



ICARUS Project
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ICARUS Project

Inter - Cultural Approaches for Road Users Safety

Research report

Results

MALTA

CAR DRIVERS (QUESTIONNAIRE SECTION 1)

Sample description

A total of 111 people answered the Section 1 of the questionnaire. Males were 93 (83.8 % of the total sample) and females were 18 (16.2% of the total sample). Their mean age was 22.87 years (standard deviation 2.78), ranging between 20 and 29 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. Only few respondents from Malta own a car (about 4% 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 relatively often (about 52% of them drive after midnight more than 2 times a week). Male drivers also refer to have received a traffic fine less often than female drivers, mostly for driving without using the seatbelts and parking where it is forbidden.

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, young drivers from Malta seem to be characterized by being frequent drivers, 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	2 (2.25%)	87 (97.75%)
Females	2 (11.11%)	16 (88.89%)
Total	4 (3.74%)	103 (96.26%)

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	2 (2.33%)	4 (4.65%)	10 (11.63%)	67 (77.91%)	3 (3.49%)
Females	0	0	2 (12.5%)	1 (6.25%)	13 (81.25%)	0
Total	0	2 (1.96%)	6 (5.88%)	11 (10.78%)	80 (78.43%)	3 (2.94%)

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	1 (1.16%)	7 (8.14%)	16 (18.6%)	25 (29.07%)	37 (43.02%)
Females	1 (6.25%)	3 (18.75%)	3 (18.75%)	6 (37.5%)	3 (18.75%)
Total	2 (1.96%)	10 (9.8%)	19 (18.63%)	31 (30.39%)	40 (39.22%)

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	38 (44.19%)	21 (24.42%)	16 (18.6%)	11 (12.79%)
Females	12 (75.5%)*	3 (18.75%)	0	1 (6.25%)
Total	50 (49.02%)	24 (23.53%)	16 (15.69%)	12 (11.76%)

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	18 (20.93%)	21 (24.42%)	29 (33.72%)	18 (20.93%)
Females	6 (37.5%)	4 (25%)	0	6 (37.5%)
Total	24 (23.53%)	25 (24.51%)	29 (28.43%)	24 (23.53%)

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	33 (37.93%)	54 (62.07%)
Females	8 (50%)	8 (50%)
Total	41 (39.81%)	62 (60.19%)

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	32 (34.41%)	4 (22.22%)	36 (32.43%)
Running a red light	1 (1.08%)	0	1 (.9%)
Running a stop sign	0	0	0
Speeding	7 (7.53%)	4 (22.22%)	11 (9.91%)
Drunk driving	0	0	0
Lack of seatbelts use	10 (10.75%)	0	10 (9.01%)

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	37 (44.05%)	26 (30.95%)	10 (11.9%)	4 (4.76%)	4 (4.76%)	3 (3.57%)
Females	12 (75.%)*	0	3 (18.75%)	0	1 (6.25%)	0
Total	49 (49.%)	26 (26.%)	13 (13.%)	4 (4.%)	5 (5.%)	3 (3.%)

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	2 (2.15%)	0	2 (1.8%)
You could hardly keep your head on straight	1 (1.08%)	1 (5.56%)	2 (1.8%)
You had muscle cramps	4 (4.3%)	0	4 (3.6%)
You could hardly keep your eyes open	10 (10.75%)	1 (5.56%)	11 (9.91%)
You got stomach cramps	5 (5.38%)	0	5 (4.5%)
You could not focus on the road	3 (3.23%)	0	3 (2.7%)
Someone who was with you made you notice it	4 (4.3%)	1 (5.56%)	5 (4.5%)

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, 0.66, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=740.15$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a five-factor solution that accounted for the 62.52% 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 15.76% of the common variance) refers to a negative attitude toward traffic rules. Items such as "*It is reasonable to pass when traffic light is going from yellow to red*" load on this factor.

The second factor (labelled "Negative attitude towards drugs", accounting for by the 13.85% of the common variance) refers to a negative attitude toward driving under the effects of recreational drugs. Items such as "*I would never drive under the influence of narcotic drugs*" load on this factor.

The third factor (labelled "Positive attitude toward speeding", accounting for by the 13.69% of the common variance) refers to a positive attitude toward going by car with a fast driver. Items such as "*It is ok to go by car with a fast driver if it is the only way to go back home at night*" load on this factor. This factor is negatively correlated to the first and the fourth factors (Table A.3).

The fourth factor (labelled "Usefulness of violations", accounting for by the 11.78% of the common variance) refers to a negative attitude toward traffic rules as they create obstacles for a free flowing traffic. Items such as "*To keep traffic smooth-flowing you should ignore many of the road traffic rules*" load on this factor.

The fifth factor (labelled "Negative attitude towards alcohol", accounting for by the 6.97% of the common variance) refers to a negative attitude toward driving under the effects of alcohol. Items such as "*I would never drive under the influence of alcohol*" load on this 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	4.365	24.252	24.252	2.837
2	2.883	16.014	40.266	2.493
3	1.501	8.340	48.605	2.465
4	1.305	7.253	55.858	2.121
5	1.199	6.659	62.517	1.255

6	.990	5.499	68.016
7	.931	5.171	73.188
8	.849	4.716	77.904
9	.772	4.288	82.192
10	.621	3.450	85.642
11	.549	3.052	88.694
12	.515	2.863	91.556
13	.425	2.364	93.920
14	.360	2.002	95.922
15	.340	1.887	97.809
16	.211	1.175	98.984
17	.158	.877	99.861
18	.025	.139	100.000

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

	Factor				
	Tolerance toward violations	Negative attitude toward drugs	Speeding	Usefulness of violations	Negative attitude toward alcohol
A_1				0.419	
A_2				0.690	
A_3				0.326	
A_4	0.382			0.483	
A_5	0.512				
A_6	0.428				0.259
A_7	0.414			0.407	
A_8	0.256			0.369	
A_9	0.795				
A_10	0.689				
A_11	-0.331				
A_12			0.911		
A_13			0.728		
A_14					0.508
A_15		0.301			0.618
A_16		0.403			0.401
A_17		0.961			
A_18		0.982			

Table A.3. Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	-.026	.306	.242	.076
2	-.026	1.000	-.099	.065	.237
3	.306	-.099	1.000	.327	-.124
4	.242	.065	.327	1.000	-.013
5	.076	.237	-.124	-.013	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, 0.65, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(435)=1204.39$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 45.49% of the total variance. Table B.1 shows the eigenvalues and the variance accounted for by each factor. Table B.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Internal Locus of Control, specific causes", accounting for by the 9.62% of the common variance) refers to an internal Locus of Control wherein specific factors are identified, as respondents attribute responsibility of road accidents mostly to drivers. Items such as "*Accidents occur when a driver is not careful enough of what the other drivers are doing*" load on this factor.

The second factor (labelled "External Locus of Control, specific causes", accounting for by the 7.82% of the common variance) refers to an external Locus of Control wherein specific factors are identified, as respondents attribute responsibility of road accidents mostly to external causes, independent of drivers' behaviour. Items such as "*Most accidents occur due to road bad conditions, lack of adequate signals, etc.*" load on this factor.

The third factor (labelled "Internal Locus of Control", accounting for by the 9.62% 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 fourth factor (labelled "External Locus of Control", accounting for by the 7.82% 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 four factors are not correlated (Table B.3).

