

# Study plan

# Deliverable 12.1

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**Driving Study** 

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# eUropean naturalistic Driving and Riding for Infrastructure and Vehicle safety and Environment

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# **Executive Summary**

This Deliverable presents a data collection plan for generation of necessary data in order to answer the UDRIVE research questions.

The field trials will involve three types of vehicles, partners across 7 countries and aiming at recruitment of 315 participants in total.

Type of vehicle	Country	Partner	Fleet size (number of DAS)	Number of participants
	France	CEESAR	30	50
Car	Germany	DLR	30	50
Car	Poland	IBDIM	30	50
	UK	UNIVLEEDS/LOUGHBOROU	30	50
	Austria	KFV	15	15
PTW	Spain	CIDAUT	25	25
Truck	Netherlands	TNO	75	75
				315

In terms of driver demographic characteristics, considerations are given to driving experience (i.e. annual travel distance), age, gender, exposure to road environment (i.e. urban/rural roads and motorway), as well as car-sharing (i.e. multiple drivers in an household accessing a vehicle).

With respect to vehicles, engine size and intended travel patterns are the primary focuses. Three types of passenger cars, two types of motorcycles, and two types of trucks will be recruited.

Part of this work also addresses the establishment of a "baseline" by capturing participants' self-reported risk taking tendency. A questionnaire pack was developed for this purpose.



# **Table of contents**

EXE	CUTIVE SUMMARY
1	INTRODUCTION
2	TRIAL LOCATION, FORMAT AND SAMPLE SIZE6
3	PARTICIPANT SELECTION CRITERIA8
3.1	Experience
3.2	Age
3.3	Gender 8
3.4	Multi-driver access to vehicles
3.5	Environmental exposure
3.6	Summary of required participant characteristics9
4	VEHICLE SELECTION CRITERIA11
5	PARTICIPANT RECRUITMENT REQUIREMENTS12
5.1	Sample size per OS
5.2	Recruitment requirements for car OS12
5.3	Recruitment requirements for PTW OS12
5.4	Recruitment requirements for Truck OS13
5.5	Participant demographic variables13
5.6	Participant's health conditions13
6	COLLECTION OF SUBJECTIVE DATA15
6.1	Beginning of trial15
6.2	End of trial16
7	CONCLUSIONS
8	REFERENCES
9	LIST OF ABBREVIATIONS
10	LIST OF TABLES
11	LIST OF FIGURES
12	APPENDIX: PARTICIPANT QUESTIONNAIRES22



# 1 Introduction

This Deliverable records work carried out in WP12, which follows the definition of research questions in WP11 and specifies a study plan in order to facilitate data generation tasks in SP3. The focus of this work is on participant characteristics. Vehicle data requirements are specified in D11.1 "Research questions, performance indicators and functional requirements".

The next section explains the trial format and sample size, followed by specifications of participant and vehicle selection criteria. Section 5 subsequently outlines participant recruitment requirements, followed by definition of subjective data. Section 7 concludes this Deliverable and explains its interaction with other parts of the projects.



# 2 Trial location, format and sample size

The UDRIVE project involves a large scale field trial across seven countries and three types of vehicles as depicted in Figure 1.



Figure 1: UDRIVE field trials locations and vehicle types

The original sample allocations in the DoW are as follows, fulfilled by two waves of data collection.

- 240 cars (120 DAS)
- 150 trucks (75 DAS)
- 80 PTWs (40 DAS)

Due to revision of the project work plan, data collection will be implemented as one wave instead of two. Recruitment of multi-drivers per car is therefore favoured in order to mitigate the impact of one wave data collection on the total sample size, aiming at collecting data from 200 car drivers (i.e. 50 drivers per car OS). PTW is considered less likely be shared by different riders, so the target is set at 40 (i.e. the number of DAS available). If however recruitment of multiple riders per PTW is feasible, this should be considered by



relevant OS. Trucks are most likely not be shared by different drivers and hence the target is set at 75 (i.e. the number of DAS available). These will result in 315 participants in total, as opposed to the original plan of 470 from two waves of recruitment. A summary of sampling targets is given in Table 1.

# Table 1: Sampling targets

	No of DAS	Number of participants based on two waves of data collection (DoW)	Revised recruitment target based on one wave of data collection
Cars	120	240	200
Trucks	75	150	75
PTWs	40	80	40
		470	315



# **3** Participant selection criteria

A number of factors are taken in account in order to create a sample of participants needed for addressing identified research questions (D11.1).

