

ROAD SAFETY SURVEY

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GEFYRA S.A.

1. SURVEY DETAILS

The overall sample comprises 918 questionnaires collected between Easter 2008 and October of the same year.

The survey was carried out in stages starting from Easter 2008 with the distribution of the questionnaire to drivers crossing the Rion - Antirion Bridge. In total, 336 questionnaires of those collected were used to analyse results.

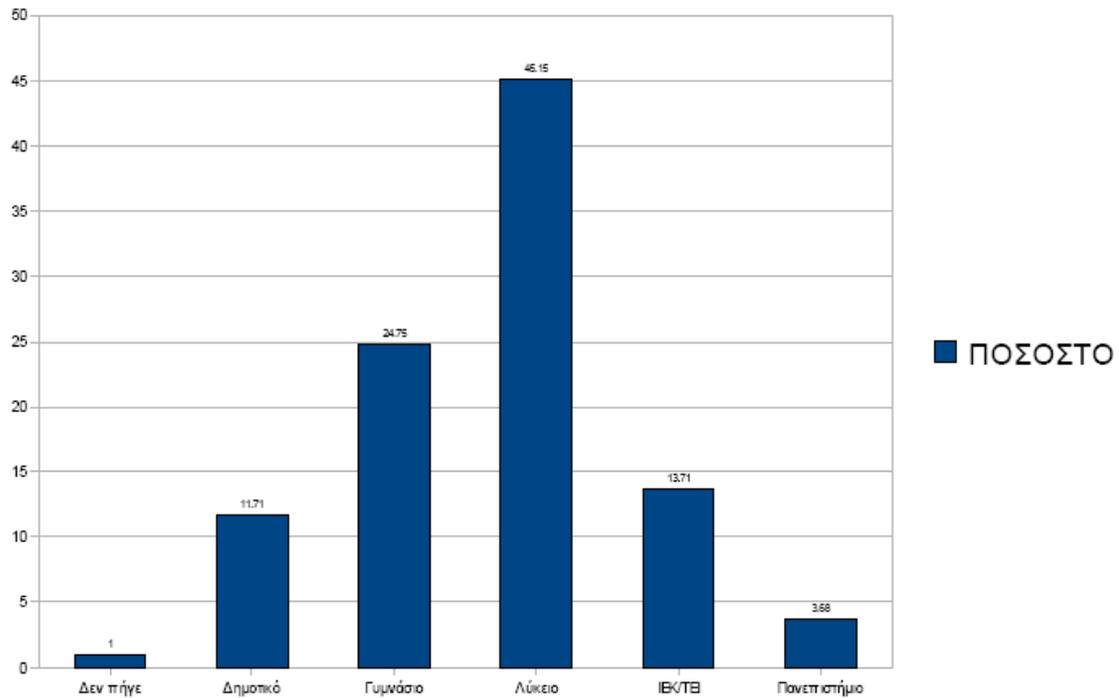
Questionnaires were also distributed among Air force Cadets. 280 questionnaires were used out of this population.

In September and October 2008, the questionnaire was distributed to taxi drivers in Athens, Thessaloniki, Patras, Chalkida and Chios, of which 302 were used for the survey. Here, it must be noted that the questionnaire distributed to professional drivers, has two additional questions. Specifically, professional drivers were asked about their education and professional experience.

Panteion University was asked to carry out the questionnaire analysis without having participated in planning the survey, drawing up the questionnaire or collecting the data. Air force cadets are a convenient sample and are not analysed separately. Taxi drivers were handled as a whole; the sample was not calculated on the basis of their numbers in individual cities. The value of the survey at exploratory level, however, is indisputable, as it offers a necessary basis to support further research on the subject.

1.1. THE PROFESSIONALS' SAMPLE

The two questions on education and experience were posed only to professional drivers. Answers are set forth here; no further analysis is required. We begin with education (Figure 1).



