



ICARUS Project
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ICARUS Project

Inter - Cultural Approaches for Road Users Safety

Research report

Results

POLAND

CAR DRIVERS (QUESTIONNAIRE SECTION 1)

Sample description

A total of 571 people answered the Section 1 of the questionnaire. Males were 344 (60.2% of the total sample) and females were 227 (39.8% of the total sample). Their mean age was 20.87 years (standard deviation 2.03), ranging between 18 and 26 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 9 show the distribution as a function of gender of the answers to items concerning the driving habits and experiences. Relatively few respondents from Poland own a car (about 26% of the respondents), independently of the gender. They however refer to use a car on a regular basis (most of them drive everyday, again without a prevalence of one gender), and for relatively long trips (especially for male drivers). Both male and female drivers refer to drive after midnight on relatively few occasions (about 64% of them drive after midnight less than 2 times a week). Male drivers also refer to have received a traffic fine less often than female drivers, mostly for speeding.

Most of the respondents refer not to drive after having drunk alcohol (and it must be noticed that the item do not refer to being drunk, but only to driving after having drunk some alcohol). Summarizing, Polish young drivers seem to be characterized by being frequent drivers, not very 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	73 (21.22%)	271 (78.78%)*
Females	78 (34.36%)*	149 (65.64%)
Total	151 (26.44%)	420 (73.56%)

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	0	20 (7.38%)	48 (17.71%)	37 (13.65%)	155 (57.2%)	11 (4.06%)
Females	0	17 (11.49%)	25 (16.89%)	19 (12.84%)	71 (47.97%)	16 (10.81%)*
Total	0	37 (8.83%)	73 (17.42%)	56 (13.37%)	226 (53.94%)	27 (6.44%)

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	8 (2.95%)	19 (7.01%)	31 (11.44%)	50 (18.45%)	163 (60.15%)*
Females	3 (2.03%)	14 (9.46%)	33 (22.3%)*	44 (29.73%)*	54 (36.49%)
Total	11 (2.63%)	33 (7.88%)	64 (15.27%)	94 (22.43%)	217 (51.79%)

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	42 (15.5%)	96 (35.42%)	56 (20.66%)	77 (28.41%)*
Females	42 (28.38%)*	59 (39.86%)	25 (16.89%)	22 (14.86%)
Total	84 (20.05%)	155 (36.99%)	81 (19.33%)	99 (23.63%)

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	66 (24.35%)	89 (32.84%)	43 (15.87%)	73 (26.94%)*
Females	55 (37.16%)*	58 (39.19%)	15 (10.14%)	20 (13.51%)
Total	121 (28.88%)	147 (35.08%)	58 (13.84%)	93 (22.2%)

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?		
	Yes	No
Males	159 (58.67%)	112 (41.33%)*
Females	105 (70.95%)*	43 (29.05%)
Total	264 (63.01%)	155 (36.99%)

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	25 (7.27%)	13 (5.73%)	38 (6.65%)
Running a red light	5 (1.45%)	5 (2.2%)	10 (1.75%)
Running a stop sign	9 (2.62%)	3 (1.32%)	12 (2.1%)
Speeding	78 (22.67%)*	29 (12.78%)	107 (18.74%)
Drunk driving	1 (.29%)	0	1 (.18%)
Lack of seatbelts use	32 (9.3%)*	9 (3.96%)	41 (7.18%)

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	208 (76.75%)	49 (18.08%)*	6 (2.21%)	5 (1.85%)	1 (.37%)	2 (.74%)
Females	132 (89.19%)*	14 (9.46%)	1 (.68%)	1 (.68%)	0	0
Total	340 (81.15%)	63 (15.04%)	7 (1.67%)	6 (1.43%)	1 (.24%)	2 (.48%)

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	13 (3.78%)*	1 (.44%)	14 (2.45%)
You could hardly keep your head on straight	7 (2.03%)	0	7 (1.23%)
You had muscle cramps	1 (.29%)	0	1 (.18%)
You could hardly keep your eyes open	4 (1.16%)	0	4 (.7%)
You got stomach cramps	2 (.58%)	0	2 (.35%)
You could not focus on the road	36 (10.47%)*	6 (2.64%)	42 (7.36%)
Someone who was with you made you notice it	15 (4.36%)	4 (1.76%)	19 (3.33%)

Specific dimensions of the questionnaire scales

Scale A, Attitude toward road safety issues.

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, 0.81, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=3137.5$, $p<.000$, 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 43.67% 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 "Tolerance toward violations", accounting for by the 14.17% of the common variance) refers to a positive attitude toward violations of traffic rules. Items such as "*High-speed driving is reasonable if you are a good driver*" load on this factor.

The second factor (labelled "Negative attitude towards drugs and alcohol", accounting for by the 16.83% of the common variance) refer 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 these factor.

The third factor (labelled "Tolerance toward speed", accounting for by the 11.52% of the common variance) refers to tolerance toward violations of speed limits by others drivers. Items such as "*It is ok to go by car with a fast driver if also the others do the same.*" load on this factor.

The fourth factor (labelled "Usefulness of violations", accounting for by the 16.49% of the common variance) refers to the attitude to justifying violations of traffic rules. Items such as "*To keep traffic smooth-flowing you should ignore many of the road traffic rules.*" load on this factor. Factors are slightly correlated (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	4.322	24.013	24.013	2.552
2	2.858	15.878	39.890	3.031
3	1.396	7.754	47.645	2.074
4	1.003	5.574	53.219	2.969
5	.966	5.366	58.585	
6	.954	5.300	63.885	
7	.794	4.414	68.299	
8	.769	4.271	72.570	
9	.743	4.130	76.699	
10	.738	4.100	80.799	

11	.601	3.337	84.136
12	.584	3.242	87.379
13	.574	3.191	90.570
14	.493	2.739	93.309
15	.363	2.018	95.327
16	.354	1.966	97.292
17	.312	1.732	99.024
18	.176	.976	100.000

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

	Factors			
	Tolerance toward violations	Negative attitude drugs and alcohol	Tolerance toward speed	Usefulness violations to traffic rules
A_1				0.726
A_2				0.567
A_3				-0.297
A_4				0.650
A_5				0.165
A_6				0.332
A_7				0.287
A_8				0.394
A_9	0.511			
A_10	0.969			
A_11				-0.315
A_12			0.849	
A_13			0.724	
A_14		0.373		
A_15		0.720		
A_16		0.774		
A_17		0.880		
A_18		0.899		

Table A.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	-.106	.328	.594
2	-.106	1.000	-.206	-.188
3	.328	-.206	1.000	.352
4	.594	-.188	.352	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, 0.778, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(435)=4292.73$, $p<.000$, 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 33.09% 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, specific causes”, accounting for by the 9.27% of the common variance) refers to the impossibility to prevent accidents due to external causes. Items such as “*It is very difficult to prevent accidents when pedestrians emerge suddenly from between parked cars*” load on this factor.

The second factor (labeled “Internal Locus of Control”, accounting for by the 10.12% 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 third factor (labeled “Attention related LOC”, accounting for by the 8.53% of the common variance) refers to an internal, attention-related Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers’ failure to be careful or to pay attention to driving. Items such as “*Driving without accidents depends on driver’s ability to pay attention to what happens on the road and pavement*” load on this factor. This factor is negatively correlated to the first one (Table B.3).

The fourth factor (labeled “External Locus of Control”, accounting for by the 8.89% 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. This factor positively correlates to the first factor (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	4.221	14.069	14.069	2.781
2	3.582	11.941	26.009	3.036
3	2.702	9.006	35.015	2.559
4	1.538	5.126	40.141	2.669
5	1.214	4.046	44.187	
6	1.164	3.881	48.068	
7	1.097	3.656	51.724	
8	1.063	3.544	55.268	
9	.978	3.260	58.528	

10	.927	3.089	61.616
11	.875	2.917	64.534
12	.858	2.861	67.394
13	.808	2.695	70.089
14	.788	2.628	72.717
15	.747	2.488	75.205
16	.716	2.387	77.592
17	.704	2.346	79.938
18	.643	2.143	82.081
19	.629	2.095	84.176
20	.616	2.053	86.229
21	.562	1.873	88.102
22	.530	1.768	89.871
23	.489	1.629	91.500
24	.466	1.552	93.052
25	.443	1.478	94.530
26	.405	1.351	95.881
27	.380	1.268	97.149
28	.327	1.090	98.239
29	.272	.906	99.145
30	.257	.855	100.000

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

	Factors			
	External LOC, specific causes	Internal LOC	Attention- related LOC	External LOC
B_1				0.575
B_2				0.486
B_3		0.365		
B_4				0.388
B_5				0.515
B_6		0.497		
B_7		0.796		
B_8		0.819		
B_9		0.480		
B_10		0.457		
B_11	0.332			

B_12				0.376
B_13	0.615			
B_14	0.882			
B_15	0.775			
B_16		0.363		
B_17		0.415		
B_18			-0.754	
B_19			-0.807	
B_20				0.474
B_21			-0.342	
B_22	0.279		-0.357	
B_23				0.294
B_24				0.408
B_25				0.379
B_26			-0.452	
B_27			-0.429	
B_28		0.402		
B_29			-0.328	
B_30		0.346		

Table B.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	.037	-.228	.315
2	.037	1.000	-.143	.019
3	-.228	-.143	1.000	.064
4	.315	.019	.064	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, 0.841, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(91)=1547.61$, $p<.000$, 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 30.49% 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 20.24 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 17.96% 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 two factors are however 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	3.964	28.314	28.314	2.834
2	1.489	10.636	38.950	2.515
3	1.065	7.608	46.559	
4	.982	7.014	53.573	
5	.913	6.523	60.096	
6	.846	6.046	66.142	
7	.744	5.315	71.457	
8	.727	5.190	76.647	
9	.627	4.482	81.129	
10	.614	4.385	85.514	
11	.590	4.216	89.730	
12	.528	3.774	93.504	
13	.483	3.450	96.955	
14	.426	3.045	100.000	

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

	Factor	
	Violation-related Rage	Obstacle-related rage
D_1	0.629	
D_2	0.377	
D_3	0.829	
D_4	0.275	
D_5		0.569
D_6	0.430	
D_7		0.462
D_8		0.596
D_9	0.493	
D_10	0.351	
D_11	0.334	
D_12		0.668
D_13	0.397	
D_14		0.420

Table D3. Factor Correlation Matrix

Factor	1	2
1	1.000	.450
2	.450	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, 0.762, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(666)=3922.72, p<.000$, 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 five-factor solution that accounted for the 27.99% 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 8.77% of the common variance) refers to Anxiety. Items such as *“I easily panic”* load on this factor.

The second factor (labelled “Sensation seeking”, accounting for by the 5.05% of the common variance) refers to the Sensation-seeking personality trait. Items such as *“I often wish exciting things”* load on this factor.

The third factor (labelled “Altruism”, accounting for by the 8.2% of the common variance) refers Altruism. Items such as *“I think I’m generous with who is in trouble”* load on this factor.

The fourth factor (labelled “Egocentrism”, accounting for by the 4.1% of the common variance) refers to being self-centered. Items such as *“Some people consider me as cool-headed and self-seeking”* load on this factor.

The fifth factor (labelled “Stability”, accounting for by the 4.64% of the common variance) refers to being calm and reflexive. Items such as *“I’m not a person who worries”* load on this factor.

Correlation between Factors are shown in Table F.3.

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	4.525	12.231	12.231	3.248
2	3.016	8.153	20.383	1.872
3	2.438	6.588	26.972	3.036
4	1.832	4.952	31.923	1.517
5	1.432	3.871	35.794	1.720
6	1.377	3.722	39.517	
7	1.296	3.502	43.019	
8	1.147	3.099	46.118	
9	1.130	3.054	49.172	
10	1.066	2.881	52.054	
11	.993	2.684	54.737	
12	.964	2.606	57.343	
13	.942	2.545	59.888	
14	.908	2.454	62.343	

15	.886	2.394	64.737	
16	.856	2.313	67.050	
17	.805	2.175	69.225	
18	.771	2.084	71.310	
19	.759	2.051	73.361	
20	.711	1.923	75.283	
21	.704	1.904	77.187	
22	.673	1.818	79.005	
23	.662	1.788	80.794	
24	.645	1.743	82.536	
25	.631	1.704	84.241	
26	.614	1.658	85.899	
27	.605	1.635	87.534	
28	.588	1.589	89.122	
29	.530	1.432	90.554	
30	.502	1.356	91.911	
31	.499	1.350	93.260	
32	.482	1.303	94.563	
33	.451	1.219	95.783	
34	.432	1.168	96.950	
35	.418	1.130	98.081	
36	.369	.998	99.079	
37	.341	.921	100.000	

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

	Factor				
	Anxiety	Sensation Seeking	Altruism	Egocentris m	Stability
F_1					0.519
F_2	0.438				
F_3	0.410				
F_4		0.406			
F_5	0.374				
F_6				0.384	
F_7			0.403		
F_8					
F_9					0.426
F_10					0.455
F_11				0.814	

F_12		0.466			
F_13	0.598				
F_14					
F_15			0.520		
F_16		-0.351			
F_17					0.379
F_18	0.390				
F_19				0.353	
F_20			0.472		
F_21	0.512				
F_22				0.350	
F_23			0.492		
F_24		0.661			
F_25					0.336
F_26	0.472				
F_27			0.430		
F_28		0.273			
F_29	0.568				
F_30	0.494				
F_31			0.534		
F_32		0.303			
F_33			0.454		
F_34			-0.369		
F_35			0.390		
F_36			0.600		
F_37	0.384				

Table F.3. Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	.038	-.244	-.074	-.017
2	.038	1.000	.082	.038	.172
3	-.244	.082	1.000	.097	-.079
4	-.074	.038	.097	1.000	.190
5	-.017	.172	-.079	.190	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, 0.926, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(561)=7534.83$, $p<.000$, 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 36.33% 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 24.01% of the common variance) refers to errors due to lapses and slips. Items such as "*I easily panic*" load on this factor.