# 3.1 Experience

A minimum annual driving/riding distance is considered. This is not strictly aligned with average annual mileage in countries concerned, but in place to safeguard that sufficient amount of data will be generated.

**Cars**: minimum annual driving distance of 10,000 km per driver is required for the principal driver; additional drivers are not subject to this requirement.

**PTWs**: minimum annual riding distance of 5,000 per rider. It is desirable for recruiting riders who ride all year round. Austrian riders would most likely be limited to riding during summer months, but it is considered feasible for Spanish OS to recruit riders who would ride all year round. For Spanish participants, a minimum riding distance of 100 km per month is desired.

**Trucks**: no minimum requirement for driving experience due to the nature of recruitment.

# 3.2 Age

Age is one of the key factors affecting driving/riding behaviours. Globally, three age groups are defined: 18-25, 26-45 and 46-70, to ensure a good spread of age distribution in the sample.

Cars: all car OS to comply with the three age bands.

**PTWs**: two age group for BMW riders (25-45; 46-70) and two age groups for Piaggio riders (18-25; 26-45). This takes the likely rider age profile into account.

**Trucks**: no minimum requirement for driver's age due to the nature of recruitment.

# 3.3 Gender

Equal split between genders is desired but a minimum percentage per gender in the sample is required to ensure that the gender factor is not overly skewed.

Cars: a minimum of 40% per gender

**PTWs**: for BMW riders, females will not be required due to foreseeable difficulty in recruitment. For Piaggio riders, a minimum of 30% female riders is required.

Trucks: no minimum requirement for driver's gender due to the nature of recruitment.

#### 3.4 Multi-driver access to vehicles

This is a required participant selection criterion in order to enlarge the sample size of car drivers. It is required that at least four cars in each age group are with multiple drivers, with a minimum of 2 drivers per car. Therefore it is a requirement that there are at least 12 cars at each OS which have multiple drivers.



The multi-driver access criterion is not applicable to PTWs and trucks.

# 3.5 Environmental exposure

It is necessary to require that participants have a mixed driving pattern across urban, rural and motorway environments. A minimum of 20% of exposure to the aforementioned three road environments is needed for car drivers.

It is a desired recruitment criterion for PTW riders. This may impose difficulties for recruitment of BMW riders in Austria, but it is considered possible for the Spanish OS to recruit commuter riders with a mixed exposure to urban and rural environments.

This criterion is not imposed on truck drivers due to the nature of recruitment.

# 3.6 Summary of required participant characteristics

Based on the above discussions, a summary of required and desired participant characteristics are provided in Table 2 and Table 3.

	Cars	PTWs	Trucks
Experience	10,000 km per annum	5,000 km per annum	N/A
Age	18-25; 26-45; 46-70	Austria: 26-45 and 46-70 Spain: 18-25 and 26-45	N/A
Gender	40% per gender	Austria: N/A Spain: 30% per gender	N/A
Multi-driver	4 cars with multi-drivers per age band; minimum 2 drivers per car.	N/A	N/A
Exposure	20% annual mileage in urban, rural and motorway environments respectively.	N/A	N/A

#### Table 2: Minimum requirements of participant characteristics

#### Table 3: Desired requirements of participant characteristics

	Cars	PTWs	Trucks
Experience	N/A	Ride all year around, with a minimum of 100 km per month	N/A
Age	N/A	N/A	N/A
Gender	Equal split between genders	N/A	N/A
Multi-driver	N/A	N/A	N/A
Exposure	N/A	Commuters exposing to both urban and rural environments	N/A



For car trials, company car drivers are not excluded from acceptable samples, but it is anticipated that recruitment will be made by approaching general public for homogeneous samples across OS (i.e. mileage and trip characteristics).



# 4 Vehicle selection criteria

A variety of types of cars, PTWs and trucks is required for addressing a range of research questions. The rationale is to observe distinctive differences among drivers' behaviours in terms of everyday driving patterns, risky behaviours and eco-driving tendency. Considerations of vehicle makes and models are dependent on OEM support (CAN access and warranty issues) and market penetration.