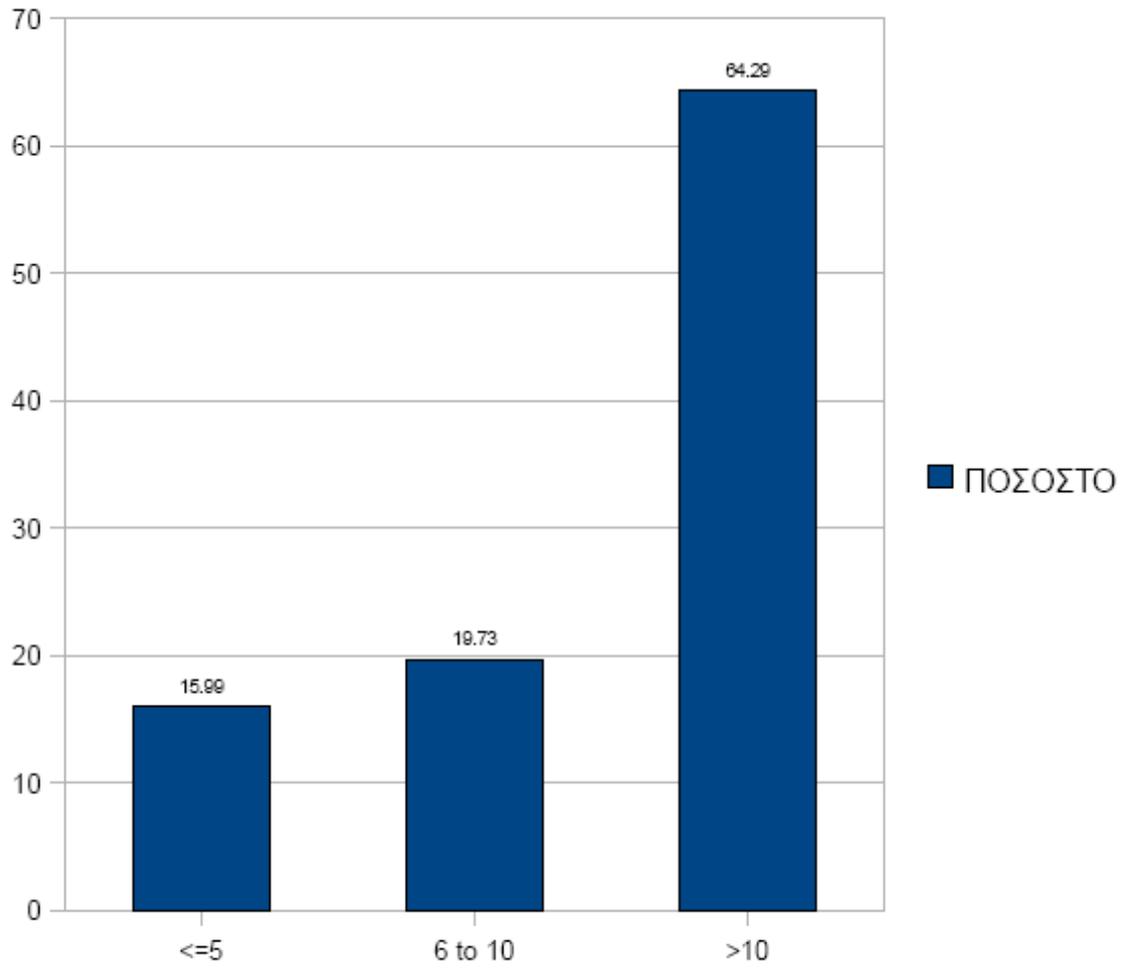
PERCENTAGE

Did not attend, Primary school, Lower Secondary School, Upper Secondary School, Institute of Vocational Training (IEK)/Technological Education Institute (TEI), University

Figure 1. Professional drivers' education level

The majority of taxi drivers are secondary education graduates (around 45%) and graduates of lower education levels (another 38%). Vocational training and higher education graduates are at the considerable level of 17%.

The professionals' experience varies (Figure 2). Their overwhelming majority has over 10 years experience



PERCENTAGE

Figure 2. Professional drivers' experience (in years)

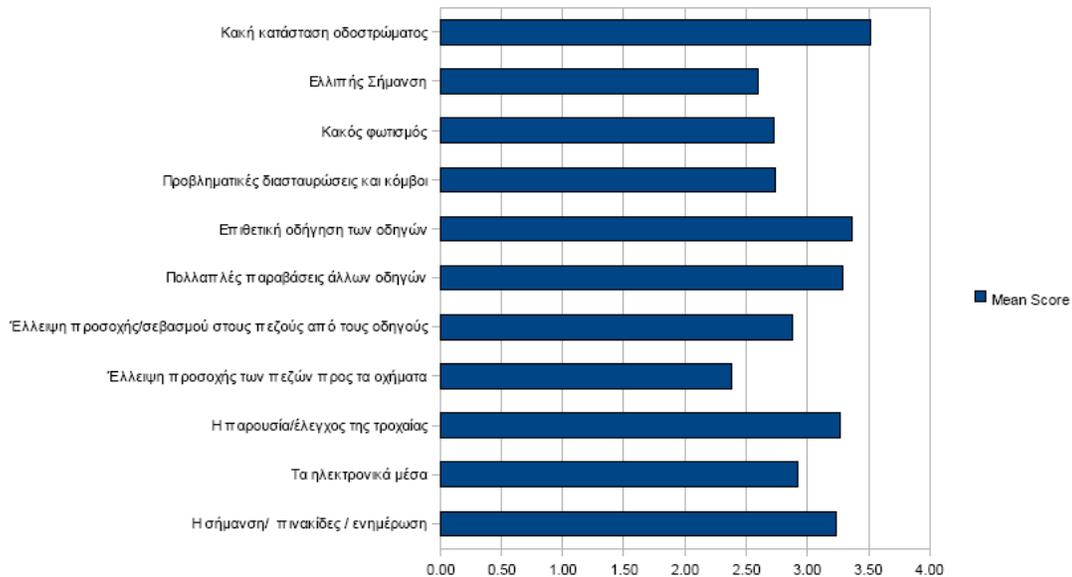
2. QUESTIONNAIRE ANALYSIS

The questionnaire is divided into three sections, which measure the respondents' perception regarding the factors that are believed to contribute to road accidents (ROAD NETWORK - HUMAN FACTOR and TRAFFIC POLICING).

There are also some general questions that are analysed separately in the fourth section.

2.1 GENERAL PICTURE OF THE FACTORS

The general picture that emerges from the entire sample is shown below in Figure 3.



Poor road surface condition
Inadequate signage
Poor lighting
Problematic intersections and junctions
Aggressive driving
Multiple violations by other drivers
Drivers' lack of attention/respect towards pedestrians
Pedestrians' lack of attention to cars
Traffic police presence/control
Electronic means
Signage/signs/information

Figure 3. Factor mean scores analysis

It is obvious that respondents believe the following:

- The *Poor road surface condition* factor is believed to contribute the most to traffic accidents out of those mentioned.

- *Aggressive driving* and *Multiple violations by other drivers* are the main human factors bothering the respondents.
- *Traffic police presence/control* and *signage/signs/information* are the factors playing a significant role in traffic policing.

The 3 sections are presented in detail below.

2.2 SECTION 1 - ROAD NETWORK

This section contains the four questions that pertain to the respondents' perception regarding the country's road network (*Poor road surface condition, Inadequate signage, Poor lighting, Problematic intersections and junctions*).

As mentioned before and also appears below in Figure 4, the most significant factor contributing to traffic accidents is poor road surface condition.



