



ICARUS Project  
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# ICARUS Project

Inter - Cultural Approaches for Road Users Safety

Research report

Results

**SLOVENIA**

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## CAR DRIVERS (QUESTIONNAIRE SECTION 1)

### Sample description

A total of 538 people answered the Section 1 of the questionnaire. Males were 306 (56.9% of the total sample) and females were 232 (43.1% of the total sample). Their mean age was 19.0 years (standard deviation 1.03), ranging between 17 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 Slovenia own a car (about 34% of the respondents), independently of the gender. They however refer to use a car on a regular basis (many of them drive everyday, again without a prevalence of one gender), and for relatively long trips. Both male and female drivers refer to drive after midnight on relatively few occasions (about 69% of them drive after midnight less than 2 times a week). Male drivers also refer to have received a traffic fine more 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, Slovenian 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                 | 101<br>(35.44%) | 184<br>(64.56%) |
| Females               | 69<br>(31.8%)   | 148<br>(68.2%)  |
| Total                 | 170<br>(33.86%) | 332<br>(66.14%) |

**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   | 5<br>(1.68%) | 49<br>(16.5%)  | 65<br>(21.89%)  | 51<br>(17.17%) | 118<br>(39.73%) | 9<br>(3.03%)        |
| Females                                       | 3<br>(1.34%) | 47<br>(20.98%) | 54<br>(24.11%)  | 36<br>(16.07%) | 77<br>(34.38%)  | 7<br>(3.13%)        |
| Total   | 8<br>(1.54%) | 96<br>(18.43%) | 119<br>(22.84%) | 87<br>(16.7%)  | 195<br>(37.43%) | 16<br>(3.07%)       |

**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   | 15<br>(5.08%)  | 44<br>(14.92%) | 62<br>(21.02%)  | 58<br>(19.66%)  | 116<br>(39.32%)* |
| Females   | 22<br>(9.87%)* | 47<br>(21.08%) | 55<br>(24.66%)  | 51<br>(22.87%)  | 48<br>(21.52%)   |
| Total   | 37<br>(7.14%)  | 91<br>(17.57%) | 117<br>(22.59%) | 109<br>(21.04%) | 164<br>(31.66%)  |

**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  | 106<br>(36.55%)  | 93<br>(32.07%)  | 55<br>(18.97%)* | 36<br>(12.41%)*   |
| Females  | 107<br>(49.31%)* | 69<br>(31.8%)   | 27<br>(12.44%)  | 14<br>(6.45%)     |
| Total  | 213<br>(42.01%)  | 162<br>(31.95%) | 82<br>(16.17%)  | 50<br>(9.86%)     |

**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  | 100<br>(38.17%) | 71<br>(27.1%)  | 52<br>(19.85%) | 39<br>(14.89%)    |
| Females  | 91<br>(45.05%)  | 58<br>(28.71%) | 35<br>(17.33%) | 18<br>(8.91%)     |
| Total  | 191<br>(41.16%) | 129<br>(27.8%) | 87<br>(18.75%) | 57<br>(12.28%)    |

**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                                 | 36<br>(12.2%)* | 259<br>(87.8%)  |
| Females                               | 9<br>(4.%)     | 216<br>(96.%)*  |
| Total                                 | 45<br>(8.65%)  | 475<br>(91.35%) |

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

|                       | Males         | Females      | Total         |
|-----------------------|---------------|--------------|---------------|
| No parking            | 11<br>(100.%) | 2<br>(100.%) | 13<br>(100.%) |
| Running a red light   | 4<br>(100.%)  | 1<br>(100.%) | 5<br>(100.%)  |
| Running a stop sign   | 4<br>(100.%)  | 0<br>(100.%) | 4<br>(100.%)  |
| Speeding              | 19<br>(100.%) | 3<br>(100.%) | 22<br>(100.%) |
| Drunk driving         | 2<br>(100.%)  | 0<br>(100.%) | 2<br>(100.%)  |
| Lack of seatbelts use | 9<br>(100.%)  | 0<br>(100.%) | 9<br>(100.%)  |

**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   | 229<br>(78.69%)  | 37<br>(12.71%) | 10<br>(3.44%)* | 8<br>(2.75%)  | 3<br>(1.03%) | 4<br>(1.37%) |
| Females   | 197<br>(87.95%)* | 19<br>(8.48%)  | 1<br>(.45%)    | 5<br>(2.23%)  | 2<br>(.89%)  | 0            |
| Total   | 426<br>(82.72%)  | 56<br>(10.87%) | 11<br>(2.14%)  | 13<br>(2.52%) | 5<br>(.97%)  | 4<br>(.78%)  |

**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      | 6<br>(100.%) | 2<br>(100.%) | 8<br>(100.%) |
| You could hardly keep your head on straight | 3<br>(100.%) | 0<br>(100.%) | 3<br>(100.%) |
| You had muscle cramps                       | 0            | 0            | 0            |
| You could hardly keep your eyes open        | 4<br>(100.%) | 2<br>(100.%) | 6<br>(100.%) |
| You got stomach cramps                      | 1<br>(100.%) | 1<br>(100.%) | 2<br>(100.%) |
| You could not focus on the road             | 5<br>(100.%) | 0<br>(100.%) | 5<br>(100.%) |
| Someone who was with you made you notice it | 0            | 3<br>(100.%) | 3<br>(100.%) |

## 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, 0.82, and factorability of the correlation matrix, Bartlett's test of sphericity  $\chi^2(153)=2127.74, p<.000$ , were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 53.23% 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 20.7% of the common variance) refers to a negative attitude toward traffic rules. Items such as *"To keep traffic smooth-flowing you should ignore many of the road traffic rules"* load on this factor.

The second factor (labelled "Negative attitude towards drugs", accounting for by the 12.2% of the common variance) and the fourth factor (labelled "Negative attitude towards alcohol", accounting for by the 10.1% of the common variance) both 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 factors. It is interesting to note the items related to driving under the effects of alcohol and drugs refer to different factors. However, these factors are also strongly correlated (Table A.3).

The third factor (labelled "Negative attitude toward speeding", accounting for by the 12.1% of the common variance) refers to a negative attitude toward going by car with a fast driver. Items such as *"It is ok to go by car with a fast driver if it is the only way to go back home at night"* load on this factor. This factor is negatively correlated to the first one (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      | 4.703               | 26.130        | 26.130       | 3.733                             |
| 2      | 2.385               | 13.252        | 39.381       | 2.201                             |
| 3      | 1.417               | 7.870         | 47.252       | 2.176                             |
| 4      | 1.076               | 5.976         | 53.228       | 1.816                             |
| 5      | .986                | 5.479         | 58.707       |                                   |
| 6      | .921                | 5.115         | 63.822       |                                   |
| 7      | .857                | 4.763         | 68.585       |                                   |
| 8      | .753                | 4.181         | 72.766       |                                   |
| 9      | .715                | 3.970         | 76.736       |                                   |
| 10     | .680                | 3.780         | 80.516       |                                   |
| 11     | .569                | 3.164         | 83.680       |                                   |
| 12     | .557                | 3.096         | 86.776       |                                   |

|    |      |       |         |
|----|------|-------|---------|
| 13 | .512 | 2.846 | 89.622  |
| 14 | .484 | 2.687 | 92.309  |
| 15 | .466 | 2.588 | 94.897  |
| 16 | .420 | 2.335 | 97.232  |
| 17 | .327 | 1.816 | 99.048  |
| 18 | .171 | .952  | 100.000 |

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

|      | Factors                                  |                                |                                   |                                  |
|------|--|--------------------------------|-----------------------------------|----------------------------------|
|      | Tolerance to violations to traffic rules | Negative attitude toward drugs | Negative attitude toward speeding | Negative attitude toward alcohol |
| A_1  | 0.651                                    |                                |                                   |                                  |
| A_2  | 0.550                                    |                                |                                   |                                  |
| A_3  |  |                                |                                   |                                  |
| A_4  | 0.649                                    |                                |                                   |                                  |
| A_5  | 0.432                                    |                                |                                   |                                  |
| A_6  | 0.705                                    |                                |                                   |                                  |
| A_7  | 0.630                                    |                                |                                   |                                  |
| A_8  | 0.473                                    |                                |                                   |                                  |
| A_9  | 0.539                                    |                                |                                   |                                  |
| A_10 | 0.553                                    |                                |                                   |                                  |
| A_11 | -0.260                                   |                                |                                   |                                  |
| A_12 |  |                                | -0.711                            |                                  |
| A_13 |  |                                | -0.812                            |                                  |
| A_14 |  |                                | 0.312                             |                                  |
| A_15 |  |                                |                                   | 0.638                            |
| A_16 |  |                                |                                   | 0.552                            |
| A_17 |  | 0.893                          |                                   |                                  |
| A_18 |  | 0.893                          |                                   |                                  |

**Table A.3.** Factor Correlation Matrix

| Factor | 1     | 2     | 3     | 4     |
|--------|-------|-------|-------|-------|
| 1      | 1.000 | -.125 | -.385 | -.261 |
| 2      | -.125 | 1.000 | .150  | .465  |
| 3      | -.385 | .150  | 1.000 | .215  |
| 4      | -.261 | .465  | .215  | 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, 0.78, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(435)=3629.98, p<.000$ , 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 34.51% 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 “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.

The second factor (labeled “External Locus of Control, reversed”, accounting for by the 11.1% 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 third factor (labeled “Attention related LOC”, accounting for by the 8.8% 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.

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

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

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 4.902               | 16.339        | 16.339       | 3.069                             |
| 2      | 3.106               | 10.353        | 26.692       | 3.316                             |
| 3      | 2.347               | 7.823         | 34.515       | 2.635                             |
| 4      | 1.563               | 5.208         | 39.723       |                                   |
| 5      | 1.360               | 4.535         | 44.258       |                                   |
| 6      | 1.297               | 4.322         | 48.580       |                                   |
| 7      | 1.139               | 3.797         | 52.377       |                                   |
| 8      | 1.102               | 3.673         | 56.050       |                                   |
| 9      | .995                | 3.318         | 59.368       |                                   |
| 10     | .974                | 3.248         | 62.615       |                                   |
| 11     | .894                | 2.981         | 65.596       |                                   |
| 12     | .853                | 2.843         | 68.439       |                                   |
| 13     | .783                | 2.610         | 71.049       |                                   |

|    |      |       |         |
|----|------|-------|---------|
| 14 | .770 | 2.567 | 73.617  |
| 15 | .733 | 2.444 | 76.061  |
| 16 | .683 | 2.276 | 78.337  |
| 17 | .654 | 2.179 | 80.516  |
| 18 | .629 | 2.096 | 82.612  |
| 19 | .598 | 1.993 | 84.606  |
| 20 | .586 | 1.952 | 86.558  |
| 21 | .566 | 1.887 | 88.444  |
| 22 | .550 | 1.833 | 90.277  |
| 23 | .472 | 1.574 | 91.851  |
| 24 | .443 | 1.477 | 93.328  |
| 25 | .422 | 1.407 | 94.735  |
| 26 | .380 | 1.267 | 96.002  |
| 27 | .357 | 1.191 | 97.193  |
| 28 | .302 | 1.008 | 98.201  |
| 29 | .280 | .933  | 99.134  |
| 30 | .260 | .866  | 100.000 |

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

|      | Factor       |                            |                                       |
|------|--------------|----------------------------|---------------------------------------|
|      | Internal LOC | External LOC<br>(reversed) | Attention-<br>related Internal<br>LOC |
| B_1  |              | -0.491                     |                                       |
| B_2  |              | -0.336                     |                                       |
| B_3  | 0.343        |                            |                                       |
| B_4  |              | -0.329                     |                                       |
| B_5  |              | -0.407                     |                                       |
| B_6  | 0.543        |                            |                                       |
| B_7  | 0.646        |                            |                                       |
| B_8  | 0.519        |                            |                                       |
| B_9  | 0.368        |                            |                                       |
| B_10 |              |                            | 0.262                                 |
| B_11 |              | -0.469                     |                                       |
| B_12 |              | -0.420                     |                                       |
| B_13 |              | -0.690                     |                                       |
| B_14 |              | -0.722                     |                                       |
| B_15 |              | -0.680                     |                                       |
| B_16 |              |                            | 0.332                                 |
| B_17 | 0.520        |                            |                                       |

|      |        |        |       |
|------|--------|--------|-------|
| B_18 |        |        | 0.631 |
| B_19 |        |        | 0.631 |
| B_20 |        | -0.425 |       |
| B_21 |        |        | 0.347 |
| B_22 |        |        | 0.504 |
| B_23 |        |        | 0.313 |
| B_24 | 0.295  | -0.395 |       |
| B_25 | -0.290 | -0.301 |       |
| B_26 |        |        | 0.448 |
| B_27 |        |        | 0.493 |
| B_28 | 0.583  |        |       |
| B_29 |        |        | 0.373 |
| B_30 | 0.583  |        |       |

**Table B.3.** Factor correlation matrix

| Factor | 1     | 2     | 3     |
|--------|-------|-------|-------|
| 1      | 1.000 | -.160 | .215  |
| 2      | -.160 | 1.000 | -.093 |
| 3      | .215  | -.093 | 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, 0.82, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(91)=1502.53$ ,  $p<.000$ , 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 48.1% 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 19.86% 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 13.68% 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 third factor (labelled “Insult-related rage, reversed”, accounting for by the 13.99% of the common variance) refers to refers the rage reactions due insults from other drivers. Items such as “*Somebody sounds the horn for your way of driving*” load on this factor.

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

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

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 3.975               | 28.391        | 28.391       | 2.780                             |
| 2      | 1.541               | 11.005        | 39.395       | 1.915                             |
| 3      | 1.211               | 8.651         | 48.047       | 1.958                             |
| 4      | .972                | 6.939         | 54.986       |                                   |
| 5      | .863                | 6.166         | 61.152       |                                   |
| 6      | .852                | 6.088         | 67.240       |                                   |
| 7      | .800                | 5.717         | 72.957       |                                   |
| 8      | .683                | 4.881         | 77.838       |                                   |
| 9      | .633                | 4.521         | 82.359       |                                   |
| 10     | .602                | 4.301         | 86.660       |                                   |
| 11     | .576                | 4.112         | 90.772       |                                   |
| 12     | .507                | 3.624         | 94.396       |                                   |
| 13     | .466                | 3.330         | 97.726       |                                   |
| 14     | .318                | 2.274         | 100.000      |                                   |

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

|      | Factor                |                        |                                |
|------|-----------------------|------------------------|--------------------------------|
|      | Obstacle-related rage | Violation-related rage | Insult-related Rage (reversed) |
| D_1  |                       | 0.488                  |                                |
| D_2  | 0.515                 |                        |                                |
| D_3  |                       | 0.725                  |                                |
| D_4  |                       | 0.476                  |                                |
| D_5  | 0.310                 |                        |                                |
| D_6  | 0.265                 | 0.356                  |                                |
| D_7  | 0.537                 |                        |                                |
| D_8  | 0.610                 |                        |                                |
| D_9  |                       |                        | -0.881                         |
| D_10 |                       |                        | -0.637                         |
| D_11 | 0.390                 |                        |                                |
| D_12 | 0.453                 |                        |                                |
| D_13 | 0.402                 |                        |                                |
| D_14 | 0.571                 |                        |                                |

**Table D3.** Factor Correlation Matrix

| Factor | 1     | 2     | 3     |
|--------|-------|-------|-------|
| 1      | 1.000 | .356  | -.402 |
| 2      | .356  | 1.000 | -.179 |
| 3      | -.402 | -.179 | 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, 0.79, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(666)=4073.72, p<.000$ , 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 31.5% 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 9.22% of the common variance) refers to Anxiety. Items such as *“I easily panic”* load on this factor.

The second factor (labelled “Altruism”, accounting for by the 6.76% of the common variance) refers Altruism. Items such as *“I think I’m generous with who is in trouble”* load on this factor.

The third factor (labelled “Sensation seeking”, accounting for by the 6.52% of the common variance) refers to the Sensation-seeking personality trait. Items such as *“I often wish exciting things”* load on this factor.

The fourth factor (labelled “Calmness”, accounting for by the 6.04% 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 fifth factor (labelled “Impulsivity”, accounting for by the 6.92% of the common variance) refers to Impulsivity. Items such as *“I’m easily distracted”* load on this factor. This factor is slightly negatively correlated with the Altruism factor (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      | 4.706               | 12.720        | 12.720       | 3.410                             |
| 2      | 3.550               | 9.594         | 22.314       | 2.503                             |
| 3      | 3.192               | 8.626         | 30.939       | 2.411                             |
| 4      | 1.862               | 5.034         | 35.973       | 2.234                             |
| 5      | 1.596               | 4.313         | 40.286       | 2.561                             |
| 6      | 1.328               | 3.589         | 43.876       |                                   |
| 7      | 1.219               | 3.296         | 47.171       |                                   |
| 8      | 1.114               | 3.010         | 50.181       |                                   |
| 9      | 1.041               | 2.814         | 52.995       |                                   |
| 10     | 1.021               | 2.760         | 55.754       |                                   |
| 11     | .985                | 2.661         | 58.415       |                                   |
| 12     | .943                | 2.549         | 60.964       |                                   |
| 13     | .919                | 2.483         | 63.447       |                                   |
| 14     | .897                | 2.425         | 65.872       |                                   |
| 15     | .836                | 2.260         | 68.132       |                                   |

|    |      |       |         |  |
|----|------|-------|---------|--|
| 16 | .782 | 2.114 | 70.246  |  |
| 17 | .762 | 2.059 | 72.305  |  |
| 18 | .724 | 1.956 | 74.261  |  |
| 19 | .687 | 1.858 | 76.119  |  |
| 20 | .677 | 1.828 | 77.947  |  |
| 21 | .661 | 1.786 | 79.733  |  |
| 22 | .628 | 1.697 | 81.429  |  |
| 23 | .617 | 1.668 | 83.097  |  |
| 24 | .599 | 1.620 | 84.717  |  |
| 25 | .560 | 1.514 | 86.231  |  |
| 26 | .538 | 1.454 | 87.685  |  |
| 27 | .501 | 1.354 | 89.039  |  |
| 28 | .492 | 1.330 | 90.369  |  |
| 29 | .472 | 1.276 | 91.645  |  |
| 30 | .460 | 1.243 | 92.888  |  |
| 31 | .440 | 1.190 | 94.078  |  |
| 32 | .412 | 1.113 | 95.191  |  |
| 33 | .400 | 1.082 | 96.273  |  |
| 34 | .386 | 1.042 | 97.316  |  |
| 35 | .358 | .967  | 98.283  |  |
| 36 | .342 | .925  | 99.208  |  |
| 37 | .293 | .792  | 100.000 |  |

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

|      | Factor  |          |                   |          |             |
|------|---------|----------|-------------------|----------|-------------|
|      | Anxiety | Altruism | Sensation Seeking | Calmness | Impulsivity |
| F_1  | -0.397  |          | 0.291             | 0.336    |             |
| F_2  | 0.417   |          |                   |          |             |
| F_3  |         | -0.605   |                   |          |             |
| F_4  |         |          | 0.683             |          |             |
| F_5  | 0.554   |          |                   |          |             |
| F_6  |         |          |                   | 0.616    |             |
| F_7  |         | 0.337    |                   | 0.326    |             |
| F_8  |         |          | 0.289             |          |             |
| F_9  | -0.284  |          |                   | 0.281    |             |
| F_10 |         | -0.304   | 0.466             | -0.266   |             |
| F_11 |         | -0.679   |                   |          |             |
| F_12 |         |          | 0.645             |          |             |

|      |        |        |       |       |        |
|------|--------|--------|-------|-------|--------|
| F_13 | 0.612  |        |       |       |        |
| F_14 |        |        |       | 0.402 |        |
| F_15 |        |        |       |       | -0.349 |
| F_16 | 0.299  |        |       |       |        |
| F_17 |        |        |       |       |        |
| F_18 | 0.398  | -0.318 |       |       |        |
| F_19 |        | -0.42  |       |       |        |
| F_20 |        |        | 0.377 |       | -0.371 |
| F_21 | 0.597  |        |       |       |        |
| F_22 |        |        |       | 0.572 |        |
| F_23 |        | 0.271  |       | 0.299 |        |
| F_24 |        |        | 0.48  |       |        |
| F_25 | -0.253 |        | 0.391 |       |        |
| F_26 | 0.44   |        |       |       |        |
| F_27 |        | 0.339  |       |       |        |
| F_28 |        |        |       |       |        |
| F_29 | 0.574  |        |       |       |        |
| F_30 | 0.624  |        |       |       |        |
| F_31 | 0.305  | 0.376  |       | 0.261 |        |
| F_32 |        |        |       |       |        |
| F_33 |        |        |       |       | -0.386 |
| F_34 |        |        |       |       | 0.464  |
| F_35 |        |        |       |       | -0.614 |
| F_36 |        |        |       |       | -0.706 |
| F_37 | 0.296  |        |       |       | 0.484  |

**Table F.3.** Factor Correlation Matrix

| Factor | 1     | 2     | 3     | 4     | 5     |
|--------|-------|-------|-------|-------|-------|
| 1      | 1.000 | -.056 | .052  | -.121 | -.032 |
| 2      | -.056 | 1.000 | -.061 | .078  | -.340 |
| 3      | .052  | -.061 | 1.000 | .176  | -.071 |
| 4      | -.121 | .078  | .176  | 1.000 | -.199 |
| 5      | -.032 | -.340 | -.071 | -.199 | 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, 0.96, and factorability of the correlation matrix, Bartlett's test of sphericity  $\chi^2(561)=9232.04$ ,  $p<.000$ , 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 53.82% of the total variance. Table I.1 shows the eigenvalues and the variance accounted for by each factor. Table I.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Slips/Lapses", accounting for by the 31.36% 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 14.11% of the common variance) refers to violations of the traffic code. Items such as "*Exceeded speed limits on the motorway*" load on this factor.

