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<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>4</td>
</tr>
<tr>
<td>I CONTEXT</td>
<td>5</td>
</tr>
<tr>
<td>II ARE ROADS SAFE?</td>
<td>6</td>
</tr>
<tr>
<td>III RISKY BEHAVIOURS</td>
<td></td>
</tr>
<tr>
<td>SPEEDING</td>
<td>8</td>
</tr>
<tr>
<td>FACTORS THAT IMPAIR DRIVING:</td>
<td></td>
</tr>
<tr>
<td>ALCOHOL, MEDICATION AND FATIGUE</td>
<td>9</td>
</tr>
<tr>
<td>DRIVING, CYCLING AND PEDESTRIAN HABITS</td>
<td>10</td>
</tr>
<tr>
<td>IV MEASURES TO IMPROVE SAFETY</td>
<td>11</td>
</tr>
<tr>
<td>V CHANGING MODES OF TRANSPORT</td>
<td>13</td>
</tr>
<tr>
<td>CONCLUSIONS</td>
<td>14</td>
</tr>
</tbody>
</table>
**INTRODUCTION**

**SARTRE**

Social Attitudes to Road Traffic Risk in Europe is a European wide survey, started in 1991, that collects information on mobility, risk perceptions, attitudes, behaviours and experiences on our roads.

Previously focused on car drivers, this latest survey, SARTRE 4, has been expanded to include car drivers, powered two wheelers and other road users such as pedestrians, cyclists and public transport users. 21,280 people were surveyed in 19 countries through face-to-face surveys.

The results give a valuable insight into public perception of road safety and the opportunity to compare behaviours and experiences in different countries.

Some national characteristics and challenges are discussed in the full SARTRE 4 report that can be downloaded at [http://www.attitudes-roadsafety.eu](http://www.attitudes-roadsafety.eu). This information can help policy-makers to identify measures that could improve safety for citizens through European or National road safety programmes.

This summary report aims to give an overview of some of the key findings and conclusions from SARTRE 4.
Road deaths in Europe

In 2010, 30,926 people died on the roads of the European Union – down by 43% since 2000 but still short of the 50% reduction targeted by the European Commission.

The type of fatalities varies considerably per country – for example 29% in Cyprus involve powered two wheelers vs 1% in Estonia, 26% cyclists in Netherlands vs 2% in Greece or Spain, 50% pedestrians in Estonia vs 13% in Sweden. Vulnerability is one factor behind the at-times high percentage of powered two wheelers, pedestrians and cyclists. These road users do not benefit from the same level of protection as car drivers. Excluding car drivers, powered two wheelers and pedestrians represent the highest percentage of victims of accidents. A comparison between countries is difficult due to varying patterns of use of different modes of transport and mobility habits.

Self-reported accidents

We explored the level of self-reported accidents among different types of road users. Despite a reduction in the number of road deaths over the past decade

- Car drivers declare being involved in as many injury and damage-only accidents as 8 years ago.
- 11% of powered two wheelers reported an injury accident within the last 3 years, with a higher proportion in southern European countries.
- 7% of cyclists reported an accident within the last 3 years, considerably higher in countries with large cycling traffic volumes like the Netherlands.
- 11.8% of other road users reported an accident over the last 3 years – ranging from 1.5% in Hungary to 27.3% in Cyprus.
Sartre 4 set out to compare the attitudes of different road users – car drivers, powered two wheelers, pedestrians, cyclists and public transport users. Road users share the same environment but they have different needs, characteristics and attitudes that influence behaviour.

People rarely fall into one single category of road users and often use several modes of transport, sometimes within the same journey.

People were asked to give their opinion about road safety. Only 60% of car drivers feel very or fairly safe, and the number is even lower among powered two wheelers and other road users.

More people considered roads safe in countries like Netherlands, Sweden, Germany and Finland (countries with low accident rates). The worst evaluation of road safety came from Greece, Poland, Hungary and Slovenia.
What modes of transport are risky?
Different types of road users share similar views about particular modes of transport. Motorcycling is perceived as the most risky in every country with public transport and walking considered the least risky.

Walking
Pedestrians are least satisfied with the road environment (sidewalks, lighting, pavements) in some countries, such as Greece, Cyprus, Hungary and also Italy, Poland and Estonia. Satisfaction of pedestrians with road infrastructure increases with town size, possibly due to better pedestrian facilities in bigger cities.