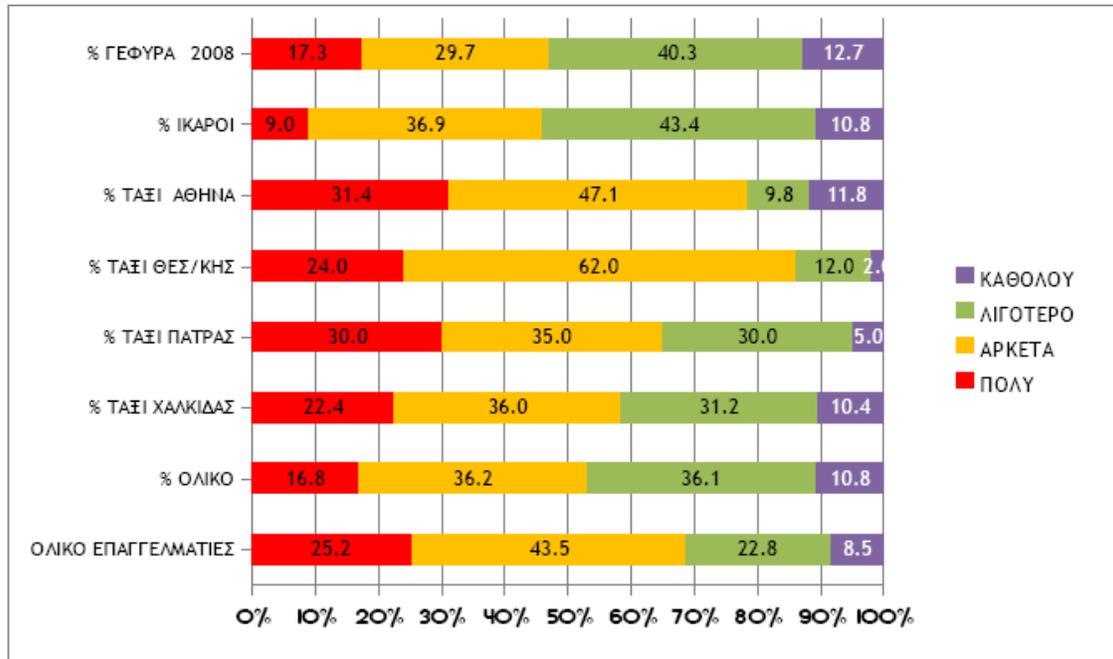
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Figure 4. Poor road surface condition

The random sample of drivers having crossed the bridge replied that the contribution of the poor road surface condition to traffic accidents is “very” important. If we add to it the “quite” important rate, then the percentage rises to a dramatic 93.7%! The corresponding percentage both in the total sample and the professional drivers one, is around 90%.

Inadequate signage as a traffic accident cause does not rank very high in the respondents' opinion (see Figure 5). The bridge random sample replied "very" and "quite" important at a rate of below 50%. The percentage is higher in the professional drivers' sample; however it does not exceed 70% in total. It must be noted, however, that a higher percentage of Athens and Thessaloniki taxi drivers cite this cause, a fact that is probably due to the size, the complexity and the diversity of the road network in large cities.

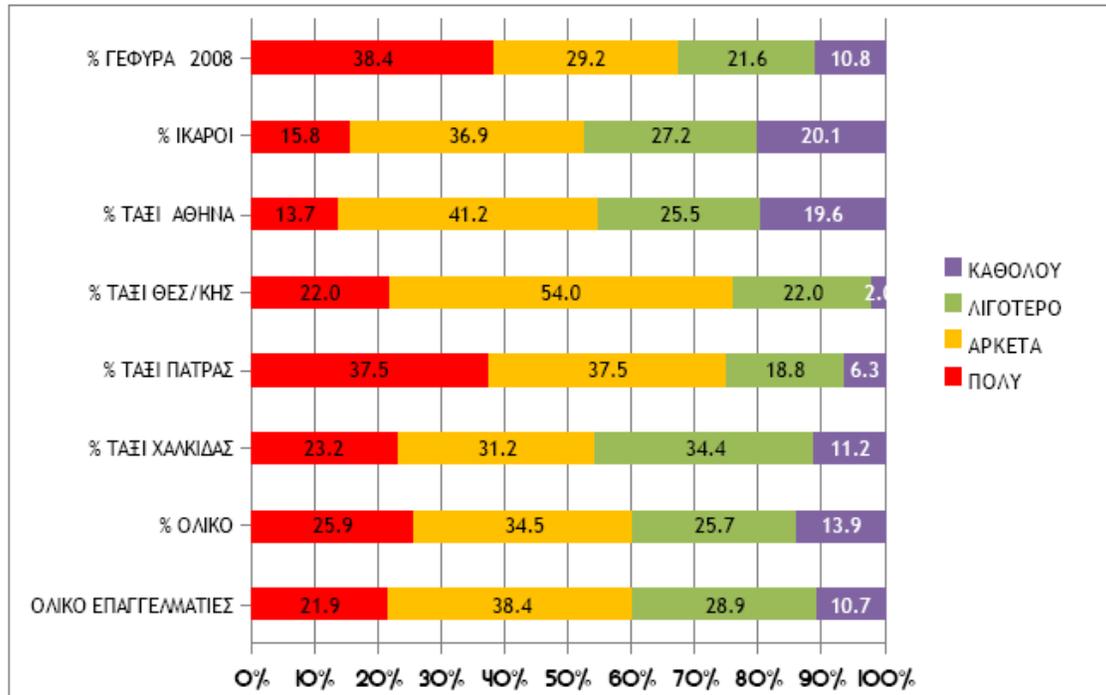


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Figure 5. Inadequate signage

Poor lighting (see Figure 6.) as a cause of traffic accidents gathers 60% of positive answers from the total sample as well as from professionals.



