



ICARUS Project
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ICARUS Project

Inter - Cultural Approaches for Road Users Safety

Research report

Results

LITHUANIA

CAR DRIVERS (QUESTIONNAIRE SECTION 1)

Sample description

A total of 463 people answered the Section 1 of the questionnaire. Males were 222 (47.9% of the total sample) and females were 241 (52.1% of the total sample). Their mean age was 20.60 years (standard error .09), ranging between 17 and 32 years. Only 15 respondents were older than 24 years old. Age was no significantly different between males and females. Not all the respondents answered all the items of the questionnaire, thus each analysis was run on the largest sample available for that analysis (missing values were not estimated).

Driving habits

Tables 1 to 9 show the distribution as a function of gender of the answers to items concerning the driving habits and experiences. About half of the respondents owns a car, with a prevalence of female respondents. Many of them, however, refer to use a car on a very regular basis (about 43% of the respondents drive everyday, without a prevalence of one gender), and for relatively long trips. Interestingly, quite a few respondents (about 43%) refer not to drive after midnight, with no gender prevalence. Male drivers also refer to have received a traffic fine more often than female drivers, mostly for speeding, and lack of seatbelts use.

Almost all the respondents state that they do not drive after having drunk alcohol (it must be noticed that the item do not refer to being drunk, but only to driving after having drunk some alcohol), again with no gender prevalence.

Summarizing, young drivers from Lithuania seem to be characterized by being frequent drivers, not experienced of driving during night hours, and very aware of the dangers associated with driving under the effects of alcohol.

Table 1. Frequency distribution of respondents for item H4 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

H_4 Do you own a car?		
	Yes	No
Males	83 (37.39%)	139 (62.61%)*
Females	126 (52.28%)*	115 (47.72%)
Total	209 (45.14%)	254 (54.86%)

Table 2. Frequency distribution of respondents for item H5 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

H_5 How many times a week do you use the car?						
	Never	1-2 times	3-4 times	5-6 times	Everyday	Only in the weekend
Males	4 (2.88%)	15 (10.79%)	21 (15.11%)	30 (21.58%)	66 (47.48%)	3 (2.16%)
Females	0 (0.00%)	24 (20.87%)*	27 (23.48%)	17 (14.78%)	43 (37.39%)	4 (3.48%)
Total	4 (1.57%)	39 (15.35%)	48 (18.9%)	47 (18.5%)	109 (42.91%)	7 (2.76%)

Table 3. Frequency distribution of respondents for item H6 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

H_6 How many kilometers do you drive in a week?					
	1-10 Km	11-30 Km	31-50 Km	51-100 Km	More than 100 Km
Males	4 (2.88%)	16 (11.51%)	23 (16.55%)	53 (38.13%)	43 (30.94%)
Females	3 (2.61%)	12 (10.43%)	24 (20.87%)	43 (37.39%)	33 (28.7%)
Total	7 (2.76%)	28 (11.02%)	47 (18.5%)	96 (37.8%)	76 (29.92%)

Table 4. Frequency distribution of respondents for item H7 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

H_7 In the last three months, how often have you driven for more that 2 hours uninterruptedly?				
	Never	1-2 times	2-4 times	More than 4 times
Males	40 (28.78%)	51 (36.69%)	27 (19.42%)	21 (15.11%)
Females	27 (23.48%)	63 (54.78%)*	16 (13.91%)	9 (7.83%)
Total	67 (26.38%)	114 (44.88%)	43 (16.93%)	30 (11.81%)

Table 5. Frequency distribution of respondents for item H8 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

H_8 In the last three months, how often have you happened to drive between midnight and 5:00 in the morning?				
	Never	1-2 times	2-4 times	More than 4 times
Males	59 (42.45%)	23 (16.55%)	27 (19.42%)	30 (21.58%)
Females	50 (43.48%)	23 (20%)	18 (15.65%)	24 (20.87%)
Total	109 (42.91%)	46 (18.11%)	45 (17.72%)	54 (21.26%)

Table 6. Frequency distribution of respondents for item H9 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

H_9 Have you ever got a traffic fine?		
	No	Yes
Males	91 (65.47%)	48 (34.53%)*
Females	91 (79.13%)*	24 (20.87%)
Total	182 (71.65%)	72 (28.35%)

Table 7. Frequency distribution of respondents for kinds of violations as a function of gender. * refers to significant differences ($p < .001$) between males and females.

	Males	Females	Total
No parking	13 (5.86%)	7 (2.9%)	20 (4.32%)
Running a red light	8 (3.6%)	3 (1.24%)	11 (2.38%)
Running a stop sign	6 (2.7%)	2 (.83%)	8 (1.73%)
Speeding	28 (12.61%)*	10 (4.15%)	38 (8.21%)
Drunk driving	5 (2.25%)	1 (.41%)	6 (1.3%)
Lack of seatbelts use	19 (8.56%)*	9 (3.73%)	28 (6.05%)

Table 8. Frequency distribution of respondents for item H18 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

H_18 Have you ever driven after drinking alcoholic drink?						
	Never			Often		
Males	115 (82.73%)	19 (13.67%)	3 (2.16%)	0	0	2 (1.44%)
Females	103 (89.57%)	8 (6.96%)	3 (2.61%)	0	0	1 (.87%)
Total	218 (85.83%)	27 (10.63%)	6 (2.36%)	0	0	3 (1.18%)

Table 9. Frequency distribution of respondents for alcohol effects as a function of gender. * refers to significant differences ($p < .001$) between males and females.

	Males	Females	Total
You could hardly follow the trajectory	3 (1.35%)	1 (.41%)	4 (.86%)
You could hardly keep your head on straight	3 (1.35%)	1 (.41%)	4 (.86%)
You had muscle cramps	2 (.9%)	0	2 (.43%)
You could hardly keep your eyes open	3 (1.35%)	2 (.83%)	5 (1.08%)
You got stomach cramps	3 (1.35%)	1 (.41%)	4 (.86%)
You could not focus on the road	1 (.45%)	1 (.41%)	2 (.43%)
Someone who was with you made you notice it	6 (2.7%)	2 (.83%)	8 (1.73%)

Specific dimensions of the questionnaire scales

Scale A, Attitude toward road safety.

Data from the Scale A of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.80, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=2530.32, p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 53.56% of the total variance. Table A.1 shows the eigenvalues and the variance accounted for by each factor. Table A.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Negative attitude toward alcohol and drugs", accounting for by the 18.96% of the common variance) refers to a negative attitude toward driving under the effect of drugs and alcohol. Items such as "*I would never drive under the influence of narcotic drugs*" load on this factor.

The second factor (labelled "Tolerance toward violations", accounting for by the 12.76% of the common variance) refers a negative attitude toward traffic rules. Items such as "*High-speed driving is possible if road conditions are good and there is nobody around*" load on this factor.

The third factor (labelled "Tolerance toward speeding", accounting for by the 8.4% of the common variance) refers to a positive attitude toward going by car with a fast driver. Items such as "*It is ok to go by car with a fast driver if it is the only way to go back home at night*" load on this factor.

The fourth factor (labelled "Usefulness of violations", accounting for by the 8.47% of the common variance) refers to a positive attitude toward violations that are useful to keep traffic flowing. Items such as "*To keep traffic smooth-flowing you should ignore many of the road traffic rules*" load on this factor. This factor is positively correlated with both the second and the third factors (Table A.3).

Table A.1. Eigenvalues and variance accounted for by each factor (Scale A)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.045	22.471	22.471	3.414
2	2.811	15.618	38.089	2.296
3	1.725	9.586	47.674	1.512
4	1.059	5.883	53.557	1.525
5	1.039	5.77	59.327	
6	0.978	5.436	64.763	
7	0.934	5.189	69.953	
8	0.748	4.154	74.107	

9	0.706	3.92	78.027
10	0.645	3.582	81.609
11	0.576	3.202	84.812
12	0.536	2.976	87.788
13	0.504	2.797	90.585
14	0.458	2.543	93.128
15	0.436	2.422	95.55
16	0.335	1.863	97.413
17	0.307	1.706	99.119
18	0.159	0.881	100

Table A.2. Factor loadings (Scale A).

	Factors			
	Negative attitude toward alcohol/drugs	Tolerance toward violations	Tolerance toward speeding	Usefulness of violations
A_1				0.707
A_2		0.372		0.313
A_3	0.445			
A_4		0.375		
A_5				
A_6		0.407		
A_7		0.616		
A_8				0.326
A_9		0.604		
A_10		0.875		-0.270
A_11		-0.275		
A_12			0.668	
A_13			0.766	
A_14	0.560			
A_15	0.703			
A_16	0.806			
A_17	0.914			
A_18	0.864			

Table A.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	-.096	-.150	-.231
2	-.096	1.000	.060	.334
3	-.150	.060	1.000	.308
4	-.231	.334	.308	1.000

Scale B, Locus of Control.

Data from the Scale B of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.83, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(435)=4656.00$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 30.29% of the total variance. Table B.1 shows the eigenvalues and the variance accounted for by each factor. Table B.2 shows the item loadings after Oblimin rotation.

The first factor (labeled “External Locus of Control”, accounting for by the 19.45% of the common variance) refers to an external Locus of Control, as respondents attribute responsibility of road accidents mostly to external causes, independent of drivers behaviour. Items such as “*Driving without accidents is mainly a question of good luck*” load on this factor. The second factor (labeled “Internal Locus of Control, reversed”, accounting for by the 8.14% of the common variance) refers to an internal Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers. Items such as “*A careful driver can prevent any accident*” load on this factor.

The three factors are not correlated (Table B.3).

Table B.1. Eigenvalues and variance accounted for by each factor (Scale B)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	6.860	22.866	22.866	5.836
2	2.228	7.426	30.292	2.442
3	2.193	7.31	37.602	
4	1.713	5.711	43.313	
5	1.533	5.111	48.424	
6	1.44	4.8	53.224	
7	1.252	4.173	57.397	
8	1.132	3.775	61.172	
9	1.054	3.514	64.686	
10	0.893	2.978	67.664	
11	0.785	2.617	70.281	
12	0.726	2.419	72.7	
13	0.695	2.316	75.016	
14	0.675	2.249	77.265	
15	0.635	2.118	79.383	
16	0.588	1.961	81.343	
17	0.577	1.923	83.266	

18	0.547	1.823	85.089
19	0.534	1.778	86.867
20	0.496	1.655	88.522
21	0.475	1.583	90.105
22	0.443	1.478	91.583
23	0.429	1.431	93.014
24	0.378	1.259	94.273
25	0.35	1.168	95.44
26	0.344	1.145	96.586
27	0.309	1.029	97.614
28	0.269	0.898	98.512
29	0.249	0.83	99.342
30	0.197	0.658	100

Table B.2. Factor loadings (Scale B).

	Factor	
	External LOC	Internal LOC (reversed)
B_1	0.479	
B_2	0.549	
B_3	0.497	-0.422
B_4	0.448	
B_5	0.255	
B_6	0.256	-0.400
B_7	0.413	-0.566
B_8	0.46	-0.388
B_9	0.456	-0.423
B_10	0.316	-0.472
B_11		
B_12	0.608	
B_13	0.756	
B_14	0.778	
B_15	0.765	
B_16	0.534	
B_17		-0.405
B_18	0.386	
B_19	0.400	
B_20		
B_21	0.519	
B_22	0.618	

B_23		0.285
B_24		
B_25		
B_26	0.346	
B_27		
B_28		-0.352
B_29		
B_30		-0.292

Table B.3. Factor correlation matrix

Factor	1	2
1	1.000	-.151
2	-.151	1.000

Scale D, Rage during driving.

Data from the Scale D of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.86, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(91)=1798.39, p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 52.2% of the total variance. Table D.1 shows the eigenvalues and the variance accounted for by each factor. Table D.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Violation-related rage”, accounting for by the 25.45% of the common variance) refers to the rage reactions due to other drivers violating the traffic code. Items such as “*Somebody reverses just in front of you without looking back*” load on this factor. The second factor (labelled “Obstacle-related rage”, accounting for by the 16.95% of the common variance) refers to the rage reactions due to obstacles preventing drivers to drive the way they want. Items such as “*You are trapped in traffic jam*” load on this factor. The third factor (labelled “Insult-related rage, reversed”, accounting for by the 21.52% of the common variance) refers to refers the rage reactions due insults from other drivers. Items such as “*Somebody sounds the horn for your way of driving*” load on this factor.

The three factors are however notably correlated (Table D.3).

Table D.1. Eigenvalues and variance accounted for by each factor (Scale D)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.719	33.706	33.706	3.563
2	1.577	11.263	44.969	2.373
3	1.012	7.231	52.2	3.013
4	0.935	6.675	58.875	
5	0.925	6.611	65.486	
6	0.761	5.435	70.921	
7	0.684	4.888	75.809	
8	0.622	4.442	80.251	
9	0.6	4.282	84.533	
10	0.506	3.612	88.145	
11	0.495	3.539	91.684	
12	0.439	3.138	94.822	
13	0.395	2.823	97.646	
14	0.33	2.354	100	

Table D.2. Factor loadings (Scale D).

	Factor		
	Violation-related rage	Obstacle-related rage	Insult-related rage (reversed)
D_1	0.629		
D_2	0.411		
D_3	0.904		
D_4	0.437		
D_5		0.481	
D_6	0.552		
D_7	0.398	0.273	
D_8		0.477	
D_9			-0.746
D_10			-0.782
D_11	0.399		
D_12		0.75	
D_13	0.364		
D_14		0.507	

Table D3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	.369	-.637
2	.369	1.000	-.444
3	-.637	-.444	1.000

Scale F, Personality.

Data from the Scale F of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.83, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(666)=5690.66, p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 40.45% of the total variance. Table F.1 shows the eigenvalues and the variance accounted for by each factor. Table F.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Anxiety”, accounting for by the 14.68% of the common variance) refers to Anxiety. Items such as “*I easily panic*” load on this factor.

The second factor (labelled “Altruism”, reversed, accounting for by the 12.93% of the common variance) refers to be kind with other people. Items such as “*I tend to be kind with all the persons I meet*” load on this factor. This factor (reversed) is slightly negatively correlated with the Anxiety factor (Table F.3).

The third factor (labelled “Sensation seeking”, accounting for by the 5.70% of the common variance) refers to the Sensation-seeking personality trait. Items such as “*I often wish exciting things*” load on this factor.

The fourth factor (labelled “Stability”, accounting for by the 4.45% of the common variance) refers to being calm and reflexive. Items such as “*I’m tranquil and not irritable*” load on this factor.

Table F.1. Eigenvalues and variance accounted for by each factor (Scale F)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	7.209	19.484	19.484	5.433
2	3.038	8.212	27.696	4.784
3	2.473	6.685	34.381	2.11
4	2.246	6.07	40.451	1.645
5	2.045	5.527	45.978	
6	1.466	3.962	49.94	
7	1.311	3.544	53.484	
8	1.166	3.152	56.635	
9	1.094	2.957	59.592	
10	1.005	2.717	62.309	
11	0.931	2.517	64.826	
12	0.854	2.308	67.134	
13	0.8	2.161	69.295	
14	0.781	2.11	71.405	
15	0.718	1.94	73.346	

16	0.693	1.873	75.219
17	0.677	1.83	77.048
18	0.654	1.768	78.816
19	0.617	1.667	80.483
20	0.584	1.579	82.062
21	0.56	1.514	83.576
22	0.532	1.438	85.014
23	0.51	1.378	86.392
24	0.476	1.287	87.679
25	0.464	1.253	88.932
26	0.459	1.24	90.171
27	0.424	1.145	91.316
28	0.395	1.068	92.384
29	0.368	0.995	93.378
30	0.365	0.985	94.364
31	0.346	0.934	95.298
32	0.331	0.896	96.194
33	0.316	0.855	97.048
34	0.289	0.78	97.828
35	0.281	0.759	98.588
36	0.269	0.728	99.316
37	0.253	0.684	100.000

Table F.2. Factor loadings (Scale F).

	Factor			
	Anxiety	Altruism	Sensation Seeking	Stability
F_1				0.271
F_2	0.342			
F_3	0.361	-0.288	0.367	
F_4			0.406	
F_5	0.606			-0.401
F_6				0.501
F_7		0.598		
F_8	0.352			
F_9	0.387			0.375
F_10			0.414	
F_11		-0.289		0.275
F_12		-0.278	0.546	

F_13	0.503			
F_14				
F_15		0.722		
F_16	0.584		-0.295	
F_17				
F_18	0.426			
F_19	0.496			
F_20		0.517	0.377	
F_21	0.317	0.388		-0.434
F_22				
F_23		0.502		
F_24			0.600	
F_25			0.309	0.542
F_26	0.64			
F_27		0.522		
F_28	0.455		0.263	
F_29	0.689			
F_30	0.709			
F_31		0.586		
F_32			0.429	
F_33		0.604		
F_34	0.284			
F_35		0.601		
F_36		0.517		
F_37	0.584			

Table F.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	-.315	.116	.058
2	-.315	1.000	-.059	-.044
3	.116	-.059	1.000	-.047
4	.058	-.044	-.047	1.000

Scale I, Driving Behaviour Questionnaire.