The second factor (labelled "Violations", accounting for by the 21.21% of the common variance) refers to violations of the traffic code and to speed and aggressive behaviour. Items such as "*Run a red light.*" load on this factor. This factor correlates with the previous factor.

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	10.003	29.420	29.420	8.164
2	3.283	9.656	39.076	7.212
3	1.457	4.285	43.361	
4	1.191	3.502	46.863	
5	1.160	3.411	50.274	
6	1.091	3.209	53.482	
7	1.014	2.981	56.463	
8	.898	2.640	59.104	
9	.843	2.479	61.583	
10	.817	2.402	63.985	
11	.808	2.376	66.361	
12	.773	2.273	68.634	
13	.741	2.180	70.814	
14	.703	2.067	72.881	
15	.675	1.985	74.866	
16	.642	1.888	76.754	
17	.626	1.842	78.595	
18	.605	1.780	80.375	
19	.598	1.760	82.135	

20	.570	1.676	83.812
21	.530	1.559	85.371
22	.489	1.437	86.808
23	.478	1.407	88.215
24	.467	1.374	89.588
25	.454	1.334	90.922
26	.411	1.208	92.130
27	.397	1.167	93.297
28	.384	1.130	94.427
29	.378	1.113	95.540
30	.356	1.048	96.588
31	.320	.941	97.529
32	.306	.901	98.430
33	.285	.838	99.268
34	.249	.732	100.000

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

	Factor	
	Slips/Lapses	Violations
I_1		0.436
I_2		0.508
I_3		0.384
I_4		0.665
I_5		0.720
I_6	0.357	
I_7		0.490
I_8		0.463
I_9		0.449
I_10		0.600
I_11		0.632
I_12		0.556
I_13		0.717
I_14		0.644
I_15		0.701
I_16		0.459
I_17		0.285
I_18	0.450	
I_19	0.634	
I_20	0.568	
I_21	0.605	

I_22	0.728	
I_23	0.711	
I_24	0.596	
I_25	0.534	
I_26	0.498	
I_27	0.544	
I_28	0.620	
I_29	0.667	
I_30	0.659	
I_31	0.575	
I_32	0.688	
I_33	0.660	
I_34		0.340

Table I.3. Factor Correlation Matrix

Factor	1	2
1	1.000	.456
2	.456	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, 0.84, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(231)=4965.73$, $p<.000$, 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 42.66% 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 “Speed”, accounting for by the 20.47% of the common variance) refers to speeding. Items such as “*You exceed the speed limits by 10 Km/h*” load on this factor. The second factor (labelled “Caution”, accounting for by the 12.06% of the common variance) refers to the caution when required by the traffic conditions. Items such as “*You slow down when approaching a danger sign*” load on this factor. This factor negatively correlates to the first factor. (Table J.3).

The third factor (labelled “Violations”, accounting for by the 17.11% of the common variance) refers to violations of the rules. Items such as “*To drive without keeping a safe distance.*” load on this factor. This factor positively correlates to the first 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	5.690	25.866	25.866	4.505
2	2.906	13.209	39.075	2.655
3	2.020	9.182	48.256	3.765
4	1.443	6.558	54.814	
5	1.114	5.066	59.880	
6	1.039	4.720	64.600	
7	.827	3.757	68.357	
8	.803	3.648	72.005	
9	.768	3.491	75.497	
10	.644	2.927	78.423	
11	.614	2.793	81.216	
12	.609	2.770	83.986	
13	.490	2.225	86.212	
14	.483	2.196	88.408	
15	.448	2.036	90.444	
16	.388	1.763	92.206	
17	.343	1.558	93.764	

18	.324	1.471	95.236
19	.312	1.417	96.653
20	.288	1.310	97.963
21	.236	1.072	99.035
22	.212	.965	100.000

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

	Factor		
	Speed	Caution	Violations
J_1	0.765		
J_2	0.861		
J_3	0.754		
J_4	0.864		
J_5	0.789		
J_6			0.548
J_7			0.525
J_8			0.494
J_9			0.541
J_10	0.327		
J_11	0.364		
J_12			0.336
J_13		0.358	
J_14		0.581	
J_15		0.709	
J_16		0.642	
J_17			0.705
J_18			0.791
J_19		0.665	
J_20		0.633	
J_21	-0.424		
J_22			0.514

Table J.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.086	.369
2	-.086	1.000	-.205
3	.369	-.205	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, 0.704, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(36)=1333.051, p<.000$, 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 39.26% 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 25.24% 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 “Preventing behaviours”, accounting for by the 17.7% of the common variance) refers to the behaviours aimed at preventing someone from driving under the effects of alcohol. Items such as “*You were the designated driver*” load on this factor.

Factors are slightly correlated (Table K.3).

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	2.923	32.481	32.481	2.272
2	1.619	17.987	50.468	1.593
3	1.176	13.061	63.529	
4	.897	9.970	73.499	
5	.676	7.513	81.012	
6	.605	6.721	87.733	
7	.431	4.784	92.517	
8	.413	4.590	97.107	
9	.260	2.893	100.000	

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

	Factor	
	Permissive attitude	Preventing behaviours
K_1	.843	-.052
K_2	.881	-.064
K_3	.046	.271
K_4	.364	.327
K_5	.639	.099
K_6	-.138	.359
K_7	-.011	.382
K_8	.117	.649
K_9	.126	.678

Table K.3. Factor Correlation Matrix

Factor	1	2
1	1.000	.257
2	.257	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, 0.808, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=2971.19$, $p<.000$, 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 42.95% 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 “Negative cognitive effects”, accounting for by the 13.26% of the common variance) refers to the supposed negative cognitive effects of alcohol assumption. Items such as “*Alcohol decreases the level of attention*” load on this factor.

The second factor (labelled “Positive effects”, accounting for by the 16.41% of the common variance) refers to the supposed positive effects of alcohol assumption. Items such as “*Alcohol increases concentration capacity*” load on this factor. This factor negatively correlates slightly to the first factor (Table L.3)

The third factor (labelled “Negative psychological effects”, accounting for by the 11.75% of the common variance) refers to psychological negative effects of alcohol assumption. Items such as “*Alcohol makes you less capable of assessing the risks*” load on this factor. This factor correlates to the first factor (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	4.412	22.062	22.062	2.652
2	2.740	13.700	35.762	3.283
3	1.495	7.473	43.235	2.350
4	1.152	5.758	48.993	
5	1.046	5.228	54.221	
6	.986	4.931	59.152	
7	.912	4.562	63.713	
8	.848	4.238	67.951	
9	.783	3.915	71.866	
10	.696	3.480	75.346	
11	.682	3.410	78.756	
12	.673	3.367	82.123	
13	.621	3.105	85.229	
14	.570	2.849	88.078	
15	.493	2.464	90.542	

16	.459	2.296	92.838
17	.433	2.167	95.005
18	.404	2.019	97.024
19	.370	1.852	98.876
20	.225	1.124	100.000

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

	Factor		
	Negative cognitive effects	Positive effects	Negative psychological effects
L_1		0.258	
L_2	0.743		
L_3	1.016		
L_4		0.502	
L_5		0.578	
L_6		0.518	
L_7			0.211
L_8		0.616	
L_9		0.468	
L_10		0.550	
L_11			0.589
L_12		0.534	
L_13			0.503
L_14			0.620
L_15			0.576
L_16		0.191	
L_17		0.246	
L_18		0.556	
L_19		0.456	
L_20		0.387	

Table L.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.217	.445
2	-.217	1.000	-.019
3	.445	-.019	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, $F_{46,1056}=40.92$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,550}=245.19$, $p<.001$) and a significant interaction between group and subscale ($F_{44,12100}= 51.79$, $p<.001$), 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. **AGGRESSIVE DRIVERS.** People in this group are especially characterized by high scores on aggressive/angry-related subscales, compared to safe drivers. They are tolerant toward traffic code violations, and have rather high scores on sensation seeking and egocentrism. Similarly to the risky drivers, 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 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 age or gender, though a prevalence of males can be observed among the risky and aggressive 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 subscales. The three groups do differ in terms of their perception of risk of being involved in an accident. Namely, respondents in the risky drivers group rate their risk of being involved in a car accident as higher compared to both the other groups, and are slightly (albeit not significantly) less worried about this possibility (Figure 2). Also, respondents in the risky driver group perceive their parents as less angry for their reckless driving behaviour compared to the other two groups (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 (Figure 3).

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

	SAFE drivers			AGGRESSIVE drivers			RISKY drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Tolerance toward violations	-0.64	0.05	226	0.37	0.05	231	0.68	0.08	96
Negative attitude toward alcohol/drugs	0.25	0.06	226	0.16	0.06	231	-1.03	0.09	96
Tolerance toward speeding	-0.47	0.05	226	0.22	0.05	231	0.64	0.08	96
Usefulness of violations	-0.59	0.05	226	0.25	0.05	231	0.89	0.07	96
External LOC, specific causes	-0.30	0.06	226	0.34	0.06	231	-0.03	0.09	96
Internal LOC	0.02	0.06	226	-0.08	0.06	231	0.14	0.09	96
Attention related LOC	-0.14	0.06	226	-0.05	0.06	231	0.45	0.09	96
External LOC	-0.46	0.05	226	0.30	0.05	231	0.38	0.08	96
Violation-related rage	-0.31	0.06	226	0.31	0.06	231	-0.01	0.09	96
Obstacle-related rage	-0.55	0.05	226	0.37	0.05	231	0.41	0.08	96
Anxiety	-0.41	0.06	226	0.28	0.06	231	0.34	0.09	96
Sensation seeking	-0.37	0.05	226	0.24	0.05	231	0.27	0.08	96
Altruism	0.25	0.06	226	-0.05	0.06	231	-0.49	0.09	96
Egocentrism	-0.02	0.06	226	-0.06	0.06	231	0.17	0.09	96
Stability	-0.33	0.05	226	0.14	0.05	231	0.43	0.08	96
Slips/Lapses	-0.19	0.06	226	-0.25	0.06	231	1.00	0.09	96
Violations	-0.51	0.05	226	0.02	0.05	231	1.13	0.08	96
Alcohol negative cognitive effects	0.26	0.06	226	0.18	0.06	231	-1.11	0.09	96
Alcohol positive effects	-0.22	0.05	226	-0.15	0.05	231	0.95	0.08	96
Alcohol negative effects	0.26	0.06	226	0.03	0.05	231	-0.73	0.08	96
Permissive attitude	-0.29	0.05	226	-0.14	0.05	231	1.04	0.08	96
Prevention behaviour	-0.08	0.06	226	-0.10	0.06	231	0.40	0.09	96
Moral disengagement	-0.73	0.05	226	0.35	0.05	231	0.95	0.08	96

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

	SAFE drivers	AGGRESSIVE drivers	Significance
	N=226	N=231	
Tolerance toward violations	-0.64	0.37	p<.001
Negative attitude toward alcohol/drugs	0.25	0.16	ns
Tolerance toward speeding	-0.47	0.22	p<.001
Usefulness of violations	-0.59	0.25	p<.001
External LOC, specific causes	-0.30	0.34	p<.001
Internal LOC	0.02	-0.08	ns
Attention related LOC	-0.14	-0.05	ns

External LOC	-0.46	0.30	p<.001
Violation-related rage	-0.31	0.31	p<.001
Obstacle-related rage	-0.55	0.37	p<.001
Anxiety	-0.41	0.28	p<.001
Sensation seeking	-0.37	0.24	p<.001
Altruism	0.25	-0.05	p<.001
Egocentrism	-0.02	-0.06	ns
Stability	-0.33	0.14	p<.001
Slips/Lapses	-0.19	-0.25	ns
Violations	-0.51	0.02	p<.001
Alcohol negative cognitive effects	0.26	0.18	ns
Alcohol positive effects	-0.22	-0.15	ns
Alcohol negative effects	0.26	0.03	ns
Permissive attitude	-0.29	-0.14	ns
Prevention behaviour	-0.08	-0.10	ns
Moral disengagement	-0.73	0.35	ns

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

	SAFE drivers N=226	RISKY drivers N=96	Significance
Tolerance toward violations	-0.64	0.68	p<.001
Negative attitude toward alcohol/drugs	0.25	-1.03	p<.001
Tolerance toward speeding	-0.47	0.64	p<.001
Usefulness of violations	-0.59	0.89	p<.001
External LOC, specific causes	-0.30	-0.03	ns
Internal LOC	0.02	0.14	ns
Attention related LOC	-0.14	0.45	p<.001
External LOC	-0.46	0.38	p<.001
Violation-related rage	-0.31	-0.01	ns
Obstacle-related rage	-0.55	0.41	p<.001
Anxiety	-0.41	0.34	p<.001
Sensation seeking	-0.37	0.27	p<.001
Altruism	0.25	-0.49	p<.001
Egocentrism	-0.02	0.17	ns
Stability	-0.33	0.43	p<.001
Slips/Lapses	-0.19	1.00	p<.001
Violations	-0.51	1.13	p<.001
Alcohol negative cognitive effects	0.26	-1.11	p<.001
Alcohol positive effects	-0.22	0.95	p<.001
Alcohol negative effects	0.26	-0.73	p<.001
Permissive attitude	-0.29	1.04	p<.001
Prevention behaviour	-0.08	0.40	p<.001
Moral disengagement	-0.73	0.95	ns