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.934	16.446	16.446	3.555
2	4.154	13.847	30.292	2.957
3	2.451	8.169	38.462	3.493
4	2.11	7.032	45.493	2.573
5	1.797	5.991	51.484	
6	1.45	4.834	56.318	
7	1.417	4.723	61.042	
8	1.305	4.351	65.392	
9	1.095	3.65	69.042	
10	0.962	3.207	72.249	
11	0.852	2.839	75.088	
12	0.742	2.473	77.561	
13	0.705	2.351	79.912	
14	0.684	2.28	82.192	
15	0.624	2.082	84.273	
16	0.56	1.867	86.14	
17	0.528	1.759	87.9	
18	0.476	1.586	89.486	
19	0.433	1.444	90.93	
20	0.406	1.352	92.282	
21	0.367	1.222	93.505	
22	0.335	1.117	94.621	
23	0.278	0.928	95.549	
24	0.272	0.905	96.454	
25	0.225	0.749	97.203	
26	0.211	0.705	97.908	
27	0.202	0.672	98.58	
28	0.161	0.537	99.117	
29	0.159	0.532	99.648	
30	0.106	0.352	100	

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

	Factor			
	Internal LOC specific causes	External LOC specific causes	Internal LOC	External LOC
B_1	0.028			
B_2	-0.066			
B_3	-0.048	0.381		
B_4	0.007			
B_5	0.023	-0.440		
B_6	0.259			0.519
B_7	0.075			0.775
B_8	0.201			0.856
B_9	-0.145			0.732
B_10	-0.04			0.417
B_11	0.048		0.550	
B_12	-0.025		0.510	
B_13	-0.111		0.753	
B_14	0.508		0.775	
B_15	0.618		0.734	
B_16	0.401			0.485
B_17	-0.008	0.468		
B_18	-0.057	0.496		0.359
B_19		0.468		0.393
B_20			0.279	
B_21		0.431		
B_22		0.344		
B_23				
B_24			0.353	
B_25				
B_26		0.438		
B_27		0.483		
B_28		0.666		
B_29		0.661		
B_30		0.613		

Table B.3. Factor correlation matrix

Factor	1	2	3	4
1	1.000	.133	.234	.067
2	.133	1.000	-.069	.261
3	.234	-.069	1.000	-.117
4	.067	.261	-.117	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, 0.77, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(91)=475.07, p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 45.22% of the total variance. Table D.1 shows the eigenvalues and the variance accounted for by each factor. Table D.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Obstacle-related rage”, accounting for by the 25.06% of the common variance) refers to the rage reactions due to obstacles preventing drivers to drive the way they want. Items such as “*You are trapped in traffic jam*” load on this factor.

The second factor (labelled “Violation-related rage”, accounting for by the 16.77% of the common variance) refers to the rage reactions due to other drivers violating the traffic code. Items such as “*Somebody reverses just in front of you without looking back*” load on this factor.

The 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	4.378	31.271	31.271	3.508
2	1.953	13.952	45.223	2.346
3	1.214	8.673	53.896	
4	1.041	7.435	61.331	
5	0.938	6.701	68.032	
6	0.820	5.855	73.887	
7	0.731	5.220	79.107	
8	0.610	4.357	83.464	
9	0.520	3.712	87.176	
10	0.488	3.485	90.661	
11	0.472	3.373	94.034	
12	0.358	2.557	96.590	
13	0.273	1.953	98.543	
14	0.204	1.457	100.000	

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

	Factor		
	Obstacle-related rage	Insult-related rage (reversed)	Violation-related rage
D_1			0.425
D_2	0.481		
D_3			0.482
D_4			0.313
D_5	0.525		
D_6	0.301		0.337
D_7	0.566		
D_8	0.592		
D_9		-0.786	
D_10		-0.949	
D_11	0.533		
D_12	0.649		-0.291
D_13	0.418		
D_14	0.552		

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

	Factor	
	Obstacle-related rage	Violation-related rage
D_1		0.463
D_2	0.468	
D_3		0.626
D_4		0.659
D_5	0.554	
D_6	0.282	
D_7	0.725	
D_8	0.763	
D_9	0.686	
D_10	0.657	
D_11	0.292	0.393
D_12	0.464	
D_13		0.574
D_14	0.447	0.514

Table D3. Factor Correlation Matrix

Factor	1	2
1	1.000	.338
2	.338	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, 0.56, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(666)=1163.20$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 29.10% 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”, reversed, accounting for by the 9.64% of the common variance) refers to the tendency to be insecure, not serene, nervous. Items such as “*I easily panic*” (reversed) load on this factor.

The second factor (labelled “Altruism”, accounting for by the 7.63 % of the common variance) refers to egoism, indifference, being cool-headed. Items such as “*Some people think I am egoist and egocentric*” load on this factor.

The third factor (labelled “Sensation seeking”, reversed, accounting for by the 7.06% of the common variance) refers to the Sensation-seeking personality trait. Items such as “*I often wish exciting things*” load on this factor.

Factors are not correlated one to each other (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	4.548	12.293	12.293	3.568
2	3.475	9.391	21.684	2.824
3	2.743	7.415	29.099	2.614
4	2.151	5.813	34.912	
5	1.902	5.140	40.052	
6	1.826	4.935	44.987	
7	1.577	4.263	49.250	
8	1.481	4.002	53.252	
9	1.403	3.793	57.045	
10	1.328	3.589	60.635	
11	1.178	3.184	63.818	
12	1.111	3.003	66.822	
13	1.099	2.971	69.792	
14	1.048	2.833	72.626	
15	0.930	2.514	75.140	

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
16	0.839	2.269	77.408	
17	0.804	2.174	79.582	
18	0.714	1.930	81.511	
19	0.690	1.865	83.376	
20	0.620	1.675	85.051	
21	0.578	1.562	86.613	
22	0.521	1.409	88.022	
23	0.505	1.365	89.387	
24	0.462	1.250	90.637	
25	0.439	1.186	91.822	
26	0.416	1.125	92.948	
27	0.392	1.058	94.006	
28	0.351	0.947	94.953	
29	0.315	0.850	95.804	
30	0.298	0.804	96.608	
31	0.264	0.712	97.320	
32	0.205	0.554	97.874	
33	0.193	0.521	98.396	
34	0.178	0.482	98.878	
35	0.160	0.433	99.311	
36	0.139	0.375	99.686	
37	0.116	0.314	100.000	

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

	Factor		
	Anxiety	Altruism	Sensation Seeking (reversed)
F_1	-0.344		
F_2	0.571		
F_3	0.268	-0.283	
F_4			-0.553
F_5	0.566		
F_6	-0.327	0.280	
F_7		0.434	
F_8			0.280
F_9			
F_10	0.360		
F_11			-0.370
F_12			-0.774
F_13	0.566		-0.262
F_14		0.443	
F_15		0.467	
F_16			
F_17	0.447		
F_18	0.268	-0.261	-0.287
F_19		-0.355	
F_20		0.341	
F_21	0.524		
F_22			
F_23		0.395	
F_24			-0.560
F_25			-0.606
F_26			
F_27		0.362	-0.340
F_28			-0.255
F_29	0.748		
F_30	0.680		
F_31		0.578	
F_32			
F_33		0.517	
F_34			
F_35		0.416	
F_36		0.416	
F_37	0.299		

Table F.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.145	-.101
2	-.145	1.000	-.102
3	-.101	-.102	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, 0.73, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(561)=1798.12$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 43.41% 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 17.99% of the common variance) refers to violations of the traffic code. Items such as "*Exceeded speed limits on the motorway*" load on this factor.

The second factor (labelled "Slips/Lapses" reversed, accounting for by the 15.09% of the common variance) refers to driving without committing slips or lapses. Items such as "*Realised you were driving with your headlights switched off while they should have been switched on*" load on this factor.

The third factor (labelled "Mistakes", reversed, accounting for by the 21.11% of the common variance) refers to driving without committing slips or lapses. Items such as "*Entered a side road without realizing that some pedestrian were crossing*" load on this factor.

