrians and cyclists when visibility is reduced*	Ban the use of headphones for pedestrians and cyclists**
SPAIN		71%	29%	76%	53%
LATAM	Argentina	78%			
	Bolivia	92%			
	Brazil	78%			
	Chile	88%			
	Colombia	91%			
	Costa Rica	94%			
	Ecuador	91%			
	Guatemala	92%			
	Mexico	86%			
	Paraguay	93%			
	Peru	91%			
	Uruguay	78%			
Venezuela	94%				
EUROPE <sup>1</sup> AVERAGE		59%	34%	62%	56%
LATAM <sup>2</sup> AVERAGE		84%			
ESRA <sup>6</sup> AVERAGE		69%			

\* Includes the level of support for applying this measure to pedestrians as well.

\*\* This item **does not appear in the survey**. Includes the level of support for applying this measure to pedestrians as well.

Although the use of reflective vests is among the measures with the highest level of support among the Spanish participants, the fact that this item refers to pedestrians as well as cyclists means that we cannot draw reliable conclusions from the result. Likewise, participants were also asked about their support for banning the use of headphones (a measure supported by a little more than half of the Spanish participants). However, as the question does not refer exclusively to the group with which this section is concerned (inasmuch as it refers to pedestrians, as well as cyclists), as with the previous measure we cannot draw reliable conclusions in relation to these results.

**Table 4.7.4**

Percentages of support for different measures that apply to cyclists (ESRA 2) (calculated based on the scores of 4 and 5 on the response scale, where 1 = *I am opposed* and 5 = *I am in support*)

Country/region	Mandatory use of helmets	Mandatory use of helmets for cyclists under 12	Mandatory use of reflective vests when visibility is reduced	Ban the use of headphones while cycling
SPAIN	<b>86.8%</b>	<b>90.7%</b>	<b>90.9%</b>	<b>78.5%</b>
EUROPE <sup>1</sup> AVERAGE	<b>67.5%</b>	<b>85%</b>	<b>85.2%</b>	<b>66.5%</b>
NORTH AMERICA <sup>3</sup> AVERAGE	72.8%	85.2%	82.8%	57.7%
ASIA & OCEANIA <sup>4</sup> AVERAGE	67.9%	78.9%	80.8%	77.3%
AFRICA <sup>5</sup> AVERAGE	85%	86.6%	83%	61.9%

In ESRA 2, these errors were corrected and participants were only asked about measures that would apply exclusively to cyclists. In all cases, the percentage of support for each of the proposed measures among the Spanish sample is higher not only than the European average, but also the averages for the rest of the comparison groups (table 4.7.4). The measures with the most support among the Spanish participants are those corresponding to mandatory use of reflective vests under conditions of reduced visibility, and mandatory use of helmets for cyclists under 12. In third place is the mandatory use of helmets for cyclists in general, with a percentage of support significantly higher in Spain than the average for the EUROPE<sup>1</sup> group. Lastly, among all of the European countries, Spain expresses the most amount of support for banning the use of headphones while cycling, as shown in the thematic report on cyclists for ESRA 2 (Achermann Stürmer, Berbatovci & Buttler, 2020). In fact, although less than 80% of Spaniards are in favour of banning the use of headphones to listen to music while cycling, this percentage is still a great deal higher than the European average. However, if we compare this result to the percentage of Spanish participants who self-report that they engage in this very same behaviour while cycling (table 4.7.2), we find – paradoxically – that this percentage is higher than the European average.

66

## 4.8. Pedestrians

### 1. Self-declared risky road behaviours as a pedestrian

The results shown in table 4.8.1 indicate that, of all the countries and comparison groups surveyed, and in both ESRA 1 and ESRA 2, the Spanish participants are the ones who engage most frequently in risky behaviours as pedestrians. Crossing the road in a place other than a pedestrian crossing (even if one is near) is the most common behaviour, followed by crossing when the pedestrian signal is red, checking email/social media while walking (ESRA 2, as this item was not included in ESRA 1), and lastly, listening to music on headphones.

As ESRA 2 did not include any items related to the self-reported frequency for any of these behaviours in the last year (and ESRA 1 did not include any items related to the frequency of such behaviours

In the last month), the reduction observed in these percentages between the two editions of the study must be interpreted with caution; as we have seen with other types of risky behaviours discussed above, such a reduction does not necessarily correspond to a genuine decrease in such behaviour, and in fact, if we compare the results for the same item over the same period of time, we may even find that such behaviour has increased.

**Table 4.8.1**

Frequencies of self-declared risky behaviours as a pedestrian (calculated based on a score of between 2 (*At least once*) and 5 on the response scale, where 1 = *Never* and 5 = (*nearly*) *Always*)

Country/region	ESRA 1 (2015-2017): last 12 months			ESRA 2 (2018-2020): last 30 days				
	Listening to music on headphones	Crossing the road when the pedestrian signal is red	Crossing the road in a place other than a pedestrian crossing	Listening to music on headphones	Crossing the road when the pedestrian signal is red	Crossing the road in a place other than a nearby pedestrian crossing	Reading messages or emails, or checking social media, while walking along the street	
SPAIN	<b>50.5%</b>	<b>82.4%</b>	<b>91.7%</b>	<b>46.6%</b>	<b>75.5%</b>	<b>84.5%</b>	<b>73.7%</b>	
LATAM	Argentina	53%	63%	85%	59%	50.7%	72.1%	61.4%
	Bolivia	67%	73%	85%				
	Brazil	54%	73%	83%				
	Chile	60%	71%	84%				
	Colombia	58%	64%	84%				
	Costa Rica	57%	60%	86%				
	Ecuador	58%	70%	81%				
	Guatemala	50%	55%	79%				
	Mexico	56%	65%	81%				
	Paraguay	58%	57%	79%				
	Peru	67%	63%	77%				
	Uruguay	63%	68%	84%				
Venezuela	48%	58%	82%					
EUROPE <sup>1</sup> AVERAGE	<b>38.2%</b>	<b>66.6%</b>	<b>87.7%</b>	<b>33.4%</b>	<b>51.8%</b>	<b>74.1%</b>	<b>58.7%</b>	
LATAM <sup>2</sup> AVERAGE	<b>56%</b>	<b>68%</b>	<b>82%</b>					
NORTH AMERICA <sup>3</sup> AVERAGE				38.2%	42.8%	63.1%	51.9%	
ASIA & OCEANIA <sup>4</sup> AVERAGE				42.6%	40.8%	70%	53.9%	
AFRICA <sup>5</sup> AVERAGE				55%	49.1%	73.3%	68.8%	
ESRA <sup>6</sup> AVERAGE	48%	64%	83%					

## 2. Support for policy measures that apply to pedestrians

The national reports published for the participating countries after ESRA 2 was carried out do not include the results related to support for these policy measures aimed at pedestrians; consequently, the results for the Colombian participants are not included in table 4.8.2.

As shown in table 4.8.2, the policy measure with the greatest amount of support from the participants is mandatory use of reflective vests/material when visibility is reduced, although it should be noted that in ESRA 2, the level of support for this measure in Spain is lower than that expressed by the rest of the comparison groups, including EUROPE<sup>1</sup> (Buttler, 2020). We should also mention, however, that both this and the measure in ESRA 1 proposing to ban the use of headphones stated that cyclists, as well as pedestrians, would be the targets for this measure. This may be the main reason why, in the second edition of the study (which specifically evaluates the participants' level of support for measures aimed solely at pedestrians), the percentage of support among the Spanish participants has fallen significantly, in view of the fact that – as explained at the start of this report – bicycles are viewed by the Spanish sample as one of the least safe modes of transport.

**Table 4.8.2**

Percentages of support for different measures that apply to pedestrians (ESRA 1: calculated based on the affirmative responses given on the response scale *Yes-No-Don't know/no answer*; ESRA 2: calculated based on the scores of 4 and 5 on the response scale, where 1 = *I am opposed* and 5 = *I am in support*)

Country/region	ESRA 1		ESRA 2	
	Mandatory use of reflective vests for pedestrians and cyclists when visibility is reduced*	Ban the use of headphones for pedestrians and cyclists**	Mandatory use of reflective material for pedestrians when visibility is reduced	Ban the use of headphones while walking along the street
SPAIN	76%	53%	46.9%	43%
EUROPE <sup>1</sup> AVERAGE	62%	56%	57.4%	42.5%
NORTH AMERICA <sup>3</sup> AVERAGE			56.7%	41.1%
ASIA & OCEANIA <sup>4</sup> AVERAGE			58%	66.8%
AFRICA <sup>5</sup> AVERAGE			54.8%	50.9%

\* Includes the level of support for applying this measure to cyclists as well.

\*\* This item **does not appear in the survey**. \* Includes the level of support for applying this measure to cyclists as well.

## 4.9. Gender-based analysis for the Spanish population

Below, we present the results of the comparative gender-based analysis, which has been carried out using the results for the Spanish sample from ESRA 2. Specifically, the data were obtained from the thematic report on gender-related matters (Granié, Thévenet, Evennou, Lyon &

Vanlaar, 2020), which includes these results at the national level. As no reports containing an analysis of this type broken down by country were published for ESRA 1, it was not possible to include the corresponding information for the first edition of the study in this section.

We used an analysis of variance (ANOVA) to compare the averages for men and women in relation to each psychological construct studied. These averages were calculated based on the overall score obtained for each construct, after using a principal component analysis (PCA) to confirm that all of the aspects included in each construct with regard to the different thematic areas (speed, alcohol, mobile phone use, etc.) were saturated on the first factor.

Specifically, the psychological constructs for which the comparisons between men and women have been made in Spain, and which are presented in table 4.9.1, are as follows (the brackets denote the items in ESRA 2 whose indicators relating to different aspects of the survey were used to calculate the overall scores following the PCA):

- Perceived social acceptance of risky driving behaviours (Q13.1); personal acceptance of risky driving behaviours (Q14.1); and self-declared risky behaviours as a car driver (Q12.1b and Q12.1a) (the indicators related to the use of child restraint systems were excluded); self-efficacy when engaging in risky driving behaviours (Q15.i.j.k.l.m.n.o.p); perceived safety while driving (Q16) (only the indicators related to feelings of safety when driving a conventional or electric/hybrid car were used); support for policy measures related to road safety (Q18); perceived risk of particular driving behaviours as a cause of accidents (Q17); number of accidents (Q23.1a.2a.3a); social-desirability bias and intention to comply (Q28); social norms related to risky driving behaviours (15.a.b); perceived likelihood of being subjected to a check or caught by the police (Q20); and positive perception of autonomous vehicles (Q24, Q25.1, Q25.2).