**Cars**: three types of cars are required in order to observe behavioural differences due to vehicle types. Minimum of two types will only be accepted under exceptional circumstances. The selected vehicles are:

- Small car: Renault Clio 3
- Medium-sized family car: Renault Mégane 3 / Scénic
- Premium car: Volvo S60/XC60/XC90 (Still to be decided at the time of writing)

Recruitment preferences are placed upon diesel cars with manual transmission in order to provide data for eco-driving related research questions.

**PTWs**: two types of motorcycles are required in order to observe behavioural differences due to vehicle types. The selected vehicles are:

- A high powered motorcycle: BMW 1200 RS. This is applicable to the Austrian OS
- A low powered scooter: Piaggio Liberty. This is applicable to the Spanish OS

**Trucks**: Volvo trucks will be used. It is required to include two distinctive types of vehicles; e.g. a large vehicle (long-haul) and a medium sized vehicle (local distribution). We are aiming at

• Long haul: FH/ FM classic, who have very similar cabins and electrical architectures and can be considered a one make/ model, given that we have a flexible installation team.

• City distribution: FE. Different cab and el architecture than FH/ FM, No relevant differences in terms of installation when it comes to different engine/ gearbox variants.



# 5 Participant recruitment requirements

# 5.1 Sample size per OS

The required sample size at each OS is provided in Table 4. The split of PTW samples across Austria and Spain takes ease of recruitment of particular PTW model owners into account.

Type of vehicle	Country	Partner	Fleet size (number of DAS)	Number of participants
	France	CEESAR	30	50
Car	Germany	DLR	30	50
	Poland	IBDIM	30	50
	UK	UNIVLEEDS/LOUGHBOROU	30	50
PTW	Austria	KFV	15	15
	Spain	CIDAUT	25	25
Truck	Netherlands	TNO	75	75

Table 4: Breakdown of fleet and sample sizes across Operations Sites

# 5.2 Recruitment requirements for car OS

Driver recruitment criteria specified in Section 3 suggested a target recruitment numbers as shown in Table 5; i.e. an equal split between genders is strongly desired. Taking car type into account, recruitment of at least one car per cell is required, as specified in Table 6.

# Table 5: Target recruitment numbers per car OS by driver age and gender

	18-25	26-45	46-70
Male	5	5	5
Female	5	5	5

# Table 6: Minimum recruitment numbers per car OS by car type, driver age and gender

		18-25	26-45	46-70
		years old	years old	years old
Small care	Male	1	1	1
	Female	1	1	1
Mid-sized family	Male	1	1	1
cars	Female	1	1	1
Evecutive core	Male	1	1	1
Executive cars	Female	1	1	1

The multiple-driver criterion requires recruitment of at least 12 vehicles at each OS being multi-driver cars, equally split across age bands. Therefore, of the 10 vehicles recruited in each age band, at least 4 cars will be multi-driver cars. Multi-driver cars should ideally spread across the three car types.

# 5.3 Recruitment requirements for PTW OS

Driver recruitment criteria specified in Section 3 suggested a target recruitment numbers as shown in Table 7.



	Austria		Spain			
	18-25	26-45	46-70	18-25	26-45	46-70
Male	0	8	7	7	6	0
Female	0	0	0	6	6	0

# Table 7: Target recruitment numbers per PTW OS by driver age and gender

# 5.4 Recruitment requirements for Truck OS

No specific requirements due to the nature of recruitment. The availability of driver and vehicles is dependent on participating fleets.

# 5.5 Participant demographic variables

A set of participant demographic variables needs to be collected during recruitment, as suggested in Table 8. Items marked with an asterisk indicate that these are not related to data analysis. However it would be advantageous to be aware of the response to these items at the recruitment stage in order to help minimising participant drop-out during the trial.

#### Table 8: Participant demographic variables

Category	Item
Personal details	Name
	Address (home, work)
	Contact details (phone, email)
	Gender
	Date of Birth (dd/mm/yyyy)
	Driving experience (e.g. in which year did you obtain your full driving licence; yyyy)
Vehicle details	make/model (this can be pre-specified in the recruitment advert)
	engine size
	does the participant own the vehicle?*
	access to vehicle (e.g. how many other people use this car)
	proportion of car usage (i.e. main driver, second driver, third driver etc – these should
	add up to 100%)
	likely to change vehicle with the period between xxx and xxx?*
Travel details	Likely to move out of area?*
	Likely to change travel pattern?* E.g. expected change of job.
	Typical weekly journeys (Monday to Sunday) – type of destination and length of travel

# 5.6 Participant's health conditions

It is of interests to establish whether there is a connection between the participants' health conditions, such as vision and hearing impairment, and risky manoeuvres. However, it is already a tough challenge to accommodate the number of driver demographic variables with the fairly-moderate sample size. There is also concern over ethics issues as this might be seen as judging a participant's ability to drive safely, which is not the purpose of this field trial.