Data from the Scale I of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.94, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(561)=8922.73$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 53.82% of the total variance. Table I.1 shows the eigenvalues and the variance accounted for by each factor. Table I.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Slips/Lapses”, accounting for by the 29.35% of the common variance) refers to errors due to lapses and slips. Items such as “*Forgot where you had parked your car*” load on this factor.

The second factor (labelled “Violations”, accounting for by the 22.10% of the common variance) refers to violations of the traffic code. Items such as “*Exceeded speed limits on the motorway*” load on this factor.

The third factor (labelled “Distraction”, accounting for by the 6.04% of the common variance) refers to errors due to lack of attention. Items such as “*Realized that you couldn’t recall a road you had just driven on*” load on this factor.

The fourth factor (labelled “Correct behavior”, accounting for by the 13.86% of the common variance) refers to complying with the traffic code. Items such as “*Driven a long distance without wearing the seatbelts*” negatively load on this factor.

The “Slips/Lapses” and the “Violations“ factors show a relevant positive correlation, whereas the “Correct behaviour” factor correlates negatively with both the “Slips/Lapses” and the “Violations” factors (Table I.3).

Table I.1. Eigenvalues and variance accounted for by each factor (Scale I)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	12.313	36.214	36.214	9.981
2	3.946	11.606	47.820	7.513
3	1.642	4.829	52.649	2.054
4	1.530	4.499	57.148	4.710
5	1.235	3.633	60.781	
6	1.063	3.128	63.908	
7	.962	2.830	66.738	
8	.871	2.563	69.301	
9	.765	2.251	71.552	
10	.674	1.982	73.534	
11	.647	1.902	75.435	
12	.592	1.741	77.177	

13	.555	1.631	78.808
14	.518	1.524	80.331
15	.482	1.419	81.750
16	.463	1.361	83.111
17	.446	1.311	84.422
18	.430	1.264	85.685
19	.411	1.210	86.895
20	.408	1.200	88.095
21	.385	1.134	89.229
22	.383	1.125	90.354
23	.359	1.057	91.410
24	.342	1.005	92.416
25	.336	.987	93.403
26	.319	.938	94.341
27	.294	.866	95.207
28	.275	.808	96.015
29	.272	.799	96.814
30	.249	.734	97.547
31	.237	.698	98.245
32	.220	.647	98.893
33	.208	.611	99.503
34	.169	.497	100.000

Table I.2. Factor loadings (Scale I).

	Factor			
	Slips/ Lapses	Violations	Distractions	Correct behaviour
I_1		0.477	0.319	
I_2		0.389		-0.259
I_3		0.831		
I_4		0.668	-0.292	
I_5				-0.515
I_6	0.346			-0.377
I_7		0.748		
I_8		0.392		-0.473
I_9		0.622		-0.293
I_10				-0.55
I_11		0.655		

I_12		0.675		
I_13		0.554	-0.327	
I_14	0.33			-0.325
I_15		0.806		
I_16	0.271	0.517		
I_17		0.363	0.259	
I_18	0.505		0.447	
I_19	0.552		0.44	
I_20	0.608		0.312	
I_21	0.466		0.474	
I_22	0.696			0.262
I_23	0.689			
I_24	0.632			
I_25	0.768			
I_26	0.617			
I_27	0.706			
I_28	0.542			
I_29	0.667			
I_30	0.645			-0.273
I_31	0.698			
I_32	0.688			
I_33	0.652			
I_34	0.509	0.285		

Table I.3 Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	.366	.197	-.375
2	.366	1.000	.045	-.305
3	.197	.045	1.000	-.110
4	-.375	-.305	-.110	1.000

Scale J, Imagined driving behaviour.

Data from the Scale J of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.87, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(231)=4990.82$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a five-factor solution that accounted for the 66.56% of the total variance. Table J.1 shows the eigenvalues and the variance accounted for by each factor. Table J.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Risky driving”, accounting for by the 20.41% of the common variance) refers to risky driving behaviour. Items such as “*You drive without keeping a safe distance*” load on this factor.

The second factor (labelled “Slowing”, accounting for by the 14.34% of the common variance) refers to the slowing the speed when required by the traffic conditions. Items such as “*You slow down when approaching a danger sign*” load on this factor.

The third factor (labelled “Alcohol/Physical conditions”, accounting for by the 12.05% of the common variance, reversed) refers to alcohol and general physical condition related behaviours. Items such as “*You drive after having had a glass of beer/wine*” load on this factor.

The fourth factor (labelled “Avoiding speeding”, accounting for by the 17.25% of the common variance, reversed) refers to speeding. Items such as “*You exceed the speed limits by 10 Km/h*” load on this factor.

The fifth factor (labelled “Pedestrian-related safe driving”, accounting for by the 12.69% of the common variance) refers to slowing down in proximity of children playing areas. Items such as “*You slow down in a childrens’ play area even if there is nobody in sight*” load on this factor.

The “Risky driving” factor has a strong negative correlation with both the “Avoiding speeding” and “Alcohol/Physical conditions” factors, whereas the “Slowing” factor correlates positively with the “Pedestrian-related risky driving” factor (Table J.3).

Table J.1. Eigenvalues and variance accounted for by each factor (Scale J)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.987	27.212	27.212	4.491
2	4.255	19.339	46.552	3.155
3	1.963	8.924	55.475	2.651
4	1.504	6.836	62.311	3.795
5	0.934	4.244	66.556	2.791
6	0.808	3.673	70.228	
7	0.704	3.2	73.428	
8	0.648	2.944	76.373	
9	0.614	2.791	79.164	
10	0.526	2.39	81.554	

11	0.492	2.235	83.789
12	0.456	2.071	85.86
13	0.443	2.012	87.872
14	0.376	1.711	89.583
15	0.357	1.621	91.204
16	0.341	1.548	92.752
17	0.314	1.429	94.181
18	0.296	1.346	95.527
19	0.273	1.24	96.768
20	0.254	1.153	97.921
21	0.238	1.083	99.004
22	0.219	0.996	100

Table J.2. Factor loadings (Scale J).

	Factor				
	Risky driving	Slowing	Alcohol/ Physical	Avoiding speeding	Pedestrian-related safe driving
J_1				-0.728	
J_2				-0.748	
J_3			-0.276	-0.532	
J_4			-0.25	-0.62	
J_5				-0.652	
J_6	0.703				
J_7	0.62				
J_8	0.732				
J_9	0.749				
J_10			-0.521	-0.258	
J_11			-0.709		
J_12	0.472				
J_13	0.313	0.438	0.374		
J_14		0.509			0.332
J_15		0.746			
J_16		0.851			
J_17			-0.79		
J_18	0.58				
J_19					0.605
J_20					0.834
J_21		0.425			0.355
J_22	0.448		-0.283		

Table J.3 Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	-.156	-.242	-.407	-.098
2	-.156	1.000	.085	-.132	.486
3	-.242	.085	1.000	.206	-.176
4	-.407	-.132	.206	1.000	-.061
5	-.098	.486	-.176	-.061	1.000

Scale K, Driving under the effect of alcohol.

Data from the Scale K of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.73, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(36)=1149.41$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 54.12% of the total variance. Table K.1 shows the eigenvalues and the variance accounted for by each factor. Table K.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Permissive attitude toward alcohol", accounting for by the 23.16% of the common variance) refers to driving under the effect of alcohol. Items such as "*You drove less than two hours after having drunk alcohol*" load on this factor.

The second factor (labelled "Prevention behaviours", reversed, accounting for by the 21.6% of the common variance, reversed) refers to lack of behaviours aimed at preventing someone from driving under the effects of alcohol. Items such as "*You were the designated driver*" load on this factor. The two factors are not correlated.

Table K.1. Eigenvalues and variance accounted for by each factor (Scale K)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	3.162	35.13	35.13	2.085
2	1.709	18.986	54.116	1.941
3	0.983	10.923	65.039	
4	0.888	9.87	74.909	
5	0.62	6.891	81.8	
6	0.495	5.499	87.299	
7	0.439	4.881	92.18	
8	0.38	4.223	96.403	
9	0.324	3.597	100	

Table K.2. Factor loadings (Scale K).

	Factor	
	Permissive attitude	Prevention behaviours (reversed)
K_1	0.439	
K_2	0.645	
K_3		-0.706
K_4	0.336	-0.532
K_5	0.511	-0.298
K_6		-0.616
K_7		-0.590
K_8	0.707	
K_9	0.590	

Table K.3 Factor Correlation Matrix

Factor	1	2
1	1.000	-.215
2	-.215	1.000

Scale L, Effects of alcohol.

Data from the Scale L of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.84, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=3159.87$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 41.11% of the total variance. Table L.1 shows the eigenvalues and the variance accounted for by each factor. Table L.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Positive effects”, accounting for by the 21.65% of the common variance) refers to the supposed positive effects of alcohol assumption. Items such as “*Alcohol increases concentration capacity*” load on this factor.

The second factor (labelled “Negative effects”, accounting for by the 14.09% of the common variance) refers to the supposed negative effects of alcohol assumption. Items such as “*Alcohol decreases the level of attention*” load on this factor. The two factors are uncorrelated (Table L.3).

Table L.1. Eigenvalues and variance accounted for by each factor (Scale L)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.174	25.869	25.869	4.331
2	3.049	15.243	41.112	2.818
3	1.592	7.962	49.074	
4	1.327	6.635	55.709	
5	1.143	5.715	61.424	
6	0.922	4.611	66.036	
7	0.787	3.933	69.968	
8	0.727	3.634	73.603	
9	0.685	3.426	77.028	
10	0.59	2.95	79.979	
11	0.565	2.823	82.802	
12	0.491	2.456	85.258	
13	0.459	2.293	87.55	
14	0.442	2.21	89.761	
15	0.397	1.985	91.746	
16	0.381	1.905	93.651	
17	0.366	1.832	95.482	
18	0.356	1.78	97.263	
19	0.293	1.466	98.729	
20	0.254	1.271	100	

Table L.2. Factor loadings (Scale L).

	Factor	
	Positive effects	Negative effects
L_1	0.582	
L_2	-0.309	0.648
L_3		0.669
L_4	0.749	
L_5	0.751	
L_6	0.486	
L_7		0.7
L_8	0.468	
L_9	0.283	0.348
L_10	0.714	
L_11		0.496
L_12		
L_13		0.527
L_14		0.585
L_15		0.462
L_16	0.293	0.26
L_17	0.503	
L_18	0.681	
L_19	0.617	
L_20	0.569	

Table L.3 Factor Correlation Matrix

Factor	1	2
1	1.000	-.077
2	-.077	1.000

Cluster analysis

Factor scores on the identified subscales for scales A, B, D, F, I, K, and L were computed through regression analysis, and then submitted to cluster analysis in order to identify groups of respondents. Also the scores on the scale H (Moral disengagement) were included into the analysis. A hierarchical method of cluster analysis was used to identify the number of clusters, then a k-means method was used to identify the groups of respondents.

Results showed three separate groups of respondents. A multivariate analysis of variance yielded a significant difference among the three groups (Wilks' Lambda=0.13, $F_{42,846}=35.19$, $p<.0001$). A further factorial analysis of variance on the subscale scores yielded a significant difference among the three groups ($F_{2,443}=245.04$, $p<.001$) and a significant interaction between group and subscale ($F_{40,8860}= 45.55$, $p<.001$), meaning that each group of respondents shows a specific profile.

1. **RISKY DRIVERS.** One group can be identified as composed of risky drivers. They have a permissive attitude toward driving under the effect of alcohol and recreational drugs, and are not that much aware of the negative effects of alcohol upon driving. They also refer not to have a correct behaviour during driving, and indeed they are quite tolerant toward violations of the traffic code and speeding. Furthermore, risky drivers have high scores on driving related rage, especially due to obstacles, and high scores on moral disengagement. Compared to safe drivers, risky drivers have higher scores on sensation seeking and impulsivity, and have more direct experiences of driving under the effect of alcohol.
2. **OVERCONFIDENT DRIVERS.** People in this group are characterized by being rather overconfident on their abilities as drivers. However, they are more tolerant toward violations of the traffic rules compared to safe drivers, but they show higher levels of rage, both violation- and obstacle-related than safe drivers. Similarly to the risky drivers, however, they show high scores on moral disengagement. They also seem to be aware of the negative effects of alcohol upon driving, though are less involved in preventing behaviours.
3. **SAFE DRIVERS.** Safe drivers are instead characterized by being not tolerant toward driving under the effects of alcohol and drugs, toward violations of traffic rules and speeding. Safe drivers have a rather high score on internal Locus of Control, and show intermediate levels of anxiety. They are also aware of the alcohol negative effects upon driving, and do not feel rage during driving. People in the safe drivers group show low scores on moral disengagement.

Interestingly, the three groups do not differ in terms of age or gender, though a prevalence of males can be observed among the risky drivers.

The average score per subscale (and standard error) for each group is shown in Table 1. Tables 2, 3, and 4 report the results of the post-hoc comparisons among the three groups. Table 5 shows the respondents' mean age as a function of gender and group. Figure 1 shows the profiles of the three groups of drivers on the subscales. The three groups do differ in terms of their perception of risk of being involved in an accident. Namely, respondents in the overconfident drivers group rate their risk of being involved in a car accident as lower compared to both the other groups, and are slightly (albeit not significantly) less worried about this possibility (Figure 2). However, respondents in the three groups do rate their parents reactions similarly (Figure 4). Finally, respondents in the three groups differ in terms of how supportive and encouraging their friends are perceived, with the risky drivers rating their friends as more supportive and encouraging than the other two groups, but

overconfident drivers rating their friends as less supportive than the other two groups (Figure 3).

Table 1. Average scores and standard errors for each group on the subscales of the questionnaire.

	RISKY drivers			OVERCONFIDENT drivers			SAFE drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Negative attitude toward alcoho/drugs	-0.61	0.07	111	0.44	0.07	96	0.26	0.05	188
Tolerance toward violations	0.42	0.07	111	0.54	0.08	96	-0.43	0.06	188
Tolerance toward speeding	0.67	0.07	111	-0.59	0.08	96	-0.03	0.05	188
Usefulness of violations	0.53	0.07	111	-0.21	0.07	96	-0.18	0.05	188
External Locus of Control	2.89	0.06	111	2.06	0.06	96	3.06	0.04	188
Internal Locus of Control (rev)	3.07	0.06	111	1.93	0.06	96	2.99	0.04	188
Anxiety	0.71	0.07	111	-0.77	0.08	96	-0.04	0.06	188
Impulsivity (rev)	-0.56	0.08	111	0.28	0.09	96	0.16	0.06	188
Sensation Seeking	0.46	0.08	111	0.27	0.08	96	-0.34	0.06	188
Stability	0.07	0.08	111	-0.54	0.08	96	0.17	0.06	188
Slips/Lapses	0.81	0.08	111	-0.33	0.08	96	-0.31	0.06	188
Violations	0.37	0.08	111	0.54	0.09	96	-0.46	0.06	188
Distraction	0.34	0.08	111	-0.48	0.08	96	0.05	0.06	188
Correct Behavior	-0.73	0.07	111	0.42	0.08	96	0.20	0.05	188
Alcohol related behavior	0.62	0.07	111	-0.18	0.08	96	-0.32	0.05	188
Prevention behavior	-0.18	0.07	111	0.70	0.08	96	-0.22	0.06	188
Positive effects	0.68	0.07	111	-0.45	0.08	96	-0.24	0.06	188
Negative effects	-0.58	0.08	111	0.52	0.08	96	0.08	0.06	188
Violation-related rage	0.19	0.08	111	0.43	0.09	96	-0.33	0.06	188
Obstacle-related rage	0.56	0.07	111	0.32	0.07	96	-0.48	0.05	188
Insult-related rage (rev)	-0.30	0.08	111	-0.49	0.08	96	0.38	0.06	188
Moral disengagement	0.45	0.08	111	0.51	0.09	96	-0.39	0.06	188

Table 2. Comparison between Overconfident and Risky drivers on each subscale.