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

	AGGRESSIVE drivers N=231	RISKY drivers N=96	Significance
Tolerance toward violations	0.37	0.68	p<.001
Negative attitude toward alcohol/drugs	0.16	-1.03	p<.001
Tolerance toward speeding	0.22	0.64	p<.001
Usefulness of violations	0.25	0.89	p<.001
External LOC, specific causes	0.34	-0.03	p<.001
Internal LOC	-0.08	0.14	ns
Attention related LOC	-0.05	0.45	p<.001
External LOC	0.30	0.38	ns
Violation-related rage	0.31	-0.01	p<.001
Obstacle-related rage	0.37	0.41	ns
Anxiety	0.28	0.34	ns
Sensation seeking	0.24	0.27	ns
Altruism	-0.05	-0.49	p<.001
Egocentrism	-0.06	0.17	ns
Stability	0.14	0.43	ns
Slips/Lapses	-0.25	1.00	p<.001
Violations	0.02	1.13	p<.001
Alcohol negative cognitive effects	0.18	-1.11	p<.001
Alcohol positive effects	-0.15	0.95	p<.001
Alcohol negative effects	0.03	-0.73	p<.001
Permissive attitude	-0.14	1.04	p<.001
Prevention behaviour	-0.10	0.40	p<.001
Moral disengagement	0.35	0.95	ns

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

		Mean age	Standard error	N
Males	Safe drivers	21.09	0.19	110
	Aggressive drivers	20.24	0.16	143
	Risky drivers	20.63	0.22	82
Females	Safe drivers	21.41	0.18	116
	Aggressive drivers	20.82	0.21	88
	Risky drivers	21.79	0.52	14

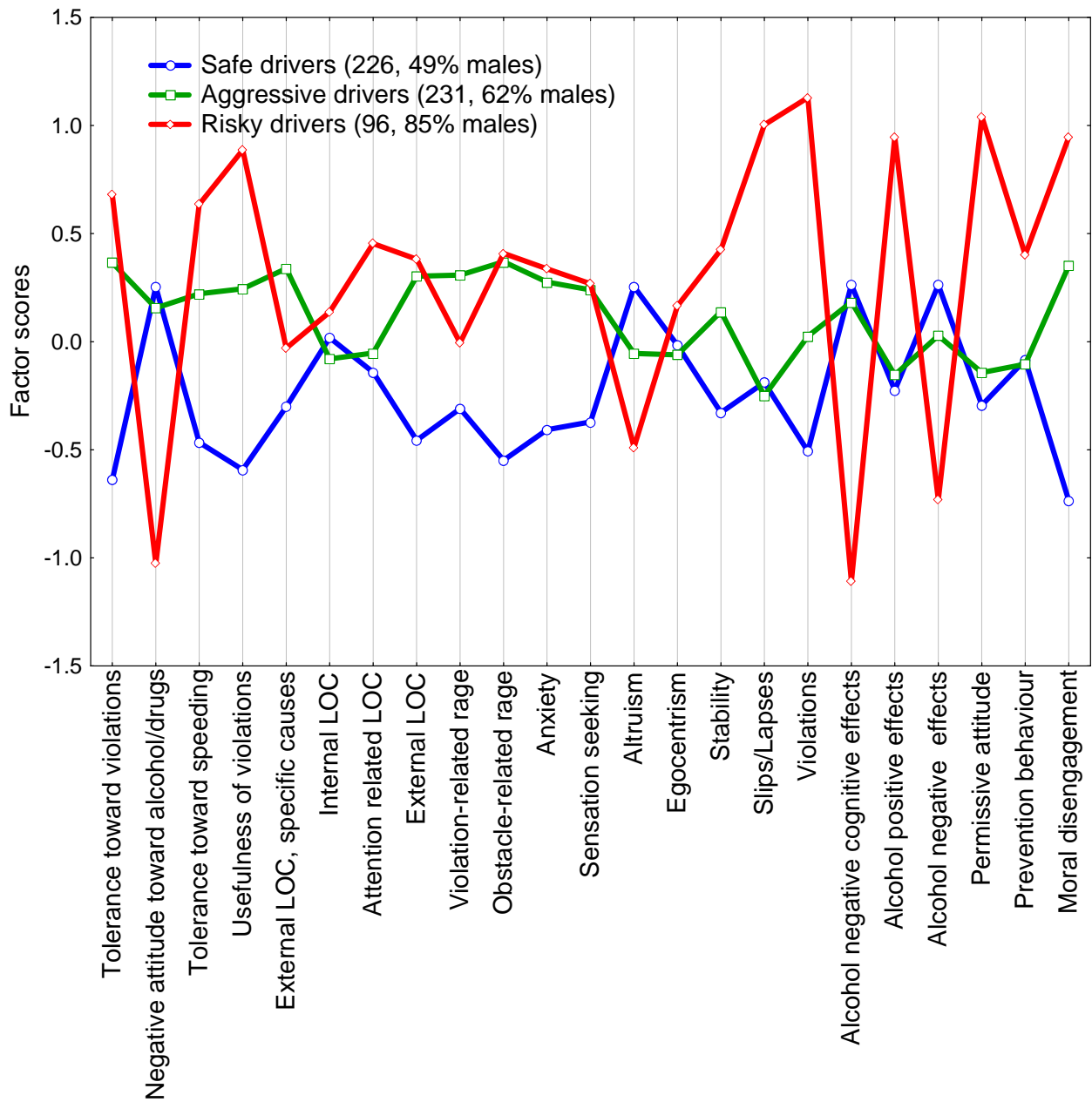


Figure 1. Average scores for each group on the subscales of the questionnaire.

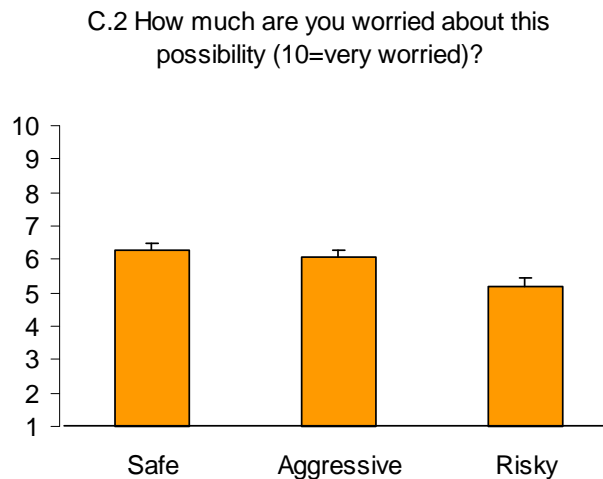
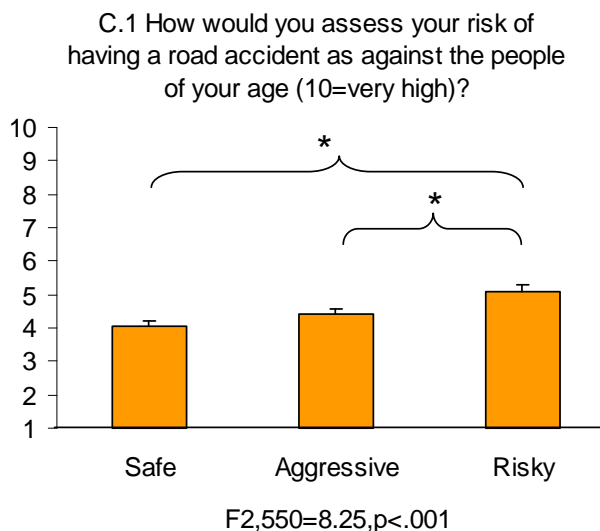


Figure 2. Average scores for each group on items concerning risk perception.

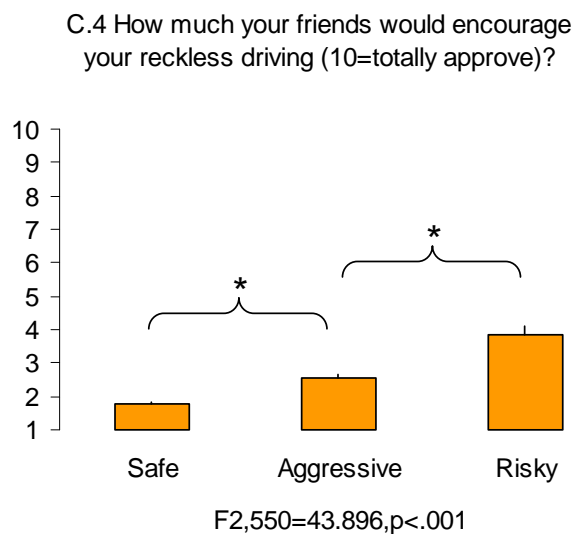
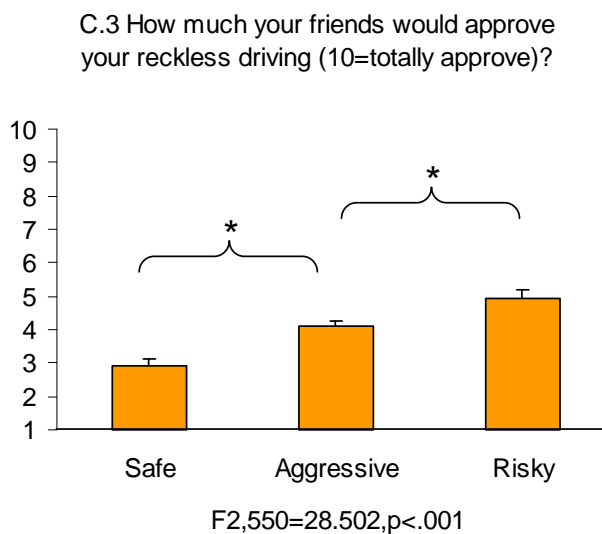


Figure 3. Average scores for each group on items concerning friends' attitude.

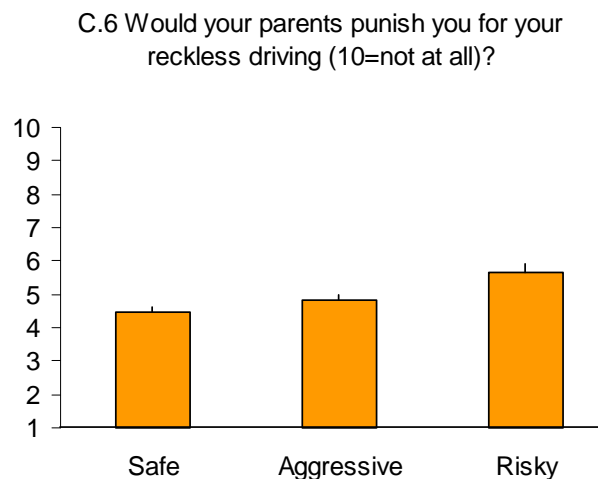
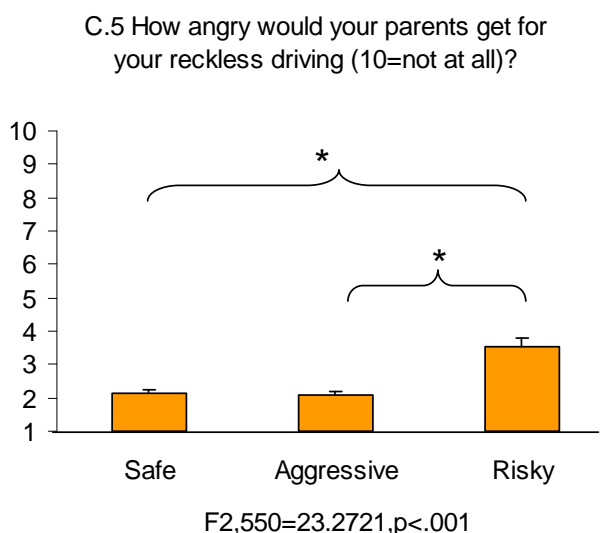


Figure 4. Average scores for each group on items concerning parents' attitude.

SCOOTER DRIVERS (QUESTIONNAIRE SECTION 2)

Sample description

A total of 159 people answered the Section 2 of the questionnaire. Males were 107 (67.3% of the total sample) and females were 52 (32.7% of the total sample). Their mean age was 20.9 years (standard deviation 3.67), ranging between 18 and 27 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 Polish scooter male drivers refer to use scooters or motorbikes often often (about 32% everyday), whereas female drivers use a scooter on a very sparse base (about 70% of them use it 1 or 2 times a week). Their use of scooters is 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 not very often (less than 50% of them drive after 11:00 pm more than 2 times a week), where female drivers are far less likely to drive during night hours (about 78% of them do not drive after 11:00 pm at all). Polish scooter drivers also are not normally used to go on as passengers, except after 11:00 pm, when this habit becomes slightly more frequent. 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.