The third factor (labelled "Correct behavior", accounting for by the 37.03% of the common variance) refers to complying with the traffic code. Items such as "*Driven a long distance without wearing the seatbelts*" negatively load on this factor. This factor correlates negatively with both the previous factors.

**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      | 14.427              | 42.431        | 42.431       | 10.662                            |
| 2      | 2.515               | 7.398         | 49.829       | 4.796                             |
| 3      | 1.357               | 3.992         | 53.821       | 12.591                            |
| 4      | 1.109               | 3.261         | 57.082       |                                   |
| 5      | .945                | 2.780         | 59.862       |                                   |
| 6      | .935                | 2.750         | 62.612       |                                   |
| 7      | .870                | 2.559         | 65.171       |                                   |
| 8      | .752                | 2.212         | 67.383       |                                   |
| 9      | .697                | 2.050         | 69.433       |                                   |
| 10     | .691                | 2.032         | 71.465       |                                   |
| 11     | .652                | 1.917         | 73.382       |                                   |
| 12     | .639                | 1.880         | 75.262       |                                   |
| 13     | .586                | 1.725         | 76.987       |                                   |
| 14     | .567                | 1.667         | 78.654       |                                   |
| 15     | .533                | 1.567         | 80.221       |                                   |
| 16     | .505                | 1.486         | 81.706       |                                   |

|    |      |       |         |
|----|------|-------|---------|
| 17 | .476 | 1.400 | 83.106  |
| 18 | .471 | 1.384 | 84.490  |
| 19 | .455 | 1.338 | 85.829  |
| 20 | .440 | 1.293 | 87.121  |
| 21 | .427 | 1.255 | 88.376  |
| 22 | .411 | 1.210 | 89.587  |
| 23 | .404 | 1.188 | 90.774  |
| 24 | .373 | 1.096 | 91.870  |
| 25 | .370 | 1.089 | 92.959  |
| 26 | .335 | .986  | 93.946  |
| 27 | .308 | .907  | 94.853  |
| 28 | .297 | .873  | 95.726  |
| 29 | .287 | .845  | 96.571  |
| 30 | .267 | .786  | 97.357  |
| 31 | .247 | .725  | 98.082  |
| 32 | .238 | .700  | 98.783  |
| 33 | .223 | .656  | 99.438  |
| 34 | .191 | .562  | 100.000 |

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

|      | Factor       |            |                                 |
|------|--------------|------------|---------------------------------|
|      | SLIPS/LAPSES | VIOLATIONS | COMPLYING WITH THE TRAFFIC CODE |
| I_1  |              |            | -0.398                          |
| I_2  |              |            | -0.489                          |
| I_3  |              |            | -0.637                          |
| I_4  |              | 0.741      |                                 |
| I_5  |              | 0.701      |                                 |
| I_6  |              |            | -0.746                          |
| I_7  |              |            | -0.813                          |
| I_8  |              |            | -0.646                          |
| I_9  |              |            | -0.631                          |
| I_10 |              | 0.477      |                                 |
| I_11 |              | 0.435      | -0.282                          |
| I_12 |              |            | -0.608                          |
| I_13 |              |            | -0.441                          |
| I_14 |              |            | -0.665                          |
| I_15 |              | 0.652      |                                 |

|      |       |  |        |
|------|-------|--|--------|
| I_16 |       |  | -0.591 |
| I_17 |       |  | -0.357 |
| I_18 | 0.487 |  |        |
| I_19 | 0.679 |  |        |
| I_20 | 0.714 |  |        |
| I_21 | 0.718 |  |        |
| I_22 | 0.653 |  |        |
| I_23 | 0.525 |  | -0.318 |
| I_24 | 0.606 |  |        |
| I_25 | 0.622 |  |        |
| I_26 | 0.367 |  |        |
| I_27 | 0.302 |  | -0.585 |
| I_28 | 0.285 |  | -0.597 |
| I_29 | 0.281 |  | -0.653 |
| I_30 | 0.508 |  | -0.382 |
| I_31 | 0.413 |  | -0.379 |
| I_32 | 0.371 |  | -0.532 |
| I_33 | 0.300 |  |        |
| I_34 | 0.298 |  | -0.473 |

**Table I.3.** Factor Correlation Matrix

| Factor | 1     | 2     | 3     |
|--------|-------|-------|-------|
| 1      | 1.000 | .204  | -.668 |
| 2      | .204  | 1.000 | -.459 |
| 3      | -.668 | -.459 | 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, 0.88, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(231)=5457.70$ ,  $p<.000$ , were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a five-factor solution that accounted for the 66.86% 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 21.9% 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 “Slowing”, accounting for by the 11.83% of the common variance) refers to the slowing the speed when required by the traffic conditions. Items such as “*You slow down when approaching a danger sign*” load on this factor.

The third factor (labelled “Alcohol/Drugs”, accounting for by the 19.0% 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 fourth factor (labelled “Pedestrian-related risky driving”, accounting for by the 10.52% of the common variance) refers to omitting of 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*” negatively load on this factor.

The fifth factor (labelled “Risky driving”, accounting for by the 21.60% of the common variance) refers to risky driving behaviour. Items such as “*You drive without keeping a safe distance*” load on this factor.

The “Risky driving” factor has a strong positive correlation with both the “Speed” and “Alcohol/Drugs” factors, whereas the “Slowing” factor correlates negatively with the “Pedestrian-related risky driving” factor (Table J.3).

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

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 6.955               | 31.614        | 31.614       | 4.817                             |
| 2      | 3.181               | 14.460        | 46.074       | 2.603                             |
| 3      | 2.427               | 11.033        | 57.108       | 4.180                             |
| 4      | 1.082               | 4.919         | 62.026       | 2.314                             |
| 5      | 1.063               | 4.831         | 66.858       | 4.753                             |
| 6      | .830                | 3.771         | 70.629       |                                   |
| 7      | .712                | 3.235         | 73.864       |                                   |
| 8      | .620                | 2.817         | 76.680       |                                   |
| 9      | .590                | 2.681         | 79.362       |                                   |
| 10     | .558                | 2.536         | 81.897       |                                   |

|    |      |       |         |
|----|------|-------|---------|
| 11 | .516 | 2.347 | 84.245  |
| 12 | .507 | 2.306 | 86.551  |
| 13 | .466 | 2.116 | 88.667  |
| 14 | .379 | 1.721 | 90.389  |
| 15 | .352 | 1.600 | 91.988  |
| 16 | .342 | 1.556 | 93.544  |
| 17 | .306 | 1.391 | 94.936  |
| 18 | .279 | 1.267 | 96.203  |
| 19 | .236 | 1.072 | 97.275  |
| 20 | .219 | .997  | 98.272  |
| 21 | .216 | .982  | 99.254  |
| 22 | .164 | .746  | 100.000 |

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

|      | Factor |         |                   |                                     |               |
|------|--------|---------|-------------------|-------------------------------------|---------------|
|      | Speed  | Slowing | Alcohol/<br>Drugs | Pedestrian-related<br>risky driving | Risky driving |
| J_1  | 0.777  |         |                   |                                     |               |
| J_2  | 0.765  |         |                   |                                     |               |
| J_3  | 0.748  |         |                   |                                     |               |
| J_4  | 0.787  |         |                   |                                     |               |
| J_5  | 0.766  |         |                   |                                     |               |
| J_6  | 0.267  |         |                   |                                     | 0.484         |
| J_7  |        |         |                   |                                     | 0.825         |
| J_8  |        |         |                   |                                     | 0.753         |
| J_9  | 0.263  |         |                   |                                     | 0.536         |
| J_10 | 0.256  |         |                   |                                     | 0.373         |
| J_11 |        |         | 0.492             |                                     |               |
| J_12 |        |         | 0.643             |                                     |               |
| J_13 |        | 0.422   |                   |                                     |               |
| J_14 |        | 0.642   |                   |                                     |               |
| J_15 |        | 0.816   |                   |                                     |               |
| J_16 |        | 0.656   |                   |                                     |               |
| J_17 |        |         | 0.774             |                                     |               |
| J_18 |        |         | 0.858             |                                     |               |
| J_19 |        |         |                   | -0.688                              |               |
| J_20 |        |         |                   | -0.978                              |               |
| J_21 | -0.358 | 0.331   |                   |                                     |               |
| J_22 |        |         | 0.696             |                                     |               |

**Table J.3.** Factor Correlation Matrix

| Factor | 1     | 2     | 3     | 4     | 5     |
|--------|-------|-------|-------|-------|-------|
| 1      | 1.000 | -.137 | .244  | .076  | .465  |
| 2      | -.137 | 1.000 | -.063 | -.493 | -.056 |
| 3      | .244  | -.063 | 1.000 | .099  | .563  |
| 4      | .076  | -.493 | .099  | 1.000 | .047  |
| 5      | .465  | -.056 | .563  | .047  | 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, 0.76, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(36)=1257.19$ ,  $p<.000$ , 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 two-factor solution that accounted for the 53.11% 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 28% 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 21.7% 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.

**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      | 3.336               | 37.062        | 37.062       | 2.521                             |
| 2      | 1.445               | 16.051        | 53.113       | 1.953                             |
| 3      | .968                | 10.757        | 63.870       |                                   |
| 4      | .773                | 8.590         | 72.461       |                                   |
| 5      | .715                | 7.948         | 80.408       |                                   |
| 6      | .634                | 7.044         | 87.453       |                                   |
| 7      | .533                | 5.923         | 93.376       |                                   |
| 8      | .373                | 4.149         | 97.524       |                                   |
| 9      | .223                | 2.476         | 100.000      |                                   |

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

|     | Factor              |                       |
|-----|---------------------|-----------------------|
|     | Permissive attitude | Preventing behaviours |
| K_1 | 0.825               |                       |
| K_2 | 0.980               |                       |
| K_3 |                     | 0.562                 |
| K_4 |                     | 0.563                 |
| K_5 | 0.424               | 0.358                 |
| K_6 |                     | 0.433                 |
| K_7 |                     | 0.582                 |
| K_8 | 0.406               |                       |
| K_9 | 0.355               | 0.342                 |

**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, 0.86, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(190)=2660.73$ ,  $p<.000$ , 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 45.76% of the total variance. Table L.1 shows the eigenvalues and the variance accounted for by each factor. Table L.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Positive effects”, accounting for by the 15.25% 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 15.8% 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 third factor (labelled “Underestimation of negative effects”, accounting for by the 14.58% 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. This factor correlates positively with the “Positive effects” 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      | 5.110               | 25.548        | 25.548       | 3.050                             |
| 2      | 2.718               | 13.589        | 39.137       | 3.161                             |
| 3      | 1.324               | 6.621         | 45.758       | 2.916                             |
| 4      | 1.086               | 5.431         | 51.190       |                                   |
| 5      | 1.026               | 5.130         | 56.320       |                                   |
| 6      | .939                | 4.696         | 61.016       |                                   |
| 7      | .894                | 4.469         | 65.485       |                                   |
| 8      | .789                | 3.944         | 69.430       |                                   |
| 9      | .734                | 3.672         | 73.102       |                                   |
| 10     | .665                | 3.323         | 76.425       |                                   |
| 11     | .661                | 3.303         | 79.728       |                                   |
| 12     | .620                | 3.100         | 82.828       |                                   |
| 13     | .551                | 2.754         | 85.582       |                                   |
| 14     | .513                | 2.563         | 88.146       |                                   |
| 15     | .475                | 2.375         | 90.520       |                                   |
| 16     | .424                | 2.118         | 92.639       |                                   |
| 17     | .420                | 2.098         | 94.737       |                                   |

|    |      |       |         |
|----|------|-------|---------|
| 18 | .386 | 1.928 | 96.665  |
| 19 | .360 | 1.799 | 98.464  |
| 20 | .307 | 1.536 | 100.000 |

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

|      | Factor           |                  |                                     |
|------|------------------|------------------|-------------------------------------|
|      | Positive effects | Negative effects | Underestimation of negative effects |
| L_1  | 0.423            |                  |                                     |
| L_2  |                  | 0.562            |                                     |
| L_3  |                  | 0.668            |                                     |
| L_4  | 0.499            |                  |                                     |
| L_5  | 0.389            |                  | 0.369                               |
| L_6  | 0.47             |                  |                                     |
| L_7  |                  | 0.396            |                                     |
| L_8  | 0.569            |                  |                                     |
| L_9  | 0.478            | 0.374            |                                     |
| L_10 | 0.598            |                  |                                     |
| L_11 |                  | 0.712            |                                     |
| L_12 | 0.333            | -0.339           |                                     |
| L_13 |                  | 0.617            |                                     |
| L_14 |                  | 0.586            |                                     |
| L_15 |                  | 0.47             |                                     |
| L_16 |                  |                  | 0.468                               |
| L_17 |                  |                  | 0.549                               |
| L_18 |                  |                  | 0.615                               |
| L_19 |                  |                  | 0.556                               |
| L_20 |                  |                  | 0.386                               |

**Table L.3.** Factor Correlation Matrix

| Factor | 1     | 2     | 3     |
|--------|-------|-------|-------|
| 1      | 1.000 | -.157 | .430  |
| 2      | -.157 | 1.000 | -.193 |
| 3      | .430  | -.193 | 1.000 |

## Cluster analysis

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

Results showed three separate groups of respondents. A multivariate analysis of variance yielded a significant difference among the three groups (Wilks' Lambda=0.08,  $F_{48,596}=32.07$ ,  $p<.0001$ ). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ( $F_{2,321}=27.52$ ,  $p<.001$ ) and a significant interaction between group and subscale ( $F_{46,7383}= 43.09$ ,  $p<.001$ ), meaning that each group of respondents shows a specific profile.

1. **RISKY DRIVERS.** The first group can be identified as composed of risky drivers. They have a permissive attitude toward driving under the effect of alcohol and recreational drugs, and are not that much aware of the negative effects of alcohol upon driving. They also refer not to have a correct behaviour during driving. They are also quite tolerant toward violations of the traffic code and speeding and, more interestingly, they see reasons why the traffic code should be violated, as such violations are useful to keep traffic flowing smoothly. Furthermore, risky drivers have high scores on driving related rage, especially due to obstacles, and high scores on moral disengagement.
2. **OVERCONFIDENT DRIVERS.** People in the second group are characterized by being rather overconfident on their abilities as drivers. Interestingly, compared to people in the other two groups they are characterized by an internal Locus of Control rather than external, meaning that they consider accidents as essentially due to drivers' errors and mistakes. However, they are tolerant toward violations of the traffic rules, significantly less anxious than the other groups, but they show higher levels of rage, both violation- and obstacle-related. Interestingly enough, differently from risky drivers, people in this group do not consider violations of the traffic code as useful for keeping traffic flowing. Similarly to the risky drivers, however, they show high scores on moral disengagement.
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 external 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 slight (not significant) prevalence of males can be observed among the risky and overconfident drivers.