Cycling
There is a huge variation in the number of people cycling per capita from country to country. Cyclists’ satisfaction with safety is higher in countries with higher cycling traffic volumes such as the Netherlands, Sweden, Finland and Germany and lower in countries with low cycling traffic volumes like Cyprus, Estonia and Greece. Cycle paths play an important role in satisfaction with the safety culture of cycling.
Attitudes to speeding

Speed is a key risk on our roads. Faster driving speeds mean less time to take evasive action and shorter braking distances, leading to higher impact collisions, usually with more severe or fatal injuries. Car drivers in 9 countries believe that speeding is less common than seven years ago (SARTRE 3 survey). But drivers (both car and powered two wheelers) in Europe still show a too-positive attitude to speeding – ‘more pleasant’, ‘arrive quicker’. A majority do not believe that it could result in an accident – a trend that is more pronounced among young and male drivers.

Driving behaviour is often influenced by the perception of how others behave on the roads. The % of car drivers and powered two wheelers who consider that others do not respect speed limits is high – 59% and 51% respectively for speeding in built-up areas.

• Over half of car drivers felt others speed on motorways and 38% in residential areas.
• Around 70% of PTW drivers perceived a high proportion of riders speeding on motorways, major urban and country roads, and 41% speeding in built-up areas.

Speed enforcement

Drivers’ perception of enforcement is more important than the actual level of enforcement and so is most effective when highly visible and well publicised. Car drivers and powered two wheelers see the risk of being stopped by the police for speeding as low. More than half of car drivers believed it unlikely that they would be stopped and only 19% of powered two wheelers thought they were likely to be checked.

25% of car drivers and 10% of powered two wheelers have had a speeding ticket in the last three years. Drivers in the Netherlands were most likely to have received a fine, and those in Greece least likely. Overall, more men than women were penalised.

Speeding fines/penalties were most frequent among drivers aged 25-34. A higher percentage of drivers of cars and powered two wheelers with more powerful engines (cars bigger than 1300cc and motorcycles of more than 250cc) were fined for speeding.

Countries with a high number/intensity of speed cameras – such as Austria, Belgium, France, Germany, the Netherlands – reported higher levels of speed enforcement.
Alcohol
Driving under the influence of alcohol or drugs is a factor in nearly 1 in 4 crashes. Reducing drink-driving has long been a focus in Europe. Road safety policies have been successful as most Europeans recognise the risk of drink-driving. However, some of the most vulnerable of drivers – powered two wheelers – downplay the impact of alcohol on road accidents compared to other factors. 15% of car drivers report having driven over the legal limit in the last month. Male car drivers are 2.6 times more likely to drink-drive than females. 28% of those who drive over the limit are aged 25-34 years. Drink-driving is less prevalent among powered two wheelers – but 23% still drive with even a small amount of alcohol. Drink-drive behaviour is more frequent in southern countries. The impact of alcohol on powered two wheelers is even greater considering the extra riding skills required to operate a motorcycle.

On average 88% of cyclists agree that drink cycling is dangerous. But 1 in 4 agree that you can drink and cycle if you do it carefully (varying from 1 in 2 in countries like Netherlands, Sweden and Estonia to less than 1 in 10 in others like Greece, Cyprus, Slovenia, Spain and Hungary).

Drink-driving enforcement
Drivers believe that they are unlikely to be stopped for drink-driving. Most (59%) have never been tested for alcohol in the last 3 years. More than 80% of powered two wheelers in Italy, Belgium, France and Slovenia have never been tested checked for alcohol, yet have the highest rates of drink-driving behaviours. Roadside alcohol tests are rare in most countries, and, when carried out, are done near at-risk places and not widespread.

The countries in the SARTRE 4 survey have three different blood alcohol content (BAC) levels – 0 (Czech Republic and Hungary), 0.2g/l which is the equivalent of a single unit of alcohol (Estonia, Poland, Sweden and Serbia) and 0.5g/l.

Medication
Driving under the influence of medication is not considered a critical issue by car drivers and powered two wheelers. 10% sometimes or often take medication when driving, with the highest levels in France, Netherlands, Italy, Spain and Belgium.

Most drivers declare that they do not drive having taken medication, but some people are still not aware that medication can decrease driving abilities.

Fatigue
Driving whilst tired is considered to contribute to 15-20% of traffic accidents. It impairs driver alertness and reaction times, especially in night driving.

26.3% car drivers drive when ‘sometimes’ too tired to drive, and 52% reported having taken a break due to fatigue in the last 12 months.

Coping strategies vary – from talking to passenger [79%], opening a window/lowering heating or increasing air conditioning [78%], turning on radio/up volume [69%], 2 out of 3 drivers report pulling over and taking a break [66%], but 34% of tired drivers still continue to drive.