	RISKY drivers	OVERCONFIDENT drivers	Significance
	N=111	N=96	
Negative attitude toward alcohol/drugs	-0.61	0.44	p<.001
Tolerance toward violations	0.42	0.54	ns
Tolerance toward speeding	0.67	-0.59	p<.001
Usefulness of violations	0.53	-0.21	p<.001
External Locus of Control	2.89	2.06	p<.001
Internal Locus of Control (rev)	3.07	1.93	p<.001
Anxiety	0.71	-0.77	p<.001
Impulsivity (rev)	-0.56	0.28	p<.001
Sensation Seeking	0.46	0.27	ns
Stability	0.07	-0.54	p<.001
Slips/Lapses	0.81	-0.33	p<.001
Violations	0.37	0.54	ns
Distraction	0.34	-0.48	p<.001
Correct Behavior	-0.73	0.42	p<.001
Alcohol related behavior	0.62	-0.18	p<.001
Prevention behavior	-0.18	0.70	p<.001
Positive effects	0.68	-0.45	p<.001
Negative effects	-0.58	0.52	p<.001
Violation-related rage	0.19	0.43	ns
Obstacle-related rage	0.56	0.32	ns
Insult-related rage (rev)	-0.30	-0.49	ns
Moral disengagement	0.45	0.51	ns

Table 3. Comparison between Safe and Risky drivers on each subscale.

	RISKY drivers	SAFE drivers	Significance
	N=111	N=188	
Negative attitude toward alcohol/drugs	-0.61	0.26	p<.001
Tolerance toward violations	0.42	-0.43	p<.001
Tolerance toward speeding	0.67	-0.03	p<.001
Usefulness of violations	0.53	-0.18	p<.001
External Locus of Control	2.89	3.06	ns
Internal Locus of Control (rev)	3.07	2.99	ns
Anxiety	0.71	-0.04	p<.001
Impulsivity (rev)	-0.56	0.16	p<.001
Sensation Seeking	0.46	-0.34	p<.001
Stability	0.07	0.17	ns
Slips/Lapses	0.81	-0.31	p<.001
Violations	0.37	-0.46	p<.001
Distraction	0.34	0.05	ns

Correct Behavior	-0.73	0.20	p<.001
Alcohol related behavior	0.62	-0.32	p<.001
Prevention behavior	-0.18	-0.22	ns
Positive effects	0.68	-0.24	p<.001
Negative effects	-0.58	0.08	p<.001
Violation-related rage	0.19	-0.33	p<.001
Obstacle-related rage	0.56	-0.48	p<.001
Insult-related rage (rev)	-0.30	0.38	p<.001
Moral disengagement	0.45	-0.39	p<.001

Table 4. Comparison between Overconfident and Safe drivers on each subscale.

	OVERCONFIDENT drivers N=96	SAFE drivers N=188	Significance
Negative attitude toward alcohol/drugs	0.44	0.26	ns
Tolerance toward violations	0.54	-0.43	p<.001
Tolerance toward speeding	-0.59	-0.03	p<.001
Usefulness of violations	-0.21	-0.18	ns
External Locus of Control	2.06	3.06	p<.001
Internal Locus of Control (rev)	1.93	2.99	p<.001
Anxiety	-0.77	-0.04	p<.001
Impulsivity (rev)	0.28	0.16	ns
Sensation Seeking	0.27	-0.34	p<.001
Stability	-0.54	0.17	p<.001
Slips/Lapses	-0.33	-0.31	ns
Violations	0.54	-0.46	p<.001
Distraction	-0.48	0.05	p<.001
Correct Behavior	0.42	0.20	ns
Alcohol related behavior	-0.18	-0.32	ns
Prevention behavior	0.70	-0.22	p<.001
Positive effects	-0.45	-0.24	ns
Negative effects	0.52	0.08	p<.001
Violation-related rage	0.43	-0.33	p<.001
Obstacle-related rage	0.32	-0.48	p<.001
Insult-related rage (rev)	-0.49	0.38	p<.001
Moral disengagement	0.51	-0.39	p<.001

Table 5. Mean age (years) and standard errors as a function of gender and group.

		Mean age	Standard error	N
Males	Risky drivers	20.82	0.26	62
	Overconfident drivers	20.43	0.29	47
	Safe drivers	20.48	0.22	82
Females	Risky drivers	20.41	0.29	49
	Overconfident drivers	20.47	0.29	49
	Safe drivers	20.65	0.20	106

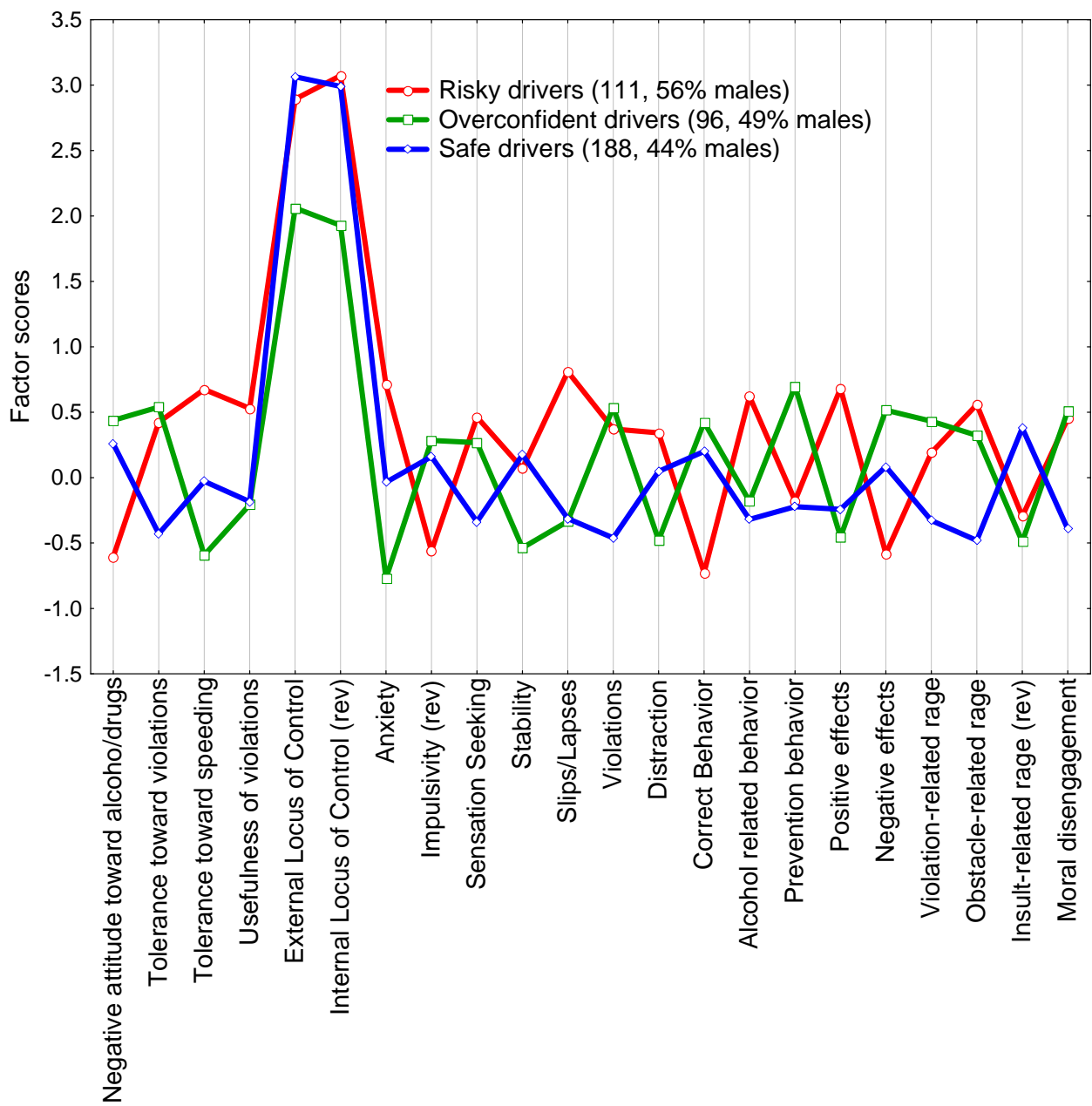


Figure 1. Average scores for each group on the subscales of the questionnaire.

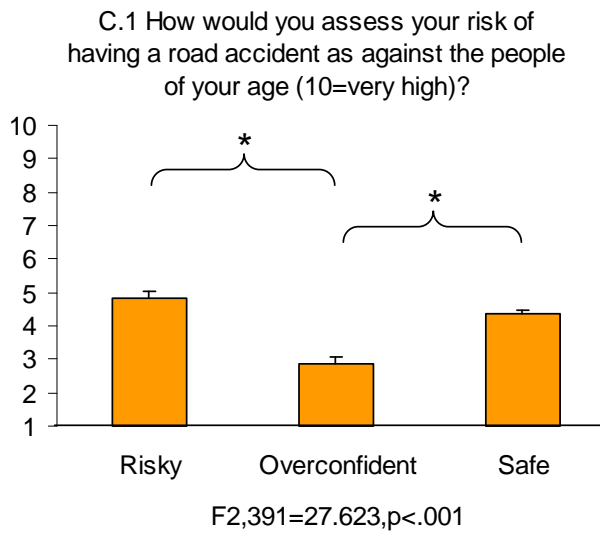


Figure 2. Average scores for each group on items concerning risk perception.

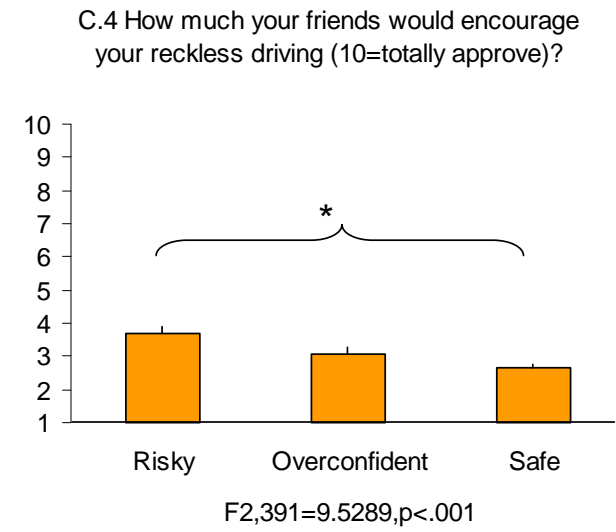
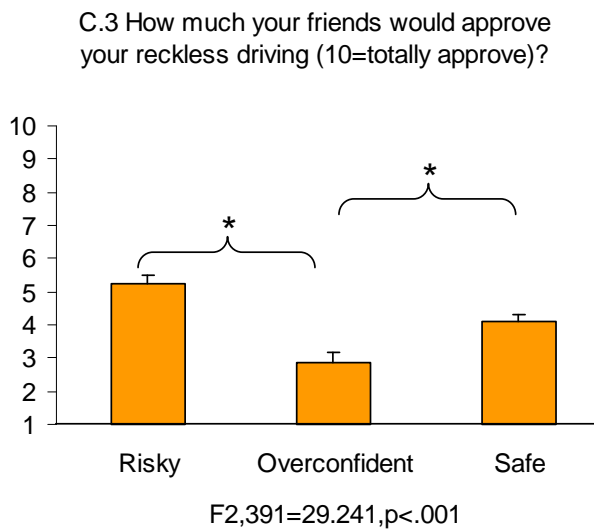


Figure 3. Average scores for each group on items concerning friends' attitude.

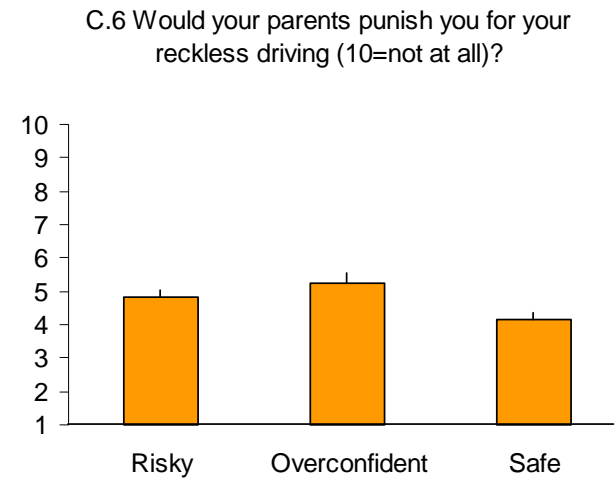
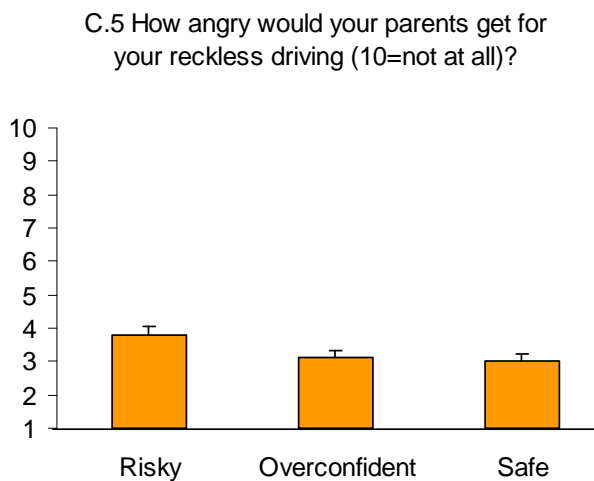


Figure 4. Average scores for each group on items concerning parents' attitude.

SCOOTER DRIVERS (QUESTIONNAIRE SECTION 2)

Sample description

A total of 231 people answered the Section 2 of the questionnaire. Males were 155 (67.1% of the total sample) and females were 76 (32.9% of the total sample). Their mean age was 19.3 years (standard deviation 2.05), ranging between 17 and 24 years. Age was no significantly different between males and females. Not all the respondents answered all the items of the questionnaire, thus each analysis was run on the largest sample available for that analysis (missing values were not estimated).

Driving habits

Tables 1 to 13 show the distribution as a function of gender of the answers to items concerning the driving habits and experiences. Most scooter male drivers from Lithuania refer to use scooters or motorbikes on a rather sparse base (only about 24% everyday), whereas female drivers use of a scooter is even rarer (about 5% of them use it everyday). Their use of scooters is also characterized by being very variable in term of number of kilometres travelled, from only few to more than 100 kilometres. Interestingly, male drivers refer to drive after 11.00 pm relatively often (more than 30% of them drive after 11:00 pm more than 4 times a week), whereas female drivers are far less likely to drive during night hours (about 38% of them do not drive after 11:00 pm at all). Scooter drivers also are not normally used to go on as passengers. Male drivers also refer to have received a traffic fine more often than female drivers, mostly for driving without the helmet and speeding. Interestingly, scooter drivers refer not to have been involved in accidents both as drivers or passengers very often, and usually they refer to have had only material damages.

Few respondents (about 21% of the total sample) state that they have driven after having drunk alcohol (though it must be noticed that the item do not refer to being drunk, but only to driving after having drunk some alcohol). However, very few of them refer of having recognized some of the symptoms associated with driving under the effects of alcohol, especially difficulties on keeping focused on the road. This might suggest that a consistent number of young drivers are still unaware of the negative effects of driving under the effects of alcohol.

Summarizing, young scooter drivers from Lithuania seem to be characterized by being not very regular drivers, not very experienced of driving during night hours (especially female drivers), and not very aware of the dangers associated with driving under the effects of alcohol.