Less than half the sample (about 21% of the total sample) states 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, Polish young scooter drivers seem to be characterized by being 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 (6.19%)	18 (18.56%)	22 (22.68%)	13 (13.4%)	31 (31.96%)*	7 (7.22%)
Females	2 (5.41%)	26 (70.27%)*	6 (16.22%)	2 (5.41%)	1 (2.7%)	0
Total	8 (5.97%)	44 (32.84%)	28 (20.9%)	15 (11.19%)	32 (23.88%)	7 (5.22%)

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 (10.31%)	20 (20.62%)	12 (12.37%)	22 (22.68%)	33 (34.02%)*
Females	15 (40.54%)*	9 (24.32%)	8 (21.62%)	4 (10.81%)	1 (2.7%)
Total	25 (18.66%)	29 (21.64%)	20 (14.93%)	26 (19.4%)	34 (25.37%)

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	25 (25.77%)	30 (30.93%)	18 (18.56%)	24 (24.74%)*
Females	29 (78.38%)*	7 (18.92%)	0	1 (2.7%)
Total	54 (40.3%)	37 (27.61%)	18 (13.43%)	25 (18.66%)

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	57 (58.76%)	26 (26.8%)*	6 (6.19%)	2 (2.06%)	1 (1.03%)	5 (5.15%)
Females	34 (91.89%)*	2 (5.41%)	0	1 (2.7%)	0	0
Total	91 (67.91%)	28 (20.9%)	6 (4.48%)	3 (2.24%)	1 (.75%)	5 (3.73%)

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	73 (75.26%)	13 (13.4%)	5 (5.15%)	6 (6.19%)
Females	34 (91.89%)*	3 (8.11%)	0	0
Total	107 (79.85%)	16 (11.94%)	5 (3.73%)	6 (4.48%)

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	28 (28.87%)	69 (71.13%)
Females	13 (35.14%)	24 (64.86%)
Total	41 (30.6%)	93 (69.4%)

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	3 (2.8%)	3 (5.77%)	6 (3.77%)
Running a red light	3 (2.8%)	2 (3.85%)	5 (3.14%)
No parking	9 (8.41%)	1 (1.92%)	10 (6.29%)
Passenger	1 (.93%)	0	1 (.63%)
Drunk driving	3 (2.8%)	1 (1.92%)	4 (2.52%)
Driving without the helmet	9 (8.41%)	10 (19.23%)*	19 (11.95%)
Speeding	15 (14.02%)	2 (3.85%)	17 (10.69%)

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	26 (26.8%)*	66 (68.04%)	5 (5.15%)
Females	2 (5.41%)	32 (86.49%)*	3 (8.11%)
Total	28 (20.9%)	98 (73.13%)	8 (5.97%)

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	17 (73.91%)	1 (4.35%)	10 (43.48%)
Females	1 (25.%)	0	1 (25.%)
Total	18 (66.67%)	1 (3.7%)	11 (40.74%)

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	30 (30.93%)*	60 (61.86%)	7 (7.22%)
Females	2 (5.41%)	34 (91.89%)*	1 (2.7%)
Total	32 (23.88%)	94 (70.15%)	8 (5.97%)

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	21 (63.64%)	2 (6.06%)	10 (30.3%)
Females	3 (75.%)	0	1 (25.%)
Total	24 (64.86%)	2 (5.41%)	11 (29.73%)

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	25 (25.77%)*	72 (74.23%)
Females	3 (8.11%)	34 (91.89%)*
Total	28 (20.9%)	106 (79.1%)

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	9 (8.41%)	0	9 (5.66%)
You could hardly keep your head on straight	6 (5.61%)	0	6 (3.77%)
You had muscle cramps	3 (2.8%)	0	3 (1.89%)
You could hardly keep your eyes open	5 (4.67%)	0	5 (3.14%)
You got stomach cramps	2 (1.87%)	2 (3.85%)	4 (2.52%)
You could not focus on the road	12 (11.21%)*	1 (1.92%)	13 (8.18%)
Someone who was with you made you notice it	2 (1.87%)	0	2 (1.26%)

Specific dimensions of the questionnaire scales

Scale A, Attitude toward road safety issues.

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, 0.798, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=1175.149$, $p<.000$, 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 46.62% 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 towards drugs and alcohol", accounting for by the 18% of the common variance) refer 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 second factor (labelled "Tolerance toward violations", accounting for by the 17.81% of the common variance) refers to an attitude toward violations of traffic rules. Items such as "*To keep traffic smooth-flowing you should ignore many of the road traffic rules*" load on this factor.

The third factor (labelled "Usefulness violations", accounting for by the 19.72% of the common variance) refers to the attitude to justifying violations of traffic rules. Items such as "*High-speed driving is reasonable if you are a good driver*" load on this factor. The second and the third factors are correlated (Table A.3), while the third factor correlates to the first factor.

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	5.029	27.938	27.938	3.240
2	2.936	16.311	44.249	3.206
3	1.495	8.307	52.557	3.550
4	1.327	7.373	59.930	
5	.992	5.511	65.441	
6	.957	5.317	70.758	
7	.745	4.137	74.896	
8	.694	3.853	78.749	
9	.638	3.542	82.291	
10	.595	3.307	85.598	
11	.532	2.954	88.552	
12	.459	2.549	91.101	
13	.396	2.199	93.300	

14	.324	1.799	95.098
15	.280	1.554	96.652
16	.241	1.338	97.990
17	.236	1.313	99.303
18	.125	.697	100.000

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

	Factors		
	Negative attitude toward drugs and alcohol	Tolerance toward violations	Usefulness of violations
A_1		0.679	
A_2		0.832	
A_3		-0.367	
A_4		0.553	
A_5			0.441
A_6		0.351	
A_7		0.396	
A_8		0.413	
A_9			0.626
A_10			0.577
A_11			
A_12			0.741
A_13			0.818
A_14		-0.189	
A_15	0.683		
A_16	0.792		
A_17	0.939		
A_18	0.953		

Table A.3. Factor Correlation Matrix

Factor	1	2	2
1	1.000	-.138	-.229
2	-.138	1.000	.373
3	-.229	.373	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, 0.623, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(435)=1601.978$, $p<.000$, 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 20.037% 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 10.07% 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”, accounting for by the 10.2% 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. This factor slightly correlates positively to the first factor (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	4.270	14.233	14.233	3.022
2	3.474	11.581	25.814	3.061
3	2.493	8.309	34.123	
4	2.133	7.109	41.232	
5	1.804	6.012	47.245	
6	1.509	5.029	52.273	
7	1.263	4.210	56.483	
8	1.166	3.887	60.371	
9	1.068	3.560	63.931	
10	1.017	3.390	67.320	
11	.981	3.271	70.591	
12	.884	2.947	73.537	
13	.791	2.638	76.176	
14	.733	2.442	78.618	
15	.703	2.344	80.961	
16	.610	2.032	82.994	
17	.597	1.991	84.985	

18	.594	1.981	86.965
19	.503	1.678	88.644
20	.496	1.653	90.296
21	.436	1.452	91.749
22	.417	1.388	93.137
23	.368	1.227	94.364
24	.348	1.158	95.522
25	.306	1.021	96.543
26	.297	.991	97.534
27	.244	.814	98.348
28	.190	.633	98.981
29	.163	.545	99.526
30	.142	.474	100.000

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

	Factor	
	External LOC	Internal LOC
B_1	0.259	
B_2	0.351	
B_3		0.251
B_4	0.326	
B_5	0.308	
B_6		0.422
B_7		0.720
B_8		0.876
B_9		0.502
B_10		0.535
B_11	0.182	
B_12		0.270
B_13	0.620	
B_14	0.934	
B_15	0.607	
B_16		0.335
B_17		0.264
B_18	0.396	
B_19	0.353	
B_20	0.149	
B_21	0.185	
B_22	0.291	-0.251
B_23	0.208	

B_24		0.410
B_25	0.223	
B_26	0.334	-0.276
B_27	0.253	
B_28	0.269	
B_29		-0.349
B_30		0.302

Table B.3. Factor correlation matrix

Factor	1	2
1	1.000	.128
2	.128	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, 0.764, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(91)=601.135, p<.000$, 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 35.154% 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 23.8% 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 13.42% 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 two factors are slightly correlated negatively (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	4.026	28.756	28.756	3.333
2	1.805	12.892	41.648	1.879
3	1.431	10.225	51.873	
4	1.156	8.259	60.132	
5	.914	6.528	66.661	
6	.866	6.183	72.844	
7	.703	5.019	77.863	
8	.592	4.230	82.093	
9	.533	3.804	85.897	
10	.483	3.450	89.347	
11	.450	3.218	92.565	
12	.388	2.769	95.334	
13	.346	2.469	97.803	
14	.308	2.197	100.000	

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

	Factor	
	Violation-related Rage	Obstacle-related rage
D_1	0.689	
D_2	0.374	
D_3	0.547	
D_4	0.373	
D_5		-0.725
D_6	0.324	
D_7	0.449	
D_8		-0.655
D_9	0.622	
D_10	0.688	
D_11	0.533	
D_12		-0.680
D_13	0.610	
D_14	0.449	

Table D3. Factor Correlation Matrix

Factor	1	2
1	1.000	-.177
2	-.177	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, 0.668, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(666)=1807.198$, $p<.000$, 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 32.163% 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 “Stability”, accounting for by the 11.42% 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 second factor (labelled “Anxiety”, accounting for by the 10.69% of the common variance) refers to the absence of Anxiety. Items such as “*I easily panic*” load on this factor.

The third factor (labelled “Egocentrism”, accounting for by the 5.778% of the common variance) refers to Egoism. Items such as “*Some people think I am egoist and egocentric*” load on this factor.

The fourth factor (labelled “Sensation seeking” (reversed), accounting for by the 5.35% of the common variance) refers to the Sensation-seeking personality trait. Items such as “*I often wish exciting things*” load on this factor.

Correlation between Factors are shown in Table F.3.

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	5.425	14.662	14.662	4.229
2	3.292	8.898	23.560	3.958
3	2.529	6.836	30.395	2.136
4	2.190	5.918	36.313	1.981
5	1.641	4.435	40.748	
6	1.495	4.040	44.787	
7	1.487	4.019	48.806	
8	1.460	3.946	52.752	
9	1.384	3.741	56.493	
10	1.194	3.226	59.720	
11	1.133	3.061	62.781	
12	1.046	2.827	65.608	
13	.969	2.620	68.228	
14	.922	2.492	70.720	
15	.912	2.466	73.186	

16	.837	2.262	75.448	
17	.769	2.078	77.526	
18	.738	1.994	79.520	
19	.684	1.847	81.367	
20	.667	1.801	83.168	
21	.588	1.589	84.757	
22	.566	1.529	86.286	
23	.543	1.468	87.754	
24	.521	1.407	89.161	
25	.500	1.350	90.511	
26	.446	1.206	91.717	
27	.422	1.140	92.858	
28	.374	1.010	93.867	
29	.347	.937	94.804	
30	.321	.867	95.671	
31	.277	.749	96.419	
32	.273	.738	97.157	
33	.242	.654	97.811	
34	.223	.604	98.415	
35	.215	.582	98.997	
36	.191	.516	99.514	
37	.180	.486	100.000	

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

	Factor			
	Stability	Anxiety	Egocentris m	Sensation seeking (reversed)
F_1				-0.533
F_2		0.370		
F_3			0.467	
F_4	0.424			
F_5		0.292		
F_6		-0.549		
F_7		-0.337		
F_8	-0.207			
F_9	0.305			
F_10		0.443		
F_11			0.621	

F_12				-0.443
F_13		0.653		
F_14			0.547	
F_15	0.383			
F_16	-0.288			
F_17				-0.703
F_18		0.340		
F_19			0.392	
F_20	0.436			
F_21		0.366		
F_22		-0.684		
F_23	0.707			
F_24	0.554			
F_25				-0.427
F_26				0.441
F_27	0.159			
F_28	0.485			
F_29		0.639		
F_30		0.528		
F_31	0.539			
F_32	0.555			
F_33	0.666			
F_34		0.388		
F_35	0.522			
F_36	0.538			
F_37		0.416		

Table F.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	-.144	.048	-.054
2	-.144	1.000	.073	-.043
3	.048	.073	1.000	-.085
4	-.054	-.043	-.085	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, 0.725, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(253)=1398.243$, $p<.000$, 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 43.318% 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 8.15% of the common variance) refers to violations of the traffic code. Items such as *"To exceed the speed limit by over 10 Km/h."* load on this factor.

The second factor (labelled "Alcohol and drugs", accounting for by the 9.98% of the common variance) refers to driving under the effect of alcohol. Items such as *"To drive after drinking, even if you are not sure that you sobered up"* load on this factor.

The third factor (labelled "Slowing", accounting for by the 16.42% of the common variance) refers to the caution when required by the traffic conditions. Items such as *"To slow down near a sign of danger"* load on this factor.

The fourth factor (labelled "Speeding", accounting for by the 13.23% of the common variance) refers to speeding. Items such as *"You exceed the speed limits by 10 Km/h"* load on this factor. Correlation between Factors are shown in 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	4.656	20.245	20.245	1.875
2	3.400	14.782	35.028	2.296
3	2.624	11.410	46.438	3.777
4	1.534	6.670	53.108	3.045
5	1.221	5.309	58.417	
6	1.034	4.495	62.912	
7	.919	3.993	66.906	
8	.895	3.893	70.799	
9	.806	3.502	74.302	
10	.749	3.254	77.556	
11	.708	3.078	80.634	
12	.678	2.949	83.583	
13	.638	2.773	86.356	
14	.535	2.327	88.683	

15	.446	1.938	90.621
16	.412	1.789	92.410
17	.361	1.571	93.981
18	.341	1.483	95.464
19	.295	1.281	96.745
20	.231	1.004	97.749
21	.192	.834	98.583
22	.171	.745	99.328
23	.155	.672	100.000

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

	Factor			
	Violations	Alcohol and drugs	Slowing	Speeding
I_1				0.828
I_2				0.902
I_3				0.752
I_4	0.364			0.640
I_5	0.971			
I_6			-0.183	
I_7			0.244	
I_8			-0.290	
I_9	0.192			
I_10	0.170			
I_11	0.387			
I_12				-0.238
I_13			0.537	
I_14			0.741	
I_15			0.741	
I_16			0.806	
I_17		0.614		
I_18		0.997		
I_19		0.453		
I_20			0.705	
I_21			0.626	
I_22			0.578	
I_23		0.286		

Table I.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	.291	-.085	.123
2	.291	1.000	-.252	.069
3	-.085	-.252	1.000	.000
4	.123	.069	.000	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, 0.699, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(231)=1459.293$, $p<.000$, 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 49.021% 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 “Drugs and Alcohol Violations”, accounting for by the 12.19% of the common variance) refers to violations of the rules. Items such as *“To drive after drinking more than a glass of beer/wine..”* load on this factor.