The three factors are however notably correlated (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	9.615	28.280	28.280	6.117
2	2.885	8.485	36.764	5.132
3	2.258	6.642	43.406	7.177
4	1.977	5.814	49.221	
5	1.793	5.274	54.494	
6	1.652	4.859	59.354	
7	1.395	4.104	63.457	
8	1.191	3.504	66.961	
9	1.100	3.236	70.198	
10	0.997	2.933	73.131	
11	0.920	2.705	75.837	
12	0.809	2.380	78.217	
13	0.771	2.269	80.486	
14	0.715	2.102	82.587	
15	0.681	2.004	84.592	

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
16	0.625	1.838	86.430	
17	0.514	1.511	87.941	
18	0.498	1.464	89.405	
19	0.454	1.336	90.741	
20	0.430	1.264	92.005	
21	0.393	1.155	93.161	
22	0.321	0.945	94.106	
23	0.315	0.928	95.033	
24	0.258	0.759	95.792	
25	0.240	0.707	96.499	
26	0.212	0.623	97.122	
27	0.198	0.582	97.704	
28	0.162	0.475	98.179	
29	0.150	0.440	98.619	
30	0.125	0.366	98.985	
31	0.111	0.326	99.311	
32	0.090	0.266	99.577	
33	0.081	0.238	99.815	
34	0.063	0.185	100.000	

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

	Factor		
	Violations	Slips/Lapses	Mistakes (reversed)
I_1			
I_2	0.369	0.253	
I_3	0.603		
I_4	0.468		-0.302
I_5	0.426		-0.284
I_6	0.369		
I_7	0.769		
I_8	0.631		
I_9	0.576		
I_10	0.567		
I_11	0.502		
I_12	0.420		
I_13			
I_14			
I_15	0.405		
I_16	0.423		
I_17			-0.291
I_18		0.623	
I_19		0.806	
I_20	0.345	0.393	
I_21		0.324	
I_22		0.525	
I_23		0.428	
I_24		0.484	-0.309
I_25		0.655	
I_26		0.579	
I_27		0.333	-0.530
I_28			-0.708
I_29			-0.809
I_30			-0.811
I_31			-0.893
I_32			-0.705
I_33		0.306	-0.483
I_34			-0.494

Table I.3. Factor Correlation Matrix (Scale I)

Factor	1	2	3
1	1.000	.281	-.469
2	.281	1.000	-.375
3	-.469	-.375	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, 0.79, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(231)=1068.19$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 44.03% of the total variance. Table J.1 shows the eigenvalues and the variance accounted for by each factor. Table J.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Risky driving”, accounting for by the 26.69% 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 “Safe driving”, accounting for by the 14.85% of the common variance) refers to the slowing the speed when required by the traffic conditions. Items such as “*You slow down when approaching a danger sign*” load on this factor. The two factors are moderately negatively correlated (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	6.609	30.039	30.039	5.873
2	3.077	13.988	44.027	3.268
3	1.806	8.208	52.235	
4	1.454	6.609	58.844	
5	1.250	5.682	64.527	
6	1.099	4.994	69.521	
7	0.931	4.231	73.752	
8	0.826	3.754	77.506	
9	0.746	3.389	80.895	
10	0.580	2.636	83.531	
11	0.529	2.403	85.934	
12	0.483	2.195	88.129	
13	0.442	2.007	90.137	
14	0.398	1.809	91.946	
15	0.303	1.378	93.324	
16	0.291	1.325	94.649	
17	0.263	1.197	95.847	
18	0.250	1.135	96.982	
19	0.201	0.914	97.896	

20	0.183	0.832	98.729
21	0.153	0.695	99.424
22	0.127	0.576	100.000

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

	Factor	
	Risky driving	Safe driving
J_1	0.563	
J_2	0.790	
J_3	0.834	
J_4	0.755	
J_5	0.740	
J_6	0.655	
J_7	0.697	
J_8	0.575	
J_9	0.693	
J_10	0.563	
J_11	0.434	
J_12	0.288	
J_13		0.319
J_14		0.695
J_15		0.687
J_16		0.674
J_17	0.424	
J_18	0.431	
J_19		0.758
J_20	0.263	0.633
J_21		0.314
J_22		

Table J.3. Factor Correlation Matrix

Factor	1	2
1	1.000	-.226
2	-.226	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, 0.54, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(36)=395.48$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 53.83% 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 "Experience with alcohol related issues", accounting for by the 24.12% of the common variance) refers to having had personal experience of 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 "Police control", reversed, accounting for by the 21.61% of the common variance) refers to having experienced an alcohol test as a driver or a passenger. Items such as "You were driving a car and you were stopped by the police for a breath analysis" load on this factor.

Table K.3. shows that the two factors are not correlated.

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	2.947	32.742	32.742	2.171
2	1.898	21.093	53.835	1.945
3	1.255	13.942	67.777	
4	0.942	10.462	78.239	
5	0.713	7.922	86.161	
6	0.534	5.930	92.091	
7	0.362	4.024	96.115	
8	0.294	3.261	99.377	
9	0.056	0.623	100.000	

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

	Factor	
	Experience with alcohol related issues	Police control
K_1	0.608	
K_2	0.688	
K_3		
K_4	0.483	
K_5	0.646	
K_6	0.518	
K_7	0.549	
K_8		-0.953
K_9		-0.948

Table K.3. Factor Correlation Matrix (Scale K).

Factor	1	2
1	1.000	-.059
2	-.059	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, 0.69, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=591.22, p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 35.83% of the total variance. Table L.1 shows the eigenvalues and the variance accounted for by each factor. Table L.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Positive effects”, accounting for by the 17.35% of the common variance) refers to the supposed positive effects of alcohol assumption. Items such as “*Alcohol makes you more active and alert*” load on this factor.

The second factor (labelled “Negative effects”, accounting for by the 11.87% 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.

Table L.3. shows that the two factors are not correlated.

20	0.221	1.105	99.004
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Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.115	20.574	20.574	3.470
2	3.052	15.259	35.834	2.375
3	1.989	9.944	45.777	
4	1.274	6.368	52.145	
5	1.245	6.227	58.372	
6	1.182	5.909	64.282	
7	0.925	4.626	68.908	
8	0.846	4.229	73.137	
9	0.712	3.562	76.700	
10	0.671	3.353	80.053	
11	0.627	3.137	83.190	
12	0.596	2.980	86.170	
13	0.486	2.431	88.601	
14	0.448	2.240	90.841	
15	0.419	2.095	92.936	
16	0.378	1.889	94.825	
17	0.357	1.785	96.610	
19	0.258	1.289	97.898	

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

	Factor	
	Positive effects	Negative effects
L_1		
L_2	-0.599	
L_3	-0.507	
L_4	0.513	0.342
L_5	0.590	0.323
L_6	0.474	
L_7	-0.613	
L_8		0.479
L_9		0.589
L_10	0.573	
L_11	-0.374	0.498
L_12	0.376	
L_13		0.498
L_14	-0.535	0.525
L_15	-0.557	
L_16		0.252
L_17		0.418
L_18	0.469	0.335
L_19		0.458
L_20		

Table L.3. Factor Correlation Matrix (Scale L).

Factor	1	2
1	1.000	.001
2	.001	1.000

Cluster analysis

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

Results showed three separate groups of respondents. A multivariate analysis of variance yielded a significant difference among the three groups (Wilks' Lambda=0.03, $F_{44, 64}=6.35$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,53}=11.24$, $p<.001$) and a significant interaction between group and subscale ($F_{42,1113}= 6.35$, $p<.001$), 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. **OVERCONFIDENT 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. 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.
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 low score on external Locus of Control. 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 it should be noted that only few female drivers are included in the sample.

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, nor in terms of how much worried they are about that (Figure 2). Also, the three groups do not differ in terms of how much they feel supported or encouraged by their friends (Figure 3). Finally, the three groups of drivers do not differ on the estimated reactions of their parents for their reckless driving behaviour (Figure 4).