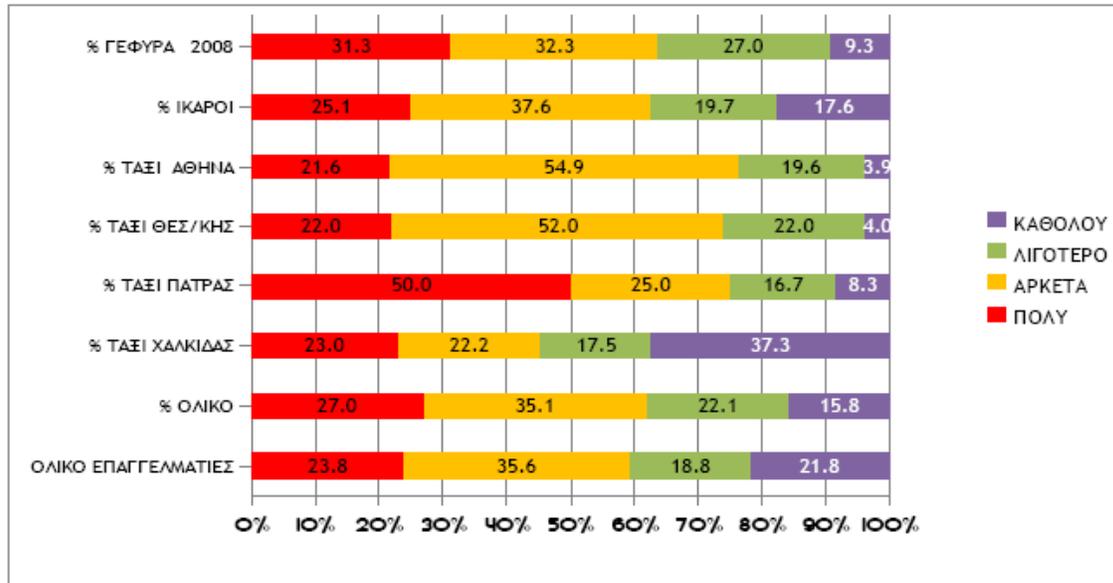
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Figure 6. Poor Lighting

The biggest problem (over 70% of answers) is centred in Thessaloniki and Patras, where there seems to be a problem with the road network lighting.

The last factor *Problematic intersections and junctions* (Figure 7.) also gathers 60% of positive answers from the total sample as well as from professionals.



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Figure 7. Problematic intersections and junctions

The case of professional taxi drivers in Patras is different, as there seem to be more problematic intersections and junctions there than in other areas, where the rest of the sample professionals belong to (75% replied "very" and "quite" to this question)

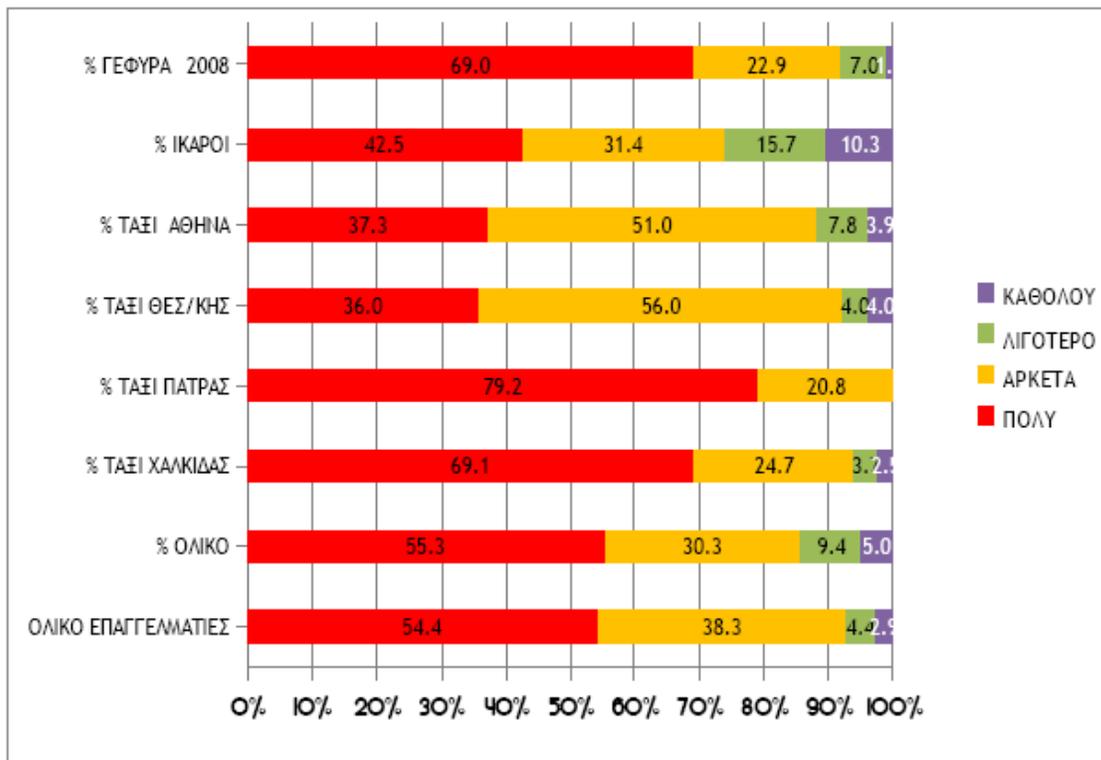
There are also some remarks that the respondents wrote in the open-ended question that followed. The sample from Easter 2008, probably with the experience of the roads connected by the bridge fresh in memory, reported the *lack of protective barriers - islands* as a possible cause of accidents. Another issue frequently reported in the total sample is the *need for more traffic lanes*, while many respondents repeat the *poor road surface condition* and *poor lighting factors*, in an attempt to reinforce what was noted

above.