The average score per subscale (and standard error) for each group is shown in Table 1. Tables 2, 3, and 4 report the results of the post-hoc comparisons among the three groups. Table 5 shows the respondents' mean age as a function of gender and group. Figure 1 shows the profiles of the three groups of drivers on the subscales. The three groups do not differ in terms of their perception of risk of being involved in an accident, or on how much they are 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 error for each group on the subscales of the questionnaire

|   | SAFE DRIVERS |          |     | OVERCONFIDENT DRIVERS |          |     | RISKY DRIVERS |          |    |
|---|--------------|----------|-----|-----------------------|----------|-----|---------------|----------|----|
|   | Mean         | Std.Err. | N   | Mean                  | Std.Err. | N   | Mean          | Std.Err. | N  |
| Tolerance toward violations                 | -0.57        | 0.06     | 148 | 0.36                  | 0.06     | 146 | 0.43          | 0.13     | 30 |
| Intolerance toward drugs                    | 0.19         | 0.07     | 148 | 0.09                  | 0.07     | 146 | -0.78         | 0.15     | 30 |
| Negative attitude toward speeding           | 0.49         | 0.06     | 148 | -0.32                 | 0.06     | 146 | -0.57         | 0.14     | 30 |
| Intolerance toward alcohol                  | 0.34         | 0.05     | 148 | -0.06                 | 0.05     | 146 | -0.79         | 0.12     | 30 |
| Obstacle-related rage                       | -0.44        | 0.06     | 148 | 0.26                  | 0.06     | 146 | 0.59          | 0.14     | 30 |
| Violation-related rage                      | -0.01        | 0.06     | 148 | 0.10                  | 0.06     | 146 | 0.21          | 0.14     | 30 |
| Insult-related rage                         | 0.22         | 0.07     | 148 | -0.08                 | 0.08     | 146 | -0.42         | 0.17     | 30 |
| Internal Locus of Control                   | 0.10         | 0.07     | 148 | -0.23                 | 0.07     | 146 | 0.25          | 0.16     | 30 |
| External Locus of Control (rev)             | 0.32         | 0.07     | 148 | -0.13                 | 0.07     | 146 | -0.43         | 0.16     | 30 |
| Attention related Locus of Control          | 0.26         | 0.06     | 148 | -0.01                 | 0.06     | 146 | -0.56         | 0.14     | 30 |
| Anxiety                                     | -0.07        | 0.07     | 148 | 0.08                  | 0.08     | 146 | 0.26          | 0.17     | 30 |
| Altruism                                    | 0.29         | 0.07     | 148 | -0.04                 | 0.07     | 146 | -0.83         | 0.15     | 30 |
| Sensation Seeking                           | -0.38        | 0.07     | 148 | 0.23                  | 0.07     | 146 | 0.35          | 0.15     | 30 |
| Stability                                   | 0.01         | 0.07     | 148 | 0.02                  | 0.07     | 146 | 0.10          | 0.16     | 30 |
| Impulsivity                                 | -0.26        | 0.07     | 148 | 0.08                  | 0.07     | 146 | 0.44          | 0.15     | 30 |
| Slips/Lapses                                | -0.27        | 0.06     | 148 | -0.18                 | 0.06     | 146 | 1.61          | 0.13     | 30 |
| Violations                                  | -0.52        | 0.06     | 148 | 0.37                  | 0.06     | 146 | 0.82          | 0.13     | 30 |
| Complying with the traffic code             | 0.50         | 0.04     | 148 | 0.11                  | 0.04     | 146 | -2.15         | 0.09     | 30 |
| Permissive attitude toward alcohol          | -0.42        | 0.04     | 148 | -0.19                 | 0.04     | 146 | 2.17          | 0.09     | 30 |
| Preventing behaviors                        | -0.20        | 0.06     | 148 | 0.09                  | 0.06     | 146 | 0.69          | 0.14     | 30 |
| Alcohol positive effects                    | -0.39        | 0.06     | 148 | 0.03                  | 0.06     | 146 | 1.03          | 0.14     | 30 |
| Alcohol negative effects                    | 0.29         | 0.06     | 148 | 0.13                  | 0.06     | 146 | -0.70         | 0.14     | 30 |
| Underestimation of alcohol negative effects | -0.48        | 0.06     | 148 | 0.09                  | 0.06     | 146 | 1.09          | 0.13     | 30 |
| Moral disengagement                         | -0.73        | 0.06     | 148 | 0.56                  | 0.06     | 146 | 0.60          | 0.14     | 30 |

**Table 2.** Comparison between Safe and Overconfident drivers on each subscale.

|   | SAFE DRIVERS | OVERCONFIDENT DRIVERS | SIGNIFICANCE |
|---|--------------|-----------------------|--------------|
|   | N=148        | N=146                 |              |
| Tolerance toward violations                 | -0.57        | 0.36                  | p<.001       |
| Intolerance toward drugs                    | 0.19         | 0.09                  | ns           |
| Negative attitude toward speeding           | 0.49         | -0.32                 | p<.001       |
| Intolerance toward alcohol                  | 0.34         | -0.06                 | p<.001       |
| Obstacle-related rage                       | -0.44        | 0.26                  | p<.001       |
| Violation-related rage                      | -0.01        | 0.10                  | ns           |
| Insult-related rage                         | 0.22         | -0.08                 | ns           |
| Internal Locus of Control                   | 0.10         | -0.23                 | ns           |
| External Locus of Control (rev)             | 0.32         | -0.13                 | p<.001       |
| Attention related Locus of Control          | 0.26         | -0.01                 | ns           |
| Anxiety                                     | -0.07        | 0.08                  | ns           |
| Altruism                                    | 0.29         | -0.04                 | p<.001       |
| Sensation Seeking                           | -0.38        | 0.23                  | p<.001       |
| Stability                                   | 0.01         | 0.02                  | ns           |
| Impulsivity                                 | -0.26        | 0.08                  | p<.001       |
| Slips/Lapses                                | -0.27        | -0.18                 | ns           |
| Violations                                  | -0.52        | 0.37                  | p<.001       |
| Complying with the traffic code             | 0.50         | 0.11                  | p<.001       |
| Permissive attitude toward alcohol          | -0.42        | -0.19                 | p<.001       |
| Preventing behaviors                        | -0.20        | 0.09                  | ns           |
| Alcohol positive effects                    | -0.39        | 0.03                  | p<.001       |
| Alcohol negative effects                    | 0.29         | 0.13                  | ns           |
| Underestimation of alcohol negative effects | -0.48        | 0.09                  | p<.001       |
| Moral disengagement                         | -0.73        | 0.56                  | p<.001       |

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

|                                    | SAFE DRIVERS | RISKY DRIVERS | SIGNIFICANCE |
|------------------------------------|--------------|---------------|--------------|
|                                    | N=148        | N=30          |              |
| Tolerance toward violations        | -0.57        | 0.43          | p<.001       |
| Intolerance toward drugs           | 0.19         | -0.78         | p<.001       |
| Negative attitude toward speeding  | 0.49         | -0.57         | p<.001       |
| Intolerance toward alcohol         | 0.34         | -0.79         | p<.001       |
| Obstacle-related rage              | -0.44        | 0.59          | p<.001       |
| Violation-related rage             | -0.01        | 0.21          | ns           |
| Insult-related rage                | 0.22         | -0.42         | p<.001       |
| Internal Locus of Control          | 0.10         | 0.25          | ns           |
| External Locus of Control (rev)    | 0.32         | -0.43         | p<.001       |
| Attention related Locus of Control | 0.26         | -0.56         | p<.001       |
| Anxiety                            | -0.07        | 0.26          | ns           |

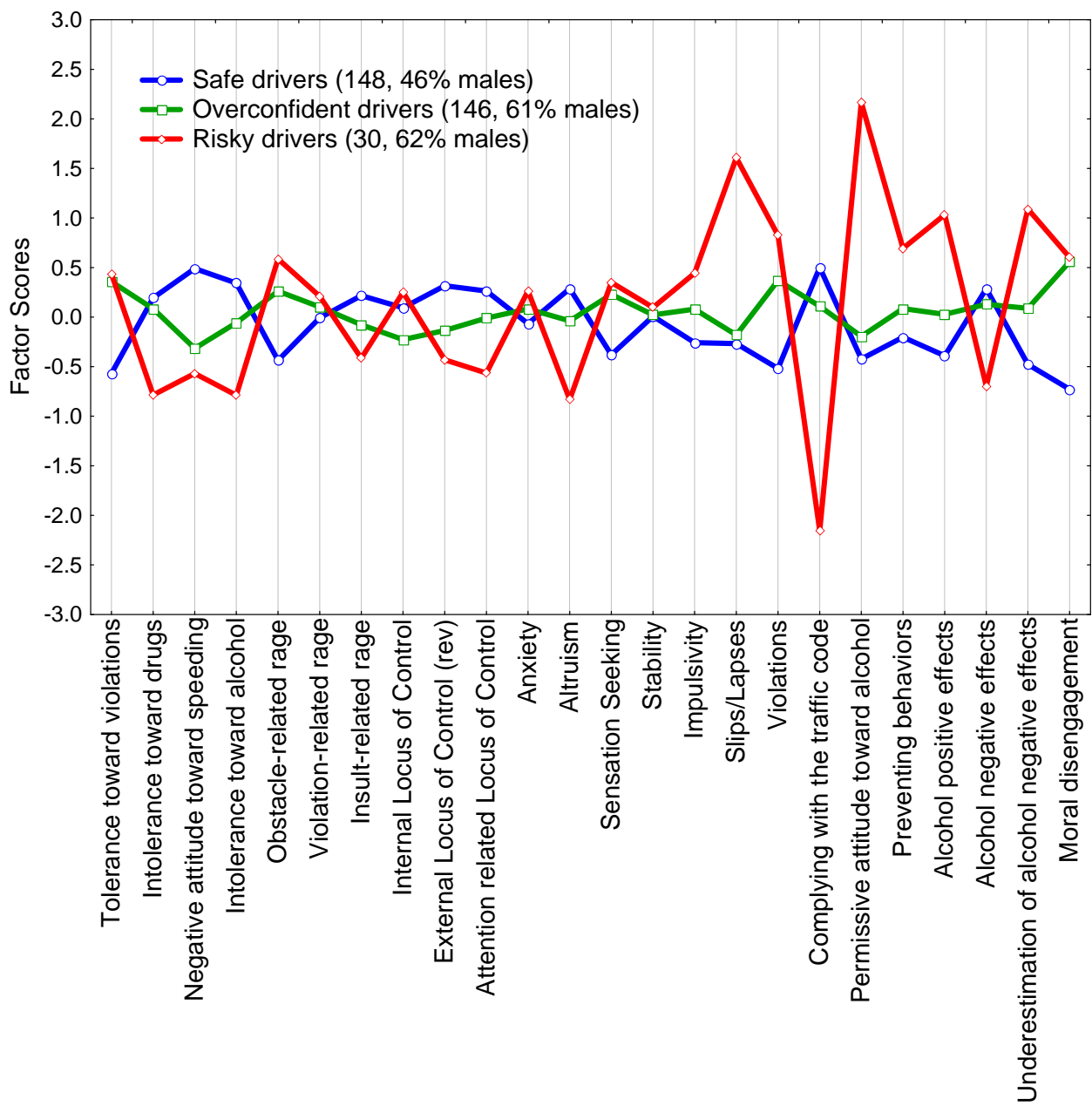
|   |       |       |        |
|---|-------|-------|--------|
| Altruism                                    | 0.29  | -0.83 | p<.001 |
| Sensation Seeking                           | -0.38 | 0.35  | p<.001 |
| Stability                                   | 0.01  | 0.10  | ns     |
| Impulsivity                                 | -0.26 | 0.44  | p<.001 |
| Slips/Lapses                                | -0.27 | 1.61  | p<.001 |
| Violations                                  | -0.52 | 0.82  | p<.001 |
| Complying with the traffic code             | 0.50  | -2.15 | p<.001 |
| Permissive attitude toward alcohol          | -0.42 | 2.17  | p<.001 |
| Preventing behaviors                        | -0.20 | 0.69  | p<.001 |
| Alcohol positive effects                    | -0.39 | 1.03  | p<.001 |
| Alcohol negative effects                    | 0.29  | -0.70 | p<.001 |
| Underestimation of alcohol negative effects | -0.48 | 1.09  | p<.001 |
| Moral disengagement                         | -0.73 | 0.60  | p<.001 |

**Table 4.** Comparison between Overconfident and Risky drivers on each subscale.

|   | OVERCONFIDENT DRIVERS | RISKY DRIVERS | SIGNIFICANCE |
|---|-----------------------|---------------|--------------|
|   | 146                   | 30            |              |
| Tolerance toward violations                 | 0.36                  | 0.43          | ns           |
| Intolerance toward drugs                    | 0.09                  | -0.78         | p<.001       |
| Negative attitude toward speeding           | -0.32                 | -0.57         | ns           |
| Intolerance toward alcohol                  | -0.06                 | -0.79         | p<.001       |
| Obstacle-related rage                       | 0.26                  | 0.59          | ns           |
| Violation-related rage                      | 0.10                  | 0.21          | ns           |
| Insult-related rage                         | -0.08                 | -0.42         | ns           |
| Internal Locus of Control                   | -0.23                 | 0.25          | ns           |
| External Locus of Control (rev)             | -0.13                 | -0.43         | ns           |
| Attention related Locus of Control          | -0.01                 | -0.56         | p<.001       |
| Anxiety                                     | 0.08                  | 0.26          | ns           |
| Altruism                                    | -0.04                 | -0.83         | p<.001       |
| Sensation Seeking                           | 0.23                  | 0.35          | ns           |
| Stability                                   | 0.02                  | 0.10          | ns           |
| Impulsivity                                 | 0.08                  | 0.44          | ns           |
| Slips/Lapses                                | -0.18                 | 1.61          | p<.001       |
| Violations                                  | 0.37                  | 0.82          | ns           |
| Complying with the traffic code             | 0.11                  | -2.15         | p<.001       |
| Permissive attitude toward alcohol          | -0.19                 | 2.17          | p<.001       |
| Preventing behaviors                        | 0.09                  | 0.69          | p<.001       |
| Alcohol positive effects                    | 0.03                  | 1.03          | p<.001       |
| Alcohol negative effects                    | 0.13                  | -0.70         | p<.001       |
| Underestimation of alcohol negative effects | 0.09                  | 1.09          | p<.001       |
| Moral disengagement                         | 0.36                  | 0.43          | ns           |

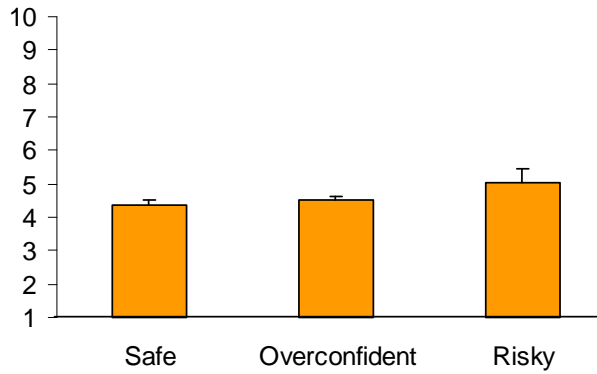
**Table 5.** Mean age (years) and standard errors as a function of gender and group.

|         |                       | Mean age | Standard error | N  |
|---------|-----------------------|----------|----------------|----|
| Males   | Safe drivers          | 18.99    | 0.12           | 67 |
|         | Overconfident drivers | 18.75    | 0.11           | 88 |
|         | Risky drivers         | 19.17    | 0.24           | 18 |
| Females | Safe drivers          | 18.94    | 0.12           | 79 |
|         | Overconfident drivers | 18.88    | 0.14           | 56 |
|         | Risky drivers         | 19.64    | 0.31           | 11 |

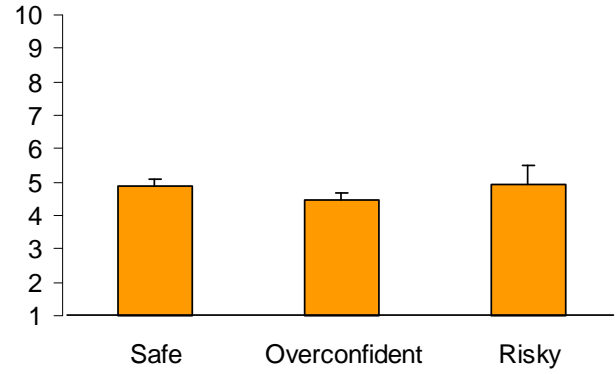


**Figure 1.** Average scores for each group on selected subscales of the questionnaire.

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

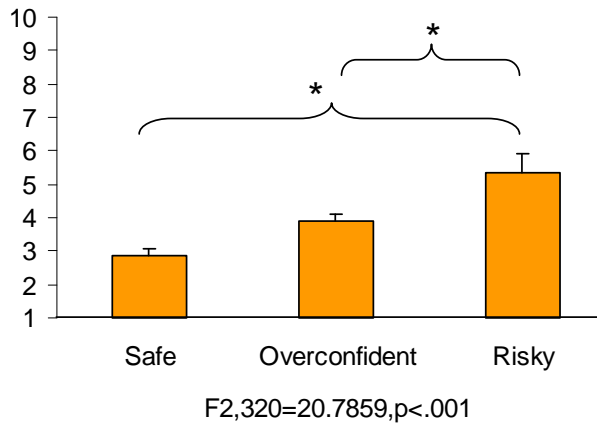


C.2 How much are you worried about this possibility (10=very worried)?

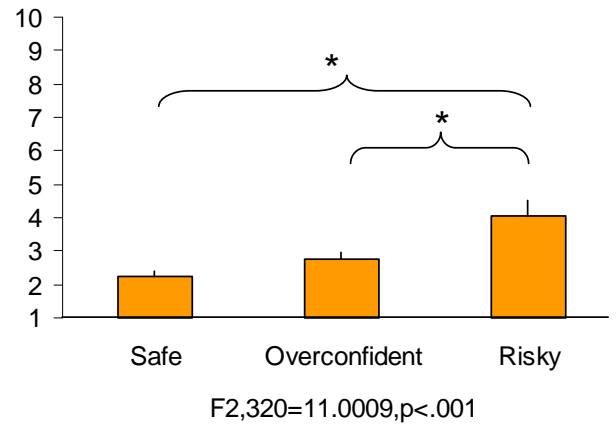


**Figure 2.** Average scores for each group on items concerning risk perception.

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

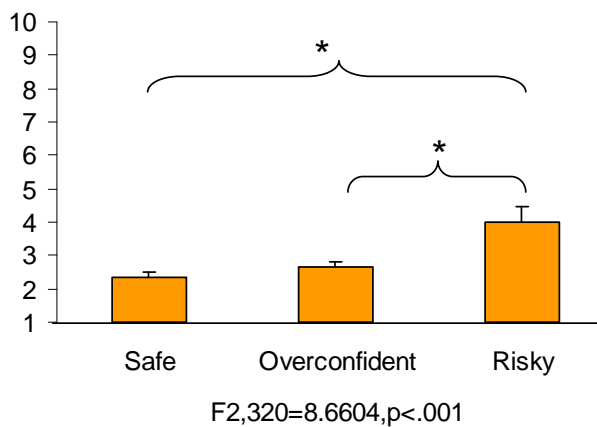


C.4 How much your friends would encourage your reckless driving (10=totally approve)?

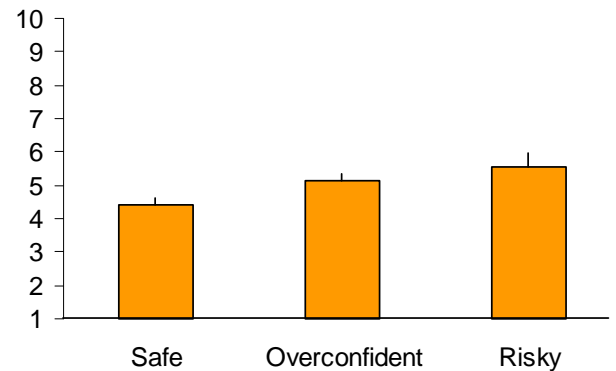


**Figure 3.** Average scores for each group on items concerning friends' attitude.

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.

## SCOOTER RIDERS (QUESTIONNAIRE SECTION 2)

### Sample description

A total of 188 people answered the Section 2 of the questionnaire. Males were 141 (75% of the total sample) and females were 47 (25% of the total sample). Their mean age was 18.2 years (standard deviation .89), ranging between 16 and 20 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 Slovenian scooter male drivers refer to use scooters or motorbikes relatively often (about 40% 5 or more times a week), whereas female drivers use a scooter on a very sparse base (about 45% 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 70% of them do not drive after 11:00 pm at all). Slovenian scooter drivers also are not normally used to go on as passengers. Male drivers also refer to have received a traffic fine more often than female drivers, mostly for driving without the helmet and speeding. Interestingly, scooter drivers refer not to have been involved in accidents both as drivers or passengers very often, and usually they refer to have had only material damages.

More than half the male drivers 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), whereas female drivers are far less likely to ride a scooter after having drunk alcohol. However, 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 number of young drivers are still unaware of the negative effects of driving under the effects of alcohol.