In general, we can affirm that men are more personally accepting – and perceive others as being more accepting – of risky driving behaviours, and that they feel more able to drive in dangerous situations, feel safer than women when driving a vehicle, and have a more positive perception than women of autonomous vehicles. For their part, women are more supportive of policy measures related to road safety, perceive certain dangerous behaviours as being more likely to cause traffic accidents, and have a greater tendency than men towards social-desirability bias and intention to comply. Intriguingly, although the frequency of self-reported risky driving behaviour is higher for men than it is for women, men also have a higher perceived risk of being subjected to police checks during habitual journeys, compared to women.

However, we should note that although there are statistically significant gender-based differences in the majority of the constructs analysed, the values of the effect size estimator obtained are in all cases fairly low (moreover, even lower values would have been obtained if the  $\omega^2$  had been calculated; in fact, the  $\omega^2$  is a more convenient statistic given that it is an unbiased estimator of effect size). For this reason, and although there is a trend at the sample level towards higher levels of accepting, and engaging in, risky behaviours on the part of men in comparison to women, the statistical significance of these contrasts should be attributed to the large sample size rather than the genuine influence of gender, which in clinically relevant terms, and according to the results obtained, is fairly small.

**Table 4.9.1**

Averages, standard deviations and effect sizes in the ANOVAs carried out in order to analyse the effect of gender on each of the constructs evaluated in ESRA 2 in Spain

CONSTRUCT	GENDER		$\eta^2$
	MEN	WOMEN	
	Average (SD)	Average (SD)	
Acceptance (others)	<b>11.26*</b> (4.24)	10.47 (5.47)	0.01
Personal acceptance	<b>19.45***</b> (6.69)	17.08 (6.42)	0.03
Self-declared behaviours	<b>24.79***</b> (7.75)	21.17 (6.94)	0.04
Self-efficacy	<b>13.23***</b> (5.37)	10.81 (4.35)	0.05
Perceived safety	8.55 (3.26)	8.26 (3.72)	<0.01
Support for policy measures	62.71 (8.56)	<b>66.53***</b> (8.07)	0.05
Perceived accident risk	30.01 (7.80)	<b>32.79***</b> (9.31)	0.02
Number of accidents	0.33 (1.18)	0.38 (1.70)	<0.01
Social-desirability bias	22.12 (4.12)	22.95* (4.55)	0.01
Social norm	4.15 (1.70)	4.26 (2.06)	<0.01
Perceived likelihood of police check	<b>17.85**</b> (7.66)	15.54 (8.83)	0.01
Positive perception of autonomous vehicles	<b>82.26*</b> (22.30)	76.91 (25.54)	0.01

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ . The statistically significant contrasts are highlighted in bold in the "Average" column.

#### 4.10. Summary of the main results for Spain in ESRA 2

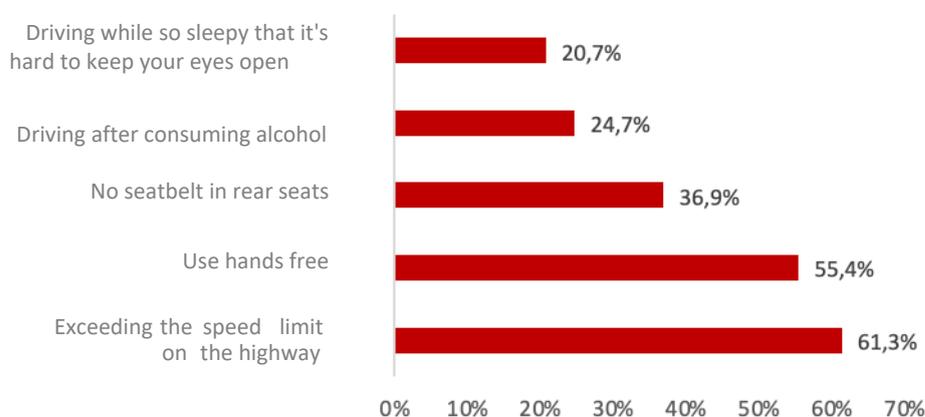
Based on the information presented, and in order to be able to draw general conclusions regarding the current situation in Spain, below we provide a summary of the main results obtained for Spain after ESRA 2 was carried out in 2018, as this is the most recent information available on the subject of Spanish drivers' attitudes and behaviours regarding road safety risks.

##### Self-declared road behaviours

With regard to the self-declared road behaviours engaged in by car drivers, speeding on motorways/dual carriageways is the most frequent, followed by using hands-free technology to talk on a phone while driving and travelling in the back seat without wearing a seatbelt. The fourth most common self-reported risky behaviour among the Spanish participants is driving a car after drinking, while the least frequent behaviour is driving while feeling so tired they struggle to keep their eyes open (figure 4.10.1).

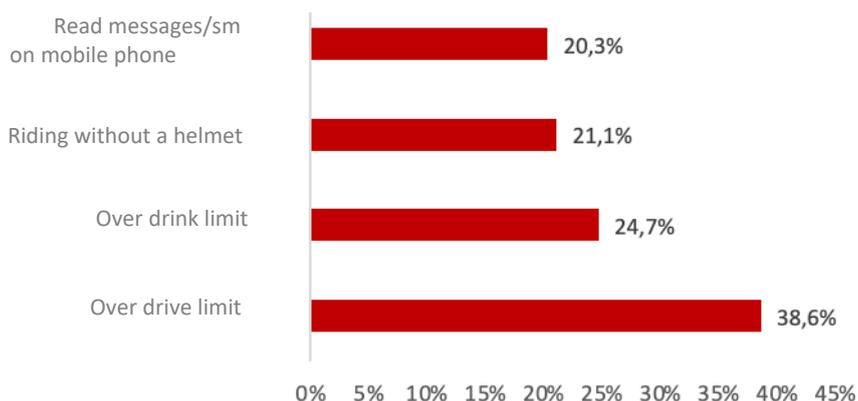
**Figure 4.10.1**

**Most frequent self-declared behaviours among car drivers**



**Figure 4.10.2**

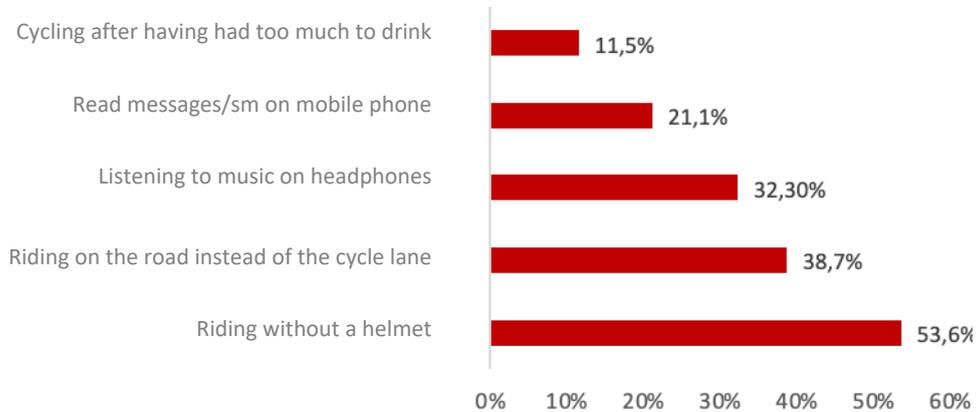
**Most frequent self-declared behaviours among motorcyclists**



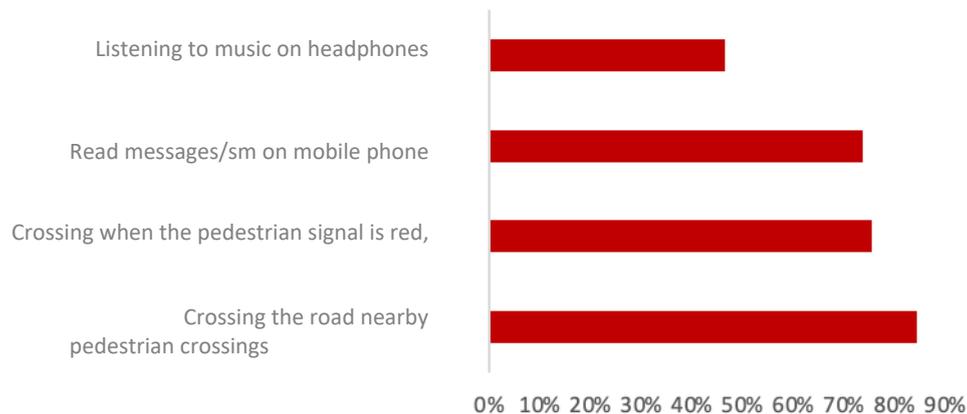
For motorcyclists, the most frequent behaviour (among those that were evaluated for each thematic area) is also speeding, followed by riding without a helmet and using one's phone to read messages or check social media. The least frequent behaviour is riding while potentially being over the drink-drive limit (figure 4.10.2).

In the case of cyclists, riding without a helmet is the most frequent risky behaviour, followed by riding on the road instead of the cycle lane and listening to music on headphones. The two least frequent behaviours are using one's mobile phone to read messages and check social media, and lastly cycling after having had too much to drink (figure 4.10.3).

**Figure 4.10.3**  
Most frequent self-declared behaviours among



**Figure 4.10.4**  
Most frequent self-declared behaviours among



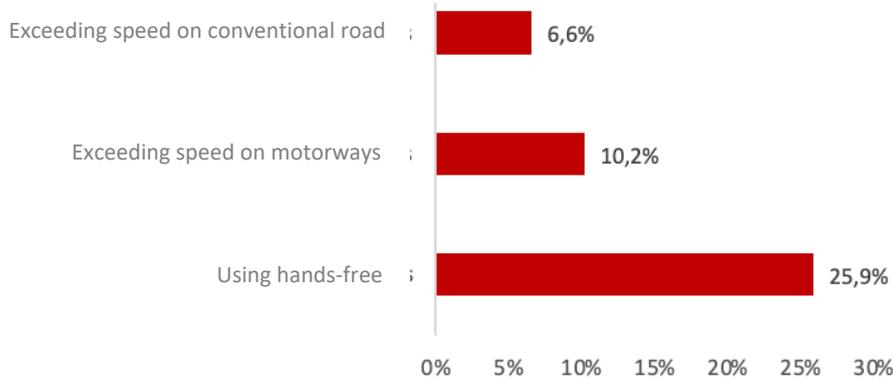
Lastly, the most frequent risky behaviours among pedestrians are crossing the road at places other than nearby pedestrian crossings, crossing when the pedestrian signal is red, and using one's mobile phone to read messages or check social media. The least frequent behaviour among the Spanish participants is walking while listening to music on headphones (figure 4.10.4).