2. SECTION 2 - HUMAN FACTOR

There are four questions in this section measuring respondents' perception of which human factors may be the cause of accidents. Respondents are to give answers on how much other drivers' behaviour bothers them, in particular *aggressive driving, multiple violations by other drivers, drivers' lack of attention/respect towards pedestrians and pedestrians' lack of attention to cars.*

The first factor, *aggressive driving*, is one of the most significant factors in general and in the total sample, as mentioned above.



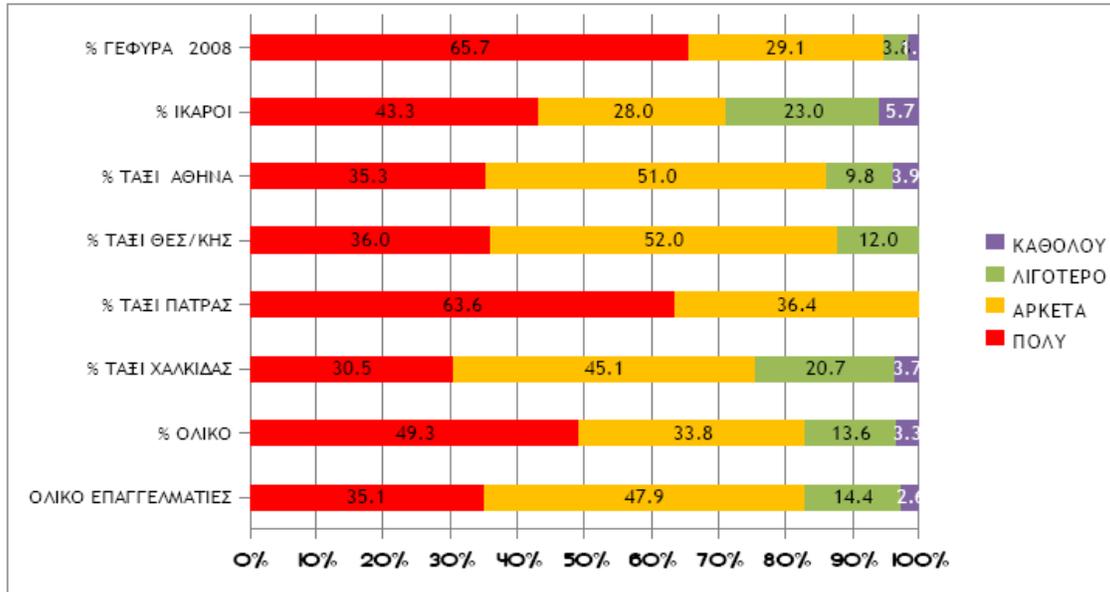
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Figure 8. Aggressive driving

In the total sample, *aggressive driving* draws 85.6% of "very" and "quite" important replies, while the rate climbs to 92.7% in the professionals' sample. (Figure 8). What is impressive here, is that all Patras taxi drivers (100%) consider aggressive driving the most significant accident causing factor, followed by their colleagues from Chalkida.

Factor *multiple violations by other drivers* is the second most important factor in this section and generally among the most important ones. However, it seems that for non-professional drivers in the random sample, it is more significant than it is for professionals (see figure 9).



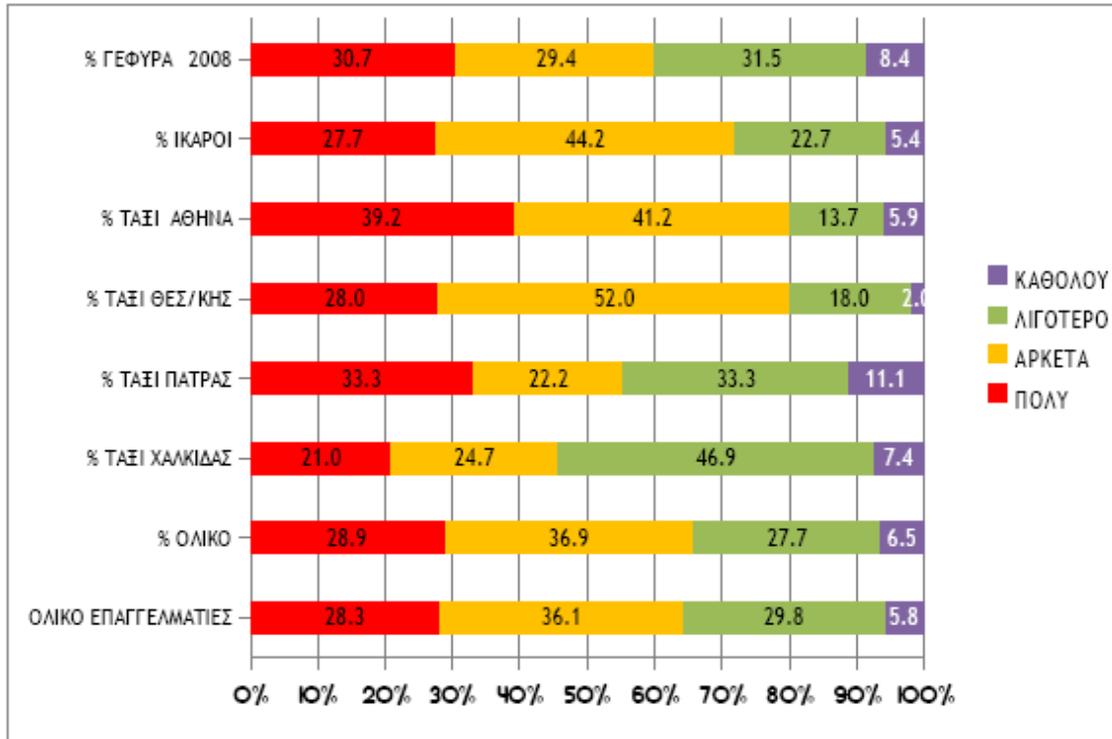
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Figure 9. Multiple violations by other drivers

A positive answer was given by 95% of respondents in the bridge sample, compared to 83% of the professionals. The latter percentage is higher due to the positive answers by Patras taxi drivers. In both cases, however, the total sample and the professionals, the positive answer percentage exceeds 80%.