Table 1. Frequency distribution of respondents for item G1.6 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

	G1_6 How many times a week do you use a scooter?					
	Never	1-2 times	3-4 times	5-6 times	Everyday	Only in the weekend
Males	6 (4.41%)	40 (29.41%)	31 (22.79%)	17 (12.5%)	33 (24.26%)*	9 (6.62%)
Females	3 (5.17%)	20 (34.48%)	23 (39.66%)*	6 (10.34%)	3 (5.17%)	3 (5.17%)
Total	9 (4.64%)	60 (30.93%)	54 (27.84%)	23 (11.86%)	36 (18.56%)	12 (6.19%)

Table 2. Frequency distribution of respondents for item G1.7 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_7 How many kilometres do you drive in a week?					
	1-10 Km	11-30 Km	31-50 Km	51-100 Km	More than 100 Km
Males	10 (7.35%)	27 (19.85%)	44 (32.35%)	41 (30.15%)	14 (10.29%)*
Females	8 (13.79%)	15 (25.86%)	22 (37.93%)	12 (20.69%)	1 (1.72%)
Total	18 (9.28%)	42 (21.65%)	66 (34.02%)	53 (27.32%)	15 (7.73%)

Table 3. Frequency distribution of respondents for item G1.8 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_8 In the last three months, how many times have you driven after 11:00 pm?				
	Never	1-2 times	2-4 times	More than 4 times
Males	46 (33.82%)	29 (21.32%)	20 (14.71%)	41 (30.15%)
Females	22 (37.93%)	19 (32.76%)	3 (5.17%)	14 (24.14%)
Total	68 (35.05%)	48 (24.74%)	23 (11.86%)	55 (28.35%)

Table 4. Frequency distribution of respondents for item G1.9 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_9 How often in a week do you go on a scooter sitting behind?						
	Never	1-2 times	3-4 times	5-6 times	Everyday	Only in the week end
Males	84 (61.76%)*	37 (27.21%)	6 (4.41%)	3 (2.21%)	0	6 (4.41%)
Females	27 (46.55%)	17 (29.31%)	6 (10.34%)	0	6 (10.34%)	2 (3.45%)
Total	111 (57.22%)	54 (27.84%)	12 (6.19%)	3 (1.55%)	6 (3.09%)	8 (4.12%)

Table 5. Frequency distribution of respondents for item G1.10 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_10 In the last three months how often you accepted a lift on a scooter after 11:00 pm?				
	Never	1-2 times a month	2-4 times in a month	More than 4 times in a month
Males	103 (75.74%)	23 (16.91%)	5 (3.68%)	5 (3.68%)
Females	38 (65.52%)	14 (24.14%)	0	6 (10.34%)
Total	141 (72.68%)	37 (19.07%)	5 (2.58%)	11 (5.67%)

Table 6. Frequency distribution of respondents for item G1.11 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_11 Have you ever been fined?		
	Yes	No
Males	27 (19.85%)*	109 (80.15%)
Females	3 (5.17%)	55 (94.83%)*
Total	30 (15.46%)	164 (84.54%)

Table 7. Frequency distribution of respondents for kinds of violations as a function of gender. * refers to significant differences ($p < .001$) between males and females.

	Males	Females	Total
Running a stop sign	1 (.65%)	0	1 (.43%)
Running a red light	1 (.65%)	0	1 (.43%)
No parking	2 (1.29%)	1 (1.32%)	3 (1.3%)
Passenger	1 (.65%)	0	1 (.43%)
Drunk driving	1 (.65%)	0	1 (.43%)
Driving without the helmet	17 (10.97%)*	1 (1.32%)	18 (7.79%)
Speeding	9 (5.81%)	1 (1.32%)	10 (4.33%)

Table 8. Frequency distribution of respondents for item G1.21 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_21 Have you ever been involved in an accident as a driver?			
	Yes	No	No but I was close to
Males	16 (11.76%)	67 (49.26%)	53 (38.97%)
Females	0	32 (55.17%)	26 (44.83%)
Total	16 (8.25%)	99 (51.03%)	79 (40.72%)

Table 9. Frequency distribution of respondents for item G1.23 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_23 What were the consequences?			
	Material damages	Personal injuries	Both
Males	6 (9.52%)	4 (6.35%)	7 (11.11%)
Females	0	0	0
Total	6 (6.74%)	4 (4.49%)	7 (7.87%)

Table 10. Frequency distribution of respondents for item G1.24 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_24 Have you ever been involved in an accident as a passenger?			
	Yes	No	No but I was close to
Males	20 (14.71%)	79 (58.09%)	37 (27.21%)
Females	8 (13.79%)	36 (62.07%)	14 (24.14%)
Total	28 (14.43%)	115 (59.28%)	51 (26.29%)

Table 11. Frequency distribution of respondents for item G1.26 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_26 What were the consequences?			
	Material damages	Personal injuries	Both
Males	11 (52.38%)	6 (28.57%)	4 (19.05%)
Females	2 (25.%)	3 (37.5%)	3 (37.5%)
Total	13 (44.83%)	9 (31.03%)	7 (24.14%)

Table 12. Frequency distribution of respondents for item G1.27 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_27 Have you ever driven after drinking alcoholic drinks?		
	Yes	No
Males	17 (12.5%)	119 (87.5%)
Females	3 (5.17%)	55 (94.83%)
Total	20 (10.31%)	174 (89.69%)

Table 13. Frequency distribution of respondents for alcohol effects as a function of gender. * refers to significant differences ($p < .001$) between males and females.

	Males	Females	Total
You could hardly follow the road	3 (1.94%)	0	3 (1.3%)
You could hardly keep your head on straight	1 (.65%)	1 (1.32%)	2 (.87%)
You had muscle cramps	1 (.65%)	0	1 (.43%)
You could hardly keep your eyes open	4 (2.58%)	2 (2.63%)	6 (2.6%)
You got stomach cramps	4 (2.58%)	2 (2.63%)	6 (2.6%)
You could not focus on the road	8 (5.16%)	0	8 (3.46%)
Someone who was with you made you notice it	3 (1.94%)	0	3 (1.3%)

Specific dimensions of the questionnaire scales

Scale A1, Attitude toward road safety issues.

Data from the Scale A1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.69, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=1471.69, p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a five-factor solution that accounted for the 62.41% of the total variance. Table A.1 shows the eigenvalues and the variance accounted for by each factor. Table A.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Usefulness of violations", accounting for by the 15.4% of the common variance) refers to a positive attitude toward violations that are useful to keep traffic flowing. Items such as "*To keep traffic smooth-flowing you should ignore many of the road traffic rules*" load on this factor. This factor is negatively correlated with the fifth factor.

The second factor (labelled "Negative attitude towards alcohol/drugs", accounting for by the 15.81% of the common variance) refers to the attitude toward driving under the effects of substances. Items such as "*I would never drive after drinking alcoholic drinks*" and "*I would never drive under the influence of narcotic drugs*" load on this factor. This factor is negatively correlated with the third factor.

The third factor (labelled "Positive attitude toward speeding", accounting for by the 19.49% of the common variance) refers to a positive attitude toward going by car with a fast driver. Items such as "*It is ok to go by car with a fast driver if it is the only way to go back home at night*" load on this factor. This factor is positively correlated to the first one.

The fourth factor (labelled "Intolerance toward violations", accounting for by the 5.74% of the common variance) refers to a negative attitude toward violations of the traffic rules. Items such as "*It is reasonable to pass when the traffic light is going from yellow to red*" load negatively on this factor.

The fifth factor (labelled "Positive attitude toward rules", accounting for by the 7.36% of the common variance) refers to a positive attitude toward traffic rules. Items such as "*Running risks and breaking a few rules does not necessarily mean that you are a bad driver*" load negatively on this factor (Table A.3).

Table A.1. Eigenvalues and variance accounted for by each factor (Scale A1)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	3.806	21.146	21.146	2.779
2	2.973	16.517	37.663	2.845
3	1.878	10.431	48.094	1.679
4	1.359	7.549	55.643	1.033
5	1.219	6.771	62.413	1.325
6	.915	5.083	67.497	
7	.845	4.693	72.190	
8	.801	4.452	76.642	
9	.703	3.904	80.546	
10	.652	3.621	84.167	
11	.597	3.318	87.485	
12	.486	2.699	90.184	
13	.389	2.164	92.348	
14	.377	2.096	94.444	
15	.339	1.882	96.326	
16	.274	1.521	97.847	
17	.248	1.376	99.223	
18	.140	.777	100.000	

Table A.2. Factor loadings (Scale A1).

	Factor				
	Usefulness of violations	Negative attitude towards alcohol/drugs	Positive attitude toward speeding	Tolerance toward violations (reversed)	Positive attitude toward rules
A1_1	0.483				-0.548
A1_2	0.559				-0.281
A1_3	-0.431				
A1_4	0.466			0.294	
A1_5				-0.684	
A1_6					-0.475
A1_7	0.737				
A1_8			0.309	-0.418	
A1_9	0.683				
A1_10	0.653				
A1_11					0.529
A1_12			0.819		
A1_13			0.658		
A1_14		0.314	-0.367		
A1_15		0.645			
A1_16		0.762			
A1_17		0.871			
A1_18		0.862			

Table A.3 Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	-.122	-.004	-.064	-.219
2	-.122	1.000	-.222	.070	-.040
3	-.004	-.222	1.000	-.093	-.108
4	-.064	.070	-.093	1.000	.146
5	-.219	-.040	-.108	.146	1.000

Scale B1, Locus of Control.

Data from the Scale B1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.83, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(435)=3331.78$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 36.45% of the total variance. Table B.1 shows the eigenvalues and the variance accounted for by each factor. Table B.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Internal Locus of Control", accounting for by the 17.97% of the common variance) refers to an internal Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers. Items such as "*A careful driver can prevent any accident*" load on this factor.

The second factor (labelled "External Locus of Control", accounting for by the 14.93% of the common variance) refers to an external Locus of Control, as respondents attribute responsibility of road accidents mostly to external causes, independent of drivers' behaviour. Items such as "*Driving without accidents is mainly a question of good luck*" load on this factor.

The two factors are not correlated (Table B.3).

Table B.1. Eigenvalues and variance accounted for by each factor (Scale B1)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	6.406	21.352	21.352	5.391
2	4.529	15.096	36.449	4.478
3	2.573	8.576	45.024	
4	2.092	6.973	51.997	
5	1.413	4.709	56.706	
6	1.375	4.585	61.291	
7	1.071	3.569	64.860	
8	1.011	3.370	68.231	
9	.888	2.961	71.192	
10	.777	2.591	73.783	
11	.741	2.471	76.254	
12	.649	2.162	78.416	
13	.607	2.022	80.439	
14	.563	1.876	82.314	
15	.531	1.771	84.085	

16	.519	1.732	85.817
17	.497	1.655	87.472
18	.464	1.547	89.019
19	.411	1.369	90.388
20	.366	1.219	91.607
21	.345	1.151	92.759
22	.340	1.133	93.892
23	.329	1.097	94.989
24	.296	.986	95.975
25	.277	.923	96.897
26	.239	.797	97.695
27	.202	.675	98.369
28	.181	.604	98.973
29	.164	.548	99.521
30	.144	.479	100.000

Table B.2. Factor loadings (Scale B1).

	Factor	
	Internal Locus of Control	External Locus of Control
B1_1		0.429
B1_2		0.38
B1_3	0.645	
B1_4		0.427
B1_5		0.431
B1_6		
B1_7	0.618	0.273
B1_8	0.678	
B1_9		0.712
B1_10		0.672
B1_11		0.336
B1_12		
B1_13	0.721	
B1_14	0.847	
B1_15	0.827	
B1_16	0.695	0.336
B1_17		
B1_18		0.328

B1_19	-0.78	0.301
B1_20		0.667
B1_21		0.686
B1_22		0.468
B1_23		0.588
B1_24	0.285	0.386
B1_25		0.373
B1_26	-0.411	
B1_27	-0.643	
B1_28		0.375
B1_29	0.352	0.363
B1_30		0.275

Table B.3. Factor Correlation Matrix

Factor	1	2
1	1.000	.023
2	.023	1.000

Scale D1, Rage during driving.

Data from the Scale D1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.80, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(91)=1142.184$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 64.03% of the total variance. Table D.1 shows the eigenvalues and the variance accounted for by each factor. Table D.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Violation-related rage", accounting for by the 24.78% of the common variance) refers to the rage reactions due to other drivers violating the traffic code. Items such as "*Somebody reverses just in front of you without looking back*" load on this factor.

The second factor (labelled "Obstacle-related rage", accounting for by the 14.69% of the common variance) refers to the rage reactions due to obstacles preventing drivers to drive the way they want. Items such as "*You are trapped in traffic jam*" load on this factor.

The third factor (labelled "Danger-related rage", accounting for by the 14.67% of the common variance) refers to the rage reactions due to other drivers violating the traffic code creating a danger situation. Items such as "*Somebody speeds up while you are trying to overtake him*" load on this factor.

The fourth factor (labelled "Insult-related rage", accounting for by the 19.03% of the common variance) refers to refers the rage reactions due insults from other drivers. Items such as "*Somebody sounds the horn for your way of driving*" load on this factor.

The four factors are however positively correlated (Table D.3).

Table D.1. Eigenvalues and variance accounted for by each factor (Scale D1)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.841	34.577	34.577	3.470
2	1.694	12.099	46.676	2.057
3	1.342	9.582	56.258	2.054
4	1.088	7.772	64.031	2.665
5	.864	6.174	70.205	
6	.695	4.962	75.167	
7	.627	4.480	79.647	
8	.607	4.335	83.982	
9	.510	3.639	87.622	
10	.464	3.316	90.938	
11	.402	2.873	93.811	
12	.326	2.328	96.138	
13	.288	2.055	98.193	
14	.253	1.807	100.000	

Table D.2. Factor loadings (Scale D1).

	Factor			
	Violation-related rage	Obstacle-related rage	Danger-related rage	Insult-related rage
D1_1	0.762			
D1_2	0.518			
D1_3	0.641		0.268	
D1_4	0.5			
D1_5		0.61		
D1_6		-0.296	0.507	0.382
D1_7				0.36
D1_8	0.412	0.461		
D1_9				0.478
D1_10				0.789
D1_11	0.48			0.251

D1_12		0.827		
D1_13			0.73	
D1_14			0.595	

Table D3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	.286	.350	.502
2	.286	1.000	.062	.217
3	.350	.062	1.000	.257
4	.502	.217	.257	1.000

Scale F1, Personality.

Data from the Scale F1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.83, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(666)=4161.76$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 43.36% of the total variance. Table F.1 shows the eigenvalues and the variance accounted for by each factor. Table F.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Sensation seeking", accounting for by the 18.01% of the common variance) refers to the Sensation-seeking personality trait. Items such as "*I often wish exciting things*" load on this factor.

The second factor (labelled "Egocentrism", accounting for by the 14.41 of the common variance) refers to Egocentrism. Items such as "*Some people think I'm egoist and egocentric*" load on this factor.

The third factor (labelled "Altruism", accounting for by the 7.99% of the common variance) refers Altruism. Items such as "*I think I'm generous with who is in trouble*" load on this factor.

Table F.1. Eigenvalues and variance accounted for by each factor (Scale F1)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	7.461	20.164	20.164	6.665
2	5.914	15.985	36.148	5.331
3	2.668	7.211	43.359	2.956
4	2.112	5.709	49.068	
5	1.546	4.178	53.246	
6	1.457	3.937	57.183	
7	1.146	3.097	60.280	
8	1.034	2.795	63.075	
9	.997	2.695	65.770	
10	.925	2.500	68.270	
11	.861	2.328	70.597	
12	.801	2.165	72.762	
13	.758	2.050	74.812	
14	.739	1.998	76.810	
15	.688	1.858	78.668	
16	.648	1.753	80.421	
17	.605	1.635	82.056	

18	.541	1.463	83.519
19	.536	1.449	84.968
20	.510	1.378	86.346
21	.495	1.337	87.683
22	.474	1.281	88.965
23	.409	1.106	90.070
24	.390	1.054	91.124
25	.366	.988	92.112
26	.347	.936	93.049
27	.340	.918	93.967
28	.318	.859	94.826
29	.301	.812	95.639
30	.280	.756	96.395
31	.240	.648	97.043
32	.232	.627	97.670
33	.210	.568	98.238
34	.189	.510	98.748
35	.179	.484	99.232
36	.154	.417	99.649
37	.130	.351	100.000

Table F.2. Factor loadings (Scale F).

	Factor		
	Sensation seeking	Egocentrism	Altruism
F1_1	-0.271		
F1_2		0.512	0.359
F1_3	-0.466	0.464	
F1_4	0.445	0.464	
F1_5	0.6	0.255	
F1_6	-0.602		0.27
F1_7		-0.403	
F1_8		0.309	
F1_9	-0.734		
F1_10	0.479		
F1_11	-0.58	0.375	
F1_12	0.269	0.556	
F1_13		0.625	

F1_14		-0.444	
F1_15			0.615
F1_16		-0.268	-0.265
F1_17	0.545		
F1_18		0.547	
F1_19			-0.304
F1_20	0.762		0.262
F1_21	0.832		
F1_22	-0.499	-0.261	
F1_23	0.389	-0.526	
F1_24	0.714		
F1_25	-0.351		0.46
F1_26		0.608	
F1_27		0.369	0.658
F1_28		0.693	
F1_29		0.593	
F1_30		0.6	
F1_31			0.429
F1_32	0.633		0.251
F1_33	0.672		0.341
F1_34		0.413	
F1_35	0.397	-0.344	0.259
F1_36			0.286
F1_37		0.539	

Table F.3 Factor Correlation Matrix

Factor	1	2	3
1	1.000	.019	.200
2	.019	1.000	-.004
3	.200	-.004	1.000

Scale I1, Driving Behaviour Questionnaire.

Data from the Scale I1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.80, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(253)=3314.72$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 64.37% of the total variance. Table I.1 shows the eigenvalues and the variance accounted for by each factor. Table I.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Violations", accounting for by the 20.89% of the common variance) refers to complying with the traffic code. Items such as *"To exceed the speed limit by over 10 Km/h"* load on this factor. This factor correlates negatively with the fourth factor and positively with the third factor.