The second factor (labelled “Speed”, accounting for by the 16% of the common variance) refers to speeding. Items such as *“You exceed the speed limits by 10 Km/h”* load on this factor.

The third factor (labelled “Caution”, accounting for by the 13.97% of the common variance) refers to the caution when required by the traffic conditions. Items such as *“You slow down when approaching a danger sign”* load on this factor.

The fourth factor (labelled “Violations”, accounting for by the 12.66% of the common variance) refers to violations of the rules. Items such as *“To drive without keeping a safe distance.”* load on this factor.

Between-factor correlations are shown in 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	4.534	20.610	20.610	2.682
2	3.510	15.954	36.564	3.520
3	2.445	11.113	47.676	3.074
4	1.738	7.900	55.576	2.786
5	1.396	6.344	61.920	
6	1.109	5.040	66.960	
7	.846	3.844	70.804	
8	.800	3.638	74.442	
9	.762	3.464	77.905	
10	.690	3.135	81.040	
11	.598	2.720	83.761	
12	.594	2.698	86.459	
13	.506	2.302	88.760	
14	.488	2.217	90.978	

15	.378	1.719	92.696
16	.343	1.557	94.254
17	.314	1.428	95.682
18	.294	1.336	97.018
19	.186	.843	97.862
20	.177	.807	98.668
21	.164	.744	99.412
22	.129	.588	100.000

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

	Factor			
	Drugs and alcohol Violations	Speed	Caution	Violations
J1_1		0.736		
J1_2		0.889		
J1_3		0.809		
J1_4		0.743		
J1_5		0.532		
J1_6				0.583
J1_7				0.573
J1_8				0.862
J1_9				0.797
J1_10		0.386		
J1_11	0.296			
J1_12	0.416			
J1_13			0.486	
J1_14			0.544	
J1_15			0.659	
J1_16			0.782	
J1_17	1.051			
J1_18	0.709			
J1_19			0.788	
J1_20			0.676	
J1_21		-0.430	0.337	
J1_22	0.412			

Table J.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	.159	-.090	.372
2	.159	1.000	.027	.236
3	-.090	.027	1.000	-.021
4	.372	.236	-.021	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, 0.704, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(36)=437.114$, $p<.000$, 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 44.01% 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 27.51% 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 "Preventing behaviours", accounting for by the 21.61% of the common variance) refers to the behaviours aimed at preventing someone from driving under the effects of alcohol. Items such as "*You were the designated driver*" load on this factor. Factors are slightly correlated (Table K.3.)

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	3.219	35.764	35.764	2.477
2	1.649	18.317	54.081	1.945
3	1.134	12.604	66.685	
4	.814	9.048	75.733	
5	.667	7.413	83.145	
6	.580	6.444	89.590	
7	.429	4.763	94.353	
8	.293	3.252	97.605	
9	.216	2.395	100.000	

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

	Factor	
	Permissive attitude	Preventing behaviours
K_1	0.859	
K_2	0.930	
K_3		
K_4	0.408	0.274
K_5	0.543	0.364
K_6		0.401
K_7		0.451
K_8		0.812
K_9	0.298	0.588

Table K.3. Factor Correlation Matrix

Factor	1	2
1	1.000	.276
2	.276	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, 0.758, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=1009.788$, $p<.000$, 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 34.88% 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 “Negative effects” (reversed), accounting for by the 16.49% 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 second factor (labelled “Positive effects”, accounting for by the 18.73% of the common variance) refers to the supposed positive effects of alcohol assumption on cognitive abilities. Items such as “*Alcohol increases concentration capacity*” load on this factor. Factors are not correlated (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	4.550	22.748	22.748	3.299
2	3.276	16.380	39.128	3.746
3	1.729	8.643	47.771	
4	1.253	6.266	54.037	
5	1.142	5.712	59.749	
6	1.028	5.138	64.887	
7	.846	4.232	69.119	
8	.834	4.168	73.287	
9	.719	3.595	76.882	
10	.644	3.221	80.103	
11	.609	3.047	83.149	
12	.529	2.644	85.793	
13	.476	2.380	88.174	
14	.458	2.288	90.462	
15	.436	2.178	92.640	
16	.382	1.912	94.552	
17	.331	1.653	96.205	
18	.296	1.480	97.685	
19	.247	1.235	98.920	
20	.216	1.080	100.000	

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

	Factor	
	Negative effects (reversed)	Positive effects
L_1		0.656
L_2	-0.759	
L_3	-0.724	
L_4		0.557
L_5		0.539
L_6		0.549
L_7	-0.526	
L_8		0.420
L_9		0.413
L_10		0.728
L_11	-0.506	
L_12		0.493
L_13	-0.561	
L_14	-0.634	
L_15	-0.581	
L_16	-0.260	
L_17		0.468
L_18		0.577
L_19		0.572
L_20		0.535

Table L.3. Factor Correlation Matrix

Factor	1	2
1	1.000	.054
2	.054	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=0.05, $F_{40,232}=20.91$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,135}=49.33$, $p<.001$) and a significant interaction between group and subscale ($F_{38,2565}= 19.29$, $p<.001$), meaning that each group of respondents shows a specific profile.

4. **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.
5. **ALCOHOL EFFECTS AWARE DRIVERS.** People in this group have a very similar profile as those in the risky drivers group, with the exception that they are aware of the negative effects of driving after having drunk alcohol.
6. **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.

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 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). Also, the three groups do not differ in terms of how much angry their parents would be for their reckless driving (Figure 4). However, respondents in the alcohol aware and risky drivers groups feel more supported and encouraged in their reckless driving behaviour than respondents in the safe drivers group (Figure 3).

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

	ALCOHOL AWARE drivers			RISKY drivers			SAFE drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Negative attitude toward alcohol/drugs	0.16	0.11	69	-0.68	0.18	26	0.17	0.14	43
Tolerance toward violations	0.33	0.08	69	0.70	0.14	26	-0.89	0.11	43
Usefulness of violations	0.01	0.10	69	1.00	0.16	26	-0.58	0.12	43
External LOC	0.40	0.10	69	0.29	0.16	26	-0.73	0.13	43
Internal LOC	0.12	0.11	69	0.15	0.18	26	-0.42	0.14	43
Violation-related rage	-0.01	0.11	69	-0.26	0.18	26	0.32	0.14	43
Obstacle-related rage	-0.20	0.10	69	-0.37	0.16	26	0.55	0.13	43
Stability	-0.03	0.12	69	-0.27	0.19	26	0.14	0.15	43
Anxiety	0.34	0.09	69	0.60	0.14	26	-0.94	0.11	43
Egocentrism	-0.06	0.11	69	0.34	0.18	26	-0.08	0.14	43
Sensation Seeking (reversed)	0.06	0.11	69	-0.49	0.18	26	0.22	0.14	43
Violations	-0.06	0.11	69	0.64	0.18	26	-0.37	0.14	43
Alcohol/Drugs	-0.33	0.08	69	1.60	0.13	26	-0.39	0.10	43
Slowing	-0.29	0.11	69	-0.32	0.17	26	0.62	0.13	43
Speeding	0.25	0.11	69	0.42	0.17	26	-0.60	0.14	43
Permissive attitude toward alcohol/drugs	-0.36	0.06	69	1.74	0.10	26	-0.42	0.08	43
Prevention behaviours	0.02	0.11	69	0.37	0.18	26	-0.15	0.14	43
Alcohol negative effects (rev)	0.10	0.11	69	0.50	0.18	26	-0.44	0.14	43
Alcohol positive effects	-0.27	0.09	69	1.22	0.15	26	-0.32	0.12	43
Moral disengagement (rev)	-0.21	0.10	69	-0.72	0.16	26	0.76	0.13	43

Table 2. Comparison between Alcohol aware and Risky drivers on each subscale.

	ALCOHOL AWARE drivers	RISKY drivers	Significance
	N=69	N=26	
Negative attitude toward alcohol/drugs	0.16	-0.68	p<.001
Tolerance toward violations	0.33	0.70	ns
Usefulness of violations	0.01	1.00	p<.001
External LOC	0.40	0.29	ns
Internal LOC	0.12	0.15	ns
Violation-related rage	-0.01	-0.26	ns
Obstacle-related rage	-0.20	-0.37	ns
Stability	-0.03	-0.27	ns
Anxiety	0.34	0.60	ns
Egocentrism	-0.06	0.34	ns

Sensation Seeking (reversed)	0.06	-0.49	ns
Violations	-0.06	0.64	ns
Alcohol/Drugs	-0.33	1.60	p<.001
Slowing	-0.29	-0.32	ns
Speeding	0.25	0.42	ns
Permissive attitude toward alcohol/drugs	-0.36	1.74	p<.001
Prevention behaviours	0.02	0.37	ns
Alcohol negative effects (rev)	0.10	0.50	ns
Alcohol positive effects	-0.27	1.22	p<.001
Moral disengagement (rev)	-0.21	-0.72	ns

Table 3. Comparison between Alcohol aware and Safe drivers on each subscale.

	ALCOHOL AWARE drivers N=69	SAFE drivers N=43	Significance
Negative attitude toward alcohol/drugs	0.16	0.17	ns
Tolerance toward violations	0.33	-0.89	p<.001
Usefulness of violations	0.01	-0.58	p<.001
External LOC	0.40	-0.73	p<.001
Internal LOC	0.12	-0.42	ns
Violation-related rage	-0.01	0.32	ns
Obstacle-related rage	-0.20	0.55	p<.001
Stability	-0.03	0.14	ns
Anxiety	0.34	-0.94	p<.001
Egocentrism	-0.06	-0.08	ns
Sensation Seeking (reversed)	0.06	0.22	ns
Violations	-0.06	-0.37	ns
Alcohol/Drugs	-0.33	-0.39	ns
Slowing	-0.29	0.62	p<.001
Speeding	0.25	-0.60	p<.001
Permissive attitude toward alcohol/drugs	-0.36	-0.42	ns
Prevention behaviours	0.02	-0.15	ns
Alcohol negative effects (rev)	0.10	-0.44	ns
Alcohol positive effects	-0.27	-0.32	ns
Moral disengagement (rev)	-0.21	0.76	p<.001

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

	RISKY drivers	SAFE drivers	Significance
	N=26	N=43	
Negative attitude toward alcohol/drugs	-0.68	0.17	ns
Tolerance toward violations	0.70	-0.89	p<.001
Usefulness of violations	1.00	-0.58	p<.001
External LOC	0.29	-0.73	p<.001
Internal LOC	0.15	-0.42	ns
Violation-related rage	-0.26	0.32	ns
Obstacle-related rage	-0.37	0.55	p<.001
Stability	-0.27	0.14	ns
Anxiety	0.60	-0.94	p<.001
Egocentrism	0.34	-0.08	ns
Sensation Seeking (reversed)	-0.49	0.22	ns
Violations	0.64	-0.37	p<.001
Alcohol/Drugs	1.60	-0.39	p<.001
Slowing	-0.32	0.62	p<.001
Speeding	0.42	-0.60	p<.001
Permissive attitude toward alcohol/drugs	1.74	-0.42	p<.001
Prevention behaviours	0.37	-0.15	ns
Alcohol negative effects (rev)	0.50	-0.44	p<.001
Alcohol positive effects	1.22	-0.32	p<.001
Moral disengagement (rev)	-0.72	0.76	p<.001

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

		Mean age	Standard error	N
Males	Alcohol aware drivers	19.53	0.41	51
	Risky drivers	19.36	0.58	25
	Safe drivers	21.47	0.75	15
Females	Alcohol aware drivers	24.06	0.69	18
	Risky drivers	23.00	2.91	1
	Safe drivers	21.89	0.55	28