The participants will simply be asked to confirm upon signing the participation agreement that they are fit to drive according to local regulations, including wearing glasses or corrective lenses in order to meet the requirements.



# 6 Collection of subjective data

# 6.1 Beginning of trial

A set of subjective data will be collected at the beginning of the trial.

There are a range of validated questionnaires in the literature which are highly relevant to UDRIVE research questions. Such questionnaires were designed to tap the respondents' tendency to commit selected target behaviours, such as violation, aggressiveness, compliance with traffic rules, and anxiety etc, or generic tendency towards risky driving.

# 6.1.1 Sensation seeking

There have been extensive research interests in exploring driver's personality as an underlying causal factor in driver behaviour. The personality construct of sensation seeking has arguably received most attention. Sensation seeking has been shown to moderately relate with risky driving such as speeding, close following, overtaking, non-wearing of seat belt etc. There are two popular selections of sensation seeking scales.

Sensation seeking scale form V (SSS-V; Zuckerman, 1994), which consists of four subscales: Thrill and Adventure Seeking, Experience Seeking, Disinhibition, Boredom Susceptibility; there are 10 items in each subscale, so 40 items in total. The SSS-V is long established and very widely used.

Arnett Inventory of Sensation Seeking (AISS; Arnett, 1994), which has two sub scales: novelty, and intensity; there are 10 items each scale, so 20 items in total. The AISS is much shorter in length than the SSS-V. Its questions are also regarded as more neutrally worded.

#### 6.1.2 Locus of Control

Locus of control (LOC) has been shown to relate with risky driving as well. There are a variety of LOC scales available (Rotter, 1966 [29 items]; Montag and Comrey, 1987 [30 items]; Őzkan and Lajunen, 2005 [17 items]). The LOC scale developed by Őzkan and Lajunen (2005) (Traffic LOC; T-LOC) was specifically referenced to driving tasks, and the questionnaire length is more compact than other popular alternatives.

#### 6.1.3 Driver Behaviour Questionnaire

The Driver Behaviour Questionnaire (DBQ) has been very widely used within the research community. There are various versions:

Parker et al (1995) taps into three behavioural factors: lapse, error and violation. There are 8 questions for each type of behaviour, so 24 items in total. Violation (intentional) and error (unintentional) questions correlates with risky driving better than lapse questions.

Lawton et al (1997) focuses on violation items only but extend the questionnaire to include 12 items in total.

Lajunen et al (2004) based on the original DBQ but slightly extended the violation questions from 8 to 11 and distinguish violation between aggressive violations and "ordinary violations". Note that this study also compared the DBQ among British, Finnish and Dutch samples. UK and Netherland are participating in the UDRIVE field trials.



# 6.1.4 Driver Attitude Questionnaire

Driver Attitude Questionnaire (DAQ; Parker et al, 1996) explores four types of risky behaviours: speeding, close following, dangerous overtaking, and drink driving. There are 10 items for each type of behaviour; so 40 items in total. Speeding and close-following are related to UDRIVE research questions.

# 6.1.5 Driving Style Questionnaire

Driving Style Questionnaire (DSQ; West et al, 1992) contains 15 items based on behaviours that are associated with risky driving behaviour.

# 6.1.6 Overall considerations

Adoption of the aforementioned standardised questionnaire would benefit from ease of reference with comparable studies. There are other potential candidate questionnaires available. For example the Driver Stress Inventory (DSI; Matthews et al, 1997) which covers a wide range of behavioural factors such as aggression, dislike of driving, hazard monitoring, thrill seeking and fatigue proneness. However, comparability with other studies would suffer because it is not as widely used by other researchers. The Driving Behaviour Survey (DBS; Clapp et al, 2011) taps into similar factors as the DSI. It is relatively new and hence comparable data would be minimal. Other examples include Driver Anger Scale (Deffenbacher, Oetting & Lynch, 1994) and Driving Skill Inventory (Lajunen & Summala, 1997).