### Acceptance of risky road behaviours

With regard to personal acceptance of the various risky behaviours while driving a car that were evaluated in the surveys, talking on the phone using hands-free technology is the behaviour considered most acceptable by the Spanish participants. The next most acceptable behaviours are related to speeding; for example, exceeding the speed limit on motorways/dual carriageways and on conventional roads (figure 4.10.5).

**Figure 4.10.5**

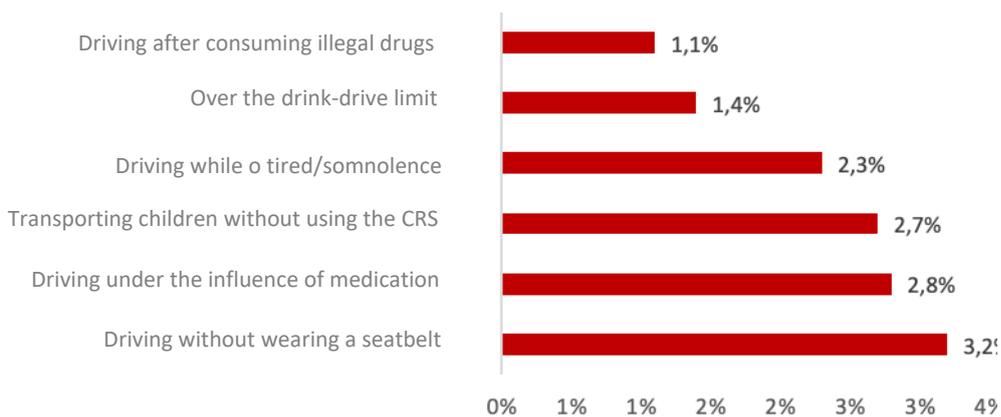
Most acceptable risky behaviours among car drivers



In terms of the behaviours that are deemed less acceptable while driving a car, at the personal level – and in descending order – these consist of driving without wearing a seatbelt, driving under the influence of medication that could affect driving ability, and transporting children without using the appropriate restraint system. Within this same category, the lowest levels of acceptance are recorded for the following behaviours: driving while feeling so tired one struggles to keep one’s eyes open, and driving while over the drink-drive limit (figure 4.10.6). Lastly, the risky behaviour with the lowest percentage of acceptance (approximately 1%) is that of driving an hour after consuming illegal drugs.

**Figure 4.10.6**

Least acceptable risky behaviours among car drivers

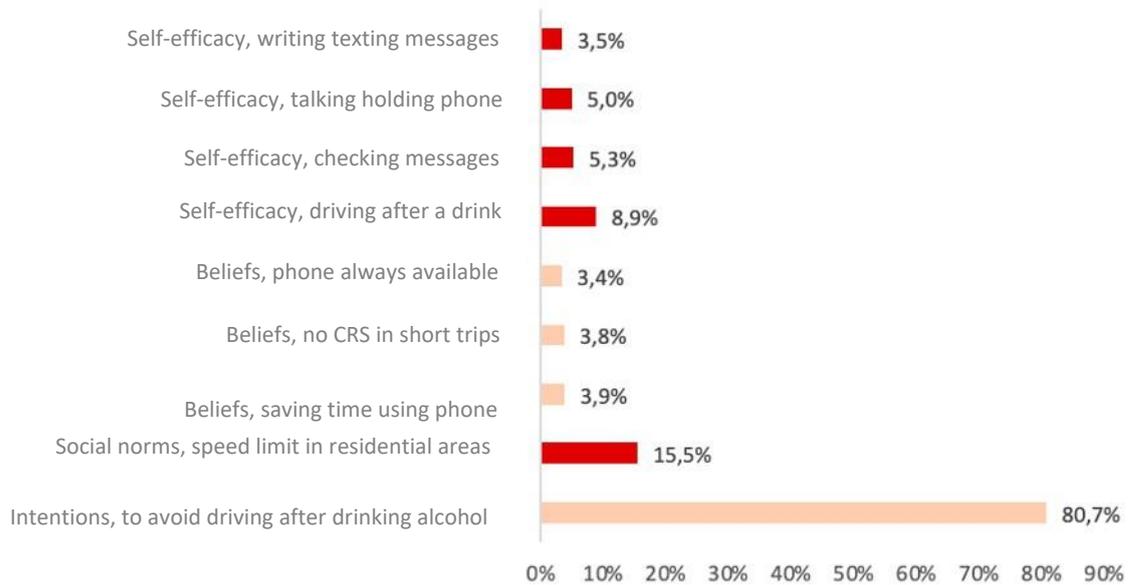


## Attitudes

To evaluate this construct in ESRA 2, the survey included indicators to measure different dimensions related to attitudes, such as social norms, beliefs, self-efficacy, and habits and intentions; however, these indicators were not included for all of the thematic areas, and the full results for all of these aspects are not available.

**Figure 4.10.7**

Percentages of agreement with the different attitude indicators in relation to the different thematic areas evaluated



74

As we can see in figure 4.10.7, the participants have low percentages of agreement with the statements related to the dangers posed by the different risky behaviours presented, although there is a higher percentage (15.5%) for the descriptive norm evaluated in relation to excess speed. In terms of intention, and with reference to the only data available in this respect in ESRA, the participants have a high percentage of agreement (80.7%) with the intention to avoid driving after drinking alcohol in the next 30 days.

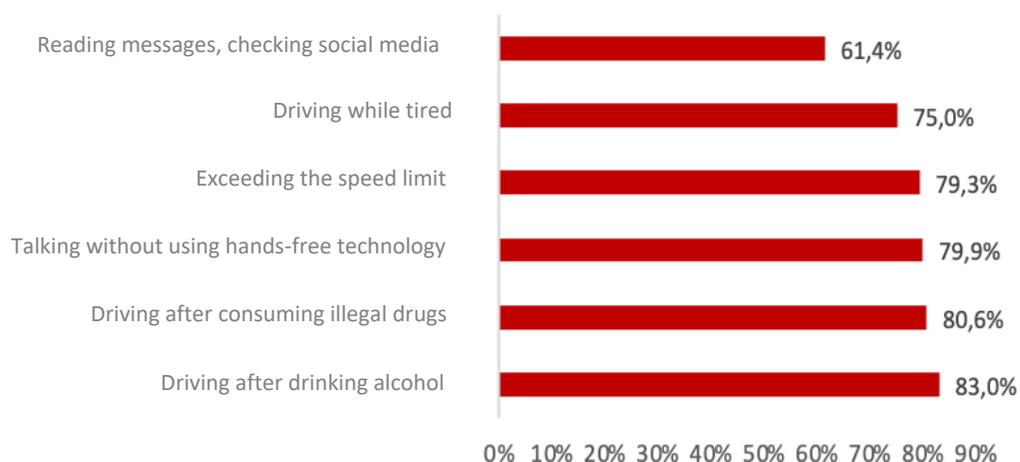
Ultimately, and in summary, we can only make very general assertions, in the absence of disparate results or results that contradict this tendency on the part of the Spanish participants to view the risky behaviours in question negatively (figure 4.10.7).

### Perception of traffic accident risk

As figure 4.10.8 shows, the risky behaviour most frequently perceived by the Spanish participants as a cause of traffic accidents involving a car (the only mode of transport the survey asked about in relation to perceived risk) is that of driving after drinking alcohol, followed by driving after consuming illegal drugs. Third on the list is talking on a mobile phone without using hands-free technology, which is followed by exceeding the speed limit and driving while tired. Lastly, the risky behaviour least frequently perceived as a cause of traffic accidents is that of reading messages or checking social media while driving.

**Figure 4.10.8**

Perceived risk of different behaviours as a cause of accidents

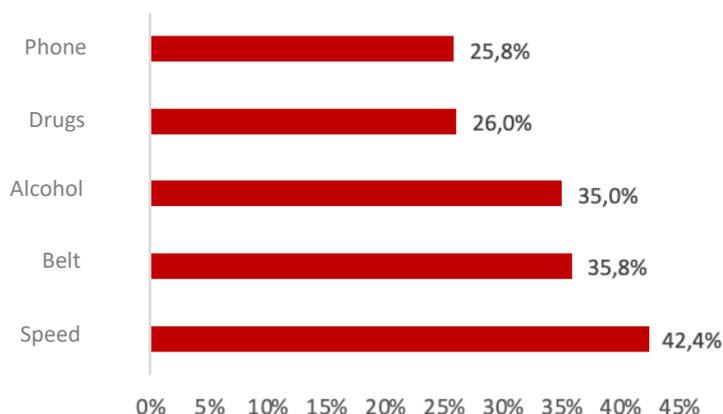


### Application of rules and penalties

The types of police checks (or radar-based checks) perceived, by the Spanish sample, as being the most likely to occur during a habitual journey by car are speed checks, followed by seatbelt checks and alcohol checks (figure 4.10.9).

**Figure 4.10.9**

Perceived risk of being subjected to police checks during a habitual journey, for different reasons



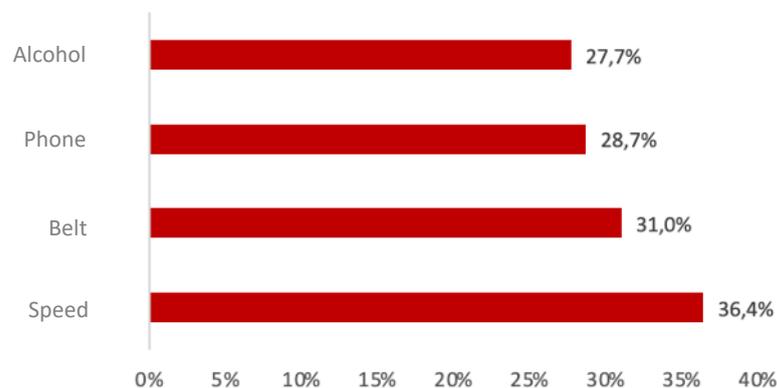
Lastly, the checks perceived as being the least likely during a habitual journey are drugs checks, and being caught using a mobile phone without hands-free technology or reading messages/checking social media while driving (figure 4.10.9).