Summarizing, Slovenian 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   | 4<br>(3.03%)                                     | 31<br>(23.48%) | 34<br>(25.76%) | 26<br>(19.7%)  | 27<br>(20.45%)* | 10<br>(7.58%)       |
| Females | 7<br>(15.91%)*                                   | 12<br>(27.27%) | 13<br>(29.55%) | 6<br>(13.64%)  | 3<br>(6.82%)    | 3<br>(6.82%)        |
| Total   | 11<br>(6.25%)                                    | 43<br>(24.43%) | 47<br>(26.7%)  | 32<br>(18.18%) | 30<br>(17.05%)  | 13<br>(7.39%)       |

**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  | 22<br>(16.67%)  | 32<br>(24.24%) | 29<br>(21.97%) | 29<br>(21.97%) | 20<br>(15.15%)   |
| Females  | 15<br>(34.88%)* | 10<br>(23.26%) | 11<br>(25.58%) | 4<br>(9.3%)    | 3<br>(6.98%)     |
| Total  | 37<br>(21.14%)  | 42<br>(24.%)   | 40<br>(22.86%) | 33<br>(18.86%) | 23<br>(13.14%)   |

**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   | 41<br>(31.3%)   | 51<br>(38.93%)* | 18<br>(13.74%) | 21<br>(16.03%)    |
| Females   | 31<br>(70.45%)* | 7<br>(15.91%)   | 4<br>(9.09%)   | 2<br>(4.55%)      |
| Total   | 72<br>(41.14%)  | 58<br>(33.14%)  | 22<br>(12.57%) | 23<br>(13.14%)    |

**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   | 89<br>(67.42%)  | 26<br>(19.7%)  | 6<br>(4.55%) | 3<br>(2.27%) | 1<br>(.76%) | 7<br>(5.3%)          |
| Females   | 28<br>(63.64%)  | 11<br>(25.%)   | 3<br>(6.82%) | 1<br>(2.27%) | 0           | 1<br>(2.27%)         |
| Total   | 117<br>(66.48%) | 37<br>(21.02%) | 9<br>(5.11%) | 4<br>(2.27%) | 1<br>(.57%) | 8<br>(4.55%)         |

**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   | 106<br>(80.3%)  | 18<br>(13.64%)    | 4<br>(3.03%)         | 4<br>(3.03%)                 |
| Females   | 41<br>(93.18%)* | 2<br>(4.55%)      | 0                    | 1<br>(2.27%)                 |
| Total   | 147<br>(83.52%) | 20<br>(11.36%)    | 4<br>(2.27%)         | 5<br>(2.84%)                 |

**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                           | 25<br>(19.08%)* | 106<br>(80.92%) |
| Females                         | 1<br>(2.13%)    | 46<br>(97.87%)* |
| Total                           | 26<br>(14.61%)  | 152<br>(85.39%) |

**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<br>(100.%) | 1<br>(100.%) | 4<br>(100.%)  |
| Running a red light        | 4<br>(100.%) | 1<br>(100.%) | 5<br>(100.%)  |
| No parking                 | 4<br>(100.%) | 0            | 4<br>(100.%)  |
| Passenger                  | 0            | 0            | 0             |
| Drunk driving              | 4<br>(100.%) | 1<br>(100.%) | 5<br>(100.%)  |
| Driving without the helmet | 9<br>(100.%) | 1<br>(100.%) | 10<br>(100.%) |
| Speeding                   | 8<br>(100.%) | 0            | 8<br>(100.%)  |

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

| G1_21 Have you ever been involved in an accident as a driver? |                 |                 |                       |
|---|-----------------|-----------------|-----------------------|
|   | Yes             | No              | No but I was close to |
| Males   | 16<br>(12.31%)* | 85<br>(65.38%)  | 29<br>(22.31%)        |
| Females   | 1<br>(2.13%)    | 41<br>(87.23%)* | 5<br>(10.64%)         |
| Total   | 17<br>(9.6%)    | 126<br>(71.19%) | 34<br>(19.21%)        |

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

| G1_23 What were the consequences? |                  |                   |          |
|-----------------------------------|------------------|-------------------|----------|
|                                   | Material damages | Personal injuries | Both     |
| Males                             |                  | 6                 | 9        |
|                                   | 0                | (17.14%)          | (25.71%) |
| Females                           |                  | 0                 | 1        |
|                                   | 0                | 0                 | (20.%)   |
| Total                             |                  | 6                 | 10       |
|                                   | 0                | (15.%)            | (25.%)   |

**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  | 28       | 78       | 21                    |
|  | (22.05%) | (61.42%) | (16.54%)              |
| Females  | 11       | 28       | 7                     |
|  | (23.91%) | (60.87%) | (15.22%)              |
| Total  | 39       | 106      | 28                    |
|  | (22.54%) | (61.27%) | (16.18%)              |

**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                             | 19               | 4                 | 5        |
|                                   | (67.86%)         | (14.29%)          | (17.86%) |
| Females                           | 8                | 1                 | 2        |
|                                   | (72.73%)         | (9.09%)           | (18.18%) |
| Total                             | 27               | 5                 | 7        |
|                                   | (69.23%)         | (12.82%)          | (17.95%) |

**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   | 66       | 59        |
|   | (52.8%)* | (47.2%)   |
| Females   | 14       | 29        |
|   | (32.56%) | (67.44%)* |
| Total   | 80       | 88        |
|   | (47.62%) | (52.38%)  |

**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            | 14<br>(100.%) | 3<br>(100.%) | 17<br>(100.%) |
| You could hardly keep your head on straight | 2<br>(100.%)  | 3<br>(100.%) | 5<br>(100.%)  |
| You had muscle cramps                       | 3<br>(100.%)  | 1<br>(100.%) | 4<br>(100.%)  |
| You could hardly keep your eyes open        | 8<br>(100.%)  | 4<br>(100.%) | 12<br>(100.%) |
| You got stomach cramps                      | 5<br>(100.%)  | 1<br>(100.%) | 6<br>(100.%)  |
| You could not focus on the road             | 11<br>(100.%) | 3<br>(100.%) | 14<br>(100.%) |
| Someone who was with you made you notice it | 2<br>(100.%)  | 1<br>(100.%) | 3<br>(100.%)  |

## Specific dimensions of the questionnaire scales

### Scale A1, Attitude toward road safety issues.

Data from the Scale A1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.82, and factorability of the correlation matrix, Bartlett's test of sphericity  $\chi^2(153)=1082.64, p<.000$ , 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 49.86% 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 20.96% of the common variance) refers to a negative attitude toward traffic rules. Items such as "*To keep traffic smooth-flowing you should ignore many of the road traffic rules*" load on this factor.

The second factor (labelled "Negative attitude towards alcohol/drugs", accounting for by the 15.91% of the common variance) refers to the attitude toward driving under the effects of substances. Items such as "*I would never drive after drinking alcoholic drinks*" and "*I would never drive under the influence of narcotic drugs*" load on this factor.

The third factor (labelled "Positive attitude toward speeding", accounting for by the 19.49% of the common variance) refers to a negative attitude toward going by car with a fast driver. Items such as "*It is ok to go by car with a fast driver if it is the only way to go back home at night*" load on this factor. This factor is positively correlated to the first one (Table A.3).

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

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 5.221               | 29.008        | 29.008       | 3.773                             |
| 2      | 2.575               | 14.307        | 43.315       | 2.864                             |
| 3      | 1.179               | 6.548         | 49.863       | 3.508                             |
| 4      | 1.07                | 5.943         | 55.806       |                                   |
| 5      | 1.006               | 5.591         | 61.397       |                                   |
| 6      | 0.931               | 5.174         | 66.571       |                                   |
| 7      | 0.808               | 4.487         | 71.058       |                                   |
| 8      | 0.726               | 4.031         | 75.089       |                                   |
| 9      | 0.692               | 3.844         | 78.932       |                                   |
| 10     | 0.66                | 3.666         | 82.598       |                                   |
| 11     | 0.62                | 3.445         | 86.043       |                                   |
| 12     | 0.476               | 2.645         | 88.688       |                                   |
| 13     | 0.471               | 2.619         | 91.307       |                                   |
| 14     | 0.446               | 2.476         | 93.783       |                                   |

|    |       |       |        |
|----|-------|-------|--------|
| 15 | 0.385 | 2.141 | 95.924 |
| 16 | 0.292 | 1.624 | 97.548 |
| 17 | 0.249 | 1.382 | 98.93  |
| 18 | 0.193 | 1.07  | 100    |

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

|       | Factor                                   |                                |                                   |
|-------|--|--------------------------------|-----------------------------------|
|       | Tolerance to violations to traffic rules | Negative attitude toward drugs | Positive attitude toward speeding |
| A1_1  | 0.363                                    |                                | 0.4                               |
| A1_2  | 0.51                                     |                                |                                   |
| A1_3  |  |                                |                                   |
| A1_4  | 0.658                                    |                                |                                   |
| A1_5  | 0.35                                     |                                |                                   |
| A1_6  | 0.273                                    |                                |                                   |
| A1_7  | 0.409                                    |                                |                                   |
| A1_8  | 0.619                                    |                                |                                   |
| A1_9  | 0.675                                    |                                |                                   |
| A1_10 | 0.482                                    |                                |                                   |
| A1_11 | -0.256                                   |                                |                                   |
| A1_12 |  |                                | 0.751                             |
| A1_13 |  |                                | 0.856                             |
| A1_14 |  | 0.496                          |                                   |
| A1_15 |  | 0.669                          |                                   |
| A1_16 |  | 0.571                          |                                   |
| A1_17 |  | 0.845                          |                                   |
| A1_18 |  | 0.836                          |                                   |

**Table A.3** Factor Correlation Matrix

| Factor | 1     | 2     | 3     |
|--------|-------|-------|-------|
| 1      | 1.000 | -.150 | .578  |
| 2      | -.150 | 1.000 | -.320 |
| 3      | .578  | -.320 | 1.000 |

**Scale B1, Locus of Control.**

Data from the Scale B1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.69, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(435)=1400.40, p<.000$ , 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 40.14% of the total variance. Table B.1 shows the eigenvalues and the variance accounted for by each factor. Table B.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Internal Locus of Control”, accounting for by the 9.7% of the common variance) refers to an internal Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers. Items such as “*A careful driver can prevent any accident*” load on this factor.

The second factor (labelled “Internal LOC, specific causes”, accounting for by the 9.1% of the common variance, reversed) also refers to an Internal Locus of Control, but with the identification of specific factors as not involved in car accidents. Items such as “*Most accidents occur due to bad road conditions, lack of adequate signals, etc.*” load on this factor.

The third factor (labelled “Attention related LOC”, accounting for by the 8.1% 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.

The fourth factor (labelled “External Locus of Control, reversed”, accounting for by the 7.04% 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 B1)

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 4.218               | 14.059        | 14.059       | 2.901                             |
| 2      | 3.286               | 10.954        | 25.012       | 2.739                             |
| 3      | 2.638               | 8.794         | 33.806       | 2.424                             |
| 4      | 1.902               | 6.339         | 40.145       | 2.112                             |
| 5      | 1.393               | 4.643         | 44.788       |                                   |
| 6      | 1.306               | 4.353         | 49.141       |                                   |
| 7      | 1.196               | 3.986         | 53.127       |                                   |
| 8      | 1.148               | 3.827         | 56.954       |                                   |
| 9      | 1.071               | 3.57          | 60.524       |                                   |
| 10     | 1.001               | 3.336         | 63.86        |                                   |
| 11     | 0.982               | 3.274         | 67.134       |                                   |

|    |       |       |         |
|----|-------|-------|---------|
| 12 | 0.88  | 2.934 | 70.068  |
| 13 | 0.877 | 2.925 | 72.993  |
| 14 | 0.818 | 2.727 | 75.72   |
| 15 | 0.757 | 2.525 | 78.245  |
| 16 | 0.694 | 2.313 | 80.558  |
| 17 | 0.654 | 2.181 | 82.74   |
| 18 | 0.613 | 2.043 | 84.782  |
| 19 | 0.575 | 1.917 | 86.699  |
| 20 | 0.536 | 1.785 | 88.484  |
| 21 | 0.495 | 1.651 | 90.135  |
| 22 | 0.446 | 1.487 | 91.622  |
| 23 | 0.43  | 1.434 | 93.057  |
| 24 | 0.386 | 1.288 | 94.345  |
| 25 | 0.348 | 1.161 | 95.506  |
| 26 | 0.333 | 1.109 | 96.615  |
| 27 | 0.295 | 0.985 | 97.599  |
| 28 | 0.281 | 0.936 | 98.535  |
| 29 | 0.231 | 0.769 | 99.304  |
| 30 | 0.209 | 0.696 | 100.000 |

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

|       | Factor       |                              |                       |              |
|-------|--------------|------------------------------|-----------------------|--------------|
|       | Internal LOC | Internal LOC Specific causes | Attention related LOC | External LOC |
| B1_1  |              |                              |                       | 0.503        |
| B1_2  |              |                              |                       | 0.441        |
| B1_3  | 0.338        |                              |                       |              |
| B1_4  |              | -0.318                       |                       |              |
| B1_5  |              |                              |                       | 0.671        |
| B1_6  | 0.561        |                              |                       |              |
| B1_7  | 0.655        |                              |                       |              |
| B1_8  | 0.627        |                              |                       |              |
| B1_9  | 0.504        |                              |                       |              |
| B1_10 | 0.52         |                              |                       |              |
| B1_11 |              | -0.302                       |                       |              |
| B1_12 |              | -0.363                       |                       |              |
| B1_13 |              | -0.725                       |                       |              |
| B1_14 |              | -0.818                       |                       |              |

|       |        |        |       |       |
|-------|--------|--------|-------|-------|
| B1_15 |        | -0.793 |       |       |
| B1_16 |        |        | 0.482 |       |
| B1_17 | 0.381  |        |       |       |
| B1_18 |        |        | 0.576 |       |
| B1_19 |        |        | 0.563 |       |
| B1_20 |        |        |       | 0.411 |
| B1_21 |        |        |       |       |
| B1_22 |        |        | 0.428 | -0.25 |
| B1_23 |        | -0.297 |       |       |
| B1_24 |        |        |       | 0.394 |
| B1_25 | -0.294 |        |       |       |
| B1_26 |        |        | 0.433 |       |
| B1_27 |        |        | 0.685 |       |
| B1_28 | 0.358  |        |       | 0.433 |
| B1_29 |        | 0.298  |       |       |
| B1_30 | 0.482  |        |       | 0.321 |

**Table B.3.** Factor Correlation Matrix

| Factor | 1     | 2     | 3     | 4     |
|--------|-------|-------|-------|-------|
| 1      | 1.000 | -.004 | .155  | .132  |
| 2      | -.004 | 1.000 | -.111 | -.221 |
| 3      | .155  | -.111 | 1.000 | -.008 |
| 4      | .132  | -.221 | -.008 | 1.000 |

**Scale D1, Rage during driving.**

Data from the Scale D1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.82, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(91)=701.02$ ,  $p<.000$ , 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 51.11% 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 23.97% 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 “Insult-related rage”, accounting for by the 16.12% of the common variance) refers to refers the rage reactions due insults from other drivers. Items such as “*Somebody sounds the horn for your way of driving*” load on this factor.

The third factor (labelled “Violation-related rage”, accounting for by the 17.86% 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 three factors are however positively correlated (Table D.3).

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

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 4.607               | 32.908        | 32.908       | 3.356                             |
| 2      | 1.357               | 9.693         | 42.601       | 2.257                             |
| 3      | 1.189               | 8.49          | 51.091       | 2.5                               |
| 4      | 1.082               | 7.725         | 58.816       |                                   |
| 5      | 1.006               | 7.189         | 66.005       |                                   |
| 6      | 0.814               | 5.812         | 71.817       |                                   |
| 7      | 0.699               | 4.995         | 76.812       |                                   |
| 8      | 0.632               | 4.515         | 81.327       |                                   |
| 9      | 0.614               | 4.384         | 85.711       |                                   |
| 10     | 0.507               | 3.622         | 89.333       |                                   |
| 11     | 0.455               | 3.252         | 92.584       |                                   |
| 12     | 0.386               | 2.754         | 95.338       |                                   |
| 13     | 0.356               | 2.544         | 97.882       |                                   |
| 14     | 0.297               | 2.118         | 100          |                                   |

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

|      | Factor                |                     |                        |
|------|-----------------------|---------------------|------------------------|
|      | Obstacle-related rage | Insult-related rage | Violation-related Rage |
| D_1  |                       |                     | 0.466                  |
| D_2  | 0.428                 |                     |                        |
| D_3  |                       |                     | 0.586                  |
| D_4  |                       |                     | 0.395                  |
| D_5  | 0.291                 |                     |                        |
| D_6  |                       |                     | 0.463                  |
| D_7  | 0.834                 |                     |                        |
| D_8  | 0.568                 |                     |                        |
| D_9  |                       | 0.676               |                        |
| D_10 |                       | 0.849               |                        |
| D_11 | 0.31                  |                     | 0.358                  |
| D_12 | 0.633                 |                     |                        |
| D_13 | 0.361                 |                     | 0.399                  |
| D_14 | 0.564                 |                     |                        |

**Table D3.** Factor Correlation Matrix

| Factor | 1     | 2     | 3     |
|--------|-------|-------|-------|
| 1      | 1.000 | .381  | .441  |
| 2      | .381  | 1.000 | .400  |
| 3      | .441  | .400  | 1.000 |

**Scale F1, Personality.**

Data from the Scale F1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.70, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(666)=1807.33, p<.000$ , 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 41.24% 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 “No impulsivity”, accounting for by the 10.36% of the common variance) refers to Impulsivity. Items such as *“I’m easily distracted”* negatively load on this factor.

The second factor (labelled “Altruism”, accounting for by the 7.82% of the common variance) refers Altruism. Items such as *“I think I’m generous with who is in trouble”* load on this factor.

The third factor (labelled “Sensation seeking”, accounting for by the 5.25% of the common variance) refers to the Sensation-seeking personality trait. Items such as *“I often wish exciting things”* load on this factor.

The fourth factor (labelled “Calmness”, accounting for by the 8.59% 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 fifth factor (labelled “Egocentrism”, accounting for by the 9.06% of the common variance) refers to Egocentrism. Items such as *“Some people think I’m egoist and egocentric”* load on this factor.