The second factor (labelled "Slowing", accounting for by the 14.41% of the common variance) refers to reducing speed when appropriate. Items such as *"To slow down near a sign of danger"* load on this factor.

The third factor (labelled "Speeding", accounting for by the 13.15% of the common variance) refers to fast driving. Items such as *"To break road traffic rules in order to drive faster"* load on this factor.

The fourth factor (labelled "Slips/Lapses", accounting for by the 16.82% of the common variance) refers to errors due to lapses and slips. Items such as *"To be distracted by what happens around you while driving"* load on this factor.

Table I.1. Eigenvalues and variance accounted for by each factor (Scale I1)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	6.134	26.669	26.669	4.805
2	3.952	17.183	43.852	3.315
3	3.000	13.042	56.894	3.024
4	1.719	7.473	64.367	3.869
5	1.295	5.631	69.997	
6	.964	4.191	74.189	
7	.905	3.936	78.125	
8	.620	2.697	80.822	
9	.573	2.490	83.312	
10	.505	2.196	85.508	
11	.415	1.802	87.310	
12	.389	1.691	89.001	
13	.358	1.558	90.559	

14	.318	1.384	91.943
15	.304	1.321	93.264
16	.259	1.126	94.391
17	.257	1.117	95.508
18	.232	1.009	96.517
19	.202	.880	97.398
20	.189	.822	98.219
21	.152	.659	98.878
22	.143	.621	99.499
23	.115	.501	100.000

Table I.2 Factor loadings (Scale I1)

	Factor			
	Violations	Slowing	Speeding	Slips/Lapses
I1_1	0.631			
I1_2	0.645			
I1_3	0.281	0.263	0.271	-0.365
I1_4			0.816	
I1_5			0.722	
I1_6	0.448			-0.517
I1_7				-0.704
I1_8				-0.887
I1_9				-0.761
I1_10			0.67	
I1_11	0.391		0.487	0.285
I1_12	0.509			
I1_13		0.355	-0.455	-0.479
I1_14		0.719		
I1_15		0.682		-0.318
I1_16		0.541		-0.478
I1_17	0.854			
I1_18	0.775			
I1_19	0.797			
I1_20		0.758		
I1_21		0.679		
I1_22		0.578	-0.434	
I1_23	0.471		0.25	

Table I.3 Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	.020	.257	-.271
2	.020	1.000	.032	-.197
3	.257	.032	1.000	.065
4	-.271	-.197	.065	1.000

Scale J1, Imagined driving behaviour.

Data from the Scale J1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.77, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(231)=2650.16, p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 61.20% of the total variance. Table J.1 shows the eigenvalues and the variance accounted for by each factor. Table J.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Violations”, accounting for by the 14.99% of the common variance) refers to complying with the traffic code. Items such as “*To exceed the speed limit by over 10 Km/h*” load on this factor. This factor correlates negatively with the fourth factor and positively with the third factor.

The second factor (labelled “Slowing”, accounting for by the 14.22% of the common variance) refers to reducing speed when appropriate. Items such as “*To slow down near a sign of danger*” load on this factor.

The third factor (labelled “Speeding”, accounting for by the 14.83% of the common variance) refers to fast driving. Items such as “*To break road traffic rules in order to drive faster*” load on this factor.

The fourth factor (labelled “Slips/Lapses”, accounting for by the 13.16% of the common variance) refers to errors due to lapses and slips. Items such as “*To be distracted by what happens around you while driving*” load on this factor (Table J.3).

The four factors are not correlated (Table J.3).

Table J.1. Eigenvalues and variance accounted for by each factor (Scale J1)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.216	23.710	23.710	3.298
2	3.298	14.990	38.699	3.128
3	2.491	11.322	50.021	3.262
4	2.460	11.183	61.203	2.896
5	1.265	5.749	66.952	
6	1.093	4.967	71.919	
7	.813	3.697	75.616	
8	.654	2.973	78.588	
9	.592	2.689	81.277	
10	.568	2.581	83.858	
11	.492	2.236	86.095	
12	.463	2.106	88.201	
13	.399	1.815	90.015	
14	.356	1.619	91.634	

15	.316	1.438	93.072
16	.287	1.306	94.378
17	.274	1.245	95.623
18	.253	1.149	96.772
19	.216	.980	97.751
20	.201	.914	98.665
21	.159	.724	99.389
22	.134	.611	100.000

Table J.2. Factor loadings (Scale J1).

	Factor			
	Violations	Slowing	Speeding	Slips/Lapses
J1_1	.498	.111	.396	.334
J1_2	.367	-.097	.390	-.078
J1_3	.058	.040	.728	-.243
J1_4	-.116	.082	.853	-.092
J1_5	.092	-.013	.858	-.051
J1_6	.206	-.077	.126	-.652
J1_7	.201	.200	-.060	-.617
J1_8	.049	-.041	.118	-.813
J1_9	.099	-.145	.159	-.679
J1_10	.334	.146	.001	-.022
J1_11	.545	-.123	.326	.237
J1_12	.673	-.160	-.101	-.009
J1_13	.136	.368	-.462	-.100
J1_14	-.037	.718	-.033	.020
J1_15	-.122	.754	.040	-.198
J1_16	-.278	.549	.230	-.291
J1_17	.634	-.036	.083	-.144
J1_18	.731	-.053	-.053	-.237
J1_19	.187	.718	.016	.392
J1_20	.068	.664	-.285	-.014
J1_21	-.006	.593	.034	.170
J1_22	.660	-.019	-.097	-.275

Table J.3 Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	-.062	.177	-.130
2	-.062	1.000	-.129	-.006
3	.177	-.129	1.000	-.095
4	-.130	-.006	-.095	1.000

Scale K1, Driving under the effect of alcohol.

Data from the Scale K1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.71, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(36)=614.88$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 52.62% of the total variance. Table K.1 shows the eigenvalues and the variance accounted for by each factor. Table K.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Safe alcohol related behaviours", accounting for by the 15.50% of the common variance) refers to driving without having had alcohol. Items such as "You were the designated driver" load on this factor.

The second factor (labelled "Experience with alcohol issues", accounting for by the 30.89% of the common variance) refers to having had experience with alcohol related issues. Items such as "You drove less than two hours after having drunk alcohol" load on this factor.

The two factors are only slightly negatively correlated (Table K.3).

Table K.1. Eigenvalues and variance accounted for by each factor (Scale K1)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total
1	3.220	35.778	35.778	1.395
2	1.516	16.839	52.617	2.780
3	1.151	12.792	65.409	
4	.969	10.767	76.176	
5	.662	7.352	83.528	
6	.487	5.407	88.935	
7	.404	4.483	93.419	
8	.330	3.663	97.081	
9	.263	2.919	100.000	

Table K.2. Factor loadings (Scale K1).

	Factor	
	Safe alcohol related behaviours	Experience with alcohol issues
K1_1	.086	.699
K1_3	.448	-.066
K1_6	.995	.030
K1_7	.289	.254
K1_8	-.001	.464
K1_9	.105	.606
K1_4	-.179	.456
K1_2	.005	.816
K1_5	-.026	.848

Table K.3 Factor Correlation Matrix

Factor	1	2
1	1.000	.128
2	.128	1.000

Scale L1, Effects of alcohol.

Data from the Scale L1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.75, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(190)=1902.59, p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 50.41% of the total variance. Table L.1 shows the eigenvalues and the variance accounted for by each factor. Table L.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Positive effects", accounting for by the 15.53% of the common variance) refers to the supposed positive effects of alcohol assumption. Items such as "*Alcohol increases concentration capacity*" load on this factor.

The second factor (labelled "Underestimation of negative effects", accounting for by the 16.93% of the common variance) refers to the supposed positive effects of alcohol assumption. Items such as "*Drunk driving dangers are overestimated*" load on this factor.

The third factor (labelled "Negative effects", accounting for by the 13.87% of the common variance) refers to the supposed negative effects of alcohol assumption. Items such as "*Alcohol decreases the level of attention*" load on this factor. The three factors are not correlated (Table L.3).

Table L1.1. Eigenvalues and variance accounted for by each factor (Scale L1)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.098	25.490	25.490	3.106
2	3.080	15.400	40.890	3.386
3	1.904	9.520	50.410	2.775
4	1.505	7.527	57.937	
5	1.206	6.030	63.967	
6	.946	4.729	68.696	
7	.840	4.202	72.898	
8	.749	3.744	76.642	
9	.621	3.103	79.744	
10	.586	2.930	82.674	
11	.529	2.643	85.318	
12	.516	2.582	87.899	
13	.440	2.200	90.100	
14	.399	1.995	92.095	
15	.384	1.919	94.013	
16	.298	1.488	95.501	
17	.273	1.366	96.867	
18	.255	1.276	98.143	
19	.207	1.034	99.177	
20	.165	.823	100.000	

Table L.2. Factor loadings (Scale L1).

	Factor		
	Positive effects	Underestimation of negative effects	Negative effects
L1_1	.255	.499	.092
L1_2	-.481	.053	.605
L1_3	.071	-.260	.283
L1_4	.653	.169	-.248
L1_5	.231	.647	.160
L1_6	.239	.620	.096
L1_7	-.370	.099	.595
L1_8	.647	.058	-.112
L1_9	.067	.045	.542
L1_10	.664	.270	-.162
L1_11	-.404	.116	.640
L1_12	.646	-.095	.042
L1_13	-.102	.014	.689
L1_14	.158	-.142	.449
L1_15	.263	.043	.051
L1_16	.036	.431	.045
L1_17	-.202	.624	-.101
L1_18	-.006	.647	-.003
L1_19	-.042	.620	-.109
L1_20	-.077	.678	-.067

Table L.3 Factor Correlation Matrix

Factor	1	2	3
1	1.000	.159	-.157
2	.159	1.000	-.142
3	-.157	-.142	1.000

Cluster analysis

Factor scores on the identified subscales for scales A, B, D, F, I, K, and L were computed through regression analysis, and then submitted to cluster analysis in order to identify groups of respondents. Also the scores on the scale H (Moral disengagement) were included into the analysis. A hierarchical method of cluster analysis was used to identify the number of clusters, then a k-means method was used to identify the groups of respondents.

Results showed three separate groups of respondents. A multivariate analysis of variance yielded a significant difference among the three groups (Wilks' Lambda=0.03, $F_{48,382}=38.52$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,214}=65.84$, $p<.001$) and a significant interaction between group and subscale ($F_{46,4922}=27.85$, $p<.001$), meaning that each group of respondents shows a specific profile.

1. **RISKY DRIVERS.** One group can be identified as composed of risky drivers. They have a permissive attitude toward driving under the effect of alcohol and recreational drugs, and are not aware of the negative effects of alcohol upon driving. They also refer not to have a correct behaviour during driving, and indeed they are quite tolerant toward violations of the traffic code and speeding. Furthermore, risky drivers have high scores on driving related rage, especially due to obstacles, and high scores on moral disengagement. Compared to safe drivers, risky drivers have higher scores on sensation seeking and aggressive driving, and have more direct experiences of driving under the effect of alcohol.
2. **SPEEDING DRIVERS.** People in this group are especially characterized by high scores on speeding subscales, compared to safe drivers. They are not tolerant toward traffic code violations, and have rather high scores on sensation seeking and egocentrism. Similarly to the safe drivers, they show low scores on moral disengagement. However, they also seem to be not aware of the negative effects of alcohol upon driving.
3. **SAFE DRIVERS.** Safe drivers are instead characterized by being not tolerant toward driving under the effects of alcohol and drugs, toward violations of traffic rules and speeding. Safe drivers have a rather high score on attention-related Locus of Control, and show intermediate levels of anxiety. They are also aware of the alcohol negative effects upon driving, and do not feel rage during driving. People in the safe drivers group show low scores on moral disengagement.

The three groups do not differ in terms of gender, though a prevalence of males can be observed among the risky and speeding drivers. However, speeding drivers are slightly older than the other two groups ($F_{2,211}=44.00$, $p<.001$).

The average score per subscale (and standard error) for each group is shown in Table 1. Tables 2, 3, and 4 report the results of the post-hoc comparisons among the three groups. Table 5 shows the respondents' mean age as a function of gender and group. Figure 1 shows the profiles of the three groups of drivers on subscales. The three groups do differ in terms of their perception of risk of being involved in an accident. Namely, respondents in the speeding drivers group perceive they have a lower probability to be involved in an accident, but the three groups do not differ on how much they worry about this possibility (Figure 2). Also, respondents in the risky drivers group rate their parents' anger for their reckless driving style lower than respondents in the other two groups (Figure 4). Finally, respondents in speeding drivers group feel less approved by their peers in their reckless driving behaviour than respondents in the other two drivers groups (Figure 3).

Table 1. Average scores and standard errors for each group on the subscales of the questionnaire.

	SPEEDING drivers			SAFE drivers			RISKY drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Usefulness of violations	0.04	0.09	98	-0.24	0.10	79	0.30	0.14	40
Negative attitude toward alcohol/drugs	0.32	0.08	98	0.16	0.09	79	-1.10	0.12	40
Positive attitude toward speed	0.06	0.08	98	-0.46	0.09	79	0.61	0.12	40
Tolerance to violations	-0.16	0.08	98	0.26	0.09	79	-0.15	0.13	40
Positive attitude toward rules	-0.48	0.07	98	0.60	0.07	79	0.03	0.10	40
Internal LOC	-0.02	0.10	98	-0.14	0.11	79	0.17	0.15	40
External LOC	-0.67	0.07	98	0.47	0.08	79	0.63	0.11	40
Violation-related rage	-0.20	0.09	98	0.01	0.10	79	0.41	0.14	40
Obstacle-related rage	0.31	0.08	98	-0.53	0.09	79	0.23	0.13	40
Danger-related rage	-0.54	0.07	98	0.35	0.08	79	0.50	0.12	40
Insult-related rage	-0.17	0.08	98	-0.07	0.09	79	0.43	0.13	40
Sensation Seeking	-0.27	0.10	98	0.18	0.11	79	0.23	0.15	40
Egocentrism	-0.54	0.07	98	-0.09	0.08	79	1.28	0.11	40
Altruism	-0.64	0.07	98	0.72	0.08	79	0.05	0.11	40
Violations	-0.36	0.06	98	-0.29	0.07	79	1.30	0.09	40
Slowing	0.19	0.09	98	-0.17	0.10	79	-0.13	0.15	40
Speeding	0.48	0.08	98	-0.69	0.09	79	0.22	0.12	40
Slips/Lapses	-0.12	0.09	98	0.46	0.10	79	-0.51	0.14	40
Prevention behaviors	0.00	0.10	98	-0.15	0.11	79	0.22	0.16	40
Positive attitude toward alcohol	-0.34	0.07	98	-0.24	0.08	79	1.18	0.11	40
Alcohol positive effects	0.26	0.08	98	-0.48	0.09	79	0.23	0.13	40
Underestimation of alcohol negative effects	-0.48	0.07	98	-0.02	0.08	79	1.15	0.11	40
Alcohol negative effects	0.27	0.09	98	-0.06	0.10	79	-0.50	0.14	40
Moral disengagement	-0.22	0.09	98	-0.30	0.10	79	0.97	0.14	40

Table 2. Comparison between Speeding and Safe drivers on each subscale.

	SPEEDING drivers	SAFE drivers	Significance
	N=98	N=79	
Usefulness of violations	0.04	-0.24	ns
Negative attitude toward alcohol/drugs	0.32	0.16	ns
Positive attitude toward speed	0.06	-0.46	p<.001
Tolerance to violations	-0.16	0.26	p<.001
Positive attitude toward rules	-0.48	0.60	p<.001
Internal LOC	-0.02	-0.14	ns

External LOC	-0.67	0.47	p<.001
Violation-related rage	-0.20	0.01	ns
Obstacle-related rage	0.31	-0.53	p<.001
Danger-related rage	-0.54	0.35	p<.001
Insult-related rage	-0.17	-0.07	ns
Sensation Seeking	-0.27	0.18	ns
Egocentrism	-0.54	-0.09	p<.001
Altruism	-0.64	0.72	p<.001
Violations	-0.36	-0.29	ns
Slowing	0.19	-0.17	ns
Speeding	0.48	-0.69	p<.001
Slips/Lapses	-0.12	0.46	p<.001
Prevention behaviors	0.00	-0.15	ns
Positive attitude toward alcohol	-0.34	-0.24	ns
Alcohol positive effects	0.26	-0.48	p<.001
Underestimation of alcohol negative effects	-0.48	-0.02	p<.001
Alcohol negative effects	0.27	-0.06	ns
Moral disengagement	-0.22	-0.30	ns

Table 3. Comparison between Speeding and Risky drivers on each subscale.