## Support for policy measures

With regard to the evaluation of the penalties imposed for violating the traffic rules (specifically, those related to the thematic areas covered by the studies) in Spain while driving a car or riding a motorcycle, speeding fines are perceived as the most severe, followed by fines for not wearing a seatbelt and for using a mobile phone while driving. Those perceived as the least severe are the penalties for driving a car or riding a motorcycle under the influence of alcohol (figure 4.10.10).

**Figure 4.10.10**

Percentages of agreement with the statement that the penalties imposed for violating different traffic rules are too severe

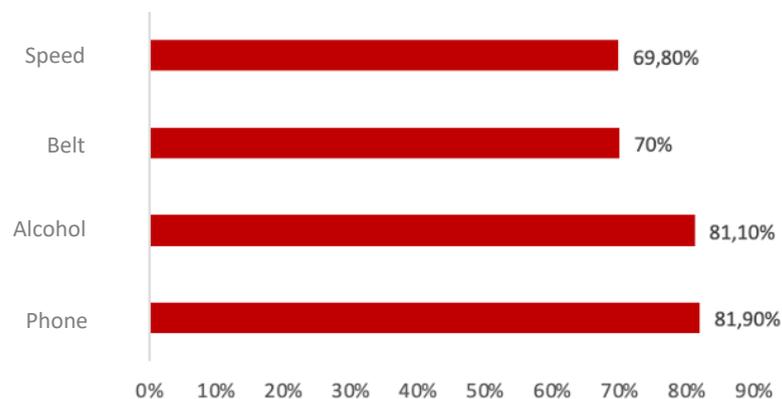


76

A large majority of the Spanish participants also agree with the statement that the rules applying to the use of mobile phones while driving a car or riding a motorcycle, along with those that apply to alcohol consumption, should be stricter. This percentage of agreement is lower, however, for the traffic rules related to seatbelt use and speed limits (figure 4.10.11).

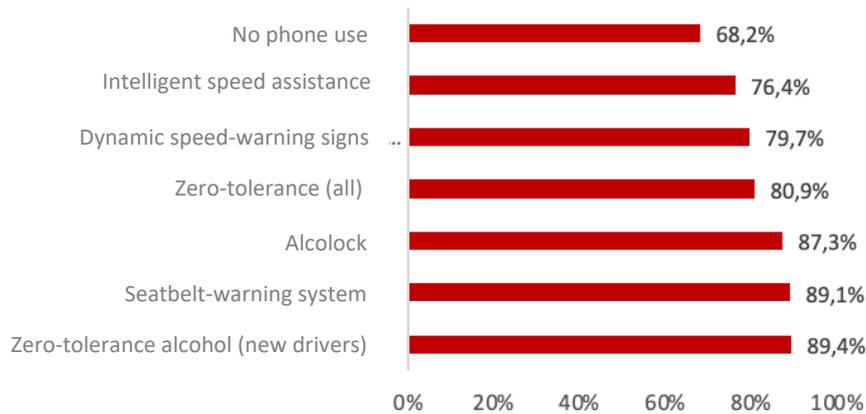
**Figure 4.10.11**

Percentages of agreement with the statement that the traffic rules for particular thematic areas should be stricter



**Figure 4.10.11**

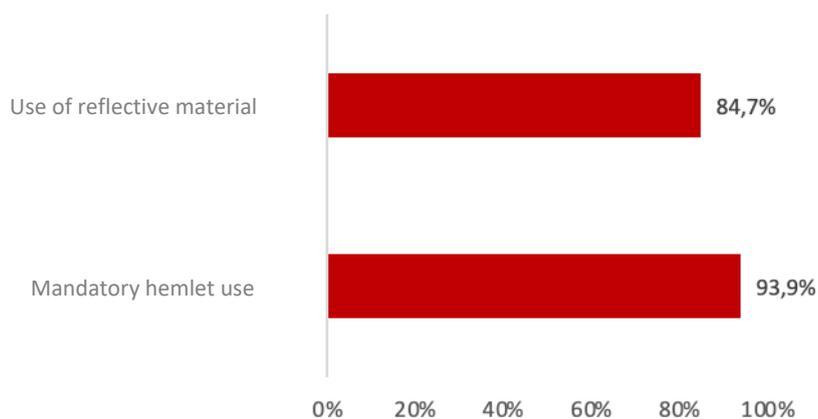
Support for different policy measures aimed at car drivers



With regard to the different policy measures designed to prevent risky behaviours while driving, the one with the greatest amount of support is that of a zero-tolerance (0.0%) approach to alcohol consumption for new drivers. This is followed, in descending order, by the installation of seatbelt-warning systems, the installation of “alcolocks” for reoffending drivers, and a zero-tolerance (0.0%) approach to alcohol consumption for all drivers. The latter is closely followed by measures to prevent speeding, such as the installation of dynamic speed-warning signs and intelligent speed assistance (ISA), while the measure with the least amount of support, recording a percentage significantly lower than the rest, is a ban on any type of mobile phone use while driving (whether hand-held or hands-free) for all drivers (figure 4.10.11).

**Figure 4.10.12**

Support for different policy measures aimed at motorcyclists

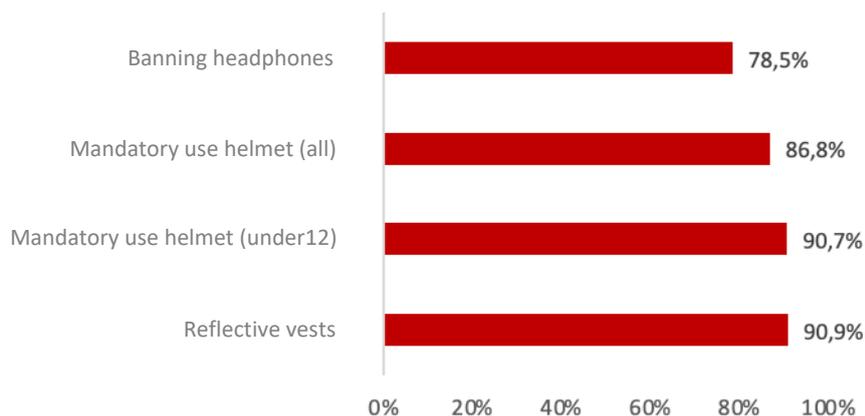


In terms of the measures aimed at motorcyclists, mandatory helmet use has the highest level of support, receiving the agreement of the vast majority of the participants, while there is a slightly lower level of support for the measure requiring the use of reflective material while riding under conditions of reduced visibility (figure 4.10.12).

In the case of cyclists, the measures with the highest levels of support are the use of reflective vests and mandatory use of helmets for cyclists under 12, followed by mandatory use of helmets for all cyclists. The measure with the lowest level of support among the Spanish sample is that of banning the use of headphones while cycling (figure 4.10.12).

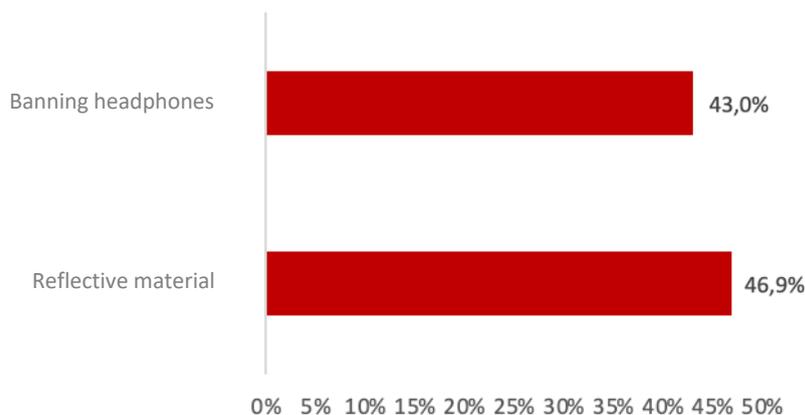
**Figure 4.10.12**

Support for different policy measures aimed at cyclists



**Figure 4.10.13**

Support for different policy measures aimed at pedestrians



Lastly, the proposed measures for pedestrians related to the use of reflective material while walking along the street under conditions of reduced visibility, and banning the use of headphones, received a significantly lower amount of support in comparison to all of the other measures evaluated in the surveys across all of the different modes of transport. Indeed, the measure proposing to ban the use of headphones is the one with the overall least amount of support among the Spanish sample (figure 4.10.13).

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# 5

## Analysis of needs and proposed indicators

79

After reviewing the main results obtained from the two editions of the ESRA that have been carried out to date, it is essential that we reflect on how useful all of the information collected may be with regard to designing and implementing public policies in the area of road safety, in line with the fundamental aim of reducing the number of road accidents.

In the following sections we present, firstly, a critical analysis of the indicators that already form part of the ESRA, and offer suggestions for improving future editions of the study. Secondly, we propose new indicators related not only to other modes of transport, but also to risky behaviours linked to other factors that contribute to road accidents in Spain and have not been covered in these studies to date, and which we should begin to evaluate.

### 5.1. Analysis of indicators already included in the ESRA and suggestions for improvement

In terms of analysing citizens' attitudes towards road safety, the advantages of the studies carried out as part of the ESRA initiative are undeniable. They make it possible to collect a large amount of road-safety information related to a wide variety of behaviours that drivers habitually engage in and which may, on occasion, pose a risk to their own safety and that of others while driving. Additionally, the large number of countries that have taken part in the project (a number that has grown with each edition) makes it possible to conduct a comparative analysis of this cross-cultural issue at the global level. Moreover, the experience gained after administering the survey that was initially designed and used in the first edition has allowed for changes to be made in order to adjust the evaluation process for the survey's indicators, thereby improving the evaluation tools used in subsequent studies.

In order to continue optimising the measurement of the psychosocial factors related to citizens' engagement in risky behaviours linked to road safety, in this section we conduct an analysis of the main indicators that form part of the ESRA 2 study (as it is the most up-to-date) and propose a number of improvements that can be applied in future editions of the ESRA.