Most powered two wheelers never or rarely drive when feeling too tired.
III - RISKY BEHAVIOURS
DRIVING, CYCLING AND PEDESTRIAN HABITS

Car drivers
Driving styles vary across European countries, with some drivers more likely to make risky manoeuvres. In general, behaviours such as driving through amber lights, following the car in front too closely or using handheld mobile phones, have risen since the last survey in 2003.

- 53.1% sometimes drive through amber lights (+3.5%)
- 39.4% sometimes follow too closely the car in front (+5.9%)
- 33.4% sometimes make/answer a handheld mobile phone.

Rates vary across countries - 62.5% in Sweden where the practice is not yet prohibited, but is less than 15% in the Netherlands where there are considerable fines.

There has been a slight increase in the frequency of risky driving behaviour in Europe over the past decade. The Netherlands and the Czech Republic show considerable improvement. Spain, the country with the largest reduction in risky driving style, is also the country with the largest reduction in fatalities between 2000-2009.

Powered two wheelers are not a homogeneous group of road users. There are clear differences across countries in terms of demographics, types of motorcycle used, motivations and road behaviour. Four profiles of powered two wheelers were identified through the survey in an attempt to better understand attitudes to risk.

**POWERED TWO WHEELERS PROFILES**

<table>
<thead>
<tr>
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<th>Commuters (C)</th>
<th>Sports riders (S)</th>
<th>Ramblers (R)</th>
<th>Travellers (T)</th>
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<tbody>
<tr>
<td>Austria</td>
<td>20.9%</td>
<td>37.7%</td>
<td>11.3%</td>
<td>30.2%</td>
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<tr>
<td>Belgium</td>
<td>11.3%</td>
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INTEGRATED MEASURE OF A RISKY DRIVING STYLE (DRIVE THROUGH AMBER, FOLLOW TOO CLOSELY, STOP AT PEDESTRIAN CROSSING).

Larger numbers indicate a more risky driving style. Plus and minus signs indicate significant changes in relation to Sartre 3 (t-test, p<.05)

Israel and Serbia are not included in Sartre 3 study

Cyclists
The number of cycling trips is rising, and European countries need to focus more resources on improving bicycle safety in terms of infrastructure and behaviour. 20% sometimes, often or very often cross when the traffic light is red. In countries like Italy, Sweden, Austria more than 30% do.

Over 35% often, very often or always wear reflective clothing, most often in Finland, Ireland and Estonia and least often in France, Greece and Italy. Only 20% of cyclists regularly wear a helmet. In Poland, Hungary or the Netherlands, less than 10% do.

Pedestrians
Pedestrians are the most vulnerable of road users yet at times take risks in their road use behaviour. On average 71% of pedestrians never or rarely cross the road at a red light, but this varies from 45% (Sweden) to 88% in Poland.

Crossing at non-designated locations is widespread. On average only 17% never cross at places other than pedestrian crossings. The vast majority of pedestrians never or rarely wear reflective clothing. Where they do, it is more in northern countries like Sweden, Estonia, Finland and Ireland.

Unsafe or distracted behaviour is more common in urban areas – the number of pedestrians who make or answer a call on a handheld phone while walking ranges from 3% in Hungary to above 45% in Slovenia.

Commuters: Typically scooters or less powerful motorbikes. More than 50% use motorbike all year round. Motivated by mobility: avoiding traffic jams, saving time, easier parking. Safety: lowest number of speed tickets, 95% helmet use but less other protective equipment like jacket, boots. More likely to follow cars too-closely and do last minute overtaking.

Sports riders: High proportion riding powerful motorbikes. Motivated by pleasure, freedom, biking spirit and mobility. Safety: highest number of speed tickets, 90% helmet use and frequently other protective equipment. More risky driving practices such as weaving and overtaking on the right.

Ramblers: Mostly conventional street motorbikes but also sports bikes, often for only part of the year. Motivated more by fun and pleasure of riding. More safety aware - lower number of speed tickets, more conscious of speed in urban areas, high helmet use and lowest % in risky driving practices.

Travellers: Mostly conventional street motorbikes but also sports bikes, often for only part of the year. Motivated more by fun and pleasure of riding. More safety aware - lower number of speed tickets, more helmet use and lowest % in risky driving practices.
Road safety is improved through education/awareness campaigns, in-car devices and enforcement. We explored people’s opinions on a number of road safety policies.