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

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 5.671               | 15.328        | 15.328       | 3.524                             |
| 2      | 3.093               | 8.36          | 23.688       | 2.658                             |
| 3      | 2.521               | 6.813         | 30.5         | 1.786                             |
| 4      | 2.17                | 5.864         | 36.364       | 2.92                              |
| 5      | 1.804               | 4.877         | 41.241       | 3.079                             |
| 6      | 1.505               | 4.067         | 45.308       |                                   |
| 7      | 1.382               | 3.734         | 49.042       |                                   |
| 8      | 1.334               | 3.606         | 52.649       |                                   |
| 9      | 1.184               | 3.2           | 55.849       |                                   |
| 10     | 1.123               | 3.036         | 58.885       |                                   |
| 11     | 1.072               | 2.896         | 61.781       |                                   |
| 12     | 1.039               | 2.809         | 64.59        |                                   |
| 13     | 0.943               | 2.55          | 67.14        |                                   |
| 14     | 0.895               | 2.42          | 69.56        |                                   |

|    |       |       |        |
|----|-------|-------|--------|
| 15 | 0.85  | 2.296 | 71.856 |
| 16 | 0.821 | 2.218 | 74.075 |
| 17 | 0.792 | 2.141 | 76.216 |
| 18 | 0.732 | 1.977 | 78.193 |
| 19 | 0.711 | 1.922 | 80.115 |
| 20 | 0.675 | 1.823 | 81.938 |
| 21 | 0.614 | 1.659 | 83.597 |
| 22 | 0.598 | 1.616 | 85.213 |
| 23 | 0.552 | 1.493 | 86.706 |
| 24 | 0.533 | 1.44  | 88.146 |
| 25 | 0.512 | 1.384 | 89.53  |
| 26 | 0.497 | 1.343 | 90.873 |
| 27 | 0.435 | 1.174 | 92.047 |
| 28 | 0.376 | 1.016 | 93.064 |
| 29 | 0.358 | 0.966 | 94.030 |
| 30 | 0.347 | 0.938 | 94.968 |
| 31 | 0.338 | 0.913 | 95.881 |
| 32 | 0.316 | 0.854 | 96.735 |
| 33 | 0.291 | 0.786 | 97.521 |
| 34 | 0.28  | 0.756 | 98.277 |
| 35 | 0.237 | 0.64  | 98.916 |
| 36 | 0.217 | 0.587 | 99.504 |
| 37 | 0.184 | 0.496 | 100    |

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

|      | Factor         |          |                   |           |             |
|------|----------------|----------|-------------------|-----------|-------------|
|      | No impulsivity | Altruism | Sensation Seeking | Stability | Egocentrism |
| F_1  |                |          |                   | 0.415     |             |
| F_2  |                |          |                   | -0.337    | 0.412       |
| F_3  |                |          |                   |           | 0.676       |
| F_4  |                |          | 0.481             |           |             |
| F_5  | -0.303         | 0.3      | -0.272            |           |             |
| F_6  |                |          |                   | 0.69      |             |
| F_7  |                | 0.49     |                   |           |             |
| F_8  |                |          |                   |           |             |
| F_9  |                |          |                   | 0.251     |             |
| F_10 |                |          |                   | -0.336    | 0.291       |

|      |        |       |       |        |       |
|------|--------|-------|-------|--------|-------|
| F_11 |        |       |       |        | 0.48  |
| F_12 |        |       | 0.564 |        | 0.341 |
| F_13 | -0.309 |       |       | -0.353 |       |
| F_14 |        |       |       | 0.604  |       |
| F_15 |        | 0.561 |       |        |       |
| F_16 |        |       |       |        |       |
| F_17 |        |       |       | 0.309  |       |
| F_18 |        |       |       |        | 0.574 |
| F_19 | -0.259 |       |       |        | 0.419 |
| F_20 |        |       | 0.28  |        |       |
| F_21 |        | 0.401 |       |        |       |
| F_22 |        |       |       | 0.524  |       |
| F_23 |        | 0.497 |       |        |       |
| F_24 |        |       | 0.45  |        |       |
| F_25 | 0.257  |       | 0.291 |        |       |
| F_26 |        |       |       | -0.296 |       |
| F_27 |        | 0.639 |       |        |       |
| F_28 |        |       | 0.455 |        |       |
| F_29 | -0.413 |       |       |        | 0.351 |
| F_30 | -0.437 |       |       |        | 0.335 |
| F_31 | 0.268  | 0.71  |       |        |       |
| F_32 |        | 0.318 |       |        |       |
| F_33 | 0.546  |       |       |        |       |
| F_34 | -0.45  |       |       |        |       |
| F_35 | 0.729  |       |       |        |       |
| F_36 | 0.615  |       |       |        |       |
| F_37 | -0.474 |       |       |        |       |

**Table F.3** Factor Correlation Matrix

| Factor | 1     | 2     | 3     | 4     | 5     |
|--------|-------|-------|-------|-------|-------|
| 1      | 1.000 | .034  | .124  | .273  | -.236 |
| 2      | .034  | 1.000 | .105  | .016  | -.029 |
| 3      | .124  | .105  | 1.000 | .077  | .041  |
| 4      | .273  | .016  | .077  | 1.000 | -.225 |
| 5      | -.236 | -.029 | .041  | -.225 | 1.000 |

**Scale I1, Driving Behaviour Questionnaire.**

Data from the Scale I1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.86, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(253)=2238.68, p<.000$ , 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 62.69% 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 15.96% of the common variance) refers to errors due to lapses and slips. Items such as “*To be distracted by what happens around you while driving*” load on this factor.

The second factor (labelled “Slowing”, accounting for by the 13.57% of the common variance) refers to reducing speed when appropriate. Items such as “*To slow down near a sign of danger*” load on this factor.

The third factor (labelled “Comply with the traffic code”, accounting for by the 23.20% of the common variance) refers to complying with the traffic code. Items such as “*To exceed the speed limit by over 10 Km/h*” negatively load on this factor. This factor correlates negatively with the first factor.

The fourth factor (labelled “Safe driving”, accounting for by the 21.29% of the common variance) refers to safety related behaviours. Items such as “*To drive long distances without wearing the helmet*” negatively load on this factor. This factor correlates negatively with the first factor.

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

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 7.942               | 34.53         | 34.53        | 3.67                              |
| 2      | 2.721               | 11.831        | 46.36        | 3.12                              |
| 3      | 2.243               | 9.751         | 56.111       | 5.337                             |
| 4      | 1.513               | 6.58          | 62.691       | 4.897                             |
| 5      | 1.08                | 4.698         | 67.389       |                                   |
| 6      | 0.898               | 3.902         | 71.291       |                                   |
| 7      | 0.811               | 3.527         | 74.818       |                                   |
| 8      | 0.62                | 2.694         | 77.512       |                                   |
| 9      | 0.584               | 2.54          | 80.052       |                                   |
| 10     | 0.573               | 2.492         | 82.545       |                                   |
| 11     | 0.519               | 2.259         | 84.803       |                                   |
| 12     | 0.48                | 2.088         | 86.891       |                                   |
| 13     | 0.439               | 1.908         | 88.799       |                                   |

|    |       |       |        |
|----|-------|-------|--------|
| 14 | 0.409 | 1.778 | 90.577 |
| 15 | 0.345 | 1.501 | 92.078 |
| 16 | 0.322 | 1.4   | 93.478 |
| 17 | 0.284 | 1.234 | 94.712 |
| 18 | 0.256 | 1.113 | 95.825 |
| 19 | 0.239 | 1.041 | 96.866 |
| 20 | 0.236 | 1.027 | 97.893 |
| 21 | 0.205 | 0.891 | 98.783 |
| 22 | 0.186 | 0.808 | 99.591 |
| 23 | 0.094 | 0.409 | 100    |

**Table I.2** Factor loadings (Scale I1)

|       | Factor       |         |                                 |              |
|-------|--------------|---------|---------------------------------|--------------|
|       | Slips/Lapses | Slowing | Complying with the traffic code | Safe driving |
| I1_1  |              |         | -0.805                          |              |
| I1_2  |              |         | -0.7                            |              |
| I1_3  |              |         | -0.791                          |              |
| I1_4  |              |         | -0.796                          |              |
| I1_5  |              |         | -0.691                          |              |
| I1_6  | 0.539        |         | -0.33                           |              |
| I1_7  | 0.647        |         |                                 |              |
| I1_8  | 0.438        |         |                                 | -0.376       |
| I1_9  | 0.555        |         | -0.295                          |              |
| I1_10 | 0.369        |         |                                 | -0.31        |
| I1_11 |              |         |                                 | -0.493       |
| I1_12 | 0.375        |         |                                 | -0.5         |
| I1_13 | 0.25         | 0.41    |                                 |              |
| I1_14 |              | 0.797   |                                 |              |
| I1_15 |              | 0.705   |                                 |              |
| I1_16 |              | 0.649   |                                 |              |
| I1_17 |              |         |                                 | -0.837       |
| I1_18 |              |         |                                 | -0.884       |
| I1_19 |              |         |                                 | -0.622       |
| I1_20 |              | 0.541   |                                 |              |
| I1_21 |              | 0.549   |                                 |              |
| I1_22 |              | 0.269   | 0.552                           |              |
| I1_23 |              |         |                                 | -0.575       |

**Table I.3** Factor Correlation Matrix

| Factor | 1     | 2     | 3     | 4     |
|--------|-------|-------|-------|-------|
| 1      | 1.000 | -.122 | -.252 | -.347 |
| 2      | -.122 | 1.000 | .244  | .130  |
| 3      | -.252 | .244  | 1.000 | .341  |
| 4      | -.347 | .130  | .341  | 1.000 |

### Scale J1, Imagined driving behaviour.

Data from the Scale J1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.82, and factorability of the correlation matrix, Bartlett's test of sphericity  $\chi^2(231)=1820.63$ ,  $p<.000$ , 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 65.65% 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 19.3% 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 14.15% of the common variance) refers to cautious driving. Items such as "You slow down when approaching a danger sign" load on this factor.

The third factor (labelled "Speed", accounting for by the 19.20% of the common variance) refers to speeding. Items such as "You exceed the speed limits by 10 Km/h" load on this factor.

The fourth factor (labelled "Alcohol/Drugs free", accounting for by the 14.45% of the common variance) refers to alcohol and drugs free related behaviours. Items such as "You drive after having had a glass of beer/wine" negatively load on this factor. This factor is negatively correlated with the "Risky driving" factor (Table J.3).

The fifth factor (labelled "Pedestrian-related safe driving", accounting for by the 10.14% 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. This factor is positively correlated with the "safe driving" factor (Table J.3).

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

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 6.662               | 30.282        | 30.282       | 4.246                             |
| 2      | 2.796               | 12.709        | 42.991       | 3.114                             |
| 3      | 2.451               | 11.142        | 54.134       | 4.223                             |
| 4      | 1.466               | 6.662         | 60.795       | 3.399                             |
| 5      | 1.067               | 4.852         | 65.647       | 2.231                             |
| 6      | 1.057               | 4.803         | 70.45        |                                   |
| 7      | 0.773               | 3.516         | 73.966       |                                   |
| 8      | 0.686               | 3.12          | 77.086       |                                   |
| 9      | 0.579               | 2.634         | 79.72        |                                   |
| 10     | 0.547               | 2.487         | 82.207       |                                   |
| 11     | 0.523               | 2.379         | 84.585       |                                   |
| 12     | 0.502               | 2.284         | 86.869       |                                   |

|    |       |       |        |
|----|-------|-------|--------|
| 13 | 0.469 | 2.132 | 89.001 |
| 14 | 0.443 | 2.014 | 91.015 |
| 15 | 0.419 | 1.904 | 92.919 |
| 16 | 0.332 | 1.51  | 94.429 |
| 17 | 0.287 | 1.304 | 95.733 |
| 18 | 0.231 | 1.049 | 96.781 |
| 19 | 0.227 | 1.032 | 97.813 |
| 20 | 0.198 | 0.902 | 98.715 |
| 21 | 0.151 | 0.685 | 99.4   |
| 22 | 0.132 | 0.6   | 100    |

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

|      | Factor        |              |          |                    |                                 |
|------|---------------|--------------|----------|--------------------|---------------------------------|
|      | Risky driving | Safe driving | Speeding | Alcohol/drugs free | Pedestrian-related safe driving |
| J_1  |               |              | 0.795    |                    |                                 |
| J_2  |               |              | 0.713    |                    |                                 |
| J_3  |               |              | 0.711    |                    |                                 |
| J_4  |               |              | 0.819    |                    |                                 |
| J_5  |               |              | 0.697    |                    |                                 |
| J_6  | 0.633         |              |          |                    |                                 |
| J_7  | 0.801         |              |          |                    |                                 |
| J_8  | 0.82          |              |          |                    |                                 |
| J_9  | 0.701         |              |          |                    |                                 |
| J_10 | 0.31          |              |          | -0.295             |                                 |
| J_11 | 0.427         |              |          | -0.26              |                                 |
| J_12 | 0.333         |              |          | -0.268             |                                 |
| J_13 |               | 0.318        |          |                    |                                 |
| J_14 |               | 0.553        |          |                    | 0.333                           |
| J_15 |               | 0.8          |          |                    |                                 |
| J_16 |               | 0.804        |          |                    |                                 |
| J_17 |               |              |          | -0.817             |                                 |
| J_18 |               |              |          | -1.034             |                                 |
| J_19 |               |              |          |                    | 0.801                           |
| J_20 |               |              |          |                    | 0.58                            |
| J_21 |               | 0.317        | -0.449   |                    | 0.267                           |
| J_22 |               |              |          | -0.361             |                                 |

**Table J.3** Factor Correlation Matrix

| Factor | 1     | 2     | 3     | 4     | 5     |
|--------|-------|-------|-------|-------|-------|
| 1      | 1.000 | -.237 | .267  | -.468 | -.008 |
| 2      | -.237 | 1.000 | -.177 | .212  | .406  |
| 3      | .267  | -.177 | 1.000 | -.187 | -.262 |
| 4      | -.468 | .212  | -.187 | 1.000 | -.060 |
| 5      | -.008 | .406  | -.262 | -.060 | 1.000 |

**Scale K1, Driving under the effect of alcohol.**

Data from the Scale K1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.68, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(36)=564.80$ ,  $p<.000$ , were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 51.95% 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 issues”, accounting for by the 27.88% of the common variance) refers to having had experience with alcohol related issues. Items such as “*You were the designated driver*” load on this factor.

The second factor (labelled “Safe alcohol related behaviours”, accounting for by the 21.74% of the common variance) refers to driving without having had alcohol. Items such as “*You drove less than two hours after having drunk alcohol*” negatively load on this factor. The two factors are only slightly negatively correlated (Table K.3).

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

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 3.3                 | 36.662        | 36.662       | 2.51                              |
| 2      | 1.376               | 15.287        | 51.949       | 1.957                             |
| 3      | 1.267               | 14.083        | 66.032       |                                   |
| 4      | 0.843               | 9.362         | 75.394       |                                   |
| 5      | 0.756               | 8.397         | 83.791       |                                   |
| 6      | 0.68                | 7.552         | 91.343       |                                   |
| 7      | 0.441               | 4.904         | 96.247       |                                   |
| 8      | 0.211               | 2.342         | 98.59        |                                   |
| 9      | 0.127               | 1.41          | 100          |                                   |

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

|     | Factor                                 |                                 |
|-----|--|---------------------------------|
|     | Experience with alcohol related issues | Safe alcohol related behaviours |
| K_1 |  | -0.792                          |
| K_2 | 0.287                                  | -0.846                          |
| K_3 |  |                                 |
| K_4 |  | -0.316                          |
| K_5 | 0.509                                  | -0.346                          |
| K_6 | 0.395                                  |                                 |
| K_7 | 0.31                                   |                                 |
| K_8 | 0.977                                  |                                 |
| K_9 | 0.798                                  |                                 |

**Table K.3** Factor Correlation Matrix

| Factor | 1     | 2     |
|--------|-------|-------|
| 1      | 1.000 | -.237 |
| 2      | -.237 | 1.000 |

**Scale L1, Effects of alcohol.**

Data from the Scale L1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.80, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(190)=1190.56$ ,  $p<.000$ , were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 41.83% 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 18.83% 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 18.41% 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 L)

| Factor | Initial Eigenvalues |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                             |
| 1      | 5.172               | 25.859        | 25.859       | 3.766                             |
| 2      | 3.194               | 15.972        | 41.831       | 3.681                             |
| 3      | 1.42                | 7.098         | 48.929       |                                   |
| 4      | 1.272               | 6.361         | 55.289       |                                   |
| 5      | 1.128               | 5.638         | 60.927       |                                   |
| 6      | 0.991               | 4.954         | 65.881       |                                   |
| 7      | 0.896               | 4.478         | 70.36        |                                   |
| 8      | 0.836               | 4.182         | 74.542       |                                   |
| 9      | 0.65                | 3.25          | 77.792       |                                   |
| 10     | 0.614               | 3.069         | 80.861       |                                   |
| 11     | 0.581               | 2.905         | 83.766       |                                   |
| 12     | 0.545               | 2.724         | 86.491       |                                   |
| 13     | 0.488               | 2.44          | 88.931       |                                   |
| 14     | 0.444               | 2.221         | 91.152       |                                   |
| 15     | 0.365               | 1.827         | 92.979       |                                   |
| 16     | 0.343               | 1.714         | 94.693       |                                   |
| 17     | 0.317               | 1.583         | 96.276       |                                   |
| 18     | 0.28                | 1.401         | 97.677       |                                   |
| 19     | 0.241               | 1.203         | 98.88        |                                   |
| 20     | 0.224               | 1.12          | 100          |                                   |

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

|       | Factor           |                  |
|-------|------------------|------------------|
|       | Positive effects | Negative effects |
| L1_1  | 0.548            | -0.258           |
| L1_2  |                  | 0.626            |
| L1_3  |                  | 0.6              |
| L1_4  | 0.615            |                  |
| L1_5  | 0.7              |                  |
| L1_6  | 0.467            |                  |
| L1_7  |                  | 0.593            |
| L1_8  | 0.504            |                  |
| L1_9  | 0.365            | 0.41             |
| L1_10 | 0.583            |                  |
| L1_11 |                  | 0.676            |
| L1_12 | 0.547            | -0.341           |
| L1_13 |                  | 0.657            |
| L1_14 |                  | 0.814            |
| L1_15 |                  | 0.578            |
| L1_16 | 0.391            |                  |
| L1_17 | 0.476            |                  |
| L1_18 | 0.592            |                  |
| L1_19 | 0.501            |                  |
| L1_20 | 0.31             |                  |

**Table L.3** Factor Correlation Matrix

| Factor | 1     | 2     |
|--------|-------|-------|
| 1      | 1.000 | -.144 |
| 2      | -.144 | 1.000 |

## Cluster analysis

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

Results showed three separate groups of respondents. A multivariate analysis of variance yielded a significant difference among the three groups (Wilks' Lambda=0.09,  $F_{48,166}=8.31$ ,  $p<.0001$ ). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ( $F_{2,106}=10.02$ ,  $p<.001$ ) and a significant interaction between group and subscale ( $F_{46,2438}= 15.74$ ,  $p<.001$ ), meaning that each group of respondents shows a specific profile.