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## 1. Self-declared road behaviours

The frequencies of self-reported unsafe behaviours related to mobility and the use of different modes of transport constitute the study's dependent variables, and reflect the influence of various factors that, according to the scientific literature, appear to be linked to such behaviours. It is therefore essential to clearly and correctly operationalise all of the unsafe and risky behaviours that are to be evaluated, in order to improve the quality of the information gathered.

In this respect (and if the subsequent aim is not simply to ascertain the frequency of each of these self-reported behaviours, but also to create models in order to determine the weighting of the rest of the indicators related to attitudes and the other matters of interest being evaluated), in order to be able to explain and predict the circumstances under which it may be more and less likely for these risky behaviours to occur it is vital that operational definitions be established for these behaviours and presented to the participants, and for these definitions to be maintained when the participants are asked about said behaviours in relation to other matters. However, there are a number of instances within the survey where this does not happen.

For example, to evaluate the risky behaviours related to fatigue while driving, each participant is asked – as a kind of dependent variable – how often they have driven while struggling to keep their eyes open; and subsequently this same example is also used to evaluate the level of personal acceptance in relation to this behaviour. However, when the survey asks the participants about their perception of the risk of fatigue as a cause of traffic accidents, the behaviours that are presented to the participants for evaluation do not, in any of the cases, match those that were initially described. For one, the participants are asked about driving while tired, which in terms of danger levels is substantially different to driving while struggling to keep one's eyes open. Moreover, the survey also includes another item related to driving while not paying attention or daydreaming, which in terms of danger levels may be more akin to the aforementioned driving while tired; however, it is not clear why the survey did not simply use the same example as the one presented for the evaluation of self-declared behaviour. Further to this issue, the reports that have been published to date do not include any of the corresponding results.

Another example is found in the items related to alcohol consumption and driving. To evaluate the self-reported occurrence of risky behaviours the participants are asked, among other things, about driving while potentially being over the drink-drive limit. This is a very useful way to operationalise a behaviour that is difficult to define, by providing the participants with a criterion against which to compare their behaviour and thereby give a more precise response. However, when evaluating alcohol consumption as a cause of accidents, participants are only presented with the example of driving after drinking alcohol (which is also included as a dependent variable), which is a very non-specific concept and can be viewed differently depending on the individual. Moreover, it also encompasses a wide variety of circumstances, ranging from driving after drinking a very small amount of alcohol and remaining below the permitted limit, to having drunk so much that driving would be considered a criminal offence under Spanish law. Consequently, we believe it would be more useful to evaluate how dangerous the participants think it would be to break the established drink-drive limits, than to ask them to evaluate a behaviour that is so non-specific, and which could also overlap with support for measures such as a zero-tolerance approach to alcohol for all drivers (which is also evaluated in the survey).

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In addition to this proposal regarding the need to develop specific definitions of road behaviour and use the same examples when the participants are asked about the rest of the attitudinal aspects related thereto, we also feel it is necessary to reduce the number of items the participants are asked about in relation to self-declared risky or unsafe behaviours, for each of the thematic areas addressed. We must remember that, in view of the methodology for these studies, the knowledge obtained is limited to the subjective assessments of the individuals surveyed, in relation to both their own behaviour and that of others. It may therefore be advantageous to put this suggestion into practice, as it would improve the balance of an evaluation tool that is already quite broad and may be tedious to complete, with all of the negative consequences that this tediousness (allied to the fact that the survey is self-administered) may have with regard to the quality of the information collected. Additionally, this would allow the participants to focus on more specific aspects of each thematic area, chosen based on criteria such as the level of danger they pose, but also taking into account the frequency of such behaviour. In turn, this would provide information that may be of greater utility, with regard to more habitual risky behaviours that may warrant the application of measures designed to prevent them.

## 2. Acceptance of risky behaviours

With regard to the acceptance variable, the survey presents two perspectives for analysis: personal acceptance (participants are asked about their personal acceptance of all of the risky behaviours presented to the sample in this section) and perceived acceptance on the part of others (items that are included in order to evaluate perceived acceptance on the part of others in relation only to certain behaviours, not all of them).

Firstly, asking the participants about their perception of the estimations or beliefs of others makes it harder for them to respond, as they are forced to infer the estimations that, in their view, others may adopt. If the aim is to analyse the extent to which the participants believe that others consider these risky behaviours to be appropriate (or not), a less confusing approach may be to evaluate the prescriptive norm or social disapproval (Cialdini, Kallgren & Reno, 1991; Cialdini, Reno & Kallgren, 1990); in other words, the extent to which the participants believe that if they engaged in each of these behaviours, their friends or those who are most important to them would disapprove or be disappointed in them. This approach also offers a way to specify which people in particular the participants are being asked about, in view of the fact that – as demonstrated in the scientific literature – these types of norms arise from the human need to build and maintain social relations by demonstrating the behaviour that is approved (or otherwise) by the majority of people (i.e. doing that which should be done, and refraining from doing that which should not be done) and thus forms part of the moral rules of the group (Cialdini & Trost, 1998). For this reason, the impact of these norms on (or their relation to) one's own behaviour should be greater than the influence that may be exerted by the perception of what the general public may think, which is what the survey currently asks.

Additionally, if the purpose of asking about the level of personal acceptance is to determine the extent to which the participants consider it appropriate for a driver to engage in the risky behaviours in question, the moral consideration that underpins this assessment would justify a more direct evaluation based on the level of reproachability assigned to each behaviour, thereby eliminating the ambiguity of the term that has been

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employed to date. There are examples in the scientific literature on compliance with traffic rules that have operationalised this construct (which is referred to as “moral judgement”) in order to assess, on the basis of the participants’ moral principles, the extent to which they consider it is reproachable (i.e. not acceptable) to engage in each of the behaviours prohibited by the rules in question (e.g. Bautista, 2012; Bautista & Miró-Llinares, 2015; Bautista & Sitges, 2016; Miró-Llinares & Bautista, 2013; Oceja, Fernández-Dols, González, Jiménez & Berenguer, 2001; Tyler, 2006).

The introduction of these changes when evaluating this construct would also eliminate the perceptual bias known as the “third-person effect”, which is found in all of the results related to both personal acceptance and perceived acceptance on the part of others for the behaviours evaluated. As discussed in section four of this report, it is a robust phenomenon in which people tend to give themselves a higher score (than the score they give to others) for behaviours that are normative and accepted, and do the opposite (i.e. give themselves a lower score) for behaviours that are socially undesirable. The way in which this aspect is currently evaluated encourages this process of comparison between oneself and others, and as a result it may serve more as proof of the existence of this phenomenon, rather than as a reliable indicator of the level of acceptance that the participants consider others to have for each of the risky behaviours evaluated.

Lastly, and putting aside the suggestions designed to optimise the evaluation of this construct, we should also mention that the survey only includes an evaluation of the acceptance of risky behaviours on the part of car drivers. No information has been gathered on the evaluation of these types of behaviours when other modes of transport included in the survey are involved, such as two-wheeled vehicles and behaviours as a pedestrian, which are also relevant to road safety.

### 3. Attitudes

In the second edition of the study, major changes were made to the evaluation of attitudes: specifically, the decision was made to base the measurement on indicators derived from the theory of planned behaviour (Ajzen, 1991) and other studies, which are also cited in the methodological report for ESRA 2 (Meesmann, Torfs, Wardenier & Van den Berghe, 2021), on socio-cognitive factors that are related to the motivations for behaviour (e.g. Rosenstock, 1974; Rogers, 1975; Vanlaar & Yannis, 2006) and also to the evaluation of road safety culture (e.g. Ward, Watson & Fleming-Vogl, 2019). In particular, ESRA 2 included items to measure the descriptive norm, beliefs and attitudes, self-efficacy and habits and intentions in relation to the various thematic areas focused on in the survey, and used Likert scales (1932), whose speed and economy make it the most representative of all of the classic tools for measuring attitudes (Renom, 1992).

Without addressing the need to expand the number of items related to each thematic area explored (and to carry out pilot studies enabling the preliminary administration of the relevant psychometric analyses to determine the reliability and validity of these scales for the purpose of evaluating attitudes), in the survey there are a number of under-represented thematic areas where it may also be useful to evaluate each of the indicators included (namely, descriptive norm, beliefs and attitudes, self-efficacy, habits and behavioural intentions). With the exception of alcohol and speeding, the rest of the risk factors are either partially addressed through just a few specific indicators (for example, the survey does not include items to evaluate social norms or habits in

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relation to mobile phone use), or simply do not form part of this section (e.g. drug consumption, seatbelt use and use of child restraint systems).

To give an example, the descriptive norm is only evaluated in relation to driving after consuming alcohol (not after consuming medication or other drugs) and breaking the speed limit (with specific reference to the participants' perception of whether their friends would drive 20 km/h above the speed limit in a residential area). We should also bear in mind that perceived behaviour on the part of others, and in particular on the part of one's peer group (and as demonstrated in other studies carried out in Spain that explore this subject), is one of the variables with the heaviest weighting in terms of explaining (non) compliance with traffic rules (e.g. Bautista, 2012; Bautista & Sitges, 2016; Bautista, Sitges & Tirado, 2015). As a result, it is closely linked to engagement in risky behaviours while driving, and we therefore recommend that this indicator be expanded to include items related to the rest of the thematic areas that, to a greater or lesser extent, are addressed in this section.

Additionally, as with the measurement of the acceptance of risky behaviours (and as discussed in the previous section), most of the items designed to evaluate each of these indicators refer to car driver behaviours. No items are presented for the purpose of evaluating the descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions relating to the risky behaviours engaged in by users of other modes of transport, such as risky behaviours on the part of those who use two-wheeled vehicles, or on the part of pedestrians. Taking into account the fact that the tool is already quite broad, we therefore propose that the survey evaluate the issues that are common to the various modes of transport in general, and also include those that are specific to each particular mode. Although the latter have not been addressed in this section, they are evaluated in the survey on a self-declared basis; for example, the use of seatbelts and child restraint systems when travelling by car; the use of helmets when travelling by bicycle or moped/motorcycle; and crossing the road in a place other than a pedestrian crossing when travelling on foot.

#### 4. Perception of accident risk

The survey includes a set of items that ask about the frequency with which the participants perceive different risky behaviours as potential causes of traffic accidents involving a car. This is done by means of indicators that encompass all of the thematic areas included in the study (alcohol, illegal drugs, speed, mobile phone use, and fatigue). However, and although the behaviours presented are generally well-operationalised, in the case of alcohol (and as discussed above) perhaps the survey should adopt the same strategy as that applied to speeding in this section; in other words, ask the participants specifically about the risk that may be posed by driving when they think they may be over the drink-drive limit. This would be less ambiguous than asking them simply about the risk posed by driving after consuming alcohol.