	SPEEDING drivers N=98	RISKY drivers N=40	Significance
Usefulness of violations	0.04	0.30	ns
Negative attitude toward alcohol/drugs	0.32	-1.10	p<.001
Positive attitude toward speed	0.06	0.61	p<.001
Tolerance to violations	-0.16	-0.15	ns
Positive attitude toward rules	-0.48	0.03	p<.001
Internal LOC	-0.02	0.17	ns
External LOC	-0.67	0.63	p<.001
Violation-related rage	-0.20	0.41	p<.001
Obstacle-related rage	0.31	0.23	ns
Danger-related rage	-0.54	0.50	p<.001
Insult-related rage	-0.17	0.43	p<.001
Sensation Seeking	-0.27	0.23	ns
Egocentrism	-0.54	1.28	p<.001
Altruism	-0.64	0.05	p<.001
Violations	-0.36	1.30	p<.001
Slowing	0.19	-0.13	ns
Speeding	0.48	0.22	ns
Slips/Lapses	-0.12	-0.51	ns
Prevention behaviors	0.00	0.22	ns
Positive attitude toward alcohol	-0.34	1.18	p<.001
Alcohol positive effects	0.26	0.23	ns
Underestimation of alcohol negative effects	-0.48	1.15	p<.001
Alcohol negative effects	0.27	-0.50	ns
Moral disengagement	-0.22	0.97	ns

Table 4. Comparison between Safe and Risky drivers on each subscale.

	SAFE drivers	RISKY drivers	Significance
	N=79	N=40	
Usefulness of violations	-0.24	0.30	p<.001
Negative attitude toward alcohol/drugs	0.16	-1.10	p<.001
Positive attitude toward speed	-0.46	0.61	p<.001
Tolerance to violations	0.26	-0.15	ns
Positive attitude toward rules	0.60	0.03	p<.001
Internal LOC	-0.14	0.17	ns
External LOC	0.47	0.63	ns
Violation-related rage	0.01	0.41	ns
Obstacle-related rage	-0.53	0.23	p<.001
Danger-related rage	0.35	0.50	ns
Insult-related rage	-0.07	0.43	ns
Sensation Seeking	0.18	0.23	ns
Egocentrism	-0.09	1.28	p<.001
Altruism	0.72	0.05	p<.001
Violations	-0.29	1.30	p<.001
Slowing	-0.17	-0.13	ns
Speeding	-0.69	0.22	p<.001
Slips/Lapses	0.46	-0.51	p<.001
Prevention behaviors	-0.15	0.22	ns
Positive attitude toward alcohol	-0.24	1.18	p<.001
Alcohol positive effects	-0.48	0.23	p<.001
Underestimation of alcohol negative effects	-0.02	1.15	p<.001
Alcohol negative effects	-0.06	-0.50	ns
Moral disengagement	-0.30	0.97	ns

Table 5. Mean age (years) and standard errors as a function of gender and group.

		Mean age	Standard error	N
Males	Speeding drivers	20.56	0.21	68
	Safe drivers	18.30	0.25	47
	Risky drivers	18.13	0.31	31
Females	Speeding drivers	20.63	0.31	30
	Safe drivers	18.28	0.30	32
	Risky drivers	18.22	0.57	9

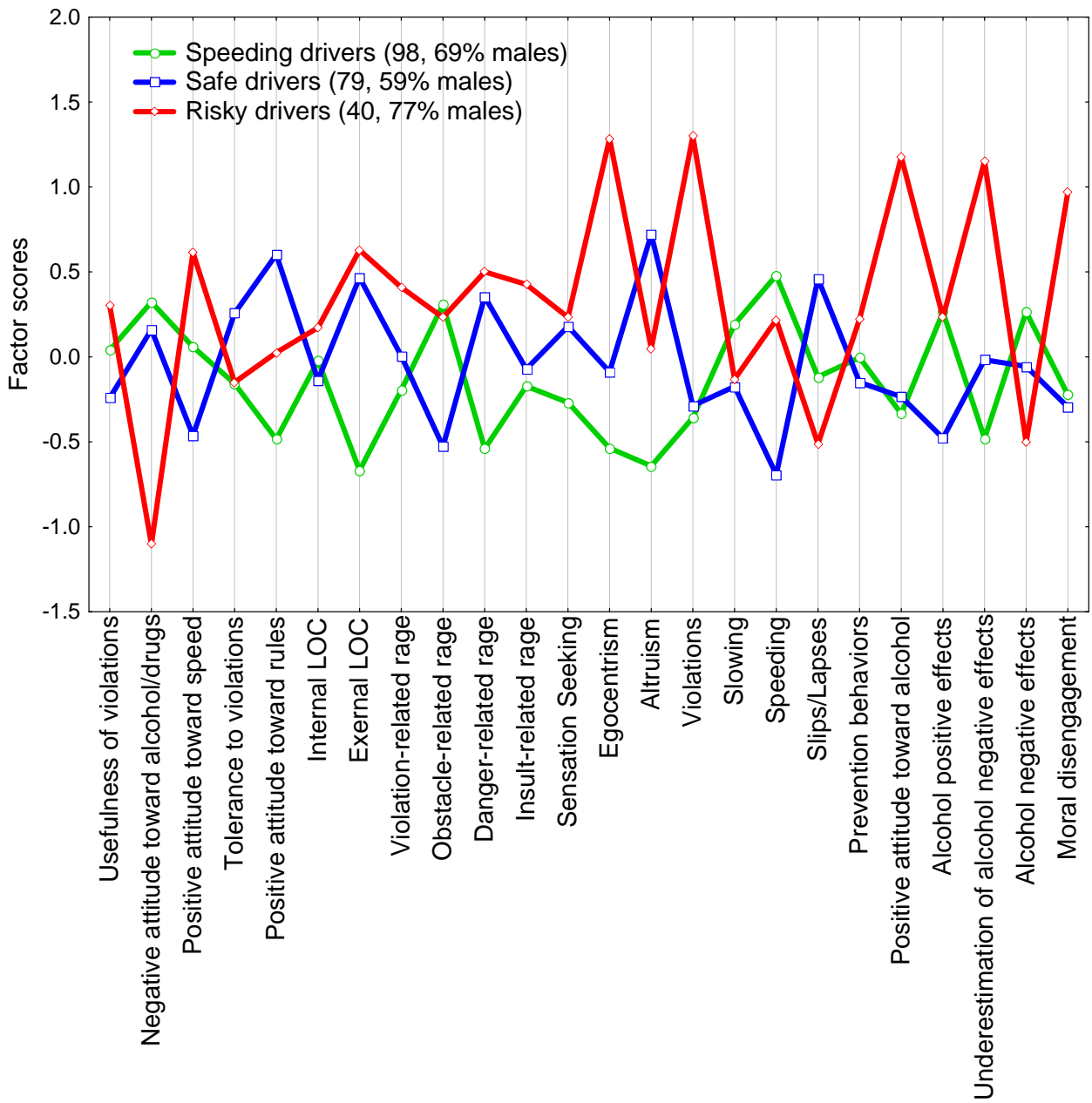


Figure 1. Average scores for each group on the subscales of the questionnaire.

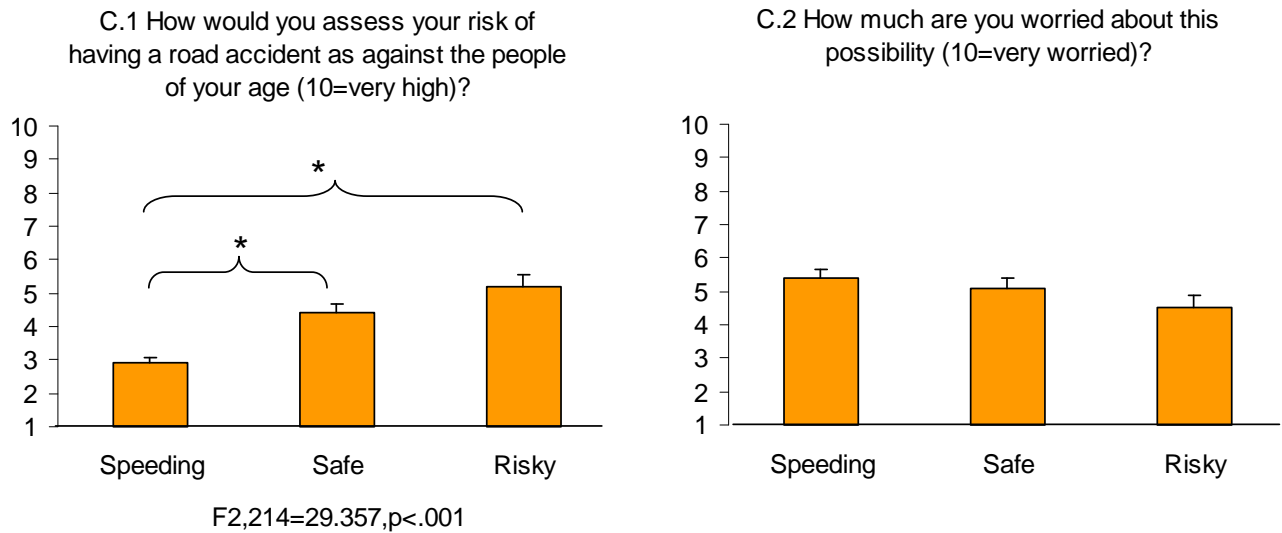


Figure 2. Average scores for each group on items concerning risk perception.

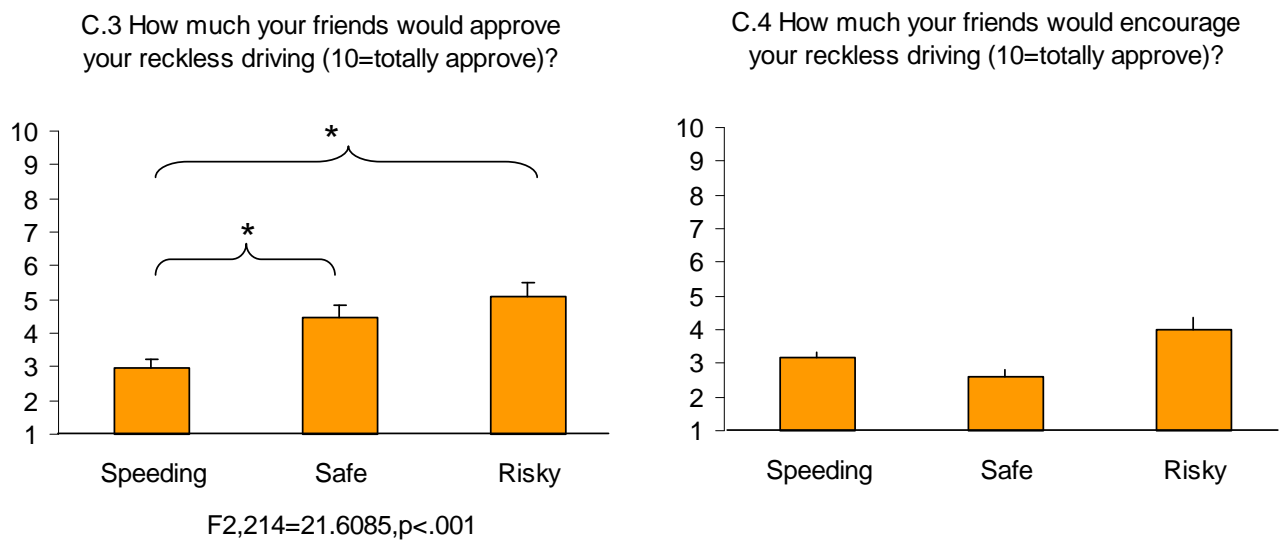


Figure 3. Average scores for each group on items concerning friends' attitude.

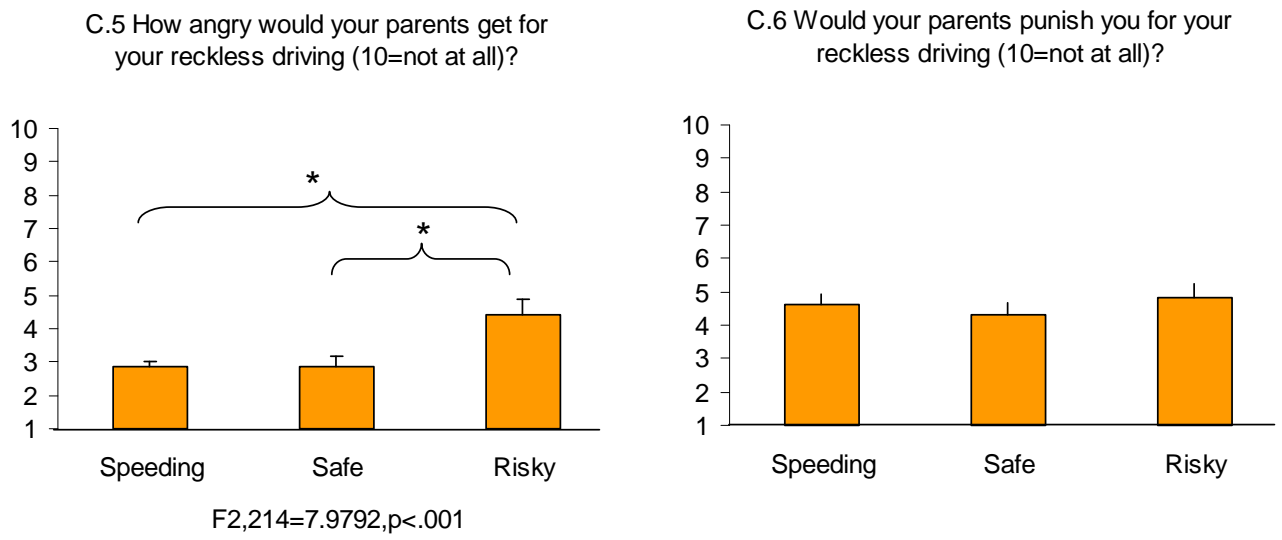


Figure 4. Average scores for each group on items concerning parents' attitude.

NON DRIVERS (QUESTIONNAIRE SECTION 3)

Sample description

A total of 225 people answered the Section 3 of the questionnaire. Males were 81 (36% of the total sample) and females were 144 (64% of the total sample). Their mean age was 20 years (standard deviation 1.96), ranging between 17 and 24 years. Age was no significantly different between males and females. Not all the respondents answered all the items of the questionnaire, thus each analysis was run on the largest sample available for that analysis (missing values were not estimated).

Specific dimensions of the questionnaire scales

Scale M, Attitude toward road safety issues.

Data from the Scale M of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.76, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=1072.91$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 51.81% of the total variance. Table M.1 shows the eigenvalues and the variance accounted for by each factor. Table M.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Tolerance toward violations", accounting for by the 15.89% of the common variance) refers to a negative attitude toward traffic rules. Items such as "*It is reasonable to exceed speed limits to overtake a "Sunday driver"*" load on this factor.

The second factor (labelled "Negative attitude towards alcohol/drugs", accounting for by the 14.74% of the common variance) refers to the attitude toward driving under the effects of substances. Items such as "*I would never drive after drinking alcoholic drinks*" and "*I would never drive under the influence of narcotic drugs*" load on this factor.

The third factor (labelled "Complying with traffic code", accounting for by the 8.15% of the common variance) refers to a positive attitude toward traffic rules. Items such as "*To keep traffic smooth-flowing you should ignore many of the traffic rules*" negatively load on this factor. This factor is negatively correlated to the first one

The fourth factor (labelled "Positive attitude toward speeding", accounting for by the 12.13% of the common variance) refers to a negative attitude toward going by car with a fast driver. Items such as "*It is ok to go by car with a fast driver if it is the only way to go back home at night*" load on this factor. This factor is positively correlated to the first one (Table A.3).

Table A.1. Eigenvalues and variance accounted for by each factor (Scale M)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.376	24.310	24.310	2.860
2	1.996	11.087	35.396	2.655
3	1.741	9.672	45.069	1.467
4	1.214	6.747	51.815	2.184
5	1.142	6.344	58.159	
6	.979	5.441	63.601	
7	.881	4.894	68.494	
8	.765	4.249	72.744	
9	.715	3.973	76.716	
10	.683	3.796	80.513	
11	.628	3.489	84.002	
12	.574	3.190	87.192	
13	.511	2.838	90.030	
14	.476	2.647	92.677	
15	.425	2.361	95.039	
16	.354	1.968	97.006	
17	.276	1.534	98.540	
18	.263	1.460	100.000	

Table A.2. Factor loadings (Scale M).