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

	RISKY drivers			OVERCONFIDENT drivers			SAFE drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Tolerance to violations	0.04	0.21	11	1.23	0.16	18	-0.54	0.13	27
Negative attitude toward drugs	-1.37	0.28	11	0.22	0.22	18	0.31	0.18	27
Speeding	0.18	0.27	11	0.73	0.21	18	-0.25	0.18	27
Usefulness of violations	0.01	0.23	11	0.81	0.18	18	-0.28	0.14	27
Negative attitude toward alcohol	-1.10	0.24	11	0.16	0.18	18	0.01	0.15	27
Internal LOC, specific causes	0.08	0.26	11	-0.34	0.20	18	0.03	0.17	27
External LOC, specific causes	-0.58	0.25	11	0.38	0.20	18	-0.18	0.16	27
Internal LOC	0.28	0.27	11	0.22	0.21	18	-0.02	0.17	27
External LOC	0.19	0.25	11	0.58	0.19	18	-0.42	0.16	27
Obstacle-related rage	0.56	0.27	11	0.23	0.21	18	-0.13	0.17	27
Violation-related rage	-0.11	0.22	11	0.25	0.17	18	-0.02	0.14	27
Anxiety	0.03	0.27	11	0.01	0.21	18	0.02	0.17	27
Altruism	-0.16	0.26	11	-0.22	0.20	18	-0.01	0.16	27
Sensation seeking (rev)	-0.82	0.24	11	-0.25	0.19	18	0.29	0.15	27
Violations	0.60	0.26	11	0.44	0.20	18	-0.24	0.17	27
Slips/Lapses	1.17	0.25	11	-0.56	0.19	18	-0.05	0.16	27
Mistakes (rev)	-1.14	0.29	11	-0.02	0.23	18	0.28	0.19	27
Alcohol permissive attitude	0.97	0.20	11	-0.07	0.15	18	-0.47	0.13	27
Alcohol police control (rev)	-0.27	0.20	11	0.24	0.16	18	0.17	0.13	27
Alcohol positive effects	0.40	0.25	11	0.15	0.19	18	-0.24	0.16	27
Alcohol negative effects	0.17	0.23	11	0.33	0.18	18	-0.34	0.15	27
Moral disengagement	0.44	0.30	11	0.35	0.24	18	-0.04	0.19	27

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

	RISKY drivers N=11	OVERCONFIDENT drivers N=18	Significance
Tolerance to violations	0.04	1.23	ns
Negative attitude toward drugs	-1.37	0.22	ns
Speeding	0.18	0.73	ns
Usefulness of violations	0.01	0.81	ns
Negative attitude toward alcohol	-1.10	0.16	p<.001
Internal LOC, specific causes	0.08	-0.34	ns
External LOC, specific causes	-0.58	0.38	p<.001
Internal LOC	0.28	0.22	ns

External LOC	0.19	0.58	ns
Obstacle-related rage	0.56	0.23	ns
Violation-related rage	-0.11	0.25	ns
Anxiety	0.03	0.01	ns
Altruism	-0.16	-0.22	ns
Sensation seeking (rev)	-0.82	-0.25	ns
Violations	0.60	0.44	ns
Slips/Lapses	1.17	-0.56	p<.001
Mistakes (rev)	-1.14	-0.02	ns
Alcohol permissive attitude	0.97	-0.07	p<.001
Alcohol police control (rev)	-0.27	0.24	ns
Alcohol positive effects	0.40	0.15	ns
Alcohol negative effects	0.17	0.33	ns
Moral disengagement	0.44	0.35	ns

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

	RISKY drivers N=11	SAFE drivers N=27	Significance
Tolerance to violations	0.04	-0.54	ns
Negative attitude toward drugs	-1.37	0.31	p<.001
Speeding	0.18	-0.25	ns
Usefulness of violations	0.01	-0.28	ns
Negative attitude toward alcohol	-1.10	0.01	ns
Internal LOC, specific causes	0.08	0.03	ns
External LOC, specific causes	-0.58	-0.18	ns
Internal LOC	0.28	-0.02	ns
External LOC	0.19	-0.42	ns
Obstacle-related rage	0.56	-0.13	ns
Violation-related rage	-0.11	-0.02	ns
Anxiety	0.03	0.02	ns
Altruism	-0.16	-0.01	ns
Sensation seeking (rev)	-0.82	0.29	p<.001
Violations	0.60	-0.24	ns
Slips/Lapses	1.17	-0.05	p<.001
Mistakes (rev)	-1.14	0.28	p<.001
Alcohol permissive attitude	0.97	-0.47	p<.001
Alcohol police control (rev)	-0.27	0.17	ns
Alcohol positive effects	0.40	-0.24	ns
Alcohol negative effects	0.17	-0.34	ns
Moral disengagement	0.44	-0.04	ns

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

	OVERCONFIDENT drivers	SAFE drivers	Significance
	N=18	N=27	
Tolerance to violations	1.23	-0.54	p<.001
Negative attitude toward drugs	0.22	0.31	ns
Speeding	0.73	-0.25	p<.001
Usefulness of violations	0.81	-0.28	p<.001
Negative attitude toward alcohol	0.16	0.01	ns
Internal LOC, specific causes	-0.34	0.03	ns
External LOC, specific causes	0.38	-0.18	ns
Internal LOC	0.22	-0.02	ns
External LOC	0.58	-0.42	p<.001
Obstacle-related rage	0.23	-0.13	ns
Violation-related rage	0.25	-0.02	ns
Anxiety	0.01	0.02	ns
Altruism	-0.22	-0.01	ns
Sensation seeking (rev)	-0.25	0.29	ns
Violations	0.44	-0.24	ns
Slips/Lapses	-0.56	-0.05	ns
Mistakes (rev)	-0.02	0.28	ns
Alcohol permissive attitude	-0.07	-0.47	ns
Alcohol police control (rev)	0.24	0.17	ns
Alcohol positive effects	0.15	-0.24	ns
Alcohol negative effects	0.33	-0.34	ns
Moral disengagement	0.35	-0.04	ns

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

		Mean age	Standard error	N
Males	Risky drivers	22.30	7.38	10
	Overconfident drivers	28.67	6.03	15
	Safe drivers	44.29	4.76	24
Females	Risky drivers	20.00	23.34	1
	Overconfident drivers	21.67	13.47	3
	Safe drivers	21.67	13.47	3

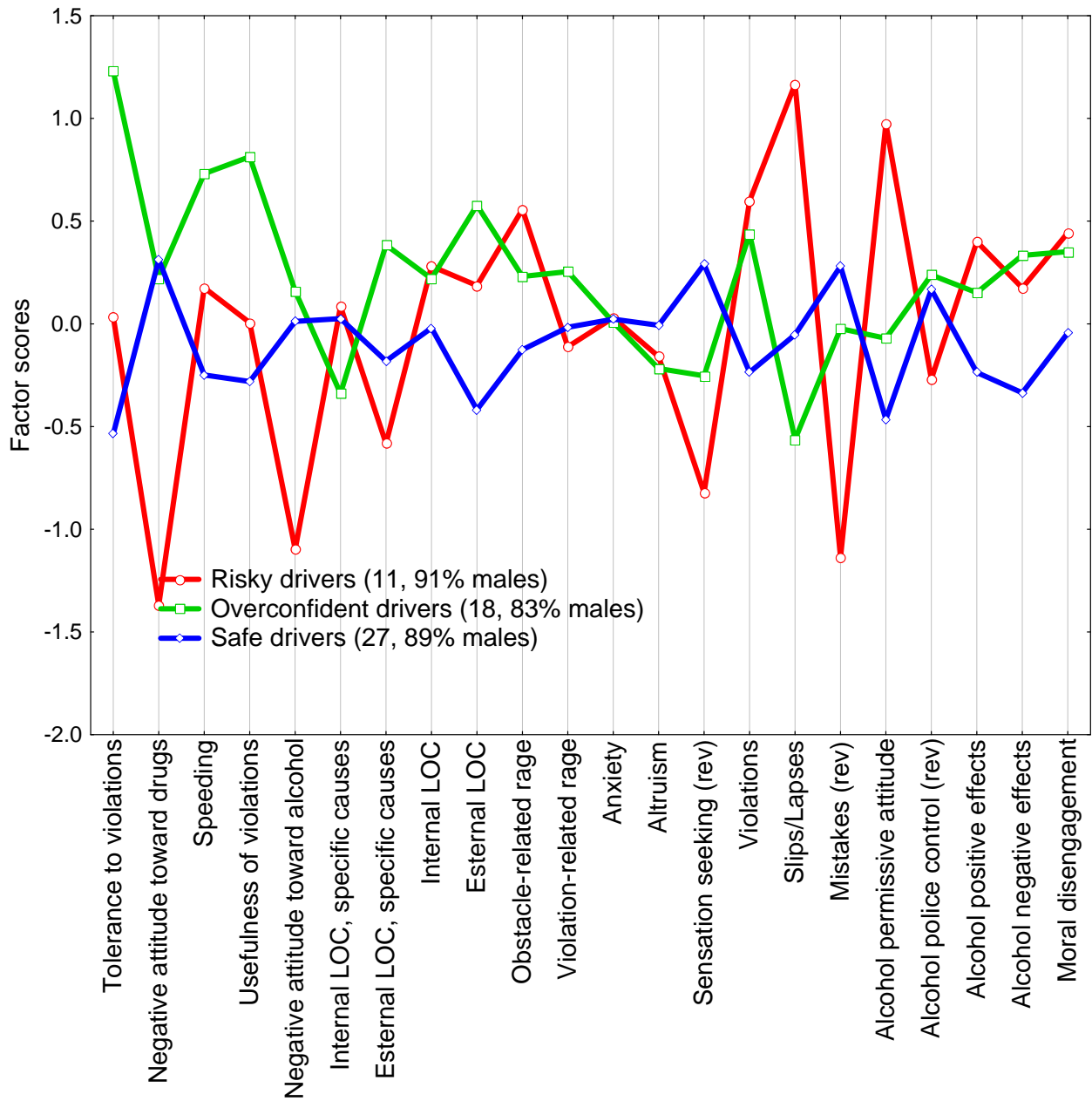
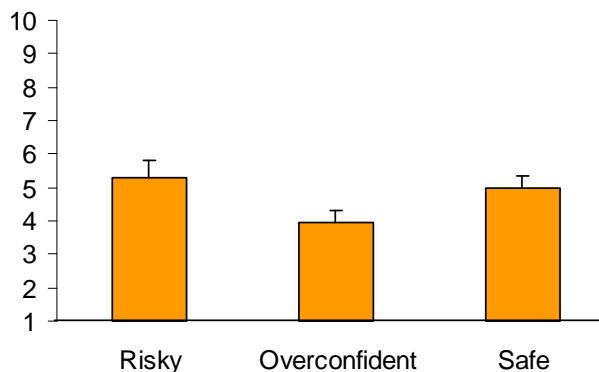