4. **RISKY DRIVERS.** The first group can be identified as composed of risky drivers. They have a permissive attitude toward driving under the effect of alcohol and recreational drugs, and are not that much aware of the negative effects of alcohol upon driving. They also refer not to have a correct behaviour during driving. They are also quite tolerant toward violations of the traffic code and speeding and, more interestingly, they see reasons why the traffic code should be violated, as such violations are useful to keep traffic flowing smoothly. Furthermore, risky drivers have high scores on driving related rage, especially due to obstacles, and high scores on moral disengagement.
5. **ANGRY DRIVERS.** People in this group are characterized by having high scores on the rage subscales. With regards to this subscales, indeed, they are not that different from the risky drivers, whereas they differ from them on almost all the other subscales.
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 external 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 slight (not significant) prevalence of males can be observed among the risky and angry 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 selected subscales. The three groups do not differ in terms of their perception of risk of being involved in an accident, or on how much they are worried about this possibility (Figure 2). Also, respondents do not differ on how they rate their parents' reactions for their reckless driving behaviour (Figure 4). However, 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 error for each group on the subscales of the questionnaire

|  | ANGRY drivers |          |    | SAFE drivers |          |    | RISKY drivers |          |    |
|--|---------------|----------|----|--------------|----------|----|---------------|----------|----|
|  | Mean          | Std.Err. | N  | Mean         | Std.Err. | N  | Mean          | Std.Err. | N  |
| Tolerance toward violations                | 0.04          | 0.09     | 51 | -0.76        | 0.10     | 39 | 1.10          | 0.15     | 19 |
| Negative attitude toward alcohol/drugs     | 0.04          | 0.11     | 51 | 0.46         | 0.12     | 39 | -0.52         | 0.18     | 19 |
| Positive attitude toward speeding          | -0.04         | 0.10     | 51 | -0.59        | 0.11     | 39 | 1.20          | 0.16     | 19 |
| Internal Locus of Control                  | -0.14         | 0.12     | 51 | -0.18        | 0.13     | 39 | 0.40          | 0.19     | 19 |
| Internal Locus of Control, specific causes | -0.10         | 0.12     | 51 | 0.58         | 0.13     | 39 | -0.65         | 0.19     | 19 |
| Attention related Locus of Control         | -0.02         | 0.12     | 51 | 0.12         | 0.14     | 39 | 0.10          | 0.20     | 19 |
| External Locus of Control                  | -0.04         | 0.11     | 51 | -0.55        | 0.12     | 39 | 0.76          | 0.18     | 19 |
| Obstacle-related rage                      | 0.24          | 0.11     | 51 | -0.74        | 0.13     | 39 | 0.64          | 0.18     | 19 |
| Insult-related rage                        | 0.15          | 0.12     | 51 | -0.44        | 0.14     | 39 | 0.26          | 0.20     | 19 |
| Violation-related rage                     | 0.17          | 0.12     | 51 | -0.24        | 0.14     | 39 | 0.03          | 0.20     | 19 |
| Impulsivity (rev)                          | -0.17         | 0.12     | 51 | 0.53         | 0.14     | 39 | -0.05         | 0.20     | 19 |
| Altruism                                   | -0.08         | 0.13     | 51 | 0.09         | 0.15     | 39 | -0.16         | 0.22     | 19 |
| Sensation Seeking                          | 0.18          | 0.12     | 51 | -0.08        | 0.13     | 39 | 0.06          | 0.19     | 19 |
| Stability                                  | -0.21         | 0.12     | 51 | 0.34         | 0.14     | 39 | -0.14         | 0.20     | 19 |
| Egocentrism                                | 0.15          | 0.11     | 51 | -0.59        | 0.12     | 39 | 0.88          | 0.17     | 19 |
| Slips/Lapses                               | 0.04          | 0.12     | 51 | -0.48        | 0.14     | 39 | 0.61          | 0.20     | 19 |
| Slowing                                    | -0.03         | 0.12     | 51 | 0.50         | 0.13     | 39 | -0.18         | 0.19     | 19 |
| Complying with the traffic code            | -0.21         | 0.11     | 51 | 0.75         | 0.12     | 39 | -0.94         | 0.18     | 19 |
| Safe driving                               | 0.15          | 0.10     | 51 | 0.59         | 0.12     | 39 | -1.04         | 0.17     | 19 |
| Experience with alcohol issues             | -0.20         | 0.11     | 51 | -0.29        | 0.13     | 39 | 0.81          | 0.19     | 19 |
| Prevention behaviors                       | 0.07          | 0.11     | 51 | 0.52         | 0.13     | 39 | -0.89         | 0.19     | 19 |
| Alcohol positive effects                   | -0.02         | 0.09     | 51 | -0.75        | 0.11     | 39 | 1.13          | 0.16     | 19 |
| Alcohol negative effects                   | 0.15          | 0.11     | 51 | 0.34         | 0.13     | 39 | -0.17         | 0.18     | 19 |
| Moral disengagement                        | -0.04         | 0.11     | 51 | -0.69        | 0.13     | 39 | 1.29          | 0.19     | 19 |

**Table 2.** Comparison between Angry and Safe drivers on each subscale.

|  | ANGRY drivers<br>51 | SAFE drivers<br>39 | Significance |
|--|---------------------|--------------------|--------------|
| Tolerance toward violations                | 0.04                | -0.76              | p<.001       |
| Negative attitude toward alcohol/drugs     | 0.04                | 0.46               | ns           |
| Positive attitude toward speeding          | -0.04               | -0.59              | p<.001       |
| Internal Locus of Control                  | -0.14               | -0.18              | ns           |
| Internal Locus of Control, specific causes | -0.10               | 0.58               | p<.001       |
| Attention related Locus of Control         | -0.02               | 0.12               | ns           |
| External Locus of Control                  | -0.04               | -0.55              | ns           |
| Obstacle-related rage                      | 0.24                | -0.74              | p<.001       |

|                                 |       |       |        |
|---------------------------------|-------|-------|--------|
| Insult-related rage             | 0.15  | -0.44 | ns     |
| Violation-related rage          | 0.17  | -0.24 | ns     |
| Impulsivity (rev)               | -0.17 | 0.53  | p<.001 |
| Altruism                        | -0.08 | 0.09  | ns     |
| Sensation Seeking               | 0.18  | -0.08 | ns     |
| Stability                       | -0.21 | 0.34  | ns     |
| Egocentrism                     | 0.15  | -0.59 | p<.001 |
| Slips/Lapses                    | 0.04  | -0.48 | ns     |
| Slowing                         | -0.03 | 0.50  | ns     |
| Complying with the traffic code | -0.21 | 0.75  | p<.001 |
| Safe driving                    | 0.15  | 0.59  | ns     |
| Experience with alcohol issues  | -0.20 | -0.29 | ns     |
| Prevention behaviors            | 0.07  | 0.52  | ns     |
| Alcohol positive effects        | -0.02 | -0.75 | p<.001 |
| Alcohol negative effects        | 0.15  | 0.34  | ns     |
| Moral disengagement             | -0.04 | -0.69 | p<.001 |

**Table 3.** Comparison between Risky and Angry drivers on each subscale.

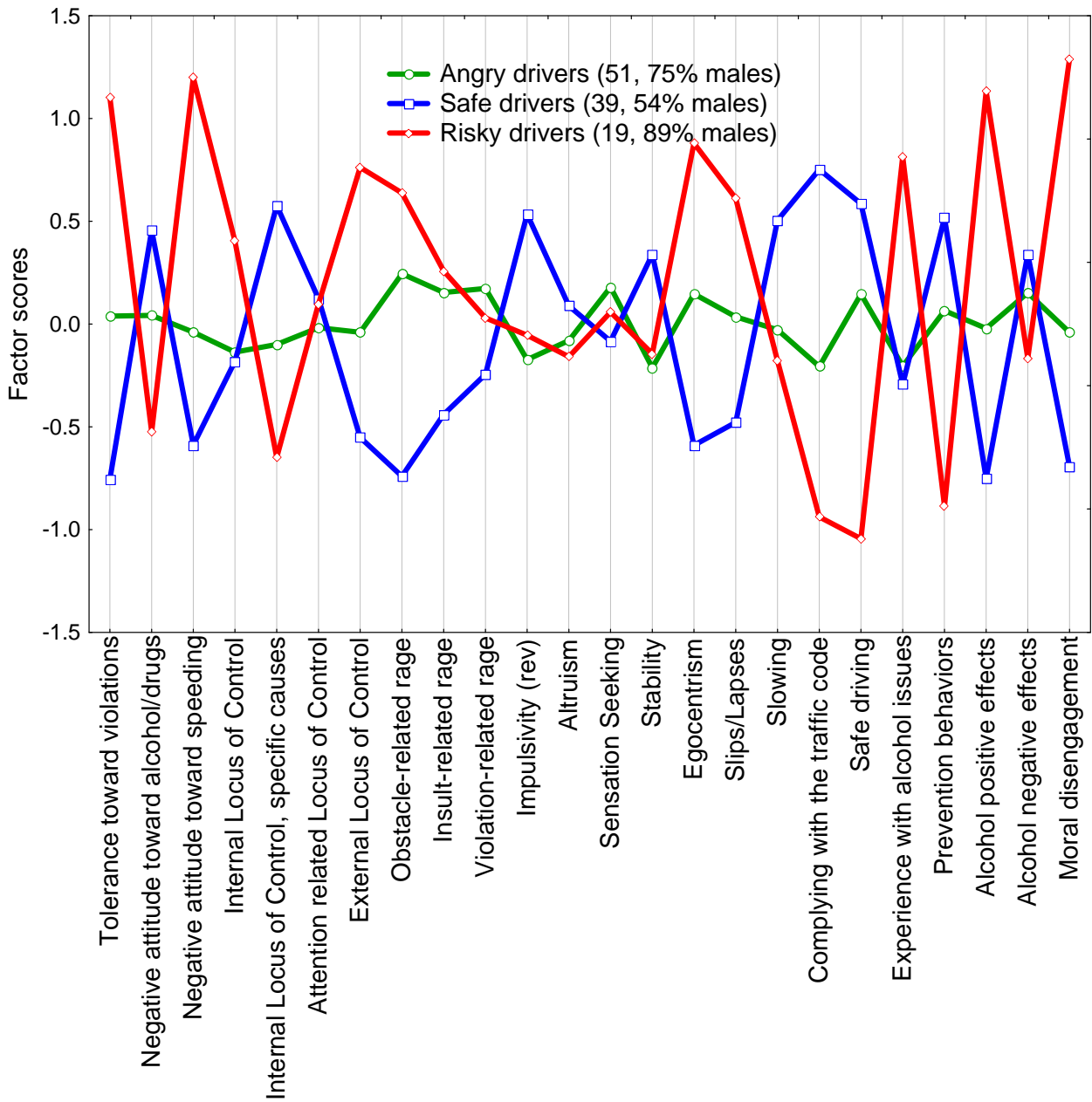
|  | ANGRY drivers | RISKY drivers | Significance |
|--|---------------|---------------|--------------|
|  | 51            | 19            |              |
| Tolerance toward violations                | 0.04          | 1.10          | p<.001       |
| Negative attitude toward alcohol/drugs     | 0.04          | -0.52         | ns           |
| Positive attitude toward speeding          | -0.04         | 1.20          | p<.001       |
| Internal Locus of Control                  | -0.14         | 0.40          | ns           |
| Internal Locus of Control, specific causes | -0.10         | -0.65         | ns           |
| Attention related Locus of Control         | -0.02         | 0.10          | ns           |
| External Locus of Control                  | -0.04         | 0.76          | p<.001       |
| Obstacle-related rage                      | 0.24          | 0.64          | ns           |
| Insult-related rage                        | 0.15          | 0.26          | ns           |
| Violation-related rage                     | 0.17          | 0.03          | ns           |
| Impulsivity (rev)                          | -0.17         | -0.05         | ns           |
| Altruism                                   | -0.08         | -0.16         | ns           |
| Sensation Seeking                          | 0.18          | 0.06          | ns           |
| Stability                                  | -0.21         | -0.14         | ns           |
| Egocentrism                                | 0.15          | 0.88          | p<.001       |
| Slips/Lapses                               | 0.04          | 0.61          | ns           |
| Slowing                                    | -0.03         | -0.18         | ns           |
| Complying with the traffic code            | -0.21         | -0.94         | ns           |
| Safe driving                               | 0.15          | -1.04         | p<.001       |
| Experience with alcohol issues             | -0.20         | 0.81          | p<.001       |
| Prevention behaviors                       | 0.07          | -0.89         | p<.001       |
| Alcohol positive effects                   | -0.02         | 1.13          | p<.001       |
| Alcohol negative effects                   | 0.15          | -0.17         | ns           |
| Moral disengagement                        | -0.04         | 1.29          | p<.001       |

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

|  | SAFE<br>drivers<br>39 | RISKY<br>drivers<br>19 | Significance |
|--|-----------------------|------------------------|--------------|
| Tolerance toward violations                | -0.76                 | 1.10                   | p<.001       |
| Negative attitude toward alcohol/drugs     | 0.46                  | -0.52                  | p<.001       |
| Positive attitude toward speeding          | -0.59                 | 1.20                   | p<.001       |
| Internal Locus of Control                  | -0.18                 | 0.40                   | ns           |
| Internal Locus of Control, specific causes | 0.58                  | -0.65                  | p<.001       |
| Attention related Locus of Control         | 0.12                  | 0.10                   | ns           |
| External Locus of Control                  | -0.55                 | 0.76                   | p<.001       |
| Obstacle-related rage                      | -0.74                 | 0.64                   | p<.001       |
| Insult-related rage                        | -0.44                 | 0.26                   | ns           |
| Violation-related rage                     | -0.24                 | 0.03                   | ns           |
| Impulsivity (rev)                          | 0.53                  | -0.05                  | ns           |
| Altruism                                   | 0.09                  | -0.16                  | ns           |
| Sensation Seeking                          | -0.08                 | 0.06                   | ns           |
| Stability                                  | 0.34                  | -0.14                  | ns           |
| Egocentrism                                | -0.59                 | 0.88                   | p<.001       |
| Slips/Lapses                               | -0.48                 | 0.61                   | p<.001       |
| Slowing                                    | 0.50                  | -0.18                  | ns           |
| Complying with the traffic code            | 0.75                  | -0.94                  | p<.001       |
| Safe driving                               | 0.59                  | -1.04                  | p<.001       |
| Experience with alcohol issues             | -0.29                 | 0.81                   | p<.001       |
| Prevention behaviors                       | 0.52                  | -0.89                  | p<.001       |
| Alcohol positive effects                   | -0.75                 | 1.13                   | p<.001       |
| Alcohol negative effects                   | 0.34                  | -0.17                  | ns           |
| Moral disengagement                        | -0.69                 | 1.29                   | p<.001       |

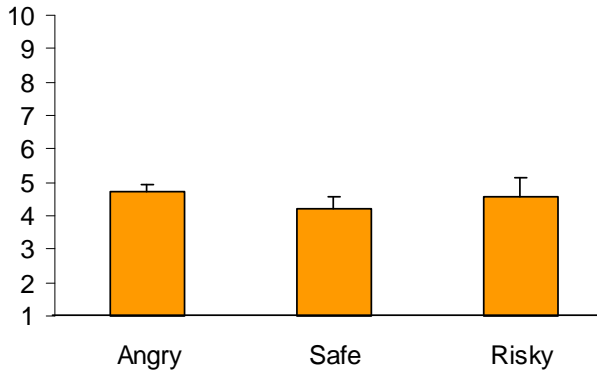
**Table 5.** Mean age (years) and standard errors as a function of gender and group.

|         |               | MEAN<br>AGE | STANDARD<br>ERROR | N  |
|---------|---------------|-------------|-------------------|----|
| Males   | Angry drivers | 17.75       | 0.15              | 36 |
|         | Safe drivers  | 18.15       | 0.20              | 20 |
|         | Risky drivers | 17.63       | 0.23              | 16 |
| Females | Angry drivers | 17.92       | 0.25              | 13 |
|         | Safe drivers  | 18.00       | 0.22              | 17 |
|         | Risky drivers | 16.00       | 0.64              | 2  |

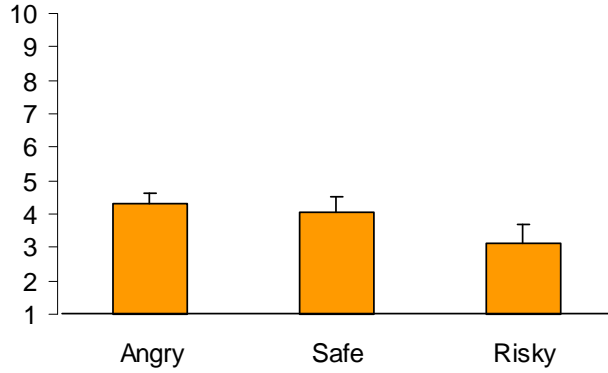


**Figure 1.** Average scores for each group on selected subscales of the questionnaire.

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

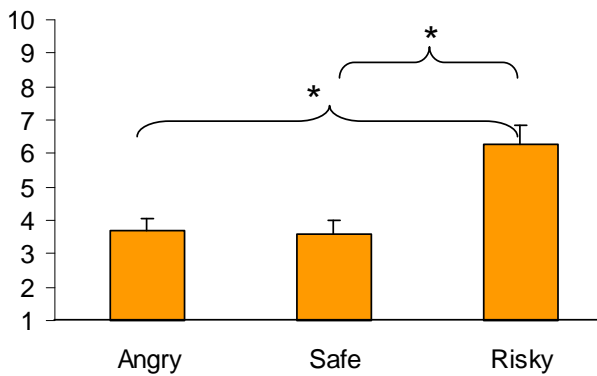


C.2 How much are you worried about this possibility (10=very worried)?



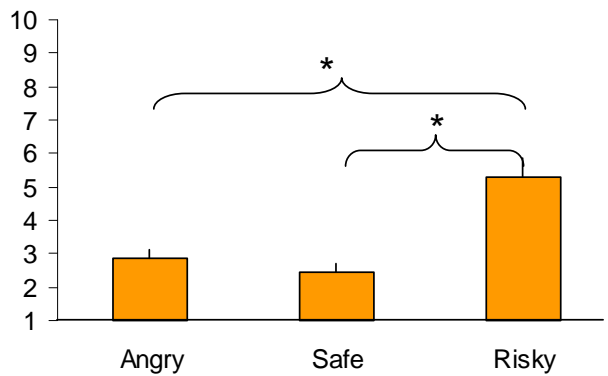
**Figure 2.** Average scores for each group on items concerning risk perception.

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



$F_{2,106}=9.7462, p<.001$

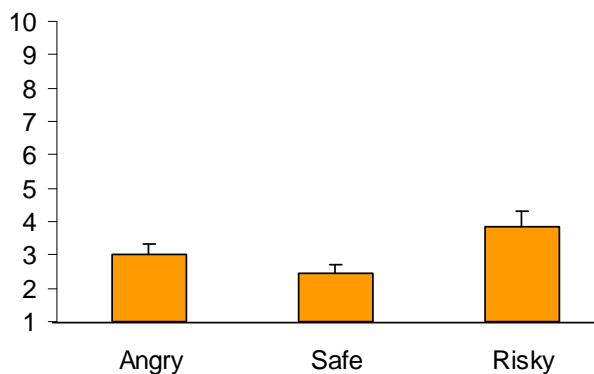
C.4 How much your friends would encourage your reckless driving (10=totally approve)?



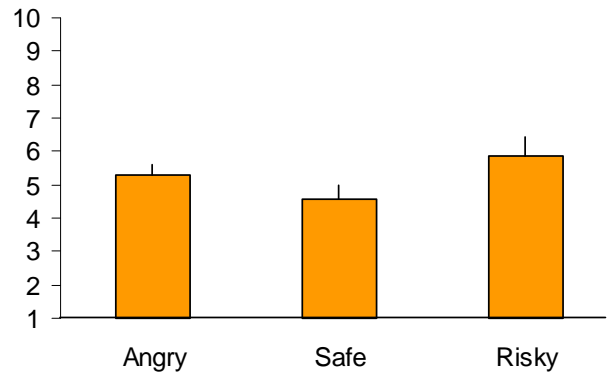
$F_{2,106}=15.1609, p<.001$

**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 3\*4 people answered the Section 3 of the questionnaire. Males were 125 (41.12% of the total sample) and females were 179 (58.88% of the total sample). Their mean age was 18.00years (standard deviation 0.66), ranging between 16 and 21 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  $\chi^2(153)=1467.46$ ,  $p<.000$ , 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 57.38% 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 18.78% of the common variance) refers to a negative attitude toward traffic rules. Items such as "*It is reasonable to exceed speed limits to overtake a "Sunday driver"*" load on this factor.

The second factor (labelled "Negative attitude towards drugs", accounting for by the 12.48% of the common variance) refers to the 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 "Negative attitude toward speeding", accounting for by the 11.64% of the common variance) refers to a negative attitude toward going by car with a fast driver. Items such as "*It is ok to go by car with a fast driver if it is the only way to go back home at night*" load on this factor. This factor is negatively correlated to the first one (Table M.3).

The fourth factor (labelled "Negative attitude towards alcohol", accounting for by the 5.72% of the common variance) refers to the attitude toward driving under the effects of alcohol. Items such as "*I would never drive after drinking alcoholic drinks*" load on this factor.

The fifth factor (labelled "Complying with traffic code", accounting for by the 6.75% of the common variance) refers to a positive attitude toward traffic rules. Items such as "*To keep traffic smooth-flowing you should ignore many of the traffic rules*" negatively load on this factor.