In summary, the final version of the questionnaire includes the following subsets:

- DAQ (Parker et al, 1996; speeding and close-following items only)
- DBQ (Lajunen et al, 2004; error and violation items only)
- DSQ (French et al, 1993; full items)
- T-LOC (Özkan and Lajunen, 2005; full items)
- AISS (Arnett, 1994; full items)
- Accident and traffic violations history

A copy of the finalised questionnaire is provided in the Appendix. The questionnaires contain the information that is desirable to best answer all research questions. However some information that is desired may not be permitted to be inquired due to law restrictions. Since the laws can differ significantly in this regard between the operation site countries a proper assessment cannot be done from one country. Thus the questionnaires should be checked by local lawyers and only be adapted if there is a need to comply with local law.

# 6.1.7 Other instruments

In addition to the questionnaire, a video based hazard perception test will also be used.

# 6.2 End of trial

An exit questionnaire will be provided for generic debriefing and interview. An in-depth interview is also planned, for participants involved in identified events (e.g. a crash), subject to ethical approval in advance as well as participant consent. The requirements will be defined by SP4 ahead of trial completion.



# 7 Conclusions

WP12 bridges the research questions and data collection. This Deliverable provides an overall study design, defining participant and vehicle profiles, as well as describing subjective data requirements. The output feeds directly to SP3 facilitating trial planning, participant recruitment and OS preparation tasks.



# 8 References

Arnett, J. (1994) Sensation seeking: A new conceptualization and a new scale. *Personality and Individual Differences*, 16(2), 289–296.

Clapp, J. D., Olsen, S. A., Beck, J. G., Palyo, S. A., Grant, D. M., Gudmundsdottir, B., & Marques, L. (2011) The Driving Behavior Survey: Scale development and validation. *Journal of Anxiety Disorders*, 25, 96-105.

Deffenbacher, J.L., Oetting, E.R. & Lynch, R.S. (1994) Development of a driving anger scale. *Psychological Reports*, 74(1), 83-91.

French, D.J., West, R.J., Elander, J., Wilding, J.M. (1993) Decision-making style, driving style, and self-reported involvement in road traffic accidents. *Ergonomics*, 36, 627–644.

Lajunen, T. and Summala, H. (1997) Effects of driving experience, personality, and driver's skill and safety orientation on speed regulation and accidents. In E. Carbonell Vaya and T. Rothengatter (Eds.), *Traffic and transport psychology: Theory and application* (pp. 283–294). Amsterdam: Pergamon.

Lajunen, T., Parker, D., & Summala, H. (2004) The Manchester Driver Behavior Questionnaire: A cross-cultural study. *Accident Analysis, and Prevention*, 36, 231-238.

Lawton, R., Parker, D., Manstead, A. and Stradling, S. (1997) The role of affect in predicting social behaviours: the case of road traffic violations. *Journal of Applied Social Psychology*, 27(14), 1258-76.

Matthews, G., Desmond, P. A., Joyner, L. A., Carcardy, B. & Gilliland, K. (1997) A comprehensive questionnaire measure of driver stress and affect. In E. Carbonell Vaya and J. A. Rothengatter (Eds), *Traffic and Transport Psychology: Theory and Application* (pp. 317- 326). Amsterdam: Pergamon.

Montag, I. and Comrey, A.L. (1987) Internality and externality as correlates of involvement in fatal driving accidents. *Journal of Applied Psychology*, 72, 339-343.

Özkan, T. and Lajunen, T. (2005) Multidimensional Traffic Locus of Control Scale (T-LOC): factor structure and relationship to risky driving. *Personality and Individual Differences*, 38(3), 533–545.

Özkan, T. and Lajunen, T. & Kaistinan, J. (2005) Traffic Locus of Control, driving skills and attitude towards invehicle technologies. Paper presented at the 18<sup>th</sup> International Co-operation on Theories and Concepts in Traffic Safety Conference. October 2005. Helsinki, Finland.

Parker, D., Reason, J., Manstead, A. & Stradling, G. (1995) Driving errors, driving violations and accident involvement. *Ergonomics*, 38(5), 1036-1048.

Parker, D., Stradling, S.G., & Manstead, A. (1996) Modifying beliefs and attitudes to exceeding the speed limit: An intervention study based on the theory of planned behaviour. *Journal of Applied Social Psychology*, 26, 1-19.