Figure 1. Average scores for each group on the subscales of the questionnaire.

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



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

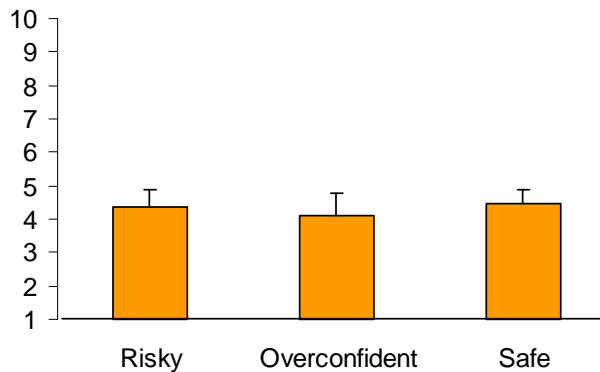
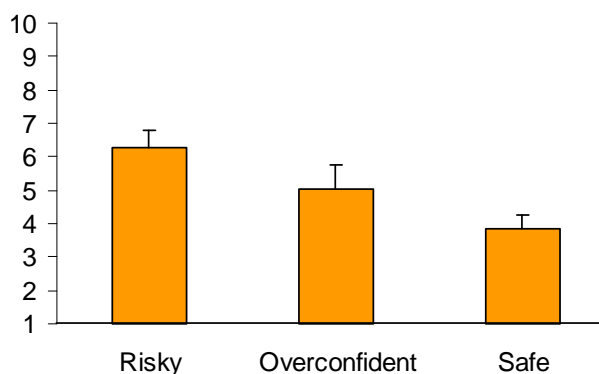


Figure 2. Average scores for each group on items concerning risk perception.

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



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

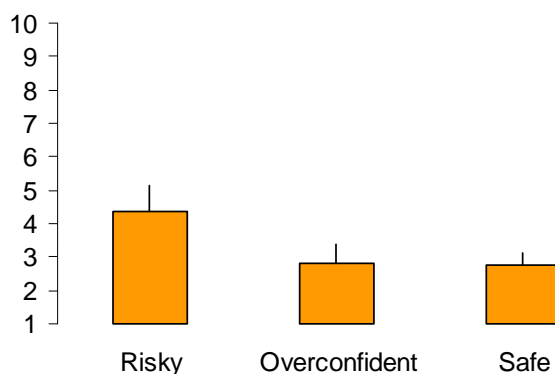
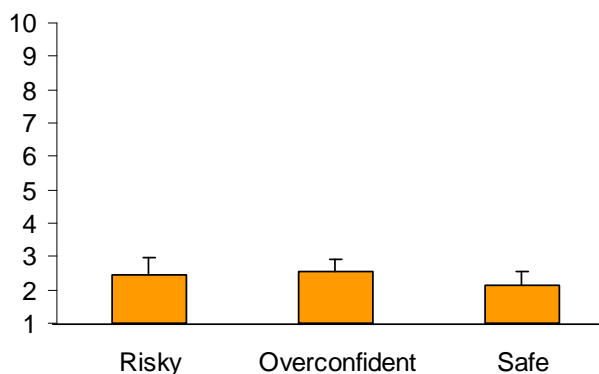


Figure 3. Average scores for each group on items concerning friends' attitude.

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



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

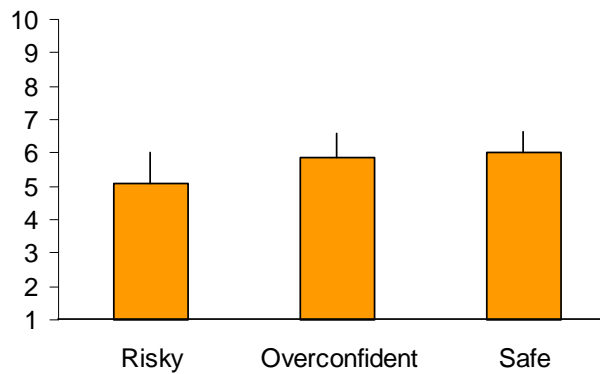


Figure 4. Average scores for each group on items concerning parents' attitude.

NON DRIVERS (QUESTIONNAIRE SECTION 3)

Sample description

A total of 169 people answered the Section 3 of the questionnaire. Males were 76 (45.0% of the total sample) and females were 93 (55.0% of the total sample). Their mean age was 20.64 years (standard deviation 1.62), ranging between 18 and 24 years. Age was no significantly different between males and females. Not all the respondents answered all the items of the questionnaire, thus each analysis was run on the largest sample available for that analysis (missing values were not estimated).

Specific dimensions of the questionnaire scales

Scale M, Attitude toward road safety issues.

Data from the Scale M of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.79, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=1289.06$, $p<.000$, 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 48.38% of the total variance. Table M.1 shows the eigenvalues and the variance accounted for by each factor. Table M.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Tolerance toward violations", accounting for by the 24.63% of the common variance) refers to a negative attitude toward traffic rules. Items such as "*Running risks and breaking a few rules doesn't necessarily mean that you are a bad driver*" load on this factor.

The second factor (labelled "Negative attitude towards alcohol/drugs", accounting for by the 17.97% of the common variance) refers to the attitude toward driving under the effects of substances. Items such as "*I would never drive after drinking alcoholic drinks*" and "*I would never drive under the influence of narcotic drugs*" load on this factor. The two factors are not correlated (Table A.3).