**Combating drink-driving**
Countries surveyed had 3 differing blood alcohol content levels: 0.00g/l, 0.2g/l and 0.5g/l. People living in countries with 0.3g/l do not drink and drive more often than those in countries with a 0 threshold, but people in countries with 0.5g/l limit do drink and drive more frequently.

13% of drivers are in favour of lowering the legal limit and 46% support no alcohol at all. Car drivers in support of a ban on any alcohol when driving have increased in Germany, Belgium, Greece, Italy, Estonia, Ireland, Poland, Austria, Hungary and Spain.

Road users were asked to state their support of devices that could help road safety: alcohol lock (to prevent a car starting if the driver exceeds the legal alcohol limit), fatigue detection device (to warn drivers to stop), black box (to identify what caused an accident) and speed limiting devices (fitted to cars to prevent drivers exceeding the speed limit).

Other road users were more favourable to the use of certain safety devices, followed by car drivers. Powered two wheelers were the least ‘pro safety’ Overall 83% of all road users are in favour of using an alcohol lock.

Differences between countries were very small indicating wide consensus among European road users for an in-vehicle device preventing drink driving.

**Speed reduction**
Attitudes to speed control measures (automatic cameras at red lights, speed surveillance cameras, automatic surveillance between two points) show fairly large variations in levels of public support country to country.

The lowest levels of support are seen in countries that already have a strong deployment of fixed and mobile camera systems for speeding control.

Most road users support four traffic calming measures intended to reduce use/speed of vehicles in urban areas and improve safety. People most in favour are non-drivers, drivers who drive less than 1000km annually, women, people aged over 55 and people in towns of 100,000 or less.

The most accepted measures are the creation of sidewalks for pedestrians and more bicycle lanes.
Toughening penalties

Most road users, excepting powered two wheelers, favour increasing sanctions against those who speed, drink drive, don’t use restraints (seat belts), don’t wear a helmet or use a handheld phone while driving. Raising penalties on drink-driving gained the most support – 80 to 90%.

Countries with high levels of support include:

- Hungary: for tougher penalties for speeding (91% of other road users, 72% of car drivers, 69% of powered two wheelers)
- Ireland: for tougher penalties for using handheld phones while driving (89% of other road users)
- Cyprus: for more severe penalties for not using seat belts (89% of car drivers)

Countries less favourable to increasing sanctions include:

- France: only 20% of powered two wheelers support penalties for speeding
- Italy: 52% of powered two wheelers support penalties for drink driving
- Slovenia: 42% of car drivers support penalties for not using seat belts
- Finland: 30% of car drivers support penalties for using handheld phones while driving
Transport contributes 19.3% of total greenhouse gas emissions in Europe. Automobile use, car ownership and distance travelled per car passenger have all increased over the last two decades. As part of a move to a more sustainable transport system, policies need to look at limiting the effect of individual mobility on the environment.

Technological developments such as fuel efficient engines, hybrid/electric cars and more sustainable road infrastructure play a part. But changes in behaviour are needed, such as reducing personal car use and promoting the use of other more sustainable transport modes.

Other road users: why people choose to be pedestrians or cyclists or use public transport

Our survey introduced a new focus on other road users (pedestrians, cyclists, public transport users) to explore their motivations for using modes of transport other than cars and motorcycles. For pedestrians:

- No necessity - just another means of transport was the most selected reason
- 56% cited a need for physical exercise and 53% cited financial reasons
- Looking at the demographics, nearly a third of pedestrians aged 18-34 cite financial reasons and are more likely to cite environmental reasons than older people.

People are rarely just pedestrians – many use some other means of transport, for example, passenger in car, bicycle or public transport in their daily travel. SARTRE looked at several factors including motivations, walking frequency and distance, use of other transport types to identify different profiles of pedestrian:

### Cycling

On average, a European cycles 7 km a day, but there is huge variation in the use of bicycles as a mode of transport, both in terms of proportion of other road users and number of kilometres cycled. Only one in three of all European other road users cycle.

- Highest rates of cycling are found in the Netherlands, Germany and Czech Republic.
- Lowest rates of cycling in Greece, Israel and Cyprus.

In Cyprus, Greece, Israel, Sweden and Serbia cyclists are mainly younger, but older in Hungary, Italy, Finland and Czech Republic.

### Concern for the environment

Our survey set out to explore concerns about the environment. Although all road groups (car drivers, powered two wheelers and other road users) were quite concerned about the polluting effects of transport, powered two wheelers were significantly less concerned. Women are generally more concerned than men.