The two remaining factors pertaining to pedestrians and drivers mutual respect seem to carry less significance for the sample (see Figures 10 and 11).

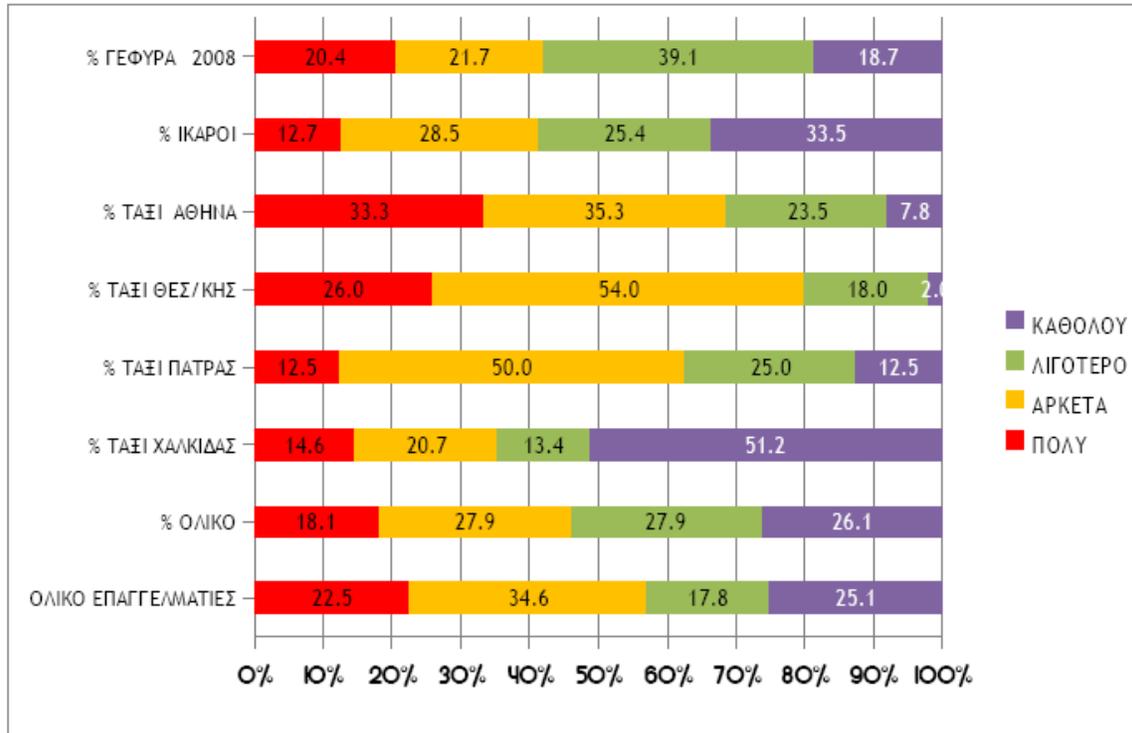


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Figure 10. Drivers' lack of attention/respect towards pedestrians

In the first case, *drivers' lack of attention/respect towards pedestrians*, 60% of the total sample considers that this factor is “very” and “quite” important, while the professionals' replies are at the same levels. In the second case, that of *pedestrians' lack of attention to cars*, the sample considers this factor as less significant, given that "very" and "quite" important replies get an aggregate of below 50% (namely 46%). This specific factor gets a rate of slightly above 50% with professionals (see Figure 11.).



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Figure 11. Pedestrians' lack of attention to cars

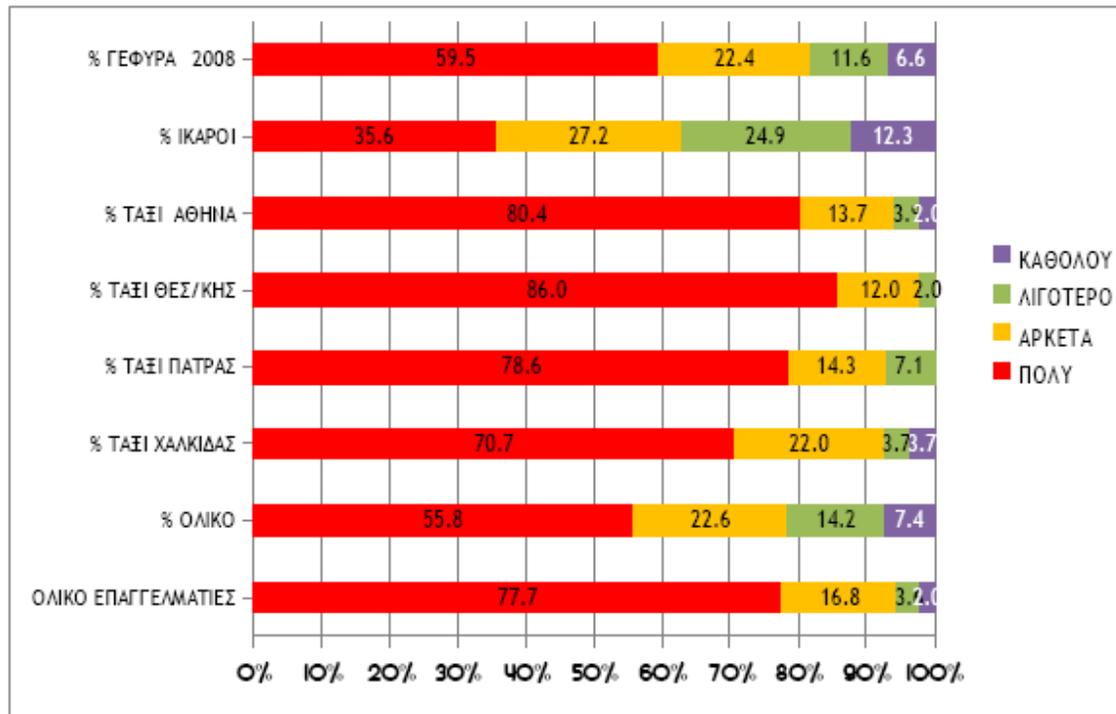
Open ended questions included various factors, such as *speeding, drivers' disrespect to new drivers and women, some drivers' age, the use of cell phones, the use of headlights, the bad condition of cars and alcohol consumption*. The majority of replies, however,