**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      | 4.571               | 25.392        | 25.392       | 3.381                             |
| 2      | 2.265               | 12.585        | 37.977       | 2.247                             |
| 3      | 1.239               | 6.881         | 44.858       | 2.095                             |
| 4      | 1.189               | 6.603         | 51.461       | 1.030                             |
| 5      | 1.066               | 5.924         | 57.385       | 1.215                             |
| 6      | 0.938               | 5.211         | 62.597       |                                   |
| 7      | 0.852               | 4.732         | 67.329       |                                   |
| 8      | 0.795               | 4.416         | 71.745       |                                   |
| 9      | 0.750               | 4.165         | 75.910       |                                   |
| 10     | 0.716               | 3.978         | 79.888       |                                   |
| 11     | 0.669               | 3.718         | 83.606       |                                   |
| 12     | 0.615               | 3.417         | 87.023       |                                   |
| 13     | 0.518               | 2.880         | 89.904       |                                   |
| 14     | 0.477               | 2.648         | 92.552       |                                   |
| 15     | 0.448               | 2.488         | 95.039       |                                   |
| 16     | 0.401               | 2.227         | 97.266       |                                   |
| 17     | 0.317               | 1.762         | 99.028       |                                   |
| 18     | 0.175               | 0.972         | 100.000      |                                   |

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

|      | Factor                      |                                |                                   |                                  |                                 |
|------|-----------------------------|--------------------------------|-----------------------------------|----------------------------------|---------------------------------|
|      | Tolerance toward violations | Negative attitude toward drugs | Negative attitude toward speeding | Negative attitude toward alcohol | Complying with the traffic code |
| M_1  | 0.483                       |                                |                                   |                                  |                                 |
| M_2  | 0.535                       |                                |                                   |                                  |                                 |
| M_3  |                             |                                |                                   |                                  | 0.334                           |
| M_4  | 0.439                       |                                |                                   |                                  | -0.466                          |
| M_5  | 0.522                       |                                |                                   |                                  |                                 |
| M_6  | 0.500                       |                                |                                   |                                  |                                 |
| M_7  | 0.591                       |                                |                                   |                                  |                                 |
| M_8  | 0.461                       |                                |                                   |                                  | -0.253                          |
| M_9  | 0.505                       |                                | -0.251                            |                                  |                                 |
| M_10 | 0.633                       |                                |                                   |                                  |                                 |

|      |  |       |        |       |       |
|------|--|-------|--------|-------|-------|
| M_11 |  |       |        |       | 0.305 |
| M_12 |  |       | -0.511 |       |       |
| M_13 |  |       | -0.866 |       |       |
| M_14 |  |       | 0.251  |       |       |
| M_15 |  | 0.304 |        | 0.530 |       |
| M_16 |  | 0.365 |        | 0.448 |       |
| M_17 |  | 0.855 |        |       |       |
| M_18 |  | 0.909 |        |       |       |

**Table M.3. Factor Correlation Matrix**

| Factor | 1     | 2     | 3     | 4     | 5     |
|--------|-------|-------|-------|-------|-------|
| 1      | 1.000 | -.124 | -.406 | -.109 | -.259 |
| 2      | -.124 | 1.000 | .111  | .186  | .228  |
| 3      | -.406 | .111  | 1.000 | .169  | .177  |
| 4      | -.109 | .186  | .169  | 1.000 | .183  |
| 5      | -.259 | .228  | .177  | .183  | 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, 0.77, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(435)=2196.79$ ,  $p<.000$ , 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 34.92% 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 (labelled “Internal Locus of Control”, accounting for by the 11.85% of the common variance) refers to an internal Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers. Items such as “*A careful driver can prevent any accident*” load on this factor.

The second factor (labelled “External Locus of Control”, accounting for by the 9.55% 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 third factor (labelled “Attention related LOC”, accounting for by the 8.68% 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.

The three 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      | 4.922               | 16.407        | 16.407       | 3.556                             |
| 2      | 3.193               | 10.642        | 27.049       | 2.865                             |
| 3      | 2.360               | 7.868         | 34.917       | 2.605                             |
| 4      | 1.507               | 5.023         | 39.940       |                                   |
| 5      | 1.365               | 4.550         | 44.490       |                                   |
| 6      | 1.217               | 4.055         | 48.545       |                                   |
| 7      | 1.154               | 3.847         | 52.392       |                                   |
| 8      | 1.105               | 3.683         | 56.075       |                                   |
| 9      | 1.083               | 3.609         | 59.684       |                                   |
| 10     | 0.948               | 3.160         | 62.844       |                                   |
| 11     | 0.897               | 2.990         | 65.834       |                                   |
| 12     | 0.863               | 2.875         | 68.709       |                                   |
| 13     | 0.833               | 2.778         | 71.487       |                                   |
| 14     | 0.762               | 2.539         | 74.026       |                                   |

|    |       |       |         |
|----|-------|-------|---------|
| 15 | 0.738 | 2.459 | 76.485  |
| 16 | 0.720 | 2.399 | 78.884  |
| 17 | 0.670 | 2.232 | 81.116  |
| 18 | 0.642 | 2.139 | 83.255  |
| 19 | 0.623 | 2.078 | 85.333  |
| 20 | 0.573 | 1.909 | 87.241  |
| 21 | 0.515 | 1.716 | 88.957  |
| 22 | 0.470 | 1.565 | 90.523  |
| 23 | 0.463 | 1.542 | 92.064  |
| 24 | 0.441 | 1.470 | 93.534  |
| 25 | 0.376 | 1.254 | 94.788  |
| 26 | 0.359 | 1.197 | 95.985  |
| 27 | 0.331 | 1.103 | 97.089  |
| 28 | 0.326 | 1.086 | 98.175  |
| 29 | 0.293 | 0.976 | 99.150  |
| 30 | 0.255 | 0.850 | 100.000 |

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

|      | Factor          |                 |                              |
|------|-----------------|-----------------|------------------------------|
|      | Internal<br>LOC | External<br>LOC | Attention-<br>related<br>LOC |
| N_1  |                 | 0.327           |                              |
| N_2  |                 | 0.303           |                              |
| N_3  | 0.441           |                 |                              |
| N_4  |                 | 0.462           |                              |
| N_5  |                 | 0.510           |                              |
| N_6  | 0.631           |                 |                              |
| N_7  | 0.696           |                 |                              |
| N_8  | 0.588           |                 |                              |
| N_9  | 0.452           |                 | 0.316                        |
| N_10 | 0.275           |                 | 0.319                        |
| N_11 |                 | 0.378           |                              |
| N_12 | 0.259           | 0.325           |                              |
| N_13 |                 | 0.589           |                              |
| N_14 |                 | 0.605           |                              |
| N_15 |                 | 0.641           |                              |
| N_16 | 0.273           |                 | 0.313                        |
| N_17 | 0.599           |                 |                              |
| N_18 |                 |                 | 0.603                        |

|      |        |        |       |
|------|--------|--------|-------|
| N_19 |        |        | 0.487 |
| N_20 |        | 0.360  |       |
| N_21 |        |        | 0.479 |
| N_22 | -0.274 |        | 0.415 |
| N_23 |        | 0.298  |       |
| N_24 | 0.323  | 0.353  |       |
| N_25 | -0.433 | 0.367  | 0.363 |
| N_26 |        |        | 0.493 |
| N_27 |        |        | 0.499 |
| N_28 | 0.563  |        |       |
| N_29 |        | -0.261 | 0.324 |
| N_30 | 0.497  |        |       |

**Table N.3.** Factor Correlation Matrix

| Factor | 1     | 2     | 3     |
|--------|-------|-------|-------|
| 1      | 1.000 | .063  | .191  |
| 2      | .063  | 1.000 | .163  |
| 3      | .191  | .163  | 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, 0.84, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(91)=1104.11$ ,  $p<.000$ , 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 51.14% 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 “Obstacle-related rage”, accounting for by the 26.19% 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 12.91% 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 third factor (labelled “Insult-related rage”, reversed, accounting for by the 18.77% of the common variance) refers to the rage reactions due insults from other drivers. Items such as “*Somebody sounds the horn for your way of driving*” load on this factor.

The three factors are however 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      | 4.642               | 33.157        | 33.157       | 3.666                             |
| 2      | 1.426               | 10.189        | 43.346       | 1.808                             |
| 3      | 1.091               | 7.794         | 51.140       | 2.628                             |
| 4      | 1.084               | 7.740         | 58.880       |                                   |
| 5      | 0.886               | 6.330         | 65.210       |                                   |
| 6      | 0.820               | 5.856         | 71.066       |                                   |
| 7      | 0.696               | 4.968         | 76.034       |                                   |
| 8      | 0.589               | 4.204         | 80.239       |                                   |
| 9      | 0.560               | 3.999         | 84.237       |                                   |
| 10     | 0.527               | 3.766         | 88.004       |                                   |
| 11     | 0.504               | 3.600         | 91.604       |                                   |
| 12     | 0.449               | 3.207         | 94.811       |                                   |
| 13     | 0.432               | 3.084         | 97.895       |                                   |
| 14     | 0.295               | 2.105         | 100.000      |                                   |

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

|      | Factor                |                        |                           |
|------|-----------------------|------------------------|---------------------------|
|      | Obstacle-related rage | Violation-related rage | Insult-related rage (rev) |
| P_1  |                       | 0.601                  |                           |
| P_2  | 0.606                 |                        |                           |
| P_3  |                       | 0.566                  |                           |
| P_4  |                       | 0.480                  |                           |
| P_5  | 0.438                 |                        |                           |
| P_6  | 0.393                 |                        |                           |
| P_7  | 0.581                 |                        |                           |
| P_8  | 0.626                 | -0.259                 |                           |
| P_9  |                       |                        | -0.795                    |
| P_10 |                       |                        | -0.794                    |
| P_11 | 0.402                 |                        |                           |
| P_12 | 0.582                 |                        |                           |
| P_13 | 0.543                 |                        |                           |
| P_14 | 0.558                 |                        |                           |

**Table P.3.** Factor Correlation Matrix

| Factor | 1     | 2     | 3     |
|--------|-------|-------|-------|
| 1      | 1.000 | .372  | -.579 |
| 2      | .372  | 1.000 | -.216 |
| 3      | -.579 | -.216 | 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, 0.75, and factorability of the correlation matrix, Bartlett's test of sphericity  $\chi^2(666)=2820.56$ ,  $p<.000$ , 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 41.24% 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 "Anxiety", accounting for by the 10.43% of the common variance) refers Anxiety. Items such as "*I tend to be tense and nervous*" load on this factor.

The second factor (labelled "Calmness", accounting for by the 6.15% of the common variance) refers to being calm and reflexive. Items such as "*It takes a lot to make me angry*" load on this factor.

The third factor (labelled "Sensation seeking", accounting for by the 6.07% of the common variance) refers to the Sensation-seeking personality trait. Items such as "*I often wish exciting things*" load on this factor.

The fourth factor (labelled "Impulsivity", accounting for by the 6.53% of the common variance) refers to Impulsivity. Items such as "*I'm easily distracted*" negatively load on this factor.

The fifth factor (labelled "Egocentrism", accounting for by the 6.24% of the common variance) refers to Egocentrism. Items such as "*Some people think I'm egoist and egocentric*" load on this factor.

The five factors are not correlated (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      | 4.586               | 12.394        | 12.394       | 3.859                             |
| 2      | 3.852               | 10.412        | 22.806       | 2.276                             |
| 3      | 3.037               | 8.208         | 31.014       | 2.245                             |
| 4      | 2.094               | 5.659         | 36.673       | 2.417                             |
| 5      | 1.842               | 4.979         | 41.652       | 2.308                             |
| 6      | 1.276               | 3.448         | 45.101       |                                   |
| 7      | 1.244               | 3.363         | 48.464       |                                   |
| 8      | 1.133               | 3.062         | 51.526       |                                   |
| 9      | 1.119               | 3.024         | 54.549       |                                   |
| 10     | 1.070               | 2.891         | 57.440       |                                   |
| 11     | 1.002               | 2.707         | 60.147       |                                   |
| 12     | 0.985               | 2.664         | 62.810       |                                   |
| 13     | 0.915               | 2.472         | 65.282       |                                   |
| 14     | 0.874               | 2.361         | 67.643       |                                   |

|    |       |       |         |
|----|-------|-------|---------|
| 15 | 0.813 | 2.198 | 69.841  |
| 16 | 0.801 | 2.165 | 72.006  |
| 17 | 0.787 | 2.128 | 74.134  |
| 18 | 0.744 | 2.011 | 76.145  |
| 19 | 0.707 | 1.912 | 78.056  |
| 20 | 0.652 | 1.762 | 79.818  |
| 21 | 0.638 | 1.725 | 81.544  |
| 22 | 0.620 | 1.675 | 83.218  |
| 23 | 0.577 | 1.559 | 84.777  |
| 24 | 0.558 | 1.508 | 86.286  |
| 25 | 0.532 | 1.437 | 87.723  |
| 26 | 0.510 | 1.377 | 89.100  |
| 27 | 0.497 | 1.344 | 90.444  |
| 28 | 0.444 | 1.201 | 91.645  |
| 29 | 0.412 | 1.113 | 92.758  |
| 30 | 0.402 | 1.087 | 93.846  |
| 31 | 0.391 | 1.057 | 94.903  |
| 32 | 0.364 | 0.983 | 95.886  |
| 33 | 0.359 | 0.970 | 96.856  |
| 34 | 0.342 | 0.924 | 97.779  |
| 35 | 0.296 | 0.799 | 98.579  |
| 36 | 0.279 | 0.753 | 99.331  |
| 37 | 0.247 | 0.669 | 100.000 |

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

|      | Factor  |           |                   |             |             |
|------|---------|-----------|-------------------|-------------|-------------|
|      | Anxiety | Stability | Sensation Seeking | Impulsivity | Egocentrism |
| R_1  | -0.563  |           |                   |             |             |
| R_2  | 0.382   |           |                   |             |             |
| R_3  |         |           |                   |             | 0.657       |
| R_4  |         |           | 0.565             |             |             |
| R_5  | 0.633   |           |                   |             |             |
| R_6  | -0.260  | 0.523     |                   |             |             |
| R_7  |         | 0.502     |                   |             | -0.279      |
| R_8  |         |           | 0.344             |             |             |
| R_9  | -0.301  |           | 0.287             |             |             |
| R_10 |         | -0.399    | 0.528             |             |             |
| R_11 |         |           |                   |             | 0.545       |
| R_12 |         |           | 0.513             |             |             |

|      |        |       |       |        |        |
|------|--------|-------|-------|--------|--------|
| R_13 | 0.608  |       |       |        |        |
| R_14 | -0.299 | 0.392 |       |        |        |
| R_15 |        | 0.434 |       |        |        |
| R_16 |        |       |       |        |        |
| R_17 | -0.306 |       |       |        |        |
| R_18 | 0.295  |       |       |        | 0.487  |
| R_19 |        |       |       |        | 0.501  |
| R_20 |        |       | 0.481 | -0.275 | -0.250 |
| R_21 | 0.634  |       |       |        |        |
| R_22 | -0.286 | 0.577 |       |        |        |
| R_23 |        | 0.251 |       |        |        |
| R_24 |        |       | 0.457 |        |        |
| R_25 | -0.392 |       | 0.346 |        |        |
| R_26 | 0.430  |       |       |        |        |
| R_27 | 0.250  | 0.481 |       |        |        |
| R_28 | 0.287  |       | 0.281 |        |        |
| R_29 | 0.652  |       |       |        |        |
| R_30 | 0.684  |       |       |        |        |
| R_31 |        | 0.394 |       |        |        |
| R_32 |        |       | 0.373 |        |        |
| R_33 |        |       |       | -0.398 |        |
| R_34 |        |       |       | 0.442  |        |
| R_35 |        |       |       | -0.606 |        |
| R_36 |        |       |       | -0.754 |        |
| R_37 | 0.275  |       |       | 0.558  |        |

**Table R.3** Factor Correlation Matrix

| Factor | 1      | 2      | 3      | 4      | 5      |
|--------|--------|--------|--------|--------|--------|
| 1      | 1.000  | -0.084 | 0.015  | -0.029 | -0.058 |
| 2      | -0.084 | 1.000  | 0.035  | -0.152 | -0.159 |
| 3      | 0.015  | 0.035  | 1.000  | -0.099 | 0.089  |
| 4      | -0.029 | -0.152 | -0.099 | 1.000  | 0.258  |
| 5      | -0.058 | -0.159 | 0.089  | 0.258  | 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, 0.84, and factorability of the correlation matrix, Bartlett’s test of sphericity  $\chi^2(190)=1867.99$ ,  $p<.000$ , were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 41.24% 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 “Positive effects”, accounting for by the 20.63% 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 16.33% 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 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      | 5.275               | 26.373        | 26.373       | 4.127                             |
| 2      | 2.973               | 14.867        | 41.240       | 3.267                             |
| 3      | 1.333               | 6.667         | 47.907       |                                   |
| 4      | 1.239               | 6.196         | 54.103       |                                   |
| 5      | 1.000               | 5.001         | 59.104       |                                   |
| 6      | 0.944               | 4.720         | 63.824       |                                   |
| 7      | 0.874               | 4.371         | 68.195       |                                   |
| 8      | 0.747               | 3.733         | 71.928       |                                   |
| 9      | 0.672               | 3.362         | 75.291       |                                   |
| 10     | 0.645               | 3.224         | 78.514       |                                   |
| 11     | 0.604               | 3.022         | 81.536       |                                   |
| 12     | 0.527               | 2.634         | 84.170       |                                   |
| 13     | 0.511               | 2.555         | 86.725       |                                   |
| 14     | 0.477               | 2.385         | 89.110       |                                   |
| 15     | 0.470               | 2.352         | 91.461       |                                   |
| 16     | 0.431               | 2.154         | 93.616       |                                   |
| 17     | 0.386               | 1.930         | 95.546       |                                   |
| 18     | 0.364               | 1.821         | 97.367       |                                   |
| 19     | 0.285               | 1.424         | 98.791       |                                   |
| 20     | 0.242               | 1.209         | 100.000      |                                   |

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

|      | Factor           |                  |
|------|------------------|------------------|
|      | Positive effects | Negative effects |
| T_1  | 0.609            |                  |
| T_2  |                  | 0.570            |
| T_3  |                  | 0.665            |
| T_4  | 0.504            |                  |
| T_5  | 0.677            |                  |
| T_6  | 0.518            |                  |
| T_7  |                  | 0.451            |
| T_8  | 0.525            |                  |
| T_9  |                  | 0.399            |
| T_10 | 0.553            |                  |
| T_11 |                  | 0.729            |
| T_12 | 0.545            | -0.255           |
| T_13 |                  | 0.646            |
| T_14 |                  | 0.673            |
| T_15 |                  | 0.533            |
| T_16 | 0.456            |                  |
| T_17 | 0.580            |                  |
| T_18 | 0.696            |                  |
| T_19 | 0.580            |                  |
| T_20 | 0.351            |                  |

**Table T.3** Factor Correlation Matrix

| Factor | 1     | 2     |
|--------|-------|-------|
| 1      | 1.000 | -.176 |
| 2      | -.176 | 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=0.18,  $F_{38,416}=15.08$ ,  $p<.0001$ ). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ( $F_{2,226}=19.05$ ,  $p<.001$ ) and a significant interaction between group and subscale ( $F_{36,4068}= 27.17$ ,  $p<.001$ ), 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, impulsivity, and egocentrism, and are less aware of the negative effects of alcohol upon driving.
2. **ANGRY/ANXIOUS DRIVERS.** People in this group are characterized by having high scores on the rage subscales, and on anxiety. With regards to these subscales, indeed, they are not that different from the risky drivers, whereas they differ from them on almost all the other subscales.
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.