	Factor			
	Tolerance toward violations	Negative attitude towards alcohol/drugs	Complying with traffic code	Positive attitude toward speeding
M_1	.109	.022	-.544	-.085
M_2	.529	-.081	-.050	.080
M_3	-.237	.009	.114	-.066
M_4	.394	-.329	-.109	-.097
M_5	-.115	-.103	-.683	-.026
M_6	.240	.048	-.259	-.005
M_7	.493	.043	-.130	.190
M_8	.074	-.056	-.310	.163
M_9	.763	.074	-.067	.091

M_10	.587	.058	.096	.115
M_11	-.479	.049	-.045	.134
M_12	-.028	-.011	.131	.935
M_13	.100	-.154	-.109	.544
M_14	-.272	.246	-.023	-.173
M_15	-.140	.608	.071	.012
M_16	-.199	.475	-.286	-.138
M_17	.209	.703	.251	-.027
M_18	.079	.832	-.084	-.098

Table A.3 Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	-.259	-.252	.321
2	-.259	1.000	.159	-.336
3	-.252	.159	1.000	-.028
4	.321	-.336	-.028	1.000

Scale N, Locus of Control.

Data from the Scale N of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.75, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(435)=2471.60$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 38.20% of the total variance. Table B.1 shows the eigenvalues and the variance accounted for by each factor. Table B.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “External Locus of Control”, accounting for by the 15.09% of the common variance) refers to an external Locus of Control, as respondents attribute responsibility of road accidents mostly to external causes, independent of drivers’ behaviour. Items such as “*Driving without accidents is mainly a question of good luck*” load on this factor.

The second factor (labelled “Internal Locus of Control, specific causes, reversed”, accounting for by the 11.93% of the common variance, reversed) also refers to an Internal Locus of Control, but with the identification of specific factors as not involved in car accidents. Items such as “*Most accidents occur due to bad road conditions, lack of adequate signals, etc.*” load on this factor.

The first factor (labelled “Internal Locus of Control”, accounting for by the 6.68% of the common variance) refers to an internal Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers. Items such as “*A careful driver can prevent any accident*” load on this factor.

The three factors are not correlated (Table B.3).

Table B.1. Eigenvalues and variance accounted for by each factor (Scale N)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.856	19.522	19.522	4.528
2	3.075	10.250	29.772	3.579
3	2.531	8.436	38.208	2.003
4	2.036	6.788	44.995	
5	1.744	5.813	50.809	
6	1.304	4.347	55.155	
7	1.163	3.878	59.033	
8	1.076	3.587	62.620	
9	1.042	3.474	66.095	
10	.954	3.179	69.274	
11	.864	2.881	72.155	
12	.803	2.676	74.831	
13	.748	2.493	77.324	

14	.683	2.278	79.602
15	.623	2.076	81.678
16	.560	1.868	83.546
17	.535	1.783	85.329
18	.506	1.686	87.015
19	.472	1.574	88.590
20	.449	1.496	90.086
21	.435	1.450	91.536
22	.376	1.252	92.788
23	.363	1.209	93.998
24	.332	1.105	95.103
25	.297	.989	96.092
26	.284	.948	97.039
27	.267	.889	97.928
28	.256	.854	98.782
29	.202	.672	99.454
30	.164	.546	100.000

Table B.2. Factor loadings (Scale N).

	Factor		
	External Locus of Control	Internal Locus of Control, specific causes, reversed	Internal Locus of Control
N_1	.258	-.131	-.157
N_2	.392	-.211	-.079
N_3	.012	-.449	-.225
N_4	.324	-.211	-.243
N_5	.205	.050	-.001
N_6	-.036	-.049	.345
N_7	-.027	-.684	.020
N_8	.315	-.313	.047
N_9	.202	-.621	.155
N_10	.037	-.484	.106
N_11	-.033	-.347	-.043
N_12	.270	-.264	-.191
N_13	.677	-.276	-.136
N_14	.608	-.291	-.042

N_15	.636	-.367	-.182
N_16	-.038	-.629	.010
N_17	-.410	-.370	.145
N_18	.064	-.216	.504
N_19	-.034	-.007	.597
N_20	.536	-.123	.078
N_21	.210	-.566	.227
N_22	.531	-.053	.188
N_23	.751	.139	.020
N_24	.499	.106	.182
N_25	.627	.349	.088
N_26	.250	.007	.527
N_27	.076	.271	.572
N_28	-.060	-.228	.253
N_29	.395	.046	.163
N_30	.311	-.074	.343

Table B.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.182	.052
2	-.182	1.000	.011
3	.052	.011	1.000

Scale P, Rage during driving.

Data from the Scale P of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.78, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(91)=926.85$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 59.20% of the total variance. Table D.1 shows the eigenvalues and the variance accounted for by each factor. Table D.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Obstacle-related rage”, accounting for by the 17.16% of the common variance) refers to the rage reactions due to obstacles preventing drivers to drive the way they want. Items such as “*You are trapped in traffic jam*” load on this factor.

The second factor (labelled “Danger related rage”, accounting for by the 13.99% of the common variance) refers to refers the rage reactions due insults from other drivers. Items such as “*Sand or gravel falls down from a lorry in front of your car*” load on this factor.

The third factor (labelled “Violation-related rage”, accounting for by the 15.77% of the common variance) refers to the rage reactions due to other drivers violating the traffic code. Items such as “*Somebody reverses just in front of you without looking back*” load on this factor.

The second factor (labelled “Insult-related rage, reversed”, accounting for by the 20.00% of the common variance) refers to the rage reactions due to insults from other drivers. Items such as “*Somebody sounds the horn for your way of driving*” load on this factor.

The four factors are however correlated (Table D.3).

Table D.1. Eigenvalues and variance accounted for by each factor (Scale P)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.385	31.322	31.322	2.403
2	1.624	11.601	42.923	1.959
3	1.274	9.098	52.020	2.209
4	1.005	7.175	59.196	2.800
5	.972	6.946	66.141	
6	.896	6.399	72.540	
7	.785	5.610	78.150	
8	.708	5.060	83.211	
9	.520	3.711	86.922	
10	.469	3.353	90.275	
11	.432	3.088	93.363	
12	.359	2.564	95.927	
13	.328	2.340	98.267	
14	.243	1.733	100.000	

Table D.2. Factor loadings (Scale P).

	Factor			
	Obstacle-related raga	Danger related raga	Violation-related raga	Insult-related raga, reversed
P_1	-.013	.174	.422	-.142
P_2	.355	-.068	.298	-.069
P_3	.068	.097	.868	.129
P_4	-.037	-.028	.312	-.084
P_5	.576	-.009	-.106	.040
P_6	.391	.137	.264	-.096
P_7	.564	.065	.162	-.130
P_8	.515	.002	.049	-.346
P_9	-.019	.025	.078	-.855
P_10	.038	.045	-.107	-.824
P_11	.320	.033	.210	-.130
P_12	.386	.334	-.229	.075
P_13	-.087	.845	.084	-.026
P_14	.019	.647	.039	-.054

Table D3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	.376	.187	-.356
2	.376	1.000	.144	-.237
3	.187	.144	1.000	-.521
4	-.356	-.237	-.521	1.000

Scale R, Personality.

Data from the Scale R of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.73, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(666)=2652.88$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 37.45% of the total variance. Table F.1 shows the eigenvalues and the variance accounted for by each factor. Table F.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Egocentrism", accounting for by the 10.22% of the common variance) refers to Egocentrism. Items such as "*Some people think I'm egoist and egocentric*" load on this factor.

The second factor (labelled "Stability, reversed", accounting for by the 7.55% of the common variance) refers to being calm and reflexive. Items such as "*It takes a lot to make me angry*" load on this factor.

The third factor (labelled "Anxiety", accounting for by the 8.07% of the common variance) refers to Anxiety. Items such as "*I often feel tense and nervous*" load on this factor.

The fourth factor (labelled "Sensation seeking", accounting for by the 6.59% of the common variance) refers to the Sensation-seeking personality trait. Items such as "*I often wish exciting things*" load on this factor.

The four factors are not correlated (Table F.3).

Table F.1. Eigenvalues and variance accounted for by each factor (Scale R)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.544	14.984	14.984	3.783
2	3.166	8.558	23.542	2.793
3	2.717	7.343	30.885	2.988
4	2.430	6.569	37.454	2.439
5	1.900	5.136	42.589	
6	1.739	4.699	47.289	
7	1.437	3.885	51.174	
8	1.282	3.464	54.638	
9	1.228	3.320	57.958	
10	1.124	3.039	60.997	
11	1.068	2.886	63.883	
12	.943	2.549	66.432	
13	.922	2.493	68.925	
14	.849	2.295	71.220	

15	.814	2.201	73.420
16	.767	2.073	75.494
17	.724	1.956	77.450
18	.703	1.899	79.349
19	.635	1.715	81.064
20	.594	1.604	82.668
21	.592	1.599	84.267
22	.533	1.441	85.708
23	.507	1.369	87.077
24	.501	1.354	88.431
25	.466	1.261	89.692
26	.443	1.197	90.889
27	.430	1.161	92.050
28	.404	1.091	93.142
29	.361	.975	94.117
30	.338	.913	95.030
31	.312	.843	95.873
32	.296	.799	96.673
33	.280	.756	97.429
34	.279	.755	98.184
35	.267	.722	98.906
36	.217	.587	99.493
37	.188	.507	100.000

Table F.2. Factor loadings (Scale F).

	Factor			
	Egocentrism	Stability, reversed	Anxiety	Sensation seeking
R_1		-0.307	-0.335	
R_2		0.252	0.339	
R_3	0.414			0.353
R_4				0.515
R_5			0.343	
R_6				
R_7	-0.548			
R_8			0.271	
R_9		0.273		0.377
R_10				0.523

R_11	0.578			0.309
R_12	0.307			0.456
R_13			0.455	
R_14				
R_15		0.506		
R_16				
R_17		-0.384		
R_18	0.254			
R_19	0.34			
R_20	-0.692			0.271
R_21	-0.58		0.473	
R_22		-0.394		
R_23	-0.669			
R_24				0.505
R_25				0.613
R_26	0.267	0.368	0.339	
R_27		0.688		
R_28			0.399	
R_29			0.601	
R_30	0.308		0.517	
R_31		0.465		
R_32				0.292
R_33	-0.277	0.619		
R_34		-0.351	0.336	
R_35	-0.566			
R_36	-0.377	0.291		
R_37			0.569	

Table F.3 Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	.047	.135	.101
2	.047	1.000	.050	.089
3	.135	.050	1.000	.066
4	.101	.089	.066	1.000

Scale S, Imagined driving behaviour.

Data from the Scale S of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.84, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(231)=2035.73$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 50.85% of the total variance. Table J.1 shows the eigenvalues and the variance accounted for by each factor. Table J.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Mistakes”, accounting for by the 20.25% of the common variance) refers to risky driving behaviour. Items such as “*You drive without keeping a safe distance*” load on this factor. This factor correlates negatively with both the other factors (Table J.3).

The second factor (labelled “Safe driving”, accounting for by the 16.49% of the common variance) refers to cautious driving. Items such as “*You slow down when approaching a danger sign*” load on this factor.

The third factor (labelled “Speeding, reversed”, accounting for by the 16.44% of the common variance) refers to speeding. Items such as “*You exceed the speed limits by 10 Km/h*” load on this factor.

Table J.1. Eigenvalues and variance accounted for by each factor (Scale S)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	6.475	29.434	29.434	4.454
2	2.414	10.972	40.406	3.628
3	2.298	10.446	50.851	3.618
4	1.212	5.507	56.358	
5	1.104	5.019	61.377	
6	.939	4.270	65.647	
7	.889	4.040	69.687	
8	.750	3.408	73.095	
9	.711	3.230	76.325	
10	.622	2.829	79.154	
11	.560	2.547	81.701	
12	.540	2.457	84.157	
13	.508	2.309	86.467	
14	.482	2.192	88.659	
15	.460	2.089	90.748	
16	.382	1.735	92.482	
17	.342	1.555	94.037	

18	.325	1.479	95.516
19	.303	1.375	96.892
20	.267	1.215	98.107
21	.227	1.031	99.138
22	.190	.862	100.000

Table J.2. Factor loadings (Scale S).

	Factor		
	Mistakes	Safe driving	Speeding, reversed
S_1			-0.638
S_2			-0.698
S_3	0.252		-0.659
S_4			-0.723
S_5			-0.648
S_6	0.432		-0.335
S_7	0.569		
S_8	0.601		
S_9	0.704		
S_10	0.352		-0.266
S_11	0.614		
S_12	0.605		
S_13		0.455	
S_14		0.719	
S_15		0.624	
S_16		0.546	-0.276
S_17	0.425		
S_18	0.636		
S_19		0.613	0.29
S_20		0.653	
S_21		0.592	
S_22	0.517		

Table J.3 Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.312	-.268
2	-.312	1.000	.187
3	-.268	.187	1.000

Scale T, Effects of alcohol.

Data from the Scale T of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.77, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=1322.80$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 35.72% of the total variance. Table L.1 shows the eigenvalues and the variance accounted for by each factor. Table L.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Positive effects”, accounting for by the 16.22% of the common variance) refers to the supposed positive effects of alcohol assumption. Items such as “*Alcohol increases concentration capacity*” load on this factor.

The second factor (labelled “Negative effects”, accounting for by the 14.89% of the common variance) refers to the supposed negative effects of alcohol assumption. Items such as “*Alcohol decreases the level of attention*” load on this factor. The two factors are not correlated (Table L.3).

Table L.1. Eigenvalues and variance accounted for by each factor (Scale T)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total
1	4.799	23.997	23.997	3.245
2	2.345	11.726	35.723	2.978
3	1.653	8.265	43.989	
4	1.510	7.548	51.536	
5	1.155	5.775	57.311	
6	.957	4.783	62.094	
7	.898	4.492	66.586	
8	.880	4.400	70.986	
9	.778	3.889	74.875	
10	.716	3.578	78.453	
11	.675	3.374	81.827	
12	.581	2.905	84.732	
13	.541	2.705	87.438	
14	.479	2.393	89.831	
15	.431	2.154	91.985	
16	.392	1.961	93.946	
17	.350	1.748	95.694	
18	.313	1.563	97.257	
19	.288	1.439	98.695	
20	.261	1.305	100.000	

Table L.2. Factor loadings (Scale T).

	Factor	
	Positive effects	Negative effects
T_1	0.402	-0.265
T_2		0.587
T_3		0.336
T_4	0.444	-0.55
T_5	0.635	-0.309
T_6	0.298	
T_7		0.55
T_8	0.314	-0.323
T_9		
T_10	0.344	-0.452
T_11		0.676
T_12	0.356	-0.562
T_13		0.396
T_14		0.288
T_15		
T_16	0.354	
T_17	0.353	
T_18	0.687	
T_19	0.663	
T_20	0.683	

Table L.3 Factor Correlation Matrix

Factor	1	2
1	1.000	-.135
2	-.135	1.000

Cluster analysis

Factor scores on the identified subscales for scales A, B, D, F, I, K, and L were computed through regression analysis, and then submitted to cluster analysis in order to identify groups of respondents. Also the score on the scale H (Moral disengagement) was included into the analysis. A hierarchical method of cluster analysis was used to identify the number of clusters, then a k-means method was used to identify the groups of respondents.

Results showed three separate groups of respondents. A multivariate analysis of variance yielded a significant difference among the three groups (Wilks' Lambda=0.06, $F_{42,362}=25.50$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,201}= 11.94$, $p<.001$) and a significant interaction between group and subscale ($F_{40,4020}= 28.02$, $p<.001$), meaning that each group of respondents shows a specific profile.

4. **RISKY DRIVERS.** The first group can be identified as composed of risky drivers. They have a permissive attitude toward driving under the effect of alcohol and recreational drugs, and are not aware of the negative effects of alcohol upon driving. They are also quite tolerant toward violations of the traffic code and speeding. Furthermore, risky drivers have high scores on driving related rage, both due to violations (of others) and obstacles, and very high scores on moral disengagement.
5. **SPEEDING DRIVERS.** People in the second group are characterized by being rather permissive toward speeding. Compared to people in the other two groups speeding drivers are characterized by an internal Locus of Control rather than external, meaning that they consider accidents as essentially due to drivers' errors and mistakes. However, they are tolerant toward violations of the traffic rules, significantly less altruistic than the other groups, and they show high levels of obstacle-related rage. Interestingly enough, differently from risky drivers, people in this group do not consider violations of the traffic code as useful for keeping traffic flowing. Differently from the risky drivers, they show low scores on moral disengagement.
6. **SAFE DRIVERS.** Safe drivers are characterized by being not tolerant toward driving under the effects of alcohol and drugs, toward violations of traffic rules and speeding. Safe drivers have a rather high score on external Locus of Control, and show high score on altruism. They are also aware of the alcohol negative effects upon driving, and feel rage during driving due to violations of the traffic rules. People in the safe drivers group show low scores on moral disengagement.