### Willingness to change travel behaviour

The survey also examined the willingness of car drivers and powered two wheelers to change their travel behaviour. Car drivers were asked to rate options such as reduced vehicle use, increased use of public transport, car free day, increased bicycling, car pooling, car renting, using moped, purchasing electric/hybrid car. When comparing responses between car drivers and powered two wheelers, both groups were most favourable to a car-free day.

We then looked at attitudes of drivers in different countries to compare rates of environmental concern and willingness to change behaviour. By sorting into high and low concern countries, we found that drivers from high concern countries were less willing to change travel behaviours, for example cycle more, use public transport more, than ones from low-concern countries.
SARTRE helps inform researchers, practitioners, engineers, policy makers, stake-holders, road users and those interested in transportation about road traffic risk, attitudes, behaviour and transport habits.

Its findings are valuable for the introduction or modification of road safety laws across Europe, public awareness campaigns and the promotion of environmentally-friendly mobility.

In comparing the results from different types of road users, SARTRE 4 identified a number of areas for consideration:

**Car drivers**

Although road safety performance has improved in 14 out of 16 countries, most car drivers in Europe believe driving over the speed limit is a normal and socially acceptable behaviour, 30% admit to drink-driving in the past month, and over 1 in 4 drive while feeling too tired at the wheel.

**Recommendations:**
The generalisation of a 0.2g/l legal BAC.
The development of preventive measures to reduce speeding and drink-driving through in-vehicle intelligent speed limiting devices and alcohol interlocks.
Campaigns targeting risky behaviours like speeding, drink-driving and use of mobile phones while driving.

**Other road users**

People use a variety of modes of transport and rarely fall into one single category of road users – such as pedestrian, cyclist, public transport users. Given the range of motivations for people to use these modes of transport, increasing awareness about air pollution will not enough to get people to change their habits.

**Recommendations:**
Policies need to support multiple modes of transport in order to ensure that alternatives to the car are easily accessible, efficient, safe and comfortable.
Governments need to understand what determines people’s transport choices to develop plans for effective actions and better communication. For example, targeting environmental benefits to younger people and health concerns to older people to increase walking/cycling.
Road layouts should be designed to pedestrian needs and use a combination of measures to support 30km/h zones.

To increase cycling, measures should prioritise the building of cycle paths and/or ways to separate cyclists from other traffic.
Strict enforcement against drinking and cycling and not stopping at red lights.
Campaigns targeting cyclists should focus on the risks to ‘someone like you’ without making cycling seem overly dangerous and thus discourage people from cycling.

SARTRE 4 reports back at a time where there are a number of economic, demographic and sustainability challenges for road safety policies.
These include a growing number of older drivers (30% of all drivers by 2060), the increasing numbers of more vulnerable road users (powered two wheelers, cyclists and very small vehicles) and an environmental need to reduce car use through options such as car-sharing and increased use of public transport.

**Powered two wheelers**

On average, powered two wheelers fatalities rose by 22% since 2002 (though with considerable variation between countries) in a period when an increasing number of daily commuters are switching to two-wheel vehicles. Across Europe there are very different profiles and demographics of users, types of motorcycle used and driving behaviour - with a clear distinction between powered two wheelers in northern and southern countries, particularly in the use of safety equipment and drink-driving.

**Recommendations:**
Communication about risk should be developed and implemented:
• Based on an understanding of country-specific circumstances and different powered two wheelers’ profiles on attitudes, motivations and habits concerning drinking and riding, speeding, use of safety equipment and interactions with car drivers.
• Using a range of communication media, including internet and social network sites to reach out to different targets like younger drivers. The process of obtaining a motorcycle licence should include improved risk communication.

Southern countries should be priority targets as they have a high proportion of motorcycle use and a high frequency of drink-driving. Attention should also focus on safety equipment adapted to hot weather to increase its use.
The generalisation of a 0.2g/l legal BAC.

**Conclusions on comparing all road users**

SARTRE also set out to explore if road safety measures should be adapted to particular types of road users. When comparing attitudes and behaviours to key topics such as speeding and drink-driving between car drivers, powered two wheelers, pedestrians, cyclists and public transport users, very few differences were found.

**Recommendations:**
Road safety campaigns should address all types of road users, unless the topic is specific to one type of user, e.g. helmets for powered two wheelers.

More research should be done into the pollution impact of motorcycles versus cars to take into account both greenhouse gas emissions but also local pollutants caused in commuting.

Generalisation of a 0.2g/l across Europe for all road users, in particular to address the increased vulnerability of powered two wheelers.

Further research to explore the speeding behaviours of powered two wheelers and car drivers to better target speeding enforcement measures.
The SARTRE 4 project has received funding from the European Union Commission, and from participating countries.