Additionally, and in line with the needs that have been identified and have given rise to most of the suggestions put forward in previous sections, we propose the inclusion of indicators that enable the evaluation of the participants' perceived risk of behaviours that could cause accidents involving other modes of transport, such as two-wheeled vehicles.

In turn, this would make it possible to complete the analysis of the influence wielded by this variable on decision-making while travelling, whether by moped, motorcycle or bicycle.

## 5. Application of rules and penalties

According to the classic deterrence model (see Paternoster, 2010 for a review thereof), some of the perceived characteristics of punishment associated with non-compliance with formal rules, such as its certainty and severity, are inversely related to the violation of said rules.

The ESRA includes an item designed to evaluate certainty, on the basis of the perceived likelihood of being subjected to a police check for alcohol or drug use, speeding (including radar-based checks), seatbelt use and mobile phone use, during a habitual journey while driving a car. In line with the previous suggestions, it would be useful to also include an item designed to evaluate these risk perceptions with regard to two-wheeled vehicles.

Furthermore, the severity of the formal punishment – another of the variables traditionally associated with compliance with rules – is the aspect that underpins many of the legislative reforms that are carried out in an attempt to encourage compliance with the rules by making the corresponding penalties harsher and extending the scope of criminal law. Although there may be less of a discrepancy between real and perceived severity when the former has been communicated effectively, its influence on behaviour is usually limited to the subjective component of same, in view of the low level of knowledge among citizens in general of the rules and the formal penalties imposed for breaking them. And although the impact of this variable on behaviour requires that there first be a perceived risk of being caught if one breaks the rules, evaluating the perceived severity would enable us to analyse its influence on driver behaviour, assess the effectiveness of communication strategies aimed at citizens, and justify the need to continue (or otherwise) developing public policies based on making penalties tougher as a means of encouraging compliance and reducing the rate of traffic accidents.

A simple way to do this would be to ask the participants which, from among a series of potential formal penalties, they believe to be the maximum that could be imposed for breaking each of the rules prohibiting the risky behaviours evaluated in the study.

## 6. Support for public measures

When evaluating the level of support for the legal application of certain road safety measures, it would be both highly interesting and very useful if reference were made to specific measures that could be applied to each of the most frequently used modes of transport that, to a varying extent, the participants are asked about in the survey (namely, cars, motorcycles and bicycles, as well as travelling as a pedestrian).

With regard to the personal evaluation of rules and penalties, and although the survey only asks about those related to driving under the influence of alcohol, speeding, and mobile phone use, the statements presented in the items refer to both driving cars and riding two-wheeled vehicles. This makes it possible to obtain overall results for these items, without the need to expand the evaluation tool.

However, we should also make some observations with regard to the way in which these aspects are evaluated in the survey. Firstly, we must bear in mind that, without first measuring the participants' actual knowledge of a rule, we cannot assume that their knowledge is extensive. Consequently, the evaluations carried out via the items in which the participants are asked whether the rules should be stricter only reflect the participants' agreement or disagreement with what they believe the rules to be; in turn, this implies that their responses could change if all of the relevant information or knowledge were made available to them. Secondly, the survey also fails to provide a response option that reflects the opinion of those who think the rules are adequate, thereby forcing them to select the "Disagree" option, which is the same response as those who think the opposite to the assertion made in the statement in question (i.e. those who believe that the rules should be less strict). We therefore propose that the survey evaluate the level of support for the rules by directly asking the participants if they think that the limits stipulated in said rules, in relation to each thematic area, should be stricter, less strict, or are adequate in their current form. With regard to the rules related to speed limits, for example, a more adequate and specific way of conducting the evaluation would be to ask the participants whether they think they should be allowed to drive faster, whether the speed limits should be stricter, or whether the speed limits are adequate in their current form. We propose using this same strategy to evaluate all of the rules included in the survey.

Additionally, the item asking the participants whether the penalties imposed for breaking the rules are too strict suffers from an almost identical problem: in order to be able to evaluate the level of support among citizens for these formal penalties, it would first be necessary to determine the true extent of their knowledge of the rules in question; or, if the evaluation is based on their perceived knowledge, it would be necessary to present all of the potential response options, which would then enable all of the participants to respond to the question.

Below, table 5.1.1 presents a summary of the suggestions for improvement that we have proposed for future editions of the ESRA, as discussed in this section.

**Table 5.1.1**  
Summary of suggestions for improvement

Construct	Suggestions for improvement
<b>1. Self-declared road behaviours</b>	Reduce the number of risky behaviours for each thematic area.
	Maintain the operationalisation of each risky road behaviour when asking about other aspects throughout the survey.
<b>2. Acceptance</b>	Evaluate the prescriptive norm.
	Evaluate the moral judgement of the norm.
	Include the evaluation of these aspects for other modes of transport besides cars.
<b>3. Attitudes</b>	Expand the items in order to evaluate the descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions for all of the thematic areas and modes of transport included in the survey.
<b>4. Perceived accident risk</b>	Evaluate the perceived risk of accidents involving other vehicles besides cars.

Construct	Suggestions for improvement
5. Application of rules and penalties	Evaluate the perceived likelihood of checks while using other modes of transport besides cars.
	Evaluate perceived severity.
6. Support for policy measures	Evaluate the assessment of rules and penalties separately.
	Add the response option "I think they are adequate".

## 5.2. Proposal of new indicators

The large amount of information gathered via the ESRA makes it possible to conduct a detailed evaluation of risky behaviours and the attitudes towards them, with regard to some of the modes of transport most frequently used by citizens in their habitual journeys. In many cases, this enables a comparison over time for those issues that have been evaluated in a similar way in both editions of the study. However, the evaluation tool lacks indicators related to uses and attitudes regarding other modes of transport that are proliferating in our cities, beyond those that, with regard to the level of interest in and perceived benefits ascribed to the use of autonomous and semi-autonomous cars, are currently included in the survey.

Additionally, we should not lose sight of the fact that one of the fundamental objectives of these studies is to obtain empirical data that can serve as a basis for the design and application of public policies intended to prevent accidents. In this respect, the DGT's annual reports containing figures for the rate of traffic accidents in Spain are a valuable source of information that make it possible to map the country's current needs with regard to road safety. For this reason, it is also necessary to review the thematic areas that have been evaluated to date in the form of risky behaviours, so that we can determine, based on the analysis of the corresponding needs identified in Spain, which of the other aspects not yet addressed should also be included in the studies, along with the rest of the indicators that are already subject to evaluation.

As stated in the previous paragraph, for the most part the ESRA focuses on analysing the participants' behaviour and attitudes in relation to certain risky behaviours that, with varying levels of frequency, citizens may engage in while driving a car. Within the context of Spain, it is appropriate to carry out a detailed analysis of all of the psychosocial variables these studies include with regard to this particular mode of transport, as cars are involved in the highest percentage of traffic accidents every year and are the mode of transport with the greatest number of deaths on interurban roads (DGT, 2020, 2021). However, there are other forms of transport that, for various reasons (e.g. because of the danger they pose, or because they have the highest fatality rate in environments where the highest percentage of accidents with victims occur (such as urban areas), or because they are new forms of mobility that have not yet been sufficiently analysed), require a more extensive and exhaustive evaluation in subsequent editions of the ESRA or in future studies conducted in Spain on the subject of mobility and road safety. All of these forms of transport, categorised by thematic area, are presented below.

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## 1. Vulnerable users

Vulnerable users are those who travel on foot, use two-wheeled vehicles such as bicycles or mopeds/motorcycles, or use personal mobility vehicles (hereinafter, PMVs). Together, these modes of transport were involved in 80% of fatal accidents that occurred on urban roads in 2020 (DGT, 2021), and are the focus of this first section.

### *a) Pedestrians: collisions*

Collisions involving pedestrians are the most frequent type of fatal accident to occur on urban roads in Spain. Without taking into account the specific type of road, they are also the third most common type of fatal accident, accounting for 22% of all fatalities in 2019 and 19% in 2020, according to the latest reports published on the subject by the DGT (2020, 2021).

With regard to travel on foot, the ESRA includes items to evaluate its frequency of use as a mode of transport, the self-reported frequency of certain risky behaviours (such as wearing headphones while walking, reading messages or checking social media on a mobile phone, and crossing the road at a red light or in places other than pedestrian crossings), and the level of support for measures to reduce risky behaviours (e.g. the use of reflective material under conditions of low visibility, and a ban on using headphones while walking). As it is one of the most frequently used modes of transport, and in view of the aforementioned data on the associated accident rate, a more exhaustive analysis is required in order to be able to identify the factors – both those relating to the pedestrians themselves, and those relating to the parties who collide with them – that contribute to accidents involving pedestrians.

In the same way that the ESRA evaluates certain aspects that are considered relevant with regard to risky behaviours while driving vehicles, in the case of pedestrians it is necessary to gather more information, not only in relation to self-declared behaviours while travelling on foot, but also regarding the prescriptive norm and moral judgements made in relation to same, as well as the descriptive norm, beliefs and attitudes, self-efficacy, habits and intentions, and the perception of risk with regard to those circumstances that could increase the likelihood of being involved in a collision while travelling on foot. As well as including those factors that depend exclusively on the behaviour of the pedestrian themselves, it would also be useful to gather information regarding behaviours exhibited by drivers on urban roads that could increase the likelihood of such accidents occurring. For example (and in addition to those that are already included, such as speeding, fatigue, driving under the influence of alcohol or other drugs, and those relating to distractions such as mobile phone use), we propose adding other factors that also constitute risks, especially in urban areas, such as not respecting pedestrian crossings, non-compliance with traffic signs, and failure to indicate when turning.

### *b) Motorcycles: risky behaviours and protective equipment*

Motorcycles are the most dangerous mode of transport, and in terms of traffic accidents, they have a higher risk of death than travelling by car, bicycle, bus or on foot (Gutiérrez, 2020). However, in view of the advantages they offer users in terms of mobility

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(reduced journey time, ease of parking, and a lower economic cost in terms of acquisition and maintenance), the use of motorcycles has increased over time, as have the rates of fatal accidents and hospitalisations associated with this mode of transport over the last 10 years (DGT, 2020).