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.124	28.468	28.468	4.434
2	3.584	19.911	48.378	3.235
3	1.312	7.29	55.669	
4	1.217	6.761	62.43	
5	1.07	5.944	68.373	
6	0.801	4.448	72.822	
7	0.741	4.114	76.936	

8	0.639	3.551	80.487
9	0.581	3.23	83.717
10	0.515	2.864	86.581
11	0.466	2.591	89.172
12	0.425	2.363	91.535
13	0.344	1.911	93.446
14	0.305	1.692	95.138
15	0.279	1.551	96.689
16	0.238	1.324	98.013
17	0.19	1.055	99.068
18	0.168	0.932	100

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

	Factor	
	Tolerance toward violations	Negative attitude towards alcohol/drugs
M_1	0.727	
M_2	0.606	
M_3		0.337
M_4	0.703	
M_5	0.665	
M_6	0.617	
M_7	0.691	
M_8	0.562	
M_9	0.658	
M_10	0.575	
M_11		0.370
M_12	0.470	
M_13	0.567	
M_14		0.727
M_15		0.795
M_16		0.746
M_17		0.760
M_18		0.736

Table A.3 Factor Correlation Matrix

Factor	1	2
1	1.000	-.008
2	-.008	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, 0.69, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(435)=1769.13$, $p<.000$, 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 45.74% of the total variance. Table B.1 shows the eigenvalues and the variance accounted for by each factor. Table B.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Internal Locus of Control, specific causes", accounting for by the 13.64% of the common variance, reversed) also refers to an Internal Locus of Control, but with the identification of specific factors as not involved in car accidents. Items such as "*Many accidents occur due to a lack of knowledge or the driver's laziness .*" load on this factor. This factor is slightly correlated with fourth factor (Table B.3).

The second factor (labelled "External Locus of Control, specific causes", accounting for by the 8.43% of the common variance) refers to an external Locus of Control, as respondents attribute responsibility of road accidents mostly to external, specific causes. Items such as "*It is very difficult to prevent accidents when pedestrians emerge suddenly from between parked cars*" load on this factor.

The third factor (labelled "Internal Locus of Control", accounting for by the 11.87% 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 fourth factor (labelled "External Locus of Control", accounting for by the 10.46% 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.

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.943	19.811	19.811	4.092
2	3.171	10.569	30.38	2.53
3	2.458	8.193	38.573	3.562
4	2.139	7.131	45.704	3.137
5	1.473	4.911	50.615	
6	1.447	4.825	55.44	
7	1.427	4.757	60.197	
8	1.152	3.841	64.038	
9	1.018	3.392	67.43	
10	0.989	3.297	70.727	
11	0.91	3.034	73.761	

12	0.778	2.595	76.356
13	0.72	2.4	78.756
14	0.71	2.365	81.121
15	0.666	2.221	83.342
16	0.583	1.942	85.284
17	0.515	1.717	87.001
18	0.508	1.694	88.696
19	0.427	1.424	90.12
20	0.408	1.36	91.479
21	0.382	1.273	92.752
22	0.35	1.166	93.918
23	0.342	1.14	95.058
24	0.295	0.984	96.042
25	0.272	0.907	96.949
26	0.231	0.77	97.719
27	0.204	0.681	98.4
28	0.192	0.641	99.04
29	0.155	0.515	99.556
30	0.133	0.444	100

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

	Factor			
	Internal LOC, specific causes	External LOC, specific causes	Internal LOC	External LOC
N_1				0.626
N_2				0.649
N_3				
N_4				0.446
N_5				0.717
N_6			0.444	
N_7			0.665	
N_8			0.818	
N_9			0.678	
N_10			0.583	
N_11		0.542	0.330	
N_12		0.494		
N_13		0.661		

N_14		0.509		
N_15		0.451		0.266
N_16	0.578			
N_17	0.482	-0.429	0.257	
N_18	0.741			
N_19	0.786			
N_20				0.367
N_21	0.378		0.303	
N_22	0.368	0.431		
N_23	0.333			
N_24				
N_25	0.363			0.316
N_26	0.517			
N_27	0.412			
N_28		-0.344	0.343	0.271
N_29	0.284			
N_30		-0.331	0.489	

Table B.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	0.128	0.280	0.309
2	0.128	1.000	-0.033	0.067
3	0.280	-0.033	1.000	0.162
4	0.309	0.067	0.162	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, 0.82, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(91)=892.89$ $p<.000$, 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 50.37% 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 32.62% of the common variance) refers to the rage reactions due to other drivers violating the traffic code. Items such as "*Somebody reverses just in front of you without looking back*" load on this factor. The second factor (labelled "Insult-related rage", accounting for by the 18.71% of the common variance) refers to the rage reactions due to insults from other drivers. Items such as "*Somebody sounds the horn for your way of driving*" load on this factor.

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

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.473	39.094	39.094	4.568
2	1.579	11.276	50.370	2.620
3	1.051	7.505	57.874	
4	0.931	6.650	64.524	
5	0.912	6.514	71.038	
6	0.707	5.047	76.085	
7	0.663	4.732	80.817	
8	0.550	3.925	84.742	
9	0.521	3.719	88.461	
10	0.421	3.008	91.469	
11	0.400	2.854	94.323	
12	0.321	2.296	96.619	
13	0.262	1.871	98.490	
14	0.211	1.510	100.000	

Table D.2. Factor loadings (Scale P)

	Factor	
	Violation-related rage	Insult-related rage
P_1	0.703	
P_2	0.732	-0.254
P_3	0.807	
P_4	0.549	
P_5	0.336	0.285
P_6	0.550	
P_7	0.505	
P_8	0.557	
P_9	0.573	
P_10	0.438	0.410
P_11	0.479	0.295
P_12		0.789
P_13	0.361	0.433
P_14	0.265	0.555

Factor	1	2
1	1.00	0.377
2	0.377	1.00

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, 0.76, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(666)=2626.73$, $p<.000$, 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 two-factor solution that accounted for the 32.85% 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 second factor (labelled “Open mindness”, accounting for by the 15.00% of the common variance) refers to being kind and attentive to other people. Items such as “*I try to be kind with all the persons I meet*” load on this factor.

The third factor (labelled “Nevroticism”, accounting for by the 14.75% of the common variance) refers to being calm and reflexive. Items such as “*I often feel tense and nervous*” load on this factor.

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

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	6.568	17.751	17.751	5.551
2	5.586	15.097	32.848	5.457
3	2.786	7.531	40.379	
4	2.329	6.294	46.673	
5	2.016	5.449	52.122	
6	1.704	4.606	56.729	
7	1.529	4.132	60.861	
8	1.298	3.508	64.369	
9	1.123	3.035	67.404	
10	0.960	2.596	70.000	
11	0.878	2.374	72.374	
12	0.854	2.308	74.682	
13	0.826	2.233	76.915	
14	0.695	1.878	78.793	
15	0.675	1.823	80.616	
16	0.631	1.705	82.321	
17	0.571	1.543	83.864	
18	0.563	1.521	85.385	
19	0.521	1.408	86.793	
20	0.452	1.221	88.014	

21	0.443	1.197	89.211
22	0.405	1.095	90.305
23	0.359	0.970	91.275
24	0.352	0.952	92.227
25	0.329	0.889	93.117
26	0.318	0.860	93.976
27	0.298	0.805	94.781
28	0.283	0.764	95.545
29	0.258	0.697	96.242
30	0.233	0.631	96.872
31	0.205	0.555	97.428
32	0.196	0.529	97.956
33	0.176	0.476	98.433
34	0.175	0.472	98.905
35	0.151	0.407	99.312
36	0.147	0.397	99.709
37	0.108	0.291	100.000

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

	Factor	
	Openess to experience	Neuroticism
R_1		0.541
R_2		0.616
R_3		0.794
R_4		0.523
R_5		0.456
R_6		0.354
R_7	0.558	
R_8		0.322
R_9		0.569
R_10		0.597
R_11		0.664
R_12		0.469
R_13		0.513
R_14		0.490
R_15	0.468	
R_16		

R_17	0.353	0.325
R_18		0.541
R_19		0.576
R_20	0.779	
R_21	0.783	
R_22	0.512	
R_23	0.726	
R_24	0.375	
R_25		0.306
R_26	0.494	
R_27	0.508	
R_28	0.393	
R_29	0.407	
R_30		
R_31	0.634	-0.332
R_32		
R_33	0.712	-0.346
R_34		0.417
R_35	0.399	
R_36	0.442	
R_37	0.268	0.336

Table F.3. Factor Correlation Matrix

Factor	1	2
1	1.000	.124
2	.124	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, 0.81, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=1334.16, p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 45.43% of the total variance. Table L.1 shows the eigenvalues and the variance accounted for by each factor. Table L.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Positive effects”, accounting for by the 23.15% of the common variance) refers to the supposed positive effects of alcohol assumption. Items such as “*Alcohol increases concentration capacity*” load on this factor.