were focused on two factors: The *lack of traffic education and manners and the granting of licenses to incompetent drivers*. This last factor was often linked to corruption related to obtaining a driver's license, namely paying for one.

3. SECTION 3 - TRAFFIC POLICE

This section contains three questions measuring sample respondents' perception on traffic policing. Respondents were asked how important traffic police presence is to them - *checks by traffic policemen, electronic means (traffic lights, cameras etc) and signage - signs - information.*

The first factor, the presence - *checks by traffic policemen*, is generally one of the most significant in the survey (Figure 12)



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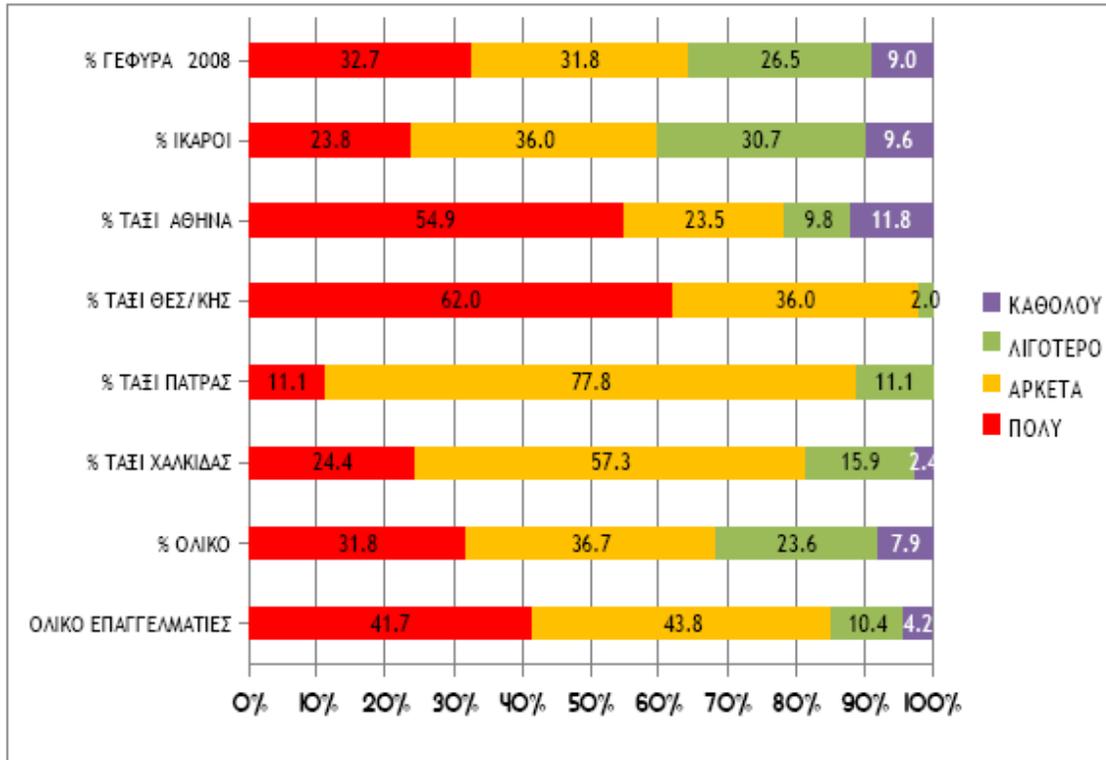
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Figure 12. The traffic police presence - checks

The aggregate rate of "very" and "quite" important in this factor is close to 80% in the total sample and over 90% in the professionals' sample. The need for policing and checks

is also stressed in replies to the open-ended question that follows at the end of the section, stressing it further.

Of the remaining factors, *electronic means (traffic lights, cameras etc.)* add up to less than 70% in the total sample, but getting a high 85.5% in the professionals' one. Thessaloniki taxi drivers seem to be particularly aware of these means' presence, as they give them a percentage of 98% on aggregate!