The current version of the ESRA evaluates those self-declared behaviours on the part of motorcyclists that are linked to the most common contributory factors in traffic accidents, such as riding under the influence of alcohol, speeding, and mobile phone use. It also evaluates the frequency of riding without a helmet. However, the survey lacks indicators that would make it possible to collect the information required to achieve the fundamental objectives of these studies with regard to the use of this particular mode of transport. Such indicators would include the perceived risk associated with these self-declared behaviours, the descriptive norm, beliefs and attitudes, self-efficacy, habits and intentions regarding the behaviours in question, and the perceived likelihood of being caught during a check while riding a motorcycle.

A more complete approach is therefore required with regard to the attitudes towards risky behaviours and use of protective equipment on the part of Spanish motorcyclists, in order to enable a more detailed analysis of the influence wielded by all of these factors on compliance with traffic rules and safe motorcycle use (ideally, such an analysis would be of a similar nature to those we can currently conduct in relation to car use). Moreover, taking into account the fact that motorcycles, rather than mopeds, are at the greatest risk of being involved in an accident where there are victims, it is necessary to determine whether, when analysing all of these aspects for the users in question, it would be useful to differentiate the results by type of vehicle (something that the items included in the current survey do not allow).

### *c) Bicycles: risky behaviours and protective equipment*

88

The percentage of cyclists who fall victim to accidents is higher than the equivalent rates for moped riders and users of PMVs, on both urban and interurban roads. This places cyclists third on the list of vulnerable users (DGT, 2021). It would, therefore, be highly relevant to conduct an analysis of behaviours and attitudes in relation to risky behaviours on the part of cyclists, along with their use of protective equipment. However, like the other modes of transport in the “vulnerable users” category, not enough consideration is given to this group in the ESRA.

As indicated in the report recently published in the DGT journal *Tráfico y Seguridad Vial* (“Traffic and Road Safety”; Nicolás-Fraile, 2021), cyclists should know and respect certain traffic rules, as all other road users are expected to do. Among these rules, those related to riding without a helmet (in Spain, helmets are mandatory for all cyclists when riding on interurban roads, regardless of age, and are highly recommended when riding on urban roads), riding under the influence of alcohol, wearing headphones, mobile phone use, and riding outside of a cycle lane are all addressed in the ESRA, albeit briefly. Although the participants are asked about the frequency with which they engage in such behaviours, as with moped/motorcycle riders no information is gathered in relation to other considerations, such as their perception of how dangerous these behaviours are or how often other cyclists engage in such behaviours, or in relation to other aspects concerning beliefs, attitudes, self-efficacy, habits and

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intentions with regard to said behaviours. We therefore recommend expanding the range of indicators in order to evaluate these psychosocial factors, which will in turn enable a deeper analysis of the predictors for safe and risky bicycle use.

#### *d) PMVs: electric scooters*

Without a doubt, in recent years our cities have experienced a surge in new forms of transport that are becoming an increasingly more common sight on our streets, where they circulate alongside cars, motorcycles, bicycles, pedestrians and all of the other more traditional modes of transport. Among these new forms of transport, PMVs and electric scooters in particular are acquiring more and more new users every year.

As indicated in the study carried out in April 2021 by the Cities for Cycles Network, 8% of the Spanish population (of a total of 20,607,000 citizens aged between 16 and 65) already use electric scooters for urban journeys, while around 1.5 million Spaniards are considered potential users due to the fact that they are interested in acquiring or using an electric scooter in the near future. The majority of electric scooter users have changed their mode of transport, switching to scooters as an alternative to walking, using public transport or even using a private vehicle for their habitual journeys. Additionally, the increase in the number of electric scooters circulating in cities alongside pedestrians, cars and other vehicles has required regulations to govern their use; to which end, the DGT has drawn up and published a set of regulations that enter into effect on 2 January 2021. These regulations stipulate the roads that PMVs can and cannot be used on, the obligation on the part of users to comply with the traffic rules relating to speed limits for such vehicles, the requirement to wear a helmet (from September 2021), and the prohibition on using these vehicles while over the drink-drive limit, under the influence of other drugs, wearing headphones, and/or using mobile phones, among other stipulations.

In view of the above, we propose including this new and growing mode of transport in future studies on mobility and road safety, as this will enable a detailed analysis not only of the level of acceptance and the advantages and disadvantages of PMVs in the eyes of the general public, but also of the risky behaviours engaged in, and the attitudes to same, by the users of such vehicles.

## 2. Shared vehicles

Vehicle sharing, in which users have access to a shared vehicle for a limited period of time, is another new and increasingly popular form of mobility in urban areas. Of particular note among the options now available in many Spanish cities are car-sharing and motorcycle-sharing, along with other services that enable the shared use of bicycles and electric scooters.

With regard to car-sharing in particular, in which cars are hired for short periods of time, the advantages it offers as an alternative to the use of private vehicles in urban areas have led organisations such as the DGT to promote this new form of sustainable mobility as a complement to urban public transport systems. These advantages include environmental sustainability, by virtue of reducing atmospheric pollution, given that the

fleets operated by the providers of these services are comprised of electric or hybrid cars; economic savings compared to buying and maintaining a private car, for those who only use a car occasionally and primarily in urban areas; and the streamlining of vehicle use, in view of the fact that drivers pay to use the vehicle on a per-minute basis.

The advantages of a motorcycle-sharing scheme are similar to those of car-sharing, with the difference being that although (unlike cars) they do not allow more than two people to travel together, this is outweighed by the fact that they help to reduce the traffic density and pollution levels within cities, given that the majority of the companies offering this service use a fleet of electric vehicles.

Thus, taking into account all of the benefits offered by these new (and fundamentally urban) forms of mobility at the environmental, personal and social level, ascertaining the current and future trends regarding use of these vehicles and measuring their levels of acceptance among citizens could contribute to the design of strategies and campaigns to promote positive attitudes towards them and encourage their use by the public.

### 3. Other modes of transport: vans, lorries and buses

Lastly, it would also be beneficial – and necessary – to conduct a complete analysis of the psychosocial risk factors and protective factors associated with the behaviours and attitudes among all users in relation to the different modes of transport they habitually use. For this reason, we propose that the psychosocial indicators used in the ESRA to evaluate these variables in relation to journeys on foot or by car or two-wheeled vehicle also be extended to include other modes of transport – namely, vans, lorries and buses – that, despite coexisting alongside all of the others, are often under-represented in the majority of studies on road safety.

We therefore propose to include indicators that are aimed at the users of these other modes of transport and are designed to gather information on self-reported risky behaviours related to the main thematic areas addressed (speed, distractions caused by mobile phone use, driving under the influence of alcohol and other drugs, fatigue, and seatbelt use), attitudes towards said behaviours, and the perceived risk of these behaviours as a cause of traffic accidents. These indicators may form part of an ESRA study or future studies on road safety carried out in Spain.

By way of summary, table 5.2.1 presents the proposed new indicators for inclusion in future editions of the ESRA or other, similar studies.

**Table 5.2.1**

Summary of the proposed new indicators

Modes of transport	Proposed indicators
<b>1. Vulnerable users</b>	<b>Pedestrians: collisions</b> - Evaluate the prescriptive norm and moral judgement, descriptive norm, beliefs and attitudes, self-efficacy, habits and intentions, and perceived risk of collision. - Expand the scope of risky behaviour for drivers on urban roads to include the risk of pedestrian collisions (e.g. respect for pedestrian crossings, traffic signs, indicating when turning, etc.).
	<b>Motorcycles</b> - Evaluate the perception of accident risk. - Evaluate attitudinal aspects: prescriptive norm and moral judgement, descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions. - Evaluate the perceived likelihood of being caught during a check while riding a motorcycle.
	<b>Bicycles</b> - Evaluate the perception of accident risk. - Evaluate attitudinal aspects: prescriptive norm and moral judgement, descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions. - Evaluate the perceived likelihood of being caught during a check while riding a bicycle.
	<b>PMVs: electric scooters</b> - Include risky behaviours related to use of this mode of transport. - Evaluate the rest of the aspects included in the survey in relation to the perception of accident risk and in relation to the attitudinal indicators (prescriptive norm and moral judgement, descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions).
<b>2. Shared vehicles</b>	<b>Car-sharing</b> - Frequency of use. - Attitudes towards the advantages/disadvantages of car-sharing (descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions).
	<b>Motorcycle-sharing</b> - Frequency of use. - Attitudes towards the advantages/disadvantages of motorcycle-sharing (descriptive norm, beliefs and attitudes, self-efficacy, and habits and intentions).
<b>3. Other modes of transport</b>	<b>Vans</b> - Include risky behaviours when using this mode of transport, in relation to the thematic areas already included in the survey (speed, consumption of alcohol and other drugs, fatigue, distractions). - Evaluate all of the aspects included in the survey (self-declared behaviours, attitudes, perception of accident risk, application of rules and penalties, and support for policy measures).
	<b>Lorries</b> - Include risky behaviours when using this mode of transport, in relation to the thematic areas already included in the survey (speed, consumption of alcohol and other drugs, fatigue, distractions). - Evaluate all of the aspects included in the survey (self-declared behaviours, attitudes, perception of accident risk, application of rules and penalties, and support for policy measures).
	<b>Buses</b> - Include risky behaviours when using this mode of transport, in relation to the thematic areas already included in the survey (speed, consumption of alcohol and other drugs, fatigue, distractions). - Evaluate all of the aspects included in the survey (self-declared behaviours, attitudes, perception of accident risk, application of rules and penalties, and support for policy measures).



# 6

## Conclusions and future prospects

One of the fundamental objectives that has motivated this study is to gain an understanding, by reviewing the results obtained in the different editions of the ESRA (accessed through the published reports), of the behaviours and attitudes related to road safety on the part of Spanish road users and to compare them to those of road users in other countries, particularly in Latin America and Europe, so that we can assess and identify strengths and areas for improvement in this regard. To this end, the first part of this discussion focuses on the identification of aspects where Spain stands out positively, as well as aspects where public policies related to road safety still need to make an impact.

According to the statistics on road accidents presented in the most recent results preview published by the DGT (2021), **Spain has Europe's fourth-lowest fatality rate for traffic accidents** (29 deaths per million inhabitants, which is significantly below the European average of 49 deaths per million inhabitants). According to the data collected in the most recent edition of the survey (ESRA 2), the highest percentage of traffic accidents involving hospitalisation suffered by the participants in the last year were those involving cars (and in particular, car drivers). The lowest percentage of accidents reported in the survey were those suffered by pedestrians.