The second factor (labelled “Negative effects”, accounting for by the 16.71% of the common variance) refers to the supposed negative effects of alcohol assumption. Items such as “*Alcohol decreases the level of attention*” load on this factor. The two factors are not correlated (Table L.3).

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.273	26.367	26.367	4.631
2	3.812	19.059	45.426	3.341
3	1.874	9.372	54.799	
4	1.140	5.702	60.501	
5	0.996	4.980	65.481	
6	0.878	4.392	69.873	
7	0.848	4.240	74.112	
8	0.722	3.611	77.723	
9	0.646	3.228	80.952	
10	0.579	2.894	83.845	
11	0.541	2.704	86.549	
12	0.488	2.442	88.991	
13	0.400	1.999	90.990	
14	0.344	1.720	92.711	
15	0.319	1.595	94.306	
16	0.277	1.385	95.690	
17	0.267	1.334	97.024	
18	0.221	1.104	98.128	
19	0.194	0.969	99.097	
20	0.181	0.903	100.000	

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

	Factor	
	Positive effects	Negative effects
T_1	0.630	
T_2		0.444
T_3		0.554
T_4	0.786	
T_5	0.750	
T_6	0.656	
T_7		0.566
T_8	0.690	
T_9	0.324	0.446
T_10	0.785	
T_11		0.673
T_12	0.753	
T_13		0.495
T_14		0.773
T_15		0.632
T_16		0.541
T_17	0.356	
T_18	0.647	
T_19		0.419
T_20	0.386	

Table L.3 Factor Correlation Matrix

Factor	1	2
1	1.000	-.001
2	-.001	1.000

Cluster analysis

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

Results showed three separate groups of respondents. A multivariate analysis of variance yielded a significant difference among the three groups (Wilks' Lambda=0.03, $F_{44, 64}=6.35$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,53}=11.24$, $p<.001$) and a significant interaction between group and subscale ($F_{42,1113}= 6.35$, $p<.001$), 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 neuroticism, and have more direct experiences of driving under the effect of alcohol.
2. **ALCOHOL TOLERANT DRIVERS.** People in this group have a very similar profile as those in the safe drivers group, with the exception that they are far less aware of the negative effects of driving after having drunk alcohol.
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 show high scores on openness to experience. 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 it should be noted that only few female drivers are included in the sample.

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, nor in terms of how much worried they are about that (Figure 2). However, risky and alcohol tolerant feel more approved and encouraged by their friends than safe drivers (Figure 3). Finally, risky and alcohol tolerant drivers are aware that their parents would not approve their reckless driving behaviour (Figure 4).

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

	ALCOHOL TOLERANT drivers			RISKY drivers			SAFE drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Tolerance to violations	-0.06	0.15	21	0.74	0.12	34	-0.77	0.11	39
Negative attitude toward alcohol/drugs	-0.88	0.16	21	-0.30	0.13	34	0.77	0.12	39
Internal LOC, specific causes	-1.10	0.17	21	0.37	0.13	34	0.27	0.12	39
External LOC, specific causes	-0.58	0.17	21	-0.24	0.13	34	0.50	0.12	39
Internal LOC	-0.29	0.20	21	0.17	0.16	34	-0.37	0.15	39
External LOC	-0.49	0.16	21	0.67	0.13	34	-0.38	0.12	39
Violation-related rage	-0.78	0.17	21	0.22	0.14	34	0.36	0.13	39
Insult-related rage	0.01	0.19	21	0.29	0.15	34	-0.34	0.14	39
Open mindedness	-1.03	0.15	21	0.09	0.12	34	0.66	0.11	39
Neuroticism	-0.31	0.16	21	0.86	0.13	34	-0.59	0.12	39
Alcohol positive effects	-0.03	0.14	21	0.74	0.11	34	-0.94	0.10	39
Alcohol negative effects	-0.73	0.16	21	-0.13	0.13	34	0.71	0.12	39
Moral disengagement	-0.27	0.17	21	0.96	0.13	34	-0.79	0.12	39

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

	ALCOHOL TOLERANT drivers	RISKY drivers	Significance
	N=21	N=34	
Tolerance to violations	-0.06	0.74	p<.001
Negative attitude toward alcohol/drugs	-0.88	-0.30	ns
Internal LOC, specific causes	-1.10	0.37	p<.001
External LOC, specific causes	-0.58	-0.24	ns
Internal LOC	-0.29	0.17	ns
External LOC	-0.49	0.67	p<.001
Violation-related rage	-0.78	0.22	p<.001
Insult-related rage	0.01	0.29	ns
Open mindedness	-1.03	0.09	p<.001
Neuroticism	-0.31	0.86	p<.001
Alcohol positive effects	-0.03	0.74	p<.001
Alcohol negative effects	-0.73	-0.13	ns
Moral disengagement	-0.27	0.96	p<.001

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

	ALCOHOL TOLERANT drivers	SAFE drivers	Significance
	N=21	N=39	
Tolerance to violations	-0.06	-0.77	p<.001
Negative attitude toward alcohol/drugs	-0.88	0.77	p<.001
Internal LOC, specific causes	-1.10	0.27	ns
External LOC, specific causes	-0.58	0.50	p<.001
Internal LOC	-0.29	-0.37	ns
External LOC	-0.49	-0.38	p<.001
Violation-related rage	-0.78	0.36	ns
Insult-related rage	0.01	-0.34	p<.001
Open mindedness	-1.03	0.66	p<.001
Neuroticism	-0.31	-0.59	p<.001
Alcohol positive effects	-0.03	-0.94	p<.001
Alcohol negative effects	-0.73	0.71	p<.001
Moral disengagement	-0.27	-0.79	p<.001

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

	RISKY drivers	SAFE drivers	Significance
	N=21	N=39	
Tolerance to violations	0.74	-0.77	p<.001
Negative attitude toward alcohol/drugs	-0.30	0.77	p<.001
Internal LOC, specific causes	0.37	0.27	ns
External LOC, specific causes	-0.24	0.50	p<.001
Internal LOC	0.17	-0.37	ns
External LOC	0.67	-0.38	p<.001
Violation-related rage	0.22	0.36	ns
Insult-related rage	0.29	-0.34	p<.001
Open mindedness	0.09	0.66	p<.001
Neuroticism	0.86	-0.59	p<.001
Alcohol positive effects	0.74	-0.94	p<.001
Alcohol negative effects	-0.13	0.71	p<.001
Moral disengagement	0.96	-0.79	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	22.13	3.84	16
	Risky drivers	26.39	3.62	18
	Safe drivers	36.91	4.63	11
Females	Alcohol tolerant drivers	21.40	6.87	5
	Risky drivers	21.44	3.84	16
	Safe drivers	19.46	2.90	28