Rotter, J. (1966) Generalized expectancies for internal versus external control of reinforcements. Psychological Monographs: General and Applied, 80(1), 1-28.

Zuckerman, M. (1994) *Behavioral expressions and biosocial bases of sensation seeking*. New York: Cambridge Press



# 9 List of abbreviations

DAS – Data Acquisition System DoW – Description of Work



# 10 List of Tables

Table 1: Sampling targets	7
Table 2: Minimum requirements of participant characteristics	9
Table 3: Desired requirements of participant characteristics	9
Table 4: Breakdown of fleet and sample sizes across Operations Sites	12
Table 5: Target recruitment numbers per car OS by driver age and gender	12
Table 6: Minimum recruitment numbers per car OS by car type, driver age and gender	12
Table 7: Target recruitment numbers per PTW OS by driver age and gender	13
Table 8: Participant demographic variables	13



# 11 List of Figures

Figure 1: UDRIVE field trials locations and vehicle types	6	5
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# 12 Appendix: Participant questionnaires



#### Participant questionnaires

Thank you for agreeing to participate in this research project, which will help us to more fully understand the interaction between the driver, the vehicle, and the road environment.

We invite you to complete a set of questionnaires which is part of the study. Please answer the questions intuitively and honestly. It is important to make you aware that we are not looking at your individual driving style or judging your ability as a driver. We are solely interested in the behaviour of a group of drivers to draw conclusions about drivers in general.

All information collected via the questionnaire will be dealt with in the strictest confidence and will only be used for research purposes.

Should clarification of any questions be required, please do not hesitate to ask a member of the research team.

Please turn over the page and start completing the questions.

Participant id: \_\_\_\_\_



#### About your attitude towards traffic behaviour

To what extent do you agree with each of the following statements? Please tick an option for each statement.

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
People stopped by the police for close-following are unlucky because lots of people do it			_		_
Speed limits are often set too low, with the result that many drivers ignore them					
Close following isn't really a serious problem at the moment					
I know exactly how fast I can drive and still drive safely					
I would favour stricter enforcement of the speed limit on 30 mph roads					
Some people can drive safely even though they only leave a small gap behind the vehicle in front					
Even driving slightly faster than the speed limit makes you less safe as a driver					
I would be happier if close-following regulations were more strictly applied					
Stricter enforcement of speed limits on 30 mph roads would be effective in reducing the occurrence of road accidents					
Even driving slightly too close to the car in front makes you less safe as a driver					
On the whole people aren't aware of the dangers involved in close following					
I would be happier if the speed limits were more strictly enforced					
Harsher penalties should be introduced for drivers who drive too close to the car in front					
It's OK to drive faster than the speed limit as long as you drive carefully					
People stopped by the police for speeding are unlucky because lots of people do it					
I think the stopping distances in the Highway Code are too great for people to take notice of them					
Speeding is one of the main causes of road accidents					
It is quite acceptable to drive close to the car in front than is recommended					
Sometimes you have to drive in excess of the speed limit in order to keep up with the flow of traffic					
I would favour a clamp down on drivers who drive too close to the vehicle in front					



# About your usual driving habits

For each driving situation described in the table below, please indicate how often each situation applies to you in the last three months. Please place a tick on an option per line.

	Never	Hardly ever	Occasionally	Quite often	Frequently	Nearly all the time
Queuing to turn left onto a main road, you pay such close attention to the main						
stream of traffic that you nearly hit the car in front of you						
Fail to notice that pedestrians are crossing when turning into a side street from a main road						
Sound your horn to indicate your annoyance to another road user						
Fail to check your rear-view mirror before pulling out, changing lanes, etc.						
Brake too quickly on a slippery road or steer the wrong way in a skid						
Pull out of a junction so far that the driver with right of way has to stop and let you out						
Disregard the speed limit on a residential road						
On turning left nearly hit a cyclist who has come up on your inside						
Miss "Give Way" signs and narrowly avoid colliding with traffic having right of way						
Attempt to overtake someone that you had not noticed to be signaling a right turn						
Become angered by another driver and give chase with the intention of giving him/her a piece of your mind						
Stay in a motorway lane that you know will be closed ahead until the last minute before forcing your way into the other lane						
Overtake a slow driver on the inside						
Race away from traffic lights with the intention of beating the driver next to you						
Drive so close to the car in front that it would be difficult to stop in an emergency						
Cross a junction knowing that the traffic lights have already turned against you						
Become angered by a certain type of a driver and indicate your hostility by whatever means you can						
Underestimate the speed of an oncoming vehicle when overtaking						
Disregard the speed limit on a motorway						



#### About your driving style

Please indicate how each question applies to you. Please place a tick on an option for each question.