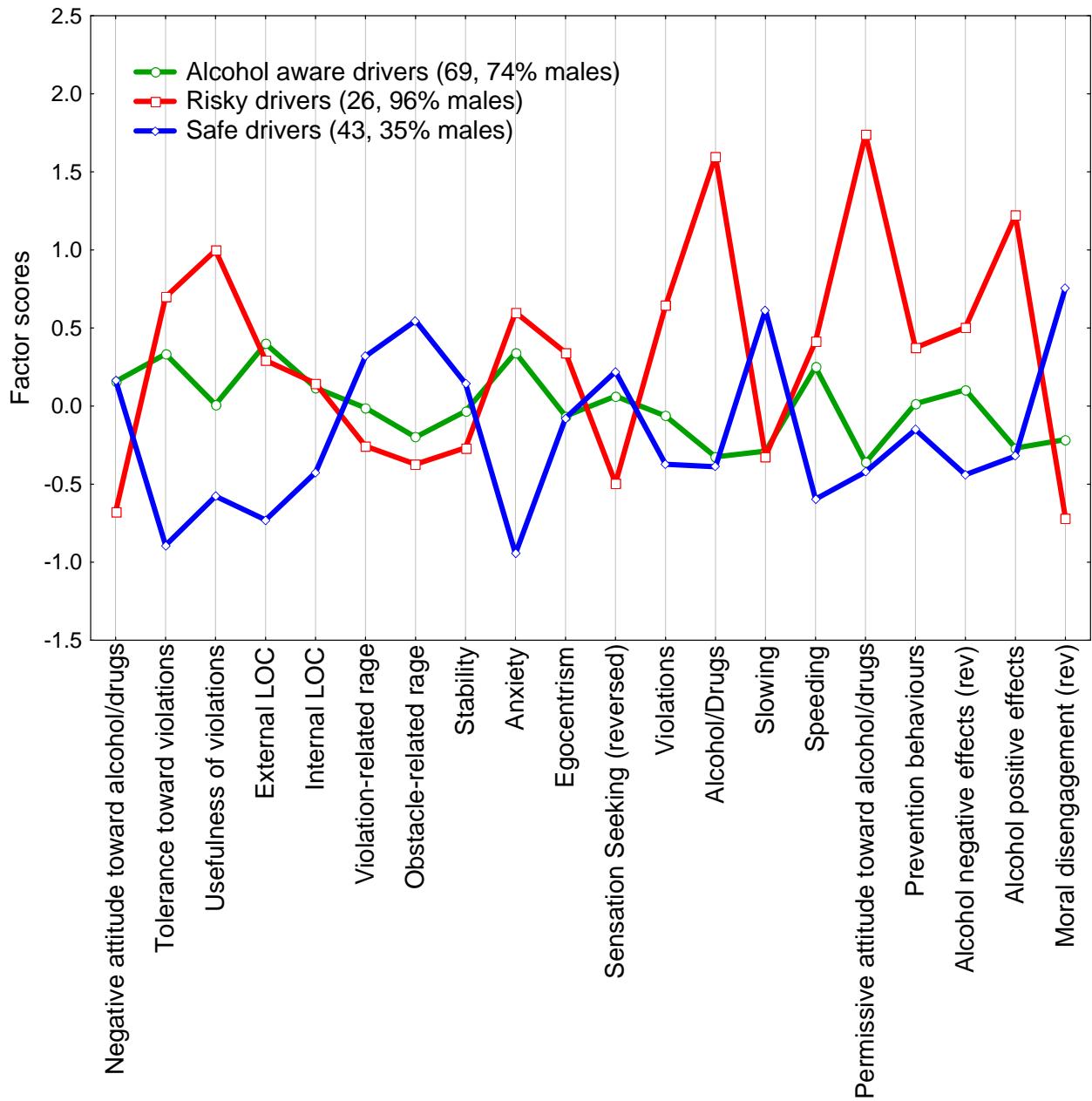


Figure 1. Average scores for each group on the subscales of the questionnaire.



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

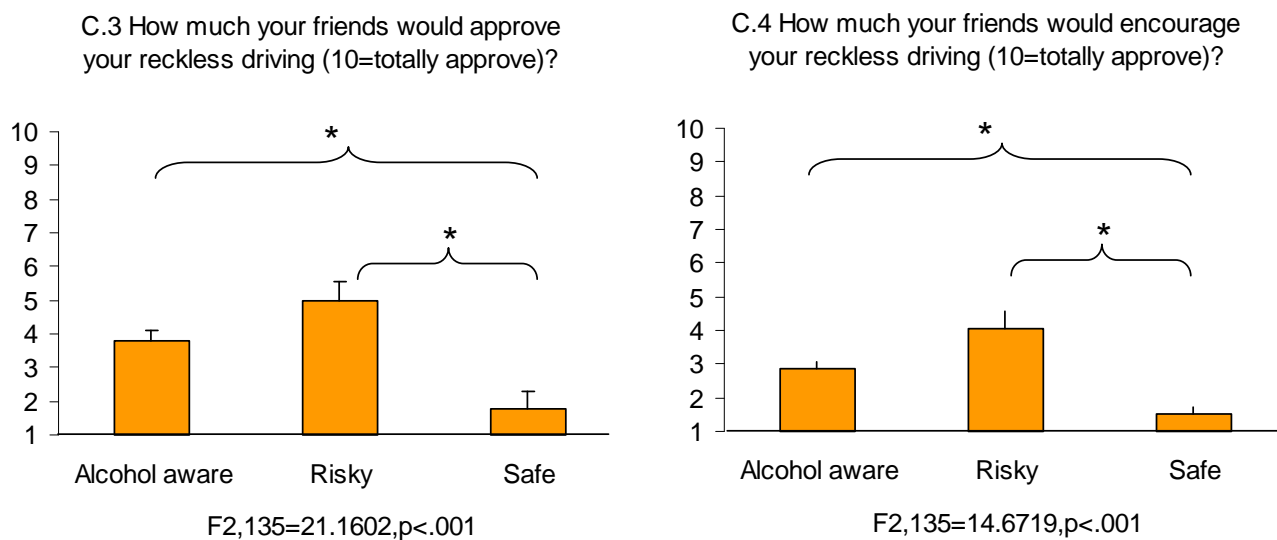


Figure 3. Average scores for each group on items concerning friends' attitude.

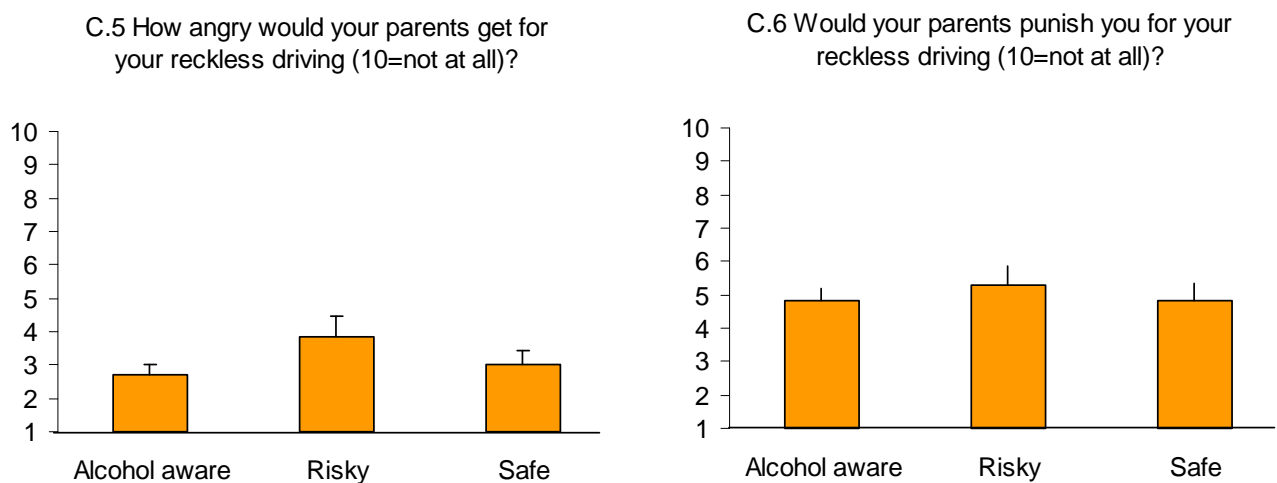


Figure 4. Average scores for each group on items concerning parents' attitude.

NON DRIVERS (QUESTIONNAIRE SECTION 3)

Sample description

A total of 212 people answered the Section 3 of the questionnaire. Males were 111 (52.36% of the total sample) and females were 101 (47.6% of the total sample). Their mean age was 18.9 years (standard deviation 1.36), ranging between 17 and 25 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, 0.78, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=1204.216$, $p<.000$, 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 43.92% 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 "Negative attitude towards drugs and alcohol", accounting for by the 17.52% of the common variance) refer 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 second factor (labelled "Tendency to justify violations", accounting for by the 13.6% of the common variance) refers to an attitude to justify violations of traffic rules. Items such as "*It is acceptable to run risks when driving if other persons are not involved.*" load on this factor.

The third factor (labelled "Tolerance toward violations", accounting for by the 13.72% of the common variance) refers to an attitude toward violations of traffic rules. Items such as "*To keep traffic smooth-flowing you should ignore many of the road traffic rules*" load on this factor.

The fourth factor (labelled "Tolerance toward speed", accounting for by the 11.65% of the common variance) refers to a positive attitude toward speed. 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.

Correlation matrix between factors is shown in Table M.3.

Table M.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	4.442	24.677	24.677	3.153
2	2.577	14.319	38.995	2.449
3	1.434	7.969	46.965	2.471
4	1.205	6.695	53.660	2.098
5	1.137	6.317	59.977	
6	.882	4.899	64.877	
7	.828	4.601	69.477	
8	.798	4.434	73.911	
9	.744	4.133	78.044	
10	.683	3.794	81.838	
11	.608	3.380	85.218	
12	.542	3.013	88.231	
13	.508	2.822	91.053	
14	.460	2.557	93.610	
15	.396	2.201	95.812	
16	.288	1.599	97.411	
17	.276	1.536	98.946	
18	.190	1.054	100.000	

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

	Factor			
	Negative attitude toward drugs and alcohol	Usefulness of violations	Tolerance toward violations	Tolerance toward speed
M_1			0.587	
M_2			0.790	
M_3			-0.298	
M_4			0.570	
M_5				0.275
M_6			0.422	
M_7		0.327		
M_8		0.298		

M_9		0.714		
M_10		0.905		
M_11			-0.217	
M_12				0.725
M_13				0.514
M_14	0.372			
M_15	0.701			
M_16	0.731			
M_17	0.913			
M_18	0.893			

Table M.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	-.116	-.165	-.288
2	-.116	1.000	.351	.299
3	-.165	.351	1.000	.373
4	-.288	.299	.373	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, 0.648, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(435)=1653.988, p<.000$, 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 26.04% of the total variance. Table N.1 shows the eigenvalues and the variance accounted for by each factor. Table N.2 shows the item loadings after Oblimin rotation.

The first factor (labeled “External Locus of Control”, accounting for by the 9.39% 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”, accounting for by the 9.73% 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 third factor (labeled “Attention related LOC”, accounting for by the 7.59% of the common variance) refers to an internal, attention-related Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers’ failure to be careful or to pay attention to driving. Items such as “*Driving without accidents depends on driver’s ability to pay attention to what happens on the road and pavement*” load on this factor.

Factors are not correlated (Table N.3).

Table N.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	3.676	12.253	12.253	2.817
2	3.427	11.424	23.677	2.919
3	2.390	7.965	31.642	2.278
4	1.881	6.269	37.911	
5	1.637	5.457	43.368	
6	1.378	4.595	47.962	
7	1.179	3.930	51.893	
8	1.123	3.743	55.635	
9	1.083	3.609	59.244	
10	1.014	3.380	62.623	
11	.966	3.219	65.842	
12	.893	2.975	68.817	
13	.874	2.915	71.732	
14	.753	2.509	74.241	

15	.733	2.445	76.685
16	.706	2.353	79.038
17	.678	2.259	81.298
18	.654	2.181	83.479
19	.613	2.044	85.523
20	.593	1.977	87.500
21	.558	1.861	89.361
22	.507	1.690	91.051
23	.479	1.598	92.649
24	.409	1.362	94.010
25	.383	1.277	95.288
26	.369	1.231	96.518
27	.321	1.070	97.589
28	.282	.938	98.527
29	.234	.779	99.307
30	.208	.693	100.000

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

	Factor		
	External LOC	Internal LOC	Attention-related Internal LOC
N_1	0.275		
N_2	0.361		
N_3		0.341	
N_4	0.383		
N_5	0.308		
N_6		0.532	
N_7		0.751	
N_8		0.624	
N_9		0.494	
N_10		0.366	
N_11	0.322		
N_12	0.514		
N_13	0.562		
N_14	0.892		
N_15	0.699		
N_16		0.369	
N_17		0.541	
N_18			0.692

N_19			0.695
N_20	0.291		
N_21			0.289
N_22			0.460
N_23			0.330
N_24			0.148
N_25		-0.239	
N_26			0.329
N_27			0.396
N_28		0.477	
N_29	-0.114		
N_30		0.486	

Table N.3. Factor correlation matrix

Factor	1	2	3
1	1.000	-.035	.173
2	-.035	1.000	.045
3	.173	.045	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, 0.754, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(91)=458.767$, $p<.000$, 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 25.02% of the total variance. Table P.1 shows the eigenvalues and the variance accounted for by each factor. Table P.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Violations-related rage", accounting for by the 16.3% of the common variance) refers to the absence of 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 "no-rage for controls" (reversed) accounting for by the 13.21% of the common variance) refers to the absence of rage reactions due to controls preventing drivers to drive the way they want. Items such as "*You passed by a speed camera.*" load on this factor.

The factors are however negatively correlated (Table P.3).

Table P.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	3.318	23.701	23.701	2.282
2	1.426	10.183	33.884	1.850
3	1.233	8.810	42.694	
4	1.122	8.011	50.705	
5	1.027	7.339	58.044	
6	.889	6.348	64.392	
7	.832	5.943	70.335	
8	.740	5.285	75.620	
9	.719	5.137	80.756	
10	.680	4.858	85.615	
11	.589	4.205	89.820	
12	.516	3.685	93.505	
13	.498	3.555	97.060	
14	.412	2.940	100.000	

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

	Factor	
	Violation-related rage	Fine related rage (reversed)
P_1	0.425	
P_2		-0.362
P_3	0.399	
P_4		-0.235
P_5		-0.626
P_6	0.184	
P_7	0.429	
P_8	0.343	
P_9	0.500	
P_10	0.448	
P_11	0.622	
P_12		-0.657
P_13	0.388	
P_14	0.417	

Table P3. Factor Correlation Matrix

Factor	1	2
1	1.000	-.337
2	-.337	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, 0.642, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(666)=1904.08$, $p<.000$, 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 29.57% of the total variance. Table R.1 shows the eigenvalues and the variance accounted for by each factor. Table R.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Altruism", accounting for by the 4.48% of the common variance) refers to Altruism. Items such as "*I try to be kind with all the persons I meet.*" load on this factor.