The three groups do differ in terms of age, as respondents in the Speeding drivers group are slightly younger than the others (about 19yo vs about 20yo) ($F_{2,198}=4.82$, $p<.01$). With regards to gender, a slight (not significant) prevalence of males can be observed in the risky drivers groups.

The average score per subscale (and standard error) for each group is shown in Table 1. Tables 2, 3, and 4 report the results of the post-hoc comparisons among the three groups. Table 5 shows the respondents' mean age as a function of gender and group. Figure 1 shows the profiles of the three groups of drivers on selected subscales. The three groups do not differ in terms of their perception of risk of being involved in an accident and of how much they worry about this possibility (Figure 2). Similarly, respondents do not differ on how much they feel supported and encouraged by their friends (Figure 3), or on their ratings on how much their parents would be angry at their driving behaviour (Figure 4).

Table 1. Average scores and standard error for each group on the subscales of the questionnaire

	SPEEDING drivers			SAFE drivers			RISKY drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N			
Tolerance toward violations	0.11	0.09	86	-0.56	0.09	73	0.61	0.12	45
Negative attitude toward alcohol/drugs	-0.10	0.10	86	0.32	0.11	73	-	0.13	45
Complying with the traffic code	-0.06	0.07	86	0.55	0.08	73	0.35	0.10	45
Positive attitude toward speeding	0.36	0.10	86	-0.24	0.11	73	0.75	0.14	45
External Locus of Control	0.06	0.08	86	0.52	0.09	73	0.17	0.12	45
Internal Locus of control, specific causes (rev)	-0.54	0.08	86	0.03	0.08	73	0.95	0.11	45
Internal Locus of control	-0.19	0.09	86	0.02	0.10	73	0.34	0.13	45
Obstacle-related rage	0.11	0.09	86	-0.19	0.10	73	0.17	0.13	45
Danger-related rage	0.19	0.09	86	-0.28	0.10	73	0.14	0.13	45
Violation-related rage	0.24	0.09	86	0.12	0.10	73	-	0.12	45
Insult-related rage	-0.39	0.09	86	0.18	0.10	73	0.51	0.13	45
Egocentrism	0.53	0.09	86	-0.51	0.09	73	0.24	0.13	45
Stability (rev)	0.22	0.08	86	0.42	0.08	73	-	0.12	45
Anxiety	0.23	0.09	86	0.10	0.10	73	0.27	0.10	45
Sensation Seeking	0.53	0.08	86	-0.36	0.09	73	1.04	0.13	45
Mistakes	0.26	0.08	86	-0.70	0.09	73	0.52	0.12	45
Safe driving	-0.23	0.09	86	0.63	0.09	73	0.39	0.12	45
Speeding (rev)	-0.74	0.07	86	0.67	0.08	73	0.63	0.11	45
Alcohol positive effects	0.27	0.10	86	-0.26	0.11	73	-	0.12	45
Alcohol negative effects	0.00	0.09	86	0.27	0.10	73	0.52	0.13	45
Moral disengagement	0.52	0.09	86	-0.71	0.10	73	0.33	0.10	45

Table 2. Comparison between Risky and Overconfident drivers on each subscale.

	SPEEDING drivers	SAFE drivers	Significance
N=	86	73	
Tolerance toward violations	0.11	-0.56	p<.001
Negative attitude toward alcohol/drugs	-0.10	0.32	p<.001
Complying with the traffic code	-0.06	0.55	p<.001
Positive attitude toward speeding	0.36	-0.24	p<.001

External Locus of Control	0.06	0.52	p<.001
Internal Locus of control, specific causes (rev)	-0.54	0.03	p<.001
Internal Locus of control	-0.19	0.02	ns
Obstacle-related rage	0.11	-0.19	ns
Danger-related rage	0.19	-0.28	p<.001
Violation-related rage	0.24	0.12	ns
Insult-related rage	-0.39	0.18	p<.001
Egocentrism	0.53	-0.51	p<.001
Stability (rev)	0.22	0.42	ns
Anxiety	0.23	0.10	ns
Sensation Seeking	0.53	-0.36	p<.001
Mistakes	0.26	-0.70	p<.001
Safe driving	-0.23	0.63	p<.001
Speeding (rev)	-0.74	0.67	p<.001
Alcohol positive effects	0.27	-0.26	p<.001
Alcohol negative effects	0.00	0.27	ns
Moral disengagement	0.52	-0.71	p<.001

Table 3. Comparison between Risky and Safe drivers on each subscale.

	SPEEDING DRIVERS	RISKY drivers	Significance
N=	86	45	
Tolerance toward violations	0.11	0.61	ns
Negative attitude toward alcohol/drugs	-0.10	-0.35	ns
Complying with the traffic code	-0.06	-0.75	p<.001
Positive attitude toward speeding	0.36	-0.17	ns
External Locus of Control	0.06	-0.95	p<.001
Internal Locus of control, specific causes (rev)	-0.54	0.98	p<.001
Internal Locus of control	-0.19	0.34	p<.001
Obstacle-related rage	0.11	0.17	ns
Danger-related rage	0.19	0.14	ns
Violation-related rage	0.24	-0.51	p<.001
Insult-related rage	-0.39	0.24	p<.001
Egocentrism	0.53	-0.27	p<.001
Stability (rev)	0.22	-1.04	p<.001
Anxiety	0.23	-0.52	p<.001
Sensation Seeking	0.53	-0.39	p<.001
Mistakes	0.26	0.63	ns
Safe driving	-0.23	-0.52	ns
Speeding (rev)	-0.74	0.33	p<.001
Alcohol positive effects	0.27	-0.04	ns
Alcohol negative effects	0.00	-0.43	ns
Moral disengagement	0.52	0.13	ns

Table 4. Comparison between Overconfident and Safe drivers on each subscale.

	SAFE drivers	RISKY drivers	Significance
N=	73	45	
Tolerance toward violations	-0.56	0.61	p<.001
Negative attitude toward alcohol/drugs	0.32	-0.35	p<.001
Complying with the traffic code	0.55	-0.75	p<.001
Positive attitude toward speeding	-0.24	-0.17	ns
External Locus of Control	0.52	-0.95	p<.001
Internal Locus of control, specific causes (rev)	0.03	0.98	p<.001
Internal Locus of control	0.02	0.34	ns
Obstacle-related rage	-0.19	0.17	ns
Danger-related rage	-0.28	0.14	ns
Violation-related rage	0.12	-0.51	p<.001
Insult-related rage	0.18	0.24	ns
Egocentrism	-0.51	-0.27	ns
Stability (rev)	0.42	-1.04	p<.001
Anxiety	0.10	-0.52	p<.001
Sensation Seeking	-0.36	-0.39	ns
Mistakes	-0.70	0.63	p<.001
Safe driving	0.63	-0.52	p<.001
Speeding (rev)	0.67	0.33	ns
Alcohol positive effects	-0.26	-0.04	ns
Alcohol negative effects	0.27	-0.43	p<.001
Moral disengagement	-0.71	0.13	p<.001

Table 5. Mean age (years) and standard errors as a function of gender and group.

		MEAN AGE	STANDARD ERROR	N
Males	Speeding drivers	19.69	0.322	36
	Safe drivers	20.92	0.536	13
	Risky drivers	20.22	0.403	23
Females	Speeding drivers	19.24	0.273	50
	Safe drivers	19.93	0.249	60
	Risky drivers	20.45	0.412	22

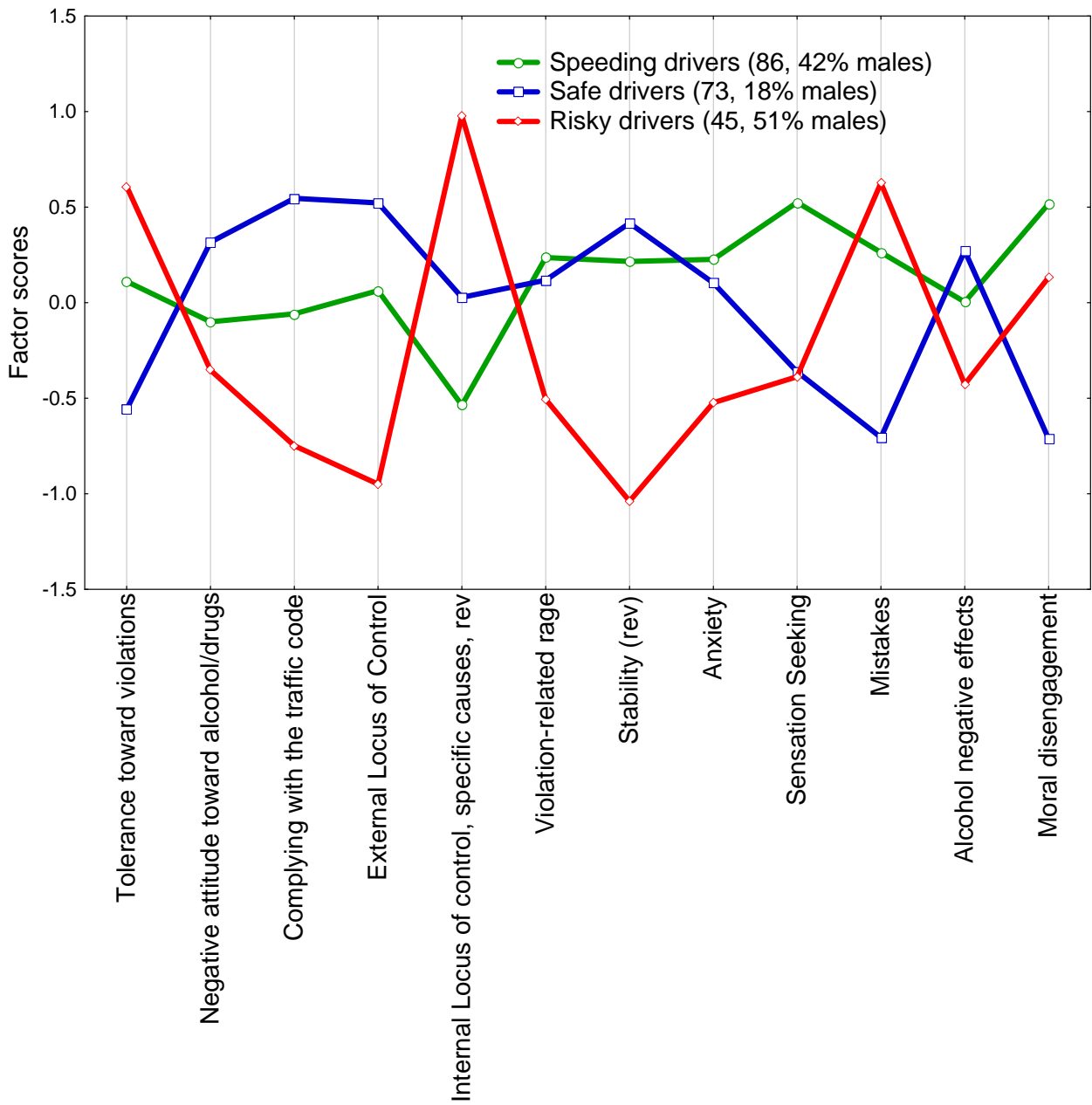
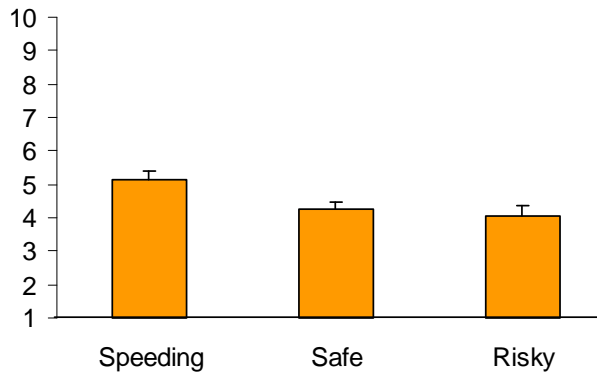


Figure 1. Average scores for each group on the subscales of the questionnaire

C.1 How would you assess your risk of having a road accident as against the people of your age (10=very high)?



C.2 How much are you worried about this possibility (10=very worried)?

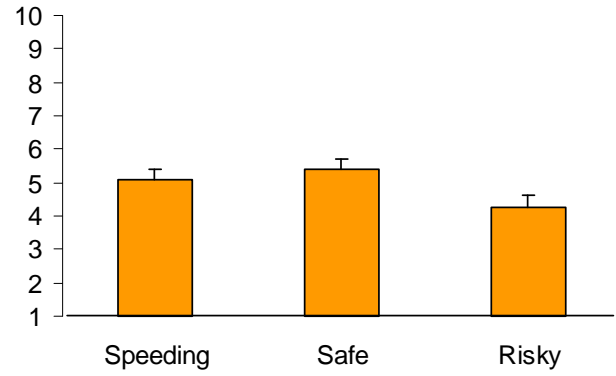
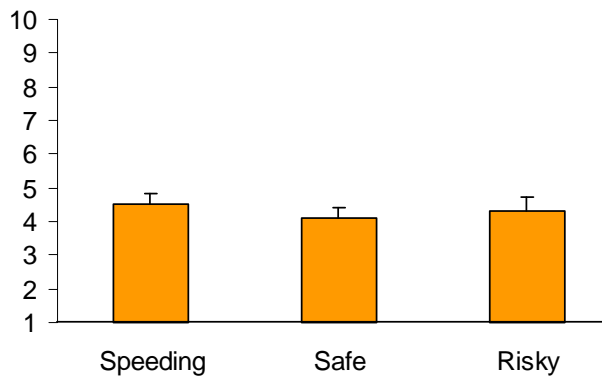


Figure 2. Average scores for each group on items concerning risk perception.

C.3 How much your friends would approve your reckless driving (10=totally approve)?



C.4 How much your friends would encourage your reckless driving (10=totally approve)?

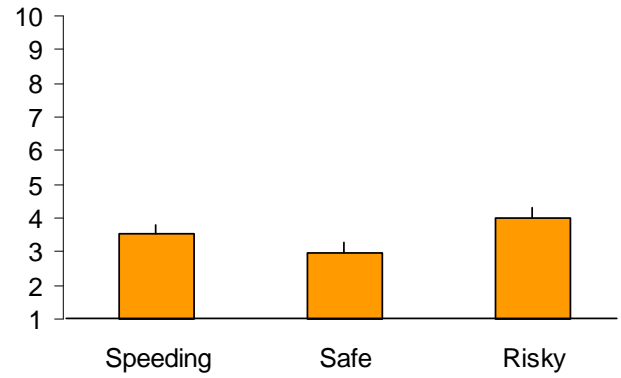
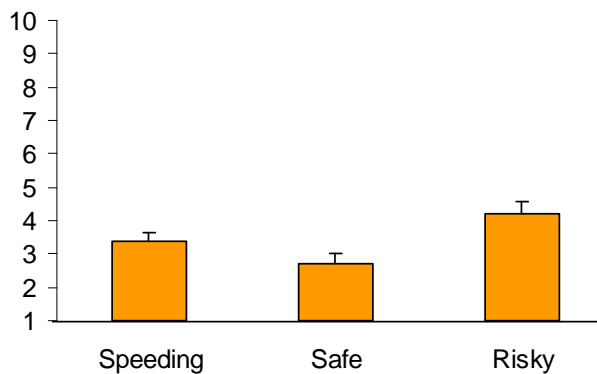


Figure 3. Average scores for each group on items concerning friends' attitude.

C.5 How angry would your parents get for your reckless driving (10=not at all)?



C.6 Would your parents punish you for your reckless driving (10=not at all)?

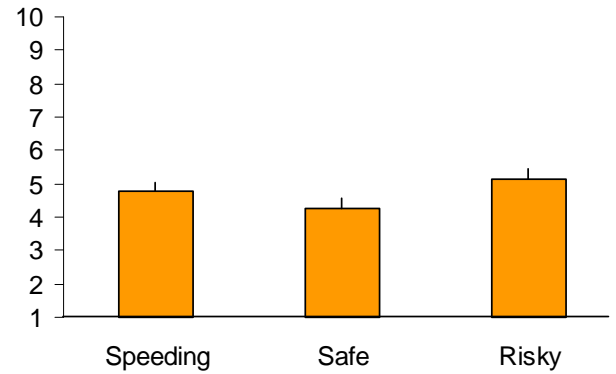


Figure 4. Average scores for each group on items concerning parents' attitude.