	Never or very infrequently	Infrequently	Quite infrequently	Quite frequently	Frequently	Very frequently or always
Sometimes when driving, things happen very quickly. Do you remain calm in such situations?						
Do you plan long journeys in advance, including places to stop and rest?						
Do you dislike people giving you advice about your driving?						
Do you exceed the 70 mph limit during a motorway journey?						
Do you ever drive through a traffic light after it has turned to red?						
Do you exceed the speed limit in built up areas?						
Do you ignore passengers urging you to change your speed?						
Do you become flustered when faced with sudden dangers while driving?						
How often do you set out on an unfamiliar journey without first looking at a map?						
Are you happy to receive advice from people about your driving?						
Do you drive cautiously?						
Do you find it easy to ignore distractions while driving?						
Do you drive fast?						
Do you overtake on the inside lane of a dual carriageway if you have the opportunity?						
Is your driving affected by pressure from other motorists?						



#### Your view towards causes of road accidents

Below is a list of possible causes of road accidents. Please indicate how possible each item would be the cause of a road accident considering your own driving. Please place a tick on an option per line.

Whether or not I get into car accident depends mostly on:

	Not at all possible	Not fairly possible	Possible	Fairly possible	Highly possible
shortcomings in my driving skills					
my own risk-taking while driving					
shortcomings in other drivers' driving skills					
other drivers' risk-taking while driving					
bad luck					
dangerous roads					
if I drive too fast					
if other drivers drive too fast					
if I drive too close to the car in front					
if other drivers drive too close to my car					
Fate					
bad weather or lighting conditions					
a mechanical failure in the car					
other drivers driving under influence of alcohol					
other drivers' dangerous overtaking					
my own dangerous overtaking					
Coincidence					



#### About your personality

For each item, please indicate which response best applies to you. Please place a tick on an option per line.

	Does not describe me at all	Does not describe me very well	Describe me somewhat	Describe me very well
I can see how it would be interesting to marry someone from a foreign country				
When the water is very cold, I prefer not to swim even if it is a hot day				
If I have to wait in a long line, I'm usually patient about it				
When I listen to music, I like it to be loud				
When taking a trip, I think it is best to make as few plans as possible and just take it as it comes				
I stay away from movies that are said to be frightening or highly suspenseful				
I think it's fun and exciting to perform or speak before a group				
If I were to go to an amusement park, I would prefer to ride the rollercoaster or other fast rides				
I would like to travel to places that are strange and far away				
I would never like to gamble with money, even if I could afford it				
I would have enjoyed being one of the first explorers of an unknown land				
I like a movie where there are a lot of explosions and car chases				
I don't like extremely hot and spicy foods				
In general, I work better when I'm under pressure				
l often like to have the radio or TV on while I'm doing something else, such as reading or cleaning up				
It would be interesting to see a car accident happen				
I think it's best to order something familiar when eating in a restaurant				
I like the feeling of standing next to the edge on a high place and looking down.				
If it were possible to visit another planet or the moon for free, I would be among the first in line to sign up				
I can see how it must be exciting to be in a battle during a war				



#### About your driving history

How many at-fault road accidents (i.e. you hit another road user or an obstacle) have you been involved in as a driver during the last 5 years? \_\_\_\_\_\_\_; and how many of which required you seeking hospital treatments? \_\_\_\_\_\_

How many non-fault accidents (i.e. you were hit by another road user) have you been involved in as a driver during the last 5 years? \_\_\_\_\_\_; and how many of which required you seeking hospital treatments? \_\_\_\_\_\_

How often have you been involved in the following traffic offences in the past 5 years? Please note that this does not ask how often you were "caught", either by a Police Officer or automated enforcement means, for the traffic offences.

	Never	Hardly ever	Occasionally	Quite often	Frequently	Very Often
Speeding						
Non-use of a seat-belt						
Failing to stop at a red traffic light						
Drink-driving						
Driving under the influence of drugs						
Use of a forbidden lane						
Illegally using a mobile telephone or any other communication devices while driving						

End of questionnaire

Many thanks for your help with completing the questionnaire