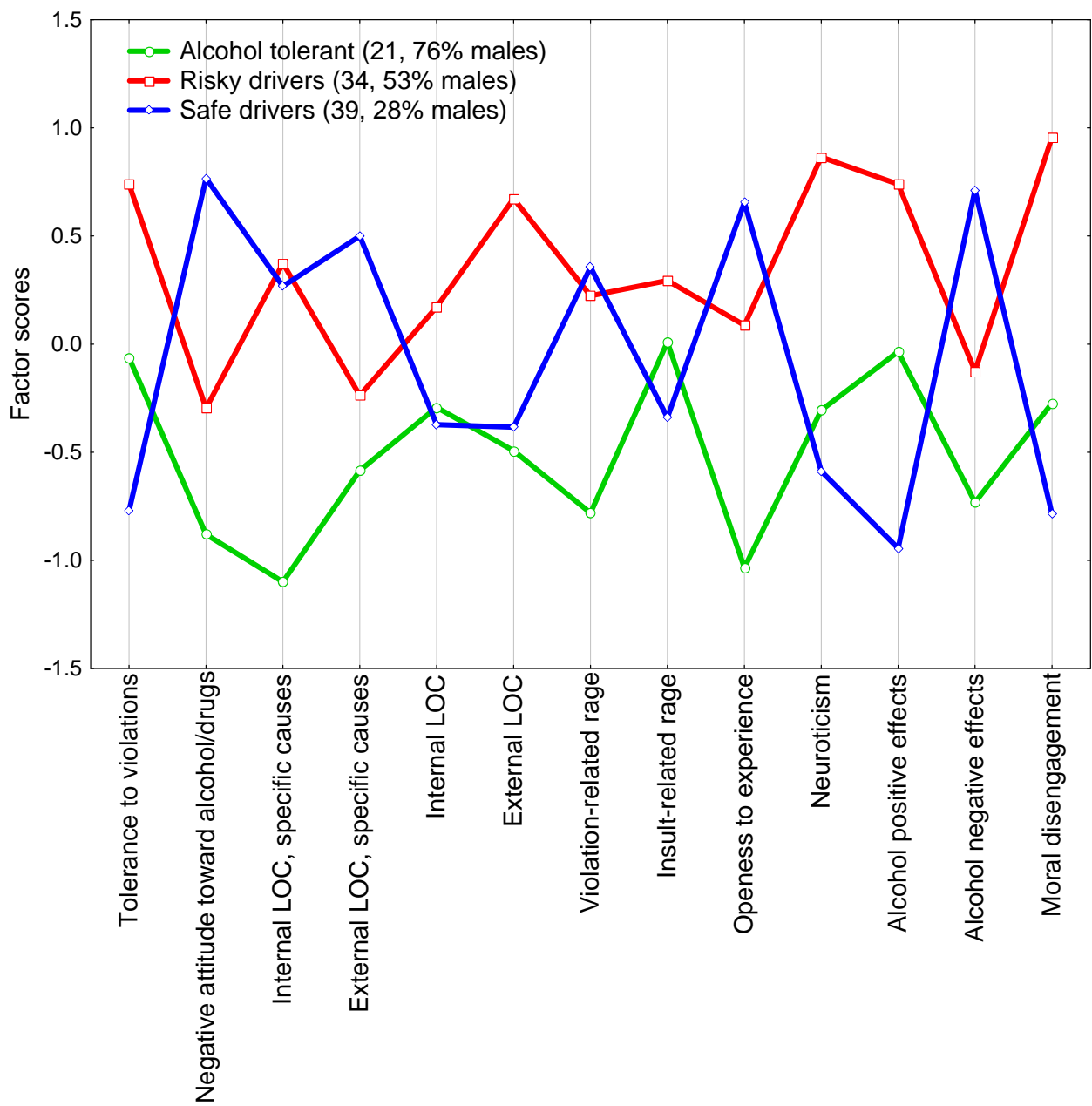
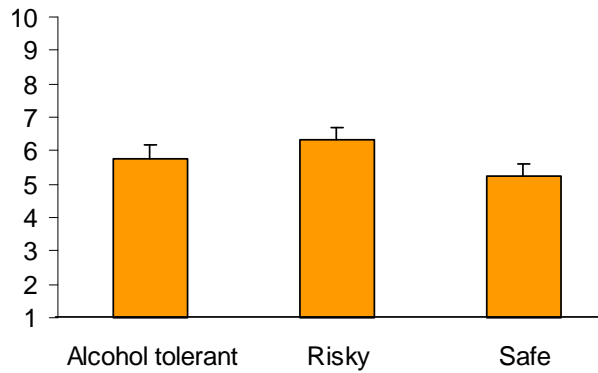


Figure 1. Average scores for each group on the subscales of the questionnaire.

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



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

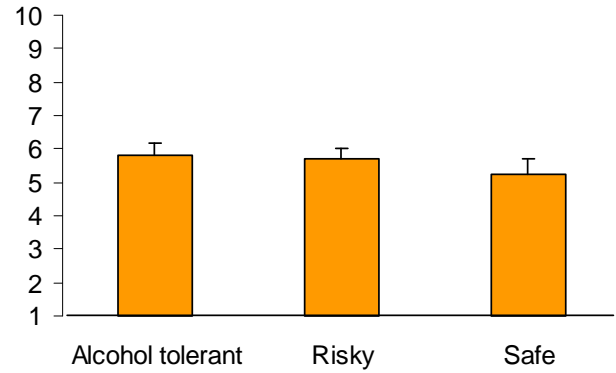
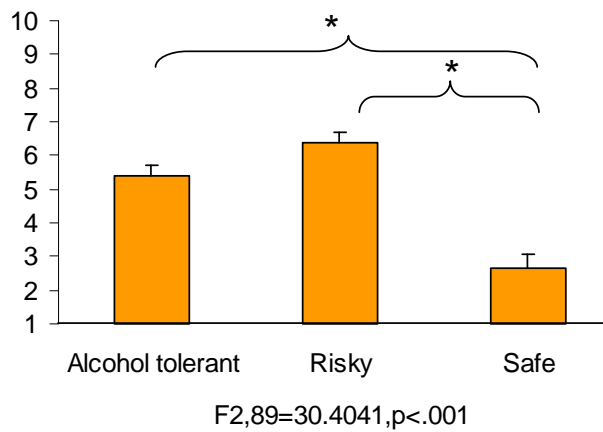


Figure 2. Average scores for each group on items concerning risk perception.

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



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

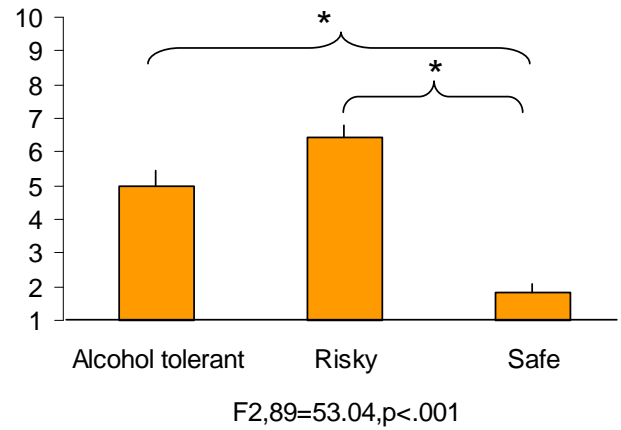
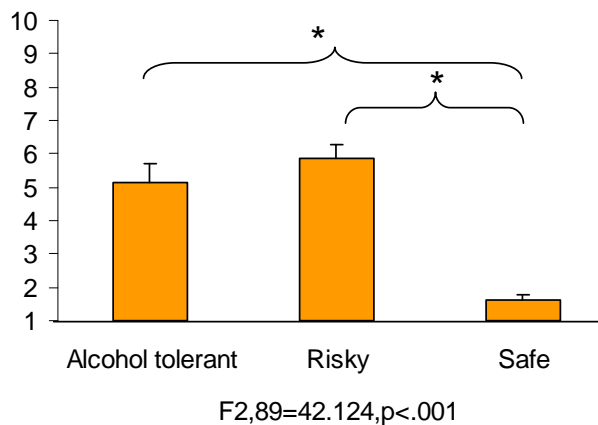


Figure 3. Average scores for each group on items concerning friends' attitude.

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



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

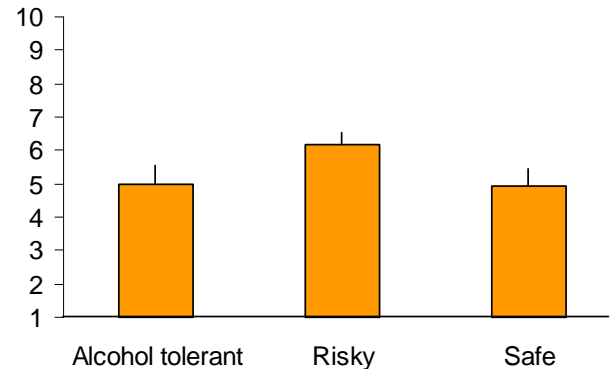


Figure 4. Average scores for each group on items concerning parents' attitude.