With regard to the most frequent contributory circumstances in accidents where there are victims and fatal accidents in Spain occurring in 2019 and 2020 (DGT, 2020, 2021), **Spain is below the European average in terms of engaging in risky driving behaviours**, such as distractions related to mobile phone use (e.g. talking while holding a mobile phone, reading messages or checking social media while driving, and driving at inappropriate speeds). In general, the Spanish participants mostly agree with certain beliefs regarding the danger posed by speeding, although their percentage of agreement falls when they are asked for their views on the increased risk of an accident when increasing one's speed by 10 km/h. Likewise, there is a low level of acceptance among the Spanish participants for speeding; higher levels of acceptance are only recorded in relation to exceeding the limit by 10 km/h (ESRA 1) or speeding on motorways/dual carriageways, as opposed to speeding on conventional or urban roads (ESRA 2). These results are consistent with both the perceptions of risk ascribed to these factors by the Spanish participants as

potential causes of accidents, and the perceived likelihood of being caught by a police or radar-based check for speeding or mobile phone use during a habitual journey. In all cases, these perceptions are higher in Spain.

For their part, and with regard to risk factors related to speed and distractions while driving, the Latin American countries on average (and Colombia in the second edition of the survey) break the speed limits less frequently on all types of road compared to Spanish drivers (and, therefore, other European drivers). However, the frequency with which they engage in the various types of mobile phone use evaluated are much higher than the equivalent figures for Spain and the European average.

The only risk factor where the Spanish figure is slightly higher than the average for Europe and the LATAM<sup>2</sup> group is drink-driving. However, driving after consuming alcohol is, in turn, the behaviour that is perceived as the most frequent cause of car accidents in Spain, and the perceived likelihood among Spanish drivers of being subjected to an alcohol check during a habitual journey is also higher than the average for the EUROPE<sup>1</sup> group. Spain also has higher percentages for other behaviours, such as the consumption of drugs or medications that could affect one's driving ability. However, we must remember that the self-reported frequencies for these behaviours are significantly lower than those reported for other behaviours, such as speeding or distractions while driving, and particularly that of driving after consuming illegal drugs.

Regarding other modes of transport, **the figures corresponding to the self-reported breakage of speed limits in Spain while riding a moped/motorcycle are lower than those for driving a car, and also lower than the European average. Helmet use is also above the average for EUROPE<sup>1</sup>, and the difference is even greater if we compare the Spanish figures with the average for the Latin American countries and Colombia in ESRA 2, where the frequency of helmet use is much lower.**

With regard to other risky behaviours while travelling by motorcycle, the results for Spain are comparable to those for EUROPE<sup>1</sup>, particularly in relation to the frequency of mobile phone use for reading messages or checking social media, or riding while potentially being over the drink-drive limit. In the latter case, Colombia presents an exception, as the percentage of Colombian participants who ride after consuming alcohol is less than half of the equivalent figure for Spain. It is notable that, in general, the frequency of riding a moped/motorcycle while under the influence of alcohol is higher than the self-reported frequency of such behaviour when driving a car, not only in Spain but also in EUROPE<sup>1</sup> and the Latin American countries. This is especially surprising in view of the fact that motorcycles are considered by the participants to be the least safe habitual mode of transport, compared to travel on foot, by car (as either a driver or passenger), bicycle or public transport. However, we do not know whether this decision is influenced by other factors, such as those related to the perceived threat of formal punishment, as the survey does not currently include indicators to evaluate the perceived risk of being subjected to police checks while riding a motorcycle; nonetheless, it is an area that requires strengthening of the relevant public policies, in order to prevent the use of these modes of transport after consuming alcohol.

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Lastly, the results of the ESRA have demonstrated that, with regard to pedestrians, the vast majority of the participants admit to frequently engaging in risky behaviours such as crossing the road at places other than a nearby pedestrian crossing, crossing while the pedestrian signal is red, or walking while reading messages or checking social media on a mobile phone. Moreover, in all cases the frequency of such behaviour is higher than the European average. Additionally (and with a lower frequency than Colombia, but a higher frequency than EUROPE<sup>1</sup>), approximately 50% of the Spanish sample listen to music on headphones while walking: a behaviour that could increase the risk of being involved in a collision. Consequently, the risky behaviours engaged in by Spanish pedestrians represent another area in which we recommend strengthening the relevant public policies designed to promote road safety.

Furthermore, and without losing sight of the fact that all of the issues analysed in this report, and the conclusions drawn in relation thereto, are based on the results presented in the publications that have been prepared and published following the administration of the ESRA, it is necessary to reflect on both the advantages and weaknesses of these studies.

Putting to one side the suggestions made regarding changes to the measurement of certain indicators included in the survey (and which may lack specificity for the purpose of evaluating some of the self-declared risky behaviours and other attitudinal variables), and the proposal to include new indicators in future editions, with a view to carrying out a more complete evaluation of the issues and new modes of transport that have not yet been addressed, it is undoubtedly true that participation in the ESRA initiative brings with it a number of significant advantages. In particular, it provides the opportunity to obtain valuable information on indicators linked to the human factor, which can then be used as risk and protection variables to analyse the influence of this factor on the accident rate. Moreover, the large number of participating countries also makes it possible to identify the aspects where there are more and fewer contrasts between countries, and to ascertain which of them in particular, for reasons of proximity or cultural similarities, may be more useful for conducting an analysis of the comparative effectiveness of particular policies in the area of road safety.

However, evaluating behaviour using a survey-based methodology also has certain limitations. Firstly, it is obvious that the participants' responses may be influenced by social-desirability bias, although as the survey is administered online it is likely that the effects of this factor will be smaller than we might observe in a survey administered via interview. Secondly, and with regard to the quality of the data, we cannot assume that the indicators used to evaluate the self-reported frequency of certain behaviours are entirely equivalent to the objective road behaviours that citizens demonstrate on a habitual basis. The information provided by the participants may be less reliable owing to the inherent difficulty we face when communicating, with precision, our past behaviours. Often, habit and the automation of certain behaviours can hinder people's ability to access information related to their own performance. As a result, they may turn to other sources of information when giving their response; sources that may be based, for example, on what they consider to be more or less appropriate. They may even unintentionally overestimate the extent to which they perform certain behaviours correctly, despite the fact that in reality they do not perform said behaviours as correctly as they believe or would like.

It would also be useful to access the data that was collected in Spain, in order to be able to conduct a more exhaustive analysis at the national level, bearing in mind that the publications

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that are currently accessible for the ESRA prioritise, above all, the comparison of results between groups of countries organised by geographical area. Although these publications also include national data, information is not always provided for each and every one of the aspects evaluated in the survey for each country, and nor are they taken into account on an individual basis in the majority of the advanced analyses that are conducted using the data in question for each of the thematic areas evaluated. We have also identified errors in the information given for the same aspects in different reports, and there are no thematic reports specifically dedicated to the indicators for the attitudes evaluated, despite the fact that the acronym “ESRA” refers to that very term. Nor is there (at least for now) a general report on the results for the last edition of the study that includes information on each and every one of the participating countries and would enable a comparison of results by entire group.

For these reasons, access to national data is vital, as it would allow us to analyse the predictive weight of all of the attitudinal constructs that have been evaluated in relation to the risky behaviours self-reported by the Spanish participants. As stated above, at present only partial results are available, from which we can draw general conclusions in line with those discussed at the beginning. However, these partial results do not allow us to determine the influence of each of the aspects evaluated in the survey in the way we would like, or in the way that each country may require in accordance with their needs and objectives. Only through modelling can we identify the psychosocial risk factors and protective factors for those road behaviours that Spanish citizens engage in, to a greater or lesser extent, and which are directly related to the accident rate. Moreover, this more detailed analysis of the data could also be used, on the one hand, to identify relevant factors to take into account when designing new strategies; and on the other, to lend support to those that have already been incorporated into the public policies implemented in Spain in the area of road safety.

In terms of final observations, and despite the fact that, as is often the case, all of the studies have areas for improvement (some of which have already been discussed in this section), after carrying out a thorough review of the ESRA results obtained prior to the preparation of this report, we can affirm that scientific foresight brings undeniable benefits with regard to road safety and the prevention of accidents with victims. In particular, and to complement the findings that are made with these types of designs (in which the evaluations essentially relate to the subjective perceptions of the participants), it would be beneficial if we also had access to empirical evidence for the behaviours that Spanish drivers and other Spanish road users objectively demonstrate on a habitual basis. For example, it would be useful to evaluate the actual levels of compliance and non-compliance with the speed limits, through the use of devices installed in roads that record such information. A representative survey of behaviour related to distractions and alcohol consumption, on different roads, could also be conducted. These approaches would make it possible to, firstly, analyse the potential discrepancies between the actual levels of compliance and non-compliance compared to those evaluated using surveys such as the ESRA, in order to determine the accuracy of the information that is usually provided by participants through these types of research methodologies. Secondly, and with regard to the factors deterring non-compliance with the rules, an analysis of particular discrepancies between perceived and actual likelihood could be helpful in determining whether some of them could play a useful preventative role.

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For example, it would be helpful to be able to compare the perceived likelihood, on the part of drivers, of being caught during a police check with the actual likelihood of being subjected to such a check, based on the allocation of police resources and the actual frequency with which checks have been carried out during the same period of time.

For their part, longitudinal studies using the same sample of participants could also play a very useful role by providing a more adequate way to evaluate potential changes in drivers' attitudes and behaviour over time. Taking into account the fact that, to date, each edition of the ESRA has used different samples, some of the phenomena identified (for example, the increase between one edition and the next with regard to the number of self-reported violations related to driving under the influence of alcohol) may be due, at least in part, to the fact that each study had different participants, rather than a systematic increase in this behaviour on the part of drivers over time.

Lastly, although studies that use a survey-based methodology may be very helpful in describing the phenomena that are the focus of the study, it is necessary to go a step further in the design of experimental or quasi-experimental studies that make it possible to analyse the potential causal relationships between certain psychosocial and attitudinal factors and risky road behaviour.

Ultimately, there is still a long way to go with regard to accident prevention and road safety at the regional, national and international level, and the development of scientific research initiatives that provide information on the risk factors and protective factors arising from the human component is the best means of achieving this aim.



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