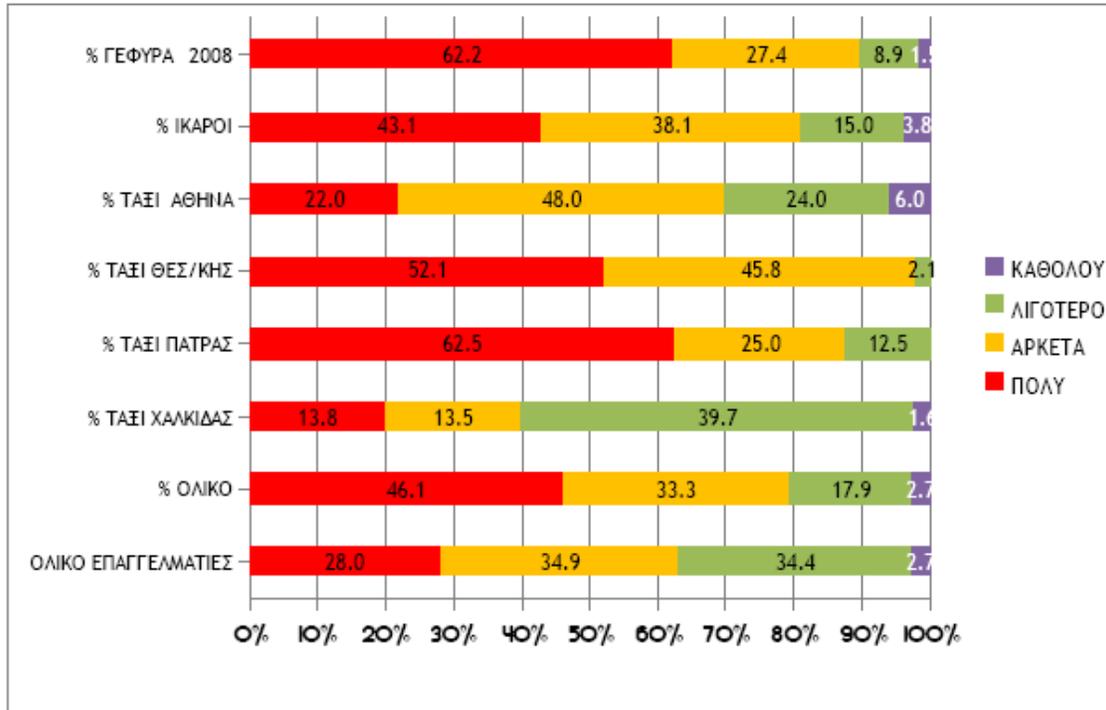


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Figure 13. Electronic means (traffic lights, cameras etc.)

A further significant factor is *signage - signs - information* as shown in Figure 14.



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Figure 14 Signage - signs - information

The need for better signage through signs etc. as well as information is obvious, as it is close to 80% for the total sample. In the professionals' sample it is a little over 60%. However, the bridge sample gives a percentage close to 90%, which stresses the need of non-professional drivers for more information and better signage. Besides, the *correct speed limit signs on the roads* was a frequent reply to the section's open ended question.

Other factors mentioned were the *traffic and bad driving of trucks, articulated lorries and tractors on high traffic days, the need for the highway code to be observed by everyone (including the police), as well as the need for true and intensive policing, and not the kind carried out for money collection purposes.*

4. SECTION 4 - NUMBER OF CHECKS

The questionnaire section requesting respondents to just give the number of times checked by the traffic police in the last five years, leads to interesting conclusions. First of all, as shown in figure 13, over 1/5 of the sample have never been checked by traffic police in the specific time period, while over 1/4 has been checked more than 5 times.

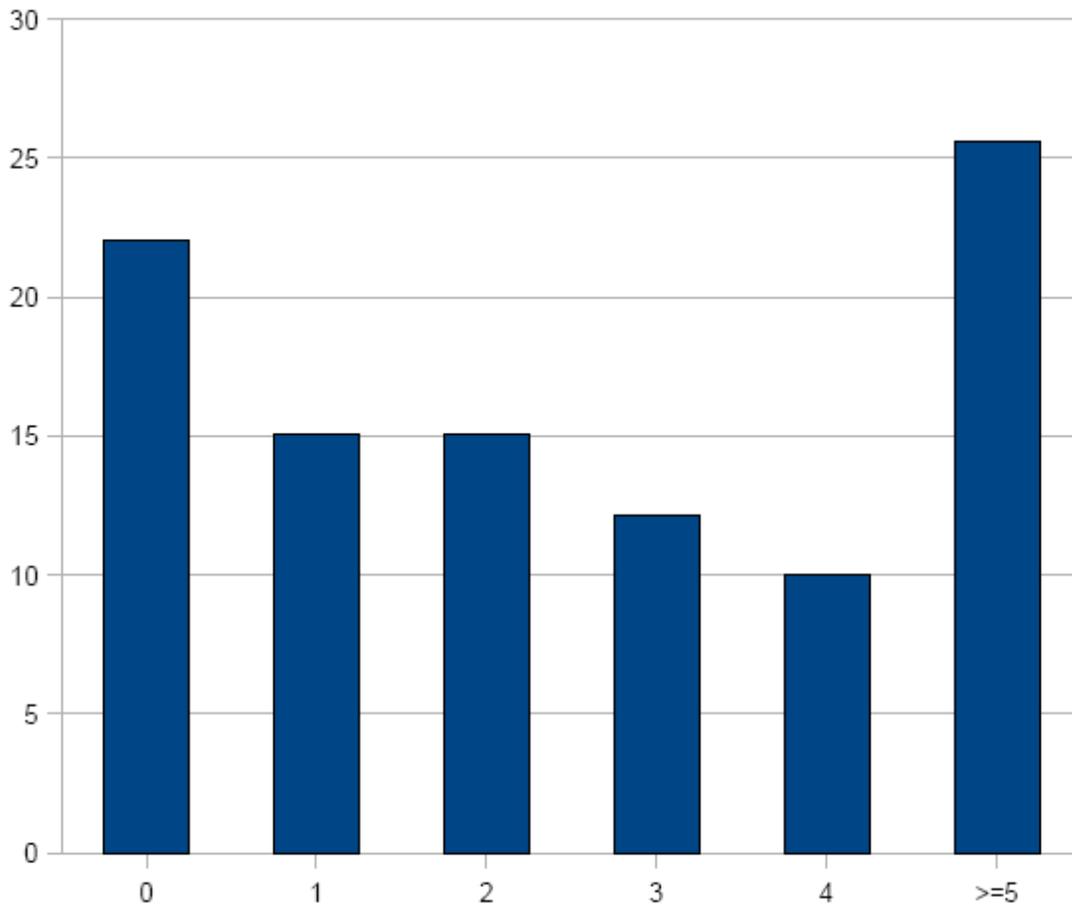