The second factor (labelled "Egoism", accounting for by the 9.4% of the common variance) refers to Egoism. Items such as "*Some people think I am egoist and egocentric*" load on this factor.

The third factor (labelled "Planning", accounting for by the 6.67% of the common variance) refers to the ability to plan and bring to an end personal plans. Items such as "*I make plans and follow through with them.*" load on this factor.

The fourth factor (labelled "Sensation seeking", accounting for by the 5.96% of the common variance) refers to the Sensation-seeking personality trait. Items such as "*I often wish exciting things*" load on this factor.

The fifth factor (labelled "Calmness", accounting for by the 4.75% of the common variance) refers to being calm and reflexive. Items such as "*I tend to be lazy*" load on this factor.

Correlation between Factors are shown in Table R.3.

Table R.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	4.193	11.333	11.333	1.660
2	2.936	7.934	19.268	3.479
3	2.690	7.271	26.539	2.468
4	1.918	5.184	31.723	2.208
5	1.809	4.890	36.613	1.760
6	1.587	4.288	40.900	
7	1.497	4.047	44.947	
8	1.357	3.667	48.614	
9	1.274	3.444	52.058	
10	1.160	3.134	55.192	
11	1.113	3.009	58.202	
12	1.035	2.797	60.999	
13	1.018	2.752	63.751	

14	.954	2.578	66.329
15	.927	2.504	68.833
16	.863	2.332	71.166
17	.838	2.265	73.430
18	.763	2.062	75.492
19	.748	2.021	77.513
20	.710	1.919	79.432
21	.702	1.897	81.330
22	.664	1.795	83.124
23	.648	1.752	84.876
24	.615	1.663	86.539
25	.554	1.498	88.036
26	.510	1.379	89.416
27	.481	1.300	90.716
28	.460	1.242	91.958
29	.432	1.167	93.125
30	.403	1.089	94.214
31	.381	1.031	95.245
32	.367	.992	96.236
33	.318	.859	97.095
34	.305	.823	97.919
35	.284	.766	98.685
36	.254	.687	99.372
37	.233	.628	100.000

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

	Factor				
	Altruism	Egocentrism	Conscientiousness	Sensation seeking	Stability
R_1				0.336	
R_2		0.394			
R_3		0.615			
R_4				0.383	
R_5		0.479			
R_6					0.344
R_7				-0.330	

R_8				-0.238	
R_9				0.318	
R_10				0.443	
R_11		0.677			
R_12				0.673	
R_13		0.620			
R_14		0.211			
R_15			0.331		
R_16				-0.215	
R_17				0.334	
R_18		0.342			
R_19		0.407			
R_20			0.330		
R_21					-0.709
R_22					0.322
R_23			0.474		
R_24				0.527	
R_25				0.376	
R_26		0.512			
R_27	1.023				
R_28	0.241				
R_29		0.529			
R_30		0.445			
R_31	0.362				
R_32				0.312	
R_33			0.513		
R_34			-0.439		
R_35			0.531		
R_36			0.868		
R_37		0.379			

Table R.3. Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	-.083	.137	.012	-.248
2	-.083	1.000	-.108	-.039	-.177
3	.137	-.108	1.000	-.023	-.052
4	.012	-.039	-.023	1.000	-.032
5	-.248	-.177	-.052	-.032	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, 0.795, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(231)=1778.339$, $p<.000$, 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 49.226% of the total variance. Table S.1 shows the eigenvalues and the variance accounted for by each factor. Table S.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Risky driving”, accounting for by the 16.51% 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 “Caution”, accounting for by the 13.36% of the common variance) refers to the caution 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 “Slowing” (reversed), accounting for by the 16.32% of the common variance) refers to the slowing the speed when required by the traffic conditions. Items such as “*You exceed the speed limit by 10 Km/h*” negatively load on this factor.

The fourth factor (labelled “Alcohol/Drugs”, accounting for by the 11.86% of the common variance) refers to alcohol and drugs related behaviours. Items such as “*You drive after having had a glass of beer/wine*” load on this factor.

The fifth factor (labelled “Pedestrian-related slowing”, accounting for by the 6.75% 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 Slowing and the Caution factors negatively correlated to the Risky-driving factor (Table S.3).

Table S.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	5.576	25.344	25.344	3.633
2	2.811	12.777	38.121	2.941
3	1.792	8.146	46.267	3.591
4	1.608	7.308	53.576	2.610
5	1.095	4.979	58.555	1.485
6	1.014	4.611	63.166	
7	.864	3.928	67.094	
8	.839	3.812	70.906	
9	.746	3.391	74.297	
10	.723	3.288	77.584	
11	.655	2.975	80.560	

12	.607	2.757	83.317
13	.570	2.590	85.907
14	.482	2.191	88.098
15	.463	2.106	90.203
16	.450	2.046	92.250
17	.414	1.884	94.133
18	.337	1.534	95.667
19	.301	1.367	97.034
20	.257	1.168	98.202
21	.227	1.032	99.234
22	.168	.766	100.000

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

	Factor				
	Risky driving	Caution	Slowing (reversed)	Alcohol/ Drugs	Pedestrian-related slowing
S_1			-0.533		
S_2			-0.632		
S_3			-0.770		
S_4			-0.842		
S_5			-0.687		
S_6	0.543				
S_7	0.658				
S_8	0.809				
S_9	0.906				
S_10	0.337				
S_11			-0.410		
S_12				0.289	
S_13		0.380			
S_14		0.667			
S_15		0.792			
S_16		0.610			
S_17				0.720	
S_18				0.871	
S_19					0.626
S_20					0.557
S_21			0.338		
S_22				0.516	

Table S.3. Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	-.307	-.321	.284	-.066
2	-.307	1.000	.148	-.257	.304
3	-.321	.148	1.000	-.284	.005
4	.284	-.257	-.284	1.000	-.047
5	-.066	.304	.005	-.047	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, 0.782, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=1130.407$, $p<.000$, 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 43.41% of the total variance. Table T.1 shows the eigenvalues and the variance accounted for by each factor. Table T.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Negative cognitive effects”, accounting for by the 10.9% of the common variance) refers to the supposed negative effects of alcohol assumption on cognitive abilities. Items such as “*Alcohol decreases the level of attention*” load on this factor.

The second factor (labelled “Underestimation of negative effects”, accounting for by the 11.93% of the common variance) refers to the underestimation of the negative effects of alcohol assumption. Items such as “*Alcohol has little effects on you*” load on this factor.

The third factor (labelled “Negative effects”, accounting for by the 9.25% of the common variance) refers to negative effects of alcohol assumption on your driving abilities. Items such as “*Alcohol makes you feel sleepy*” load on this factor.

The fourth factor (labelled “Positive effects”, accounting for by the 12.85% of the common variance) refers to the supposed positive effects of alcohol assumption on driving abilities. Items such as “*Alcohol improves reaction time*” load on this factor.

The fifth factor (labelled “Negative psychological effects” (reversed), accounting for by the 12.68% of the common variance) refers to psychological negative effects of alcohol assumption. Items such as “*Alcohol makes you feel more secure*” load on this factor.

Correlation matrix between factors is shown in Table T.3.

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.492	22.461	22.461	2.181
2	2.524	12.619	35.080	2.386
3	1.620	8.098	43.178	1.850
4	1.280	6.398	49.576	2.571
5	1.119	5.594	55.171	2.536
6	.998	4.991	60.162	
7	.908	4.540	64.702	
8	.860	4.298	69.000	
9	.832	4.160	73.160	
10	.733	3.667	76.827	
11	.686	3.430	80.257	

12	.544	2.720	82.977
13	.519	2.594	85.571
14	.508	2.539	88.110
15	.496	2.480	90.590
16	.468	2.339	92.929
17	.463	2.316	95.245
18	.374	1.868	97.113
19	.341	1.707	98.820
20	.236	1.180	100.000

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

	Factor				
	Negative Cognitive effects	Underestimation of negative effects	Negative effects	Positive effects	Positive psychological effects
T_1				0.366	
T_2	0.994				
T_3	0.683				
T_4					-0.554
T_5					-0.548
T_6					-0.530
T_7			0.432		
T_8					-0.508
T_9					-0.497
T_10				0.670	
T_11			0.371	-0.440	
T_12				0.691	
T_13			0.587		
T_14			0.667		
T_15			0.486		
T_16					
T_17		0.349			
T_18		0.740			
T_19		0.670			
T_20		0.538		0.294	

Table T.3. Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	-.047	.286	-.242	.157
2	-.047	1.000	-.053	.313	-.349
3	.286	-.053	1.000	-.212	-.093
4	-.242	.313	-.212	1.000	-.297
5	.157	-.349	-.093	-.297	1.000

Cluster analysis

Factor scores on the identified subscales for scales M, N, P, R, and T were computed through regression analysis, and then submitted to cluster analysis in order to identify groups of respondents. Also the scores on the scale Q (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=0.09, $F_{40,380}=21.79$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,209}=30.44$, $p<.001$) and a significant interaction between group and subscale ($F_{38,3971}= 25.21$, $p<.001$), meaning that each group of respondents shows a specific profile.

7. **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.
8. **ALCOHOL TOLERANT DRIVERS.** People in this group have a very similar profile as those in the risky drivers group, with the exception that they are not aware of the negative effects of driving after having drunk alcohol.
9. **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.

Interestingly, the three groups do not differ in terms of age or gender, though a prevalence of males can be observed among the alcohol tolerant 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 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). However, respondents in the alcohol tolerant group feel to be supported and encouraged by their friends more than respondents in the other two groups (Figure 3). The same respondents consider their parents would not be angry at their driving behaviour more than the other respondents (Figure 4).

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

	ALCOHOL TOLERANT drivers			SAFE drivers			RISKY drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Negative attitude toward alcohol/drugs	-1.11	0.11	48	0.38	0.09	77	0.26	0.08	87
Usefulness of violations	0.42	0.10	48	-0.81	0.08	77	0.48	0.08	87
Tolerance toward violations	0.52	0.11	48	-0.63	0.09	77	0.26	0.08	87
Tolerance toward speeding	0.72	0.11	48	-0.52	0.08	77	0.06	0.08	87
External LOC	-0.11	0.13	48	-0.32	0.10	77	0.32	0.10	87
Internal LOC	0.36	0.13	48	0.11	0.10	77	-0.26	0.10	87
Attention related LOC	-0.65	0.12	48	0.13	0.10	77	0.22	0.09	87
Violation-related rage	-0.15	0.13	48	-0.06	0.10	77	0.13	0.09	87
Fine-related rage (rev)	-0.11	0.12	48	0.23	0.09	77	-0.17	0.09	87
Altruism	-0.38	0.14	48	0.22	0.11	77	0.02	0.10	87
Egocentrism	0.10	0.13	48	-0.45	0.10	77	0.36	0.09	87
Conscientiousness	-0.45	0.13	48	0.33	0.10	77	-0.01	0.10	87
Sensation Seeking	0.53	0.12	48	-0.53	0.09	77	0.17	0.09	87
Stability	0.06	0.13	48	0.13	0.10	77	-0.17	0.10	87
Alcohol negative cognitive effects	-1.16	0.11	48	0.26	0.09	77	0.40	0.08	87
Underestimation of alcohol negative effects	0.70	0.12	48	-0.38	0.09	77	-0.04	0.09	87
Alcohol negative effects	-0.38	0.12	48	-0.12	0.09	77	0.31	0.09	87
Alcohol positive effects	0.62	0.12	48	-0.15	0.09	77	-0.20	0.09	87
Alcohol positive psychological effects	-0.62	0.11	48	0.50	0.09	77	-0.11	0.08	87
Moral disengagement	0.87	0.11	48	-0.80	0.09	77	0.22	0.08	87

Table 2. Comparison between Alcohol tolerant and Safe drivers on each subscale.

	ALCOHOL TOLERANT drivers	SAFE drivers	Significance
	N=48	N=77	
Negative attitude toward alcohol/drugs	-1.11	0.38	p<.001
Usefulness of violations	0.42	-0.81	p<.001
Tolerance toward violations	0.52	-0.63	p<.001
Tolerance toward speeding	0.72	-0.52	p<.001
External LOC	-0.11	-0.32	ns
Internal LOC	0.36	0.11	ns
Attention related LOC	-0.65	0.13	p<.001
Violation-related rage	-0.15	-0.06	ns
Fine-related rage (rev)	-0.11	0.23	ns

Altruism	-0.38	0.22	ns
Egocentrism	0.10	-0.45	p<.001
Conscientiousness	-0.45	0.33	p<.001
Sensation Seeking	0.53	-0.53	p<.001
Stability	0.06	0.13	ns
Alcohol negative cognitive effects	-1.16	0.26	p<.001
Unserestimation of alcohol negative effects	0.70	-0.38	p<.001
Alcohol negative effects	-0.38	-0.12	ns
Alcohol positive effects	0.62	-0.15	p<.001
Alcohol positive psychological effects	-0.62	0.50	p<.001
Moral disengagement	0.87	-0.80	p<.001

Table 3. Comparison between Alcohol tolerant and Risky drivers on each subscale.