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). However, respondents in the risky drivers 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.

|                                   | ANGRY/ANXIOUS drivers |          |    | RISKY drivers |          |    | SAFE drivers |          |    |
|-----------------------------------|-----------------------|----------|----|---------------|----------|----|--------------|----------|----|
|                                   | Mean                  | Std.Err. | N  | Mean          | Std.Err. | N  | Mean         | Std.Err. | N  |
| Tolerance toward violations       | 0.04                  | 0.07     | 97 | 0.80          | 0.09     | 59 | -0.71        | 0.09     | 73 |
| Negative attitude toward drugs    | 0.25                  | 0.08     | 97 | -0.52         | 0.11     | 59 | 0.24         | 0.10     | 73 |
| Negative attitude toward speeding | 0.08                  | 0.08     | 97 | -0.74         | 0.10     | 59 | 0.48         | 0.09     | 73 |
| Negative attitude toward alcohol  | 0.17                  | 0.07     | 97 | -0.47         | 0.09     | 59 | 0.17         | 0.08     | 73 |
| Complying with the traffic code   | 0.11                  | 0.06     | 97 | -0.58         | 0.08     | 59 | 0.39         | 0.07     | 73 |
| Internal LOC                      | 0.23                  | 0.09     | 97 | -0.30         | 0.12     | 59 | -0.10        | 0.11     | 73 |
| External LOC                      | 0.33                  | 0.08     | 97 | 0.18          | 0.11     | 59 | -0.55        | 0.10     | 73 |
| Attention-related LOC             | 0.16                  | 0.09     | 97 | -0.22         | 0.12     | 59 | -0.03        | 0.10     | 73 |
| Obstacle-related rage             | 0.47                  | 0.08     | 97 | 0.15          | 0.10     | 59 | -0.64        | 0.09     | 73 |
| Violation-related rage            | 0.28                  | 0.08     | 97 | -0.21         | 0.10     | 59 | -0.21        | 0.09     | 73 |
| Insult-related rage (rev)         | -0.37                 | 0.08     | 97 | 0.01          | 0.10     | 59 | 0.44         | 0.09     | 73 |
| Anxiety                           | 0.32                  | 0.09     | 97 | -0.37         | 0.11     | 59 | -0.17        | 0.10     | 73 |
| Altruism                          | 0.07                  | 0.08     | 97 | -0.48         | 0.11     | 59 | 0.38         | 0.09     | 73 |
| Sensation Seeking                 | 0.17                  | 0.08     | 97 | 0.16          | 0.11     | 59 | -0.26        | 0.09     | 73 |
| Impulsivity                       | -0.08                 | 0.08     | 97 | 0.50          | 0.10     | 59 | -0.26        | 0.09     | 73 |
| Egocentrism                       | -0.19                 | 0.08     | 97 | 0.65          | 0.10     | 59 | -0.31        | 0.09     | 73 |
| Alcohol positive effects          | -0.11                 | 0.07     | 97 | 0.59          | 0.09     | 59 | -0.59        | 0.08     | 73 |
| Alcohol negative effects          | -0.03                 | 0.08     | 97 | -0.28         | 0.10     | 59 | 0.51         | 0.09     | 73 |
| Moral disengagement               | 0.01                  | 0.08     | 97 | -0.99         | 0.10     | 59 | 0.79         | 0.09     | 73 |

**Table 2.** Comparison between Angry/anxious and Risky drivers on each subscale.

|                                   | ANGRY/ANXIOUS drivers | RISKY drivers | Significance |
|-----------------------------------|-----------------------|---------------|--------------|
|                                   | N=97                  | N=59          |              |
| Tolerance toward violations       | 0.04                  | 0.80          | p<.001       |
| Negative attitude toward drugs    | 0.25                  | -0.52         | p<.001       |
| Negative attitude toward speeding | 0.08                  | -0.74         | p<.001       |
| Negative attitude toward alcohol  | 0.17                  | -0.47         | p<.001       |
| Complying with the traffic code   | 0.11                  | -0.58         | p<.001       |
| Internal LOC                      | 0.23                  | -0.30         | p<.001       |
| External LOC                      | 0.33                  | 0.18          | ns           |
| Attention-related LOC             | 0.16                  | -0.22         | ns           |
| Obstacle-related rage             | 0.47                  | 0.15          | ns           |
| Violation-related rage            | 0.28                  | -0.21         | p<.001       |
| Insult-related rage (rev)         | -0.37                 | 0.01          | ns           |
| Anxiety                           | 0.32                  | -0.37         | p<.001       |

|                          |       |       |        |
|--------------------------|-------|-------|--------|
| Altruism                 | 0.07  | -0.48 | p<.001 |
| Sensation Seeking        | 0.17  | 0.16  | ns     |
| Impulsivity              | -0.08 | 0.50  | p<.001 |
| Egocentrism              | -0.19 | 0.65  | p<.001 |
| Alcohol positive effects | -0.11 | 0.59  | p<.001 |
| Alcohol negative effects | -0.03 | -0.28 | ns     |
| Moral disengagement      | 0.01  | -0.99 | p<.001 |

**Table 3.** Comparison between Angry/anxious and Safe drivers on each subscale.

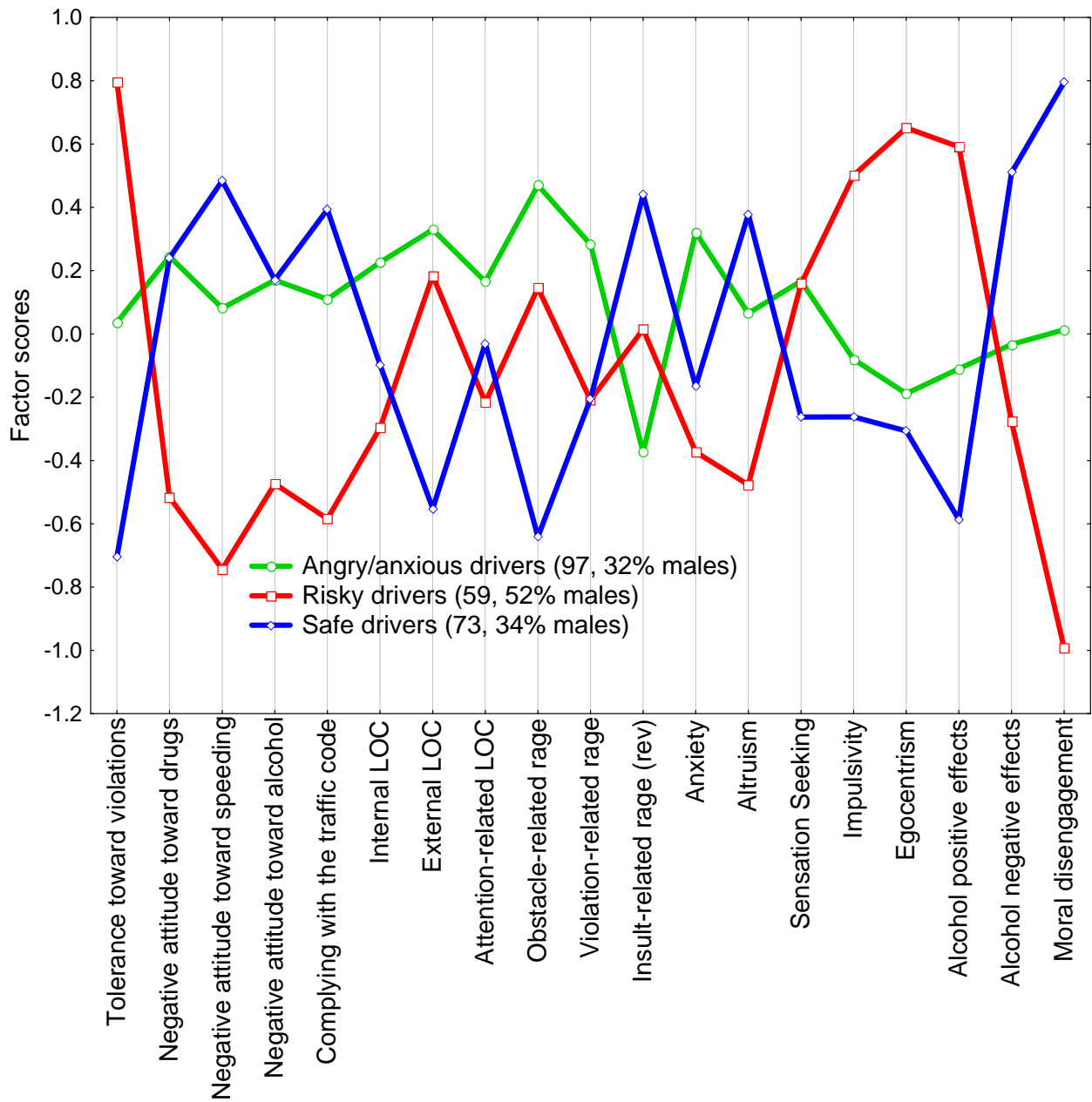
|                                   | ANGRY/ANXIOUS<br>drivers | SAFE<br>drivers | Significance |
|-----------------------------------|--------------------------|-----------------|--------------|
|                                   | N=97                     | N=73            |              |
| Tolerance toward violations       | 0.04                     | -0.71           | p<.001       |
| Negative attitude toward drugs    | 0.25                     | 0.24            | ns           |
| Negative attitude toward speeding | 0.08                     | 0.48            | p<.001       |
| Negative attitude toward alcohol  | 0.17                     | 0.17            | ns           |
| Complying with the traffic code   | 0.11                     | 0.39            | ns           |
| Internal LOC                      | 0.23                     | -0.10           | ns           |
| External LOC                      | 0.33                     | -0.55           | p<.001       |
| Attention-related LOC             | 0.16                     | -0.03           | ns           |
| Obstacle-related rage             | 0.47                     | -0.64           | p<.001       |
| Violation-related rage            | 0.28                     | -0.21           | p<.001       |
| Insult-related rage (rev)         | -0.37                    | 0.44            | p<.001       |
| Anxiety                           | 0.32                     | -0.17           | p<.001       |
| Altruism                          | 0.07                     | 0.38            | ns           |
| Sensation Seeking                 | 0.17                     | -0.26           | p<.001       |
| Impulsivity                       | -0.08                    | -0.26           | ns           |
| Egocentrism                       | -0.19                    | -0.31           | ns           |
| Alcohol positive effects          | -0.11                    | -0.59           | p<.001       |
| Alcohol negative effects          | -0.03                    | 0.51            | p<.001       |
| Moral disengagement               | 0.01                     | 0.79            | p<.001       |

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

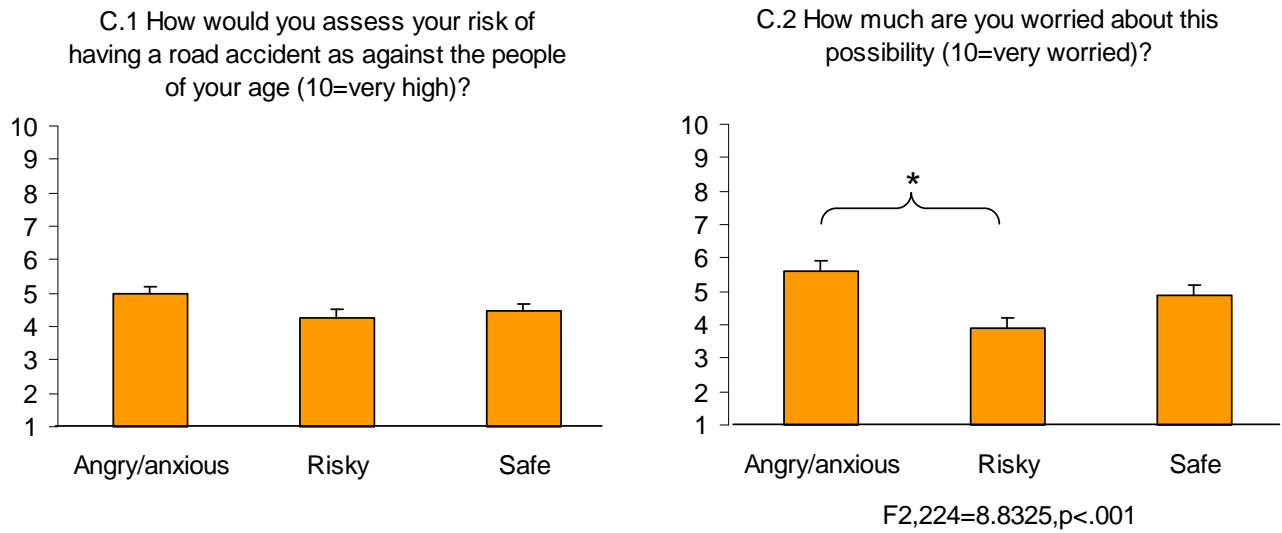
|                                   | RISKY<br>drivers | SAFE<br>drivers | Significance |
|-----------------------------------|------------------|-----------------|--------------|
|                                   | N=59             | N=73            |              |
| Tolerance toward violations       | 0.80             | -0.71           | p<.001       |
| Negative attitude toward drugs    | -0.52            | 0.24            | p<.001       |
| Negative attitude toward speeding | -0.74            | 0.48            | p<.001       |
| Negative attitude toward alcohol  | -0.47            | 0.17            | p<.001       |
| Complying with the traffic code   | -0.58            | 0.39            | p<.001       |
| Internal LOC                      | -0.30            | -0.10           | ns           |
| External LOC                      | 0.18             | -0.55           | p<.001       |
| Attention-related LOC             | -0.22            | -0.03           | ns           |
| Obstacle-related rage             | 0.15             | -0.64           | p<.001       |
| Violation-related rage            | -0.21            | -0.21           | ns           |
| Insult-related rage (rev)         | 0.01             | 0.44            | ns           |
| Anxiety                           | -0.37            | -0.17           | ns           |
| Altruism                          | -0.48            | 0.38            | p<.001       |
| Sensation Seeking                 | 0.16             | -0.26           | ns           |
| Impulsivity                       | 0.50             | -0.26           | p<.001       |
| Egocentrism                       | 0.65             | -0.31           | p<.001       |
| Alcohol positive effects          | 0.59             | -0.59           | p<.001       |
| Alcohol negative effects          | -0.28            | 0.51            | p<.001       |
| Moral disengagement               | -0.99            | 0.79            | p<.001       |

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

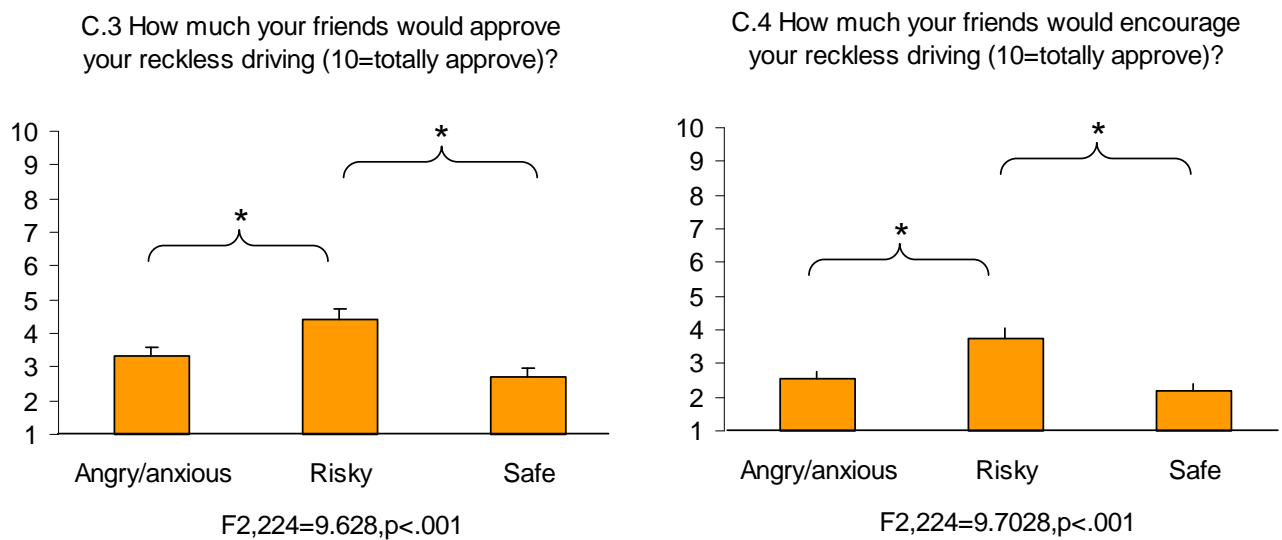
|         |                       | Mean<br>age | Standard<br>error | N  |
|---------|-----------------------|-------------|-------------------|----|
| Males   | Angry/anxious drivers | 17.90       | 0.12              | 31 |
|         | Risky drivers         | 17.97       | 0.12              | 31 |
|         | Safe drivers          | 18.40       | 0.13              | 25 |
| Females | Angry/anxious drivers | 17.95       | 0.08              | 66 |
|         | Risky drivers         | 18.11       | 0.12              | 28 |
|         | Safe drivers          | 17.98       | 0.09              | 48 |



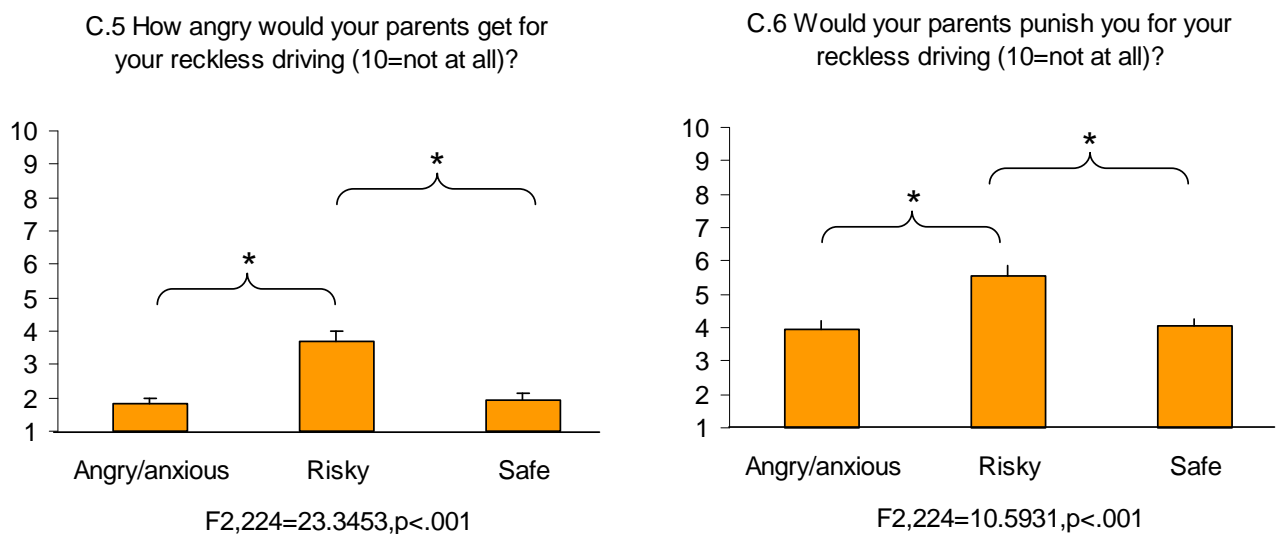
**Figure 1.** Average scores for each group on the subscales of the questionnaire.



**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.