	ALCOHOL TOLERANT drivers	RISKY drivers	Significance
	N=48	N=87	
Negative attitude toward alcohol/drugs	-1.11	0.26	p<.001
Usefulness of violations	0.42	0.48	ns
Tolerance toward violations	0.52	0.26	ns
Tolerance toward speeding	0.72	0.06	p<.001
External LOC	-0.11	0.32	ns
Internal LOC	0.36	-0.26	p<.001
Attention related LOC	-0.65	0.22	p<.001
Violation-related rage	-0.15	0.13	ns
Fine-related rage (rev)	-0.11	-0.17	ns
Altruism	-0.38	0.02	ns
Egocentrism	0.10	0.36	ns
Conscientiousness	-0.45	-0.01	ns
Sensation Seeking	0.53	0.17	ns
Stability	0.06	-0.17	ns
Alcohol negative cognitive effects	-1.16	0.40	p<.001
Unserestimation of alcohol negative effects	0.70	-0.04	p<.001
Alcohol negative effects	-0.38	0.31	p<.001
Alcohol positive effects	0.62	-0.20	p<.001
Alcohol positive psychological effects	-0.62	-0.11	p<.001
Moral disengagement	0.87	0.22	p<.001

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

	SAFE drivers	RISKY drivers	Significance
	N=77	N=87	
Negative attitude toward alcohol/drugs	0.38	0.26	ns
Usefulness of violations	-0.81	0.48	p<.001
Tolerance toward violations	-0.63	0.26	p<.001
Tolerance toward speeding	-0.52	0.06	p<.001
External LOC	-0.32	0.32	p<.001
Internal LOC	0.11	-0.26	ns
Attention related LOC	0.13	0.22	ns
Violation-related rage	-0.06	0.13	ns
Fine-related rage (rev)	0.23	-0.17	ns
Altruism	0.22	0.02	ns
Egocentrism	-0.45	0.36	p<.001
Conscientiousness	0.33	-0.01	ns
Sensation Seeking	-0.53	0.17	p<.001
Stability	0.13	-0.17	ns
Alcohol negative cognitive effects	0.26	0.40	ns
Unserestimation of alcohol negative effects	-0.38	-0.04	ns
Alcohol negative effects	-0.12	0.31	p<.001
Alcohol positive effects	-0.15	-0.20	ns
Alcohol positive psychological effects	0.50	-0.11	p<.001
Moral disengagement	-0.80	0.22	p<.001

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

		Mean age	Standard error	N
Males	Alcohol tolerant drivers	18.87	0.22	38
	Safe drivers	19.00	0.23	34
	Risky drivers	18.69	0.22	39
Females	Alcohol tolerant drivers	19.00	0.43	10
	Safe drivers	19.33	0.21	43
	Risky drivers	18.75	0.20	48

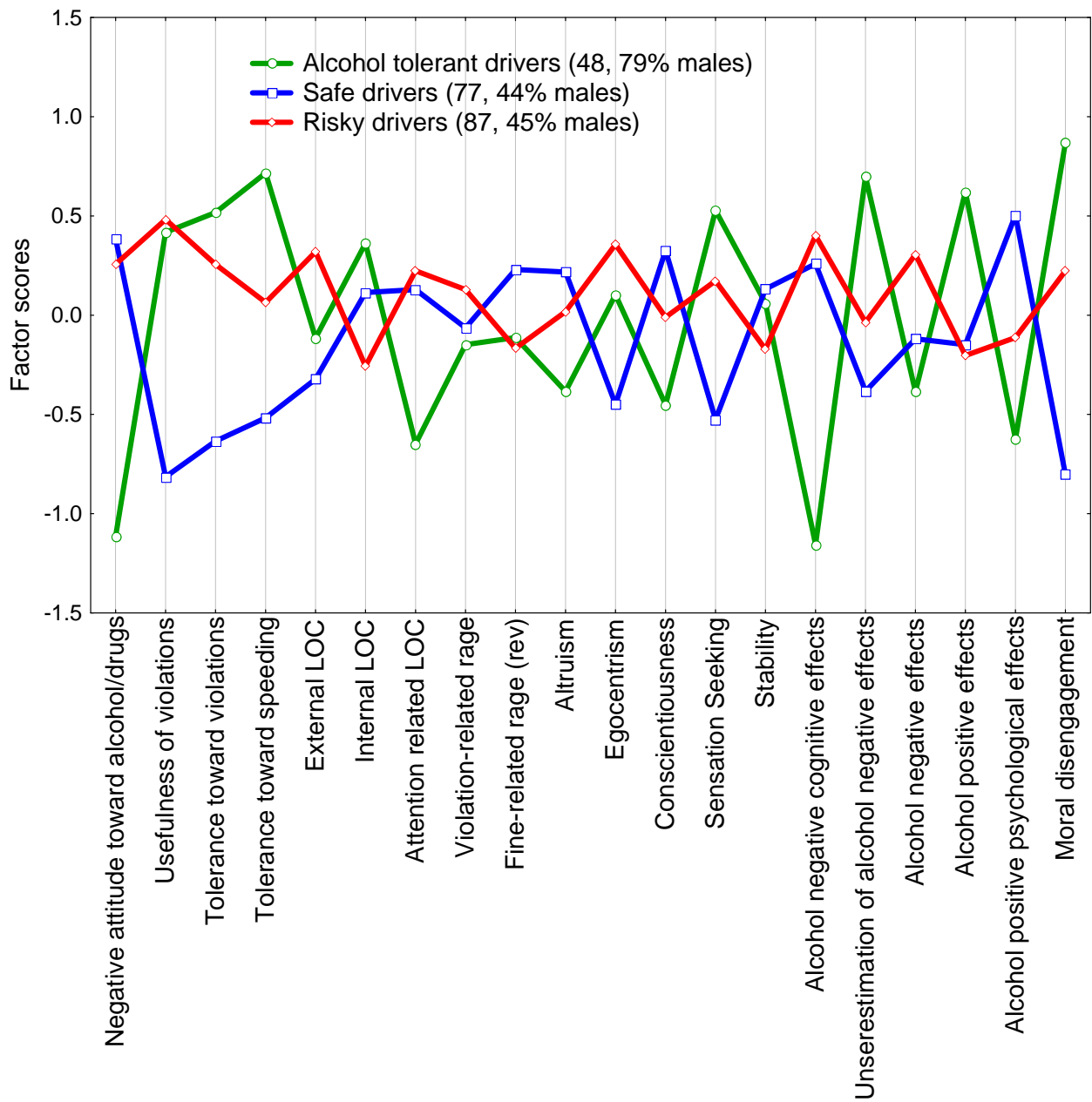


Figure 1. Average scores for each group on the subscales of the questionnaire.

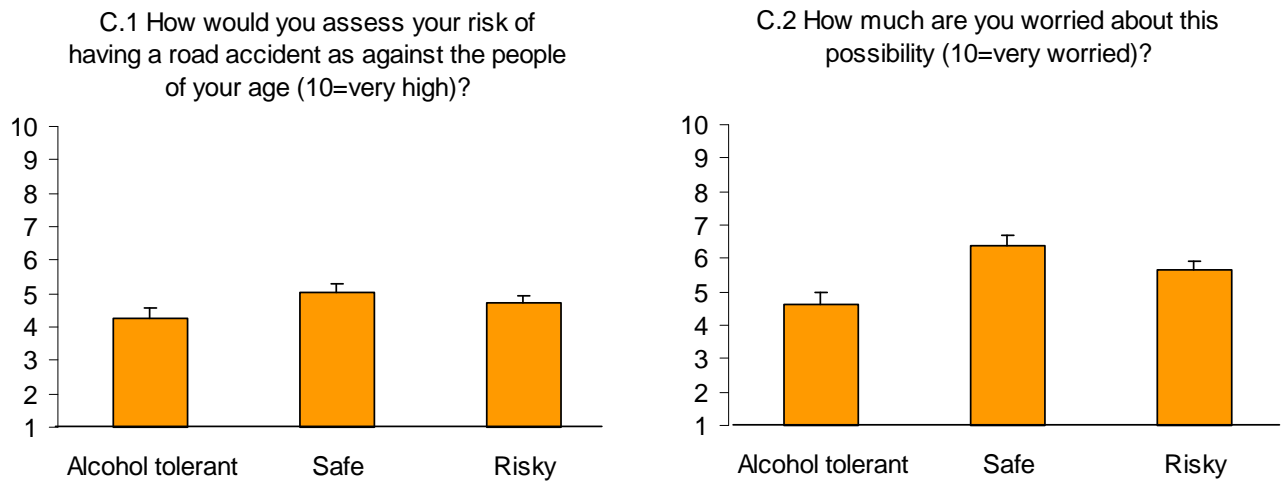


Figure 2. Average scores for each group on items concerning risk perception.

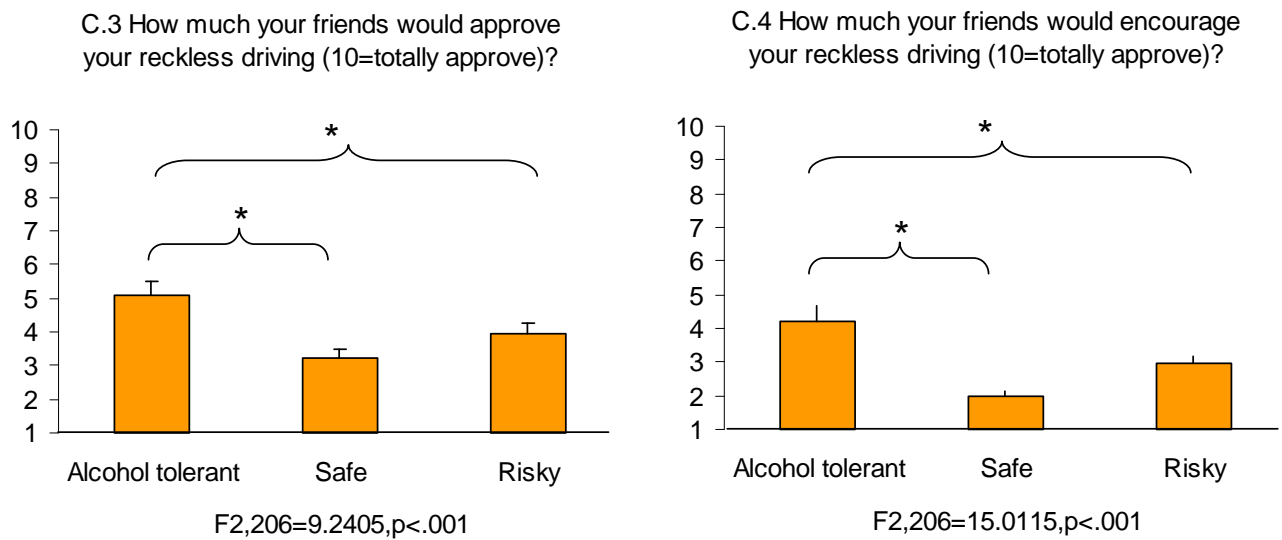


Figure 3. Average scores for each group on items concerning friends' attitude.

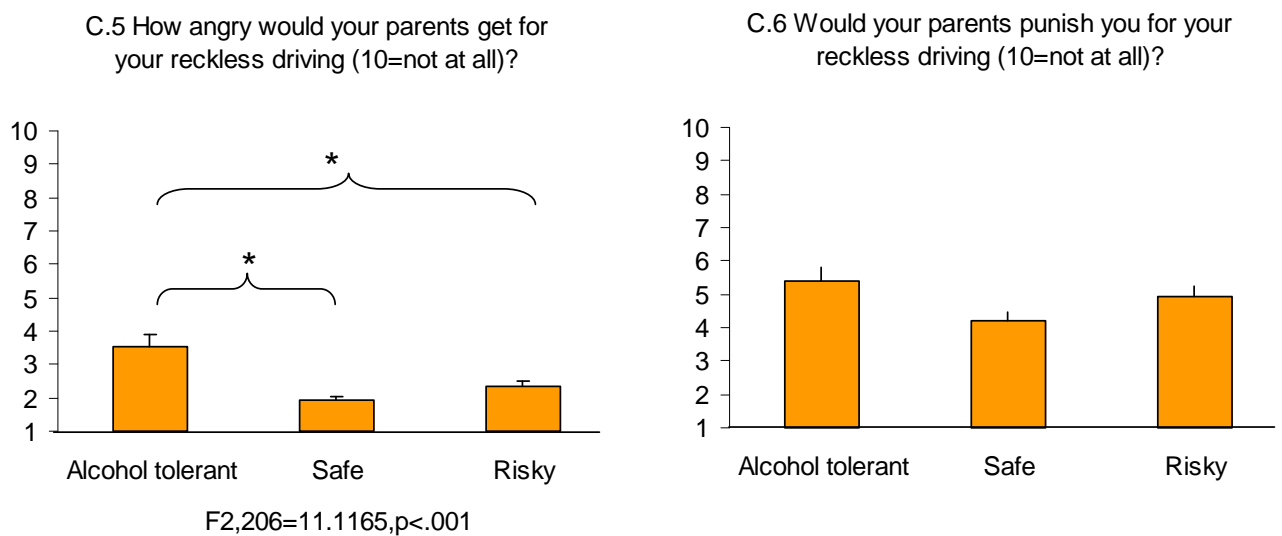


Figure 4. Average scores for each group on items concerning parents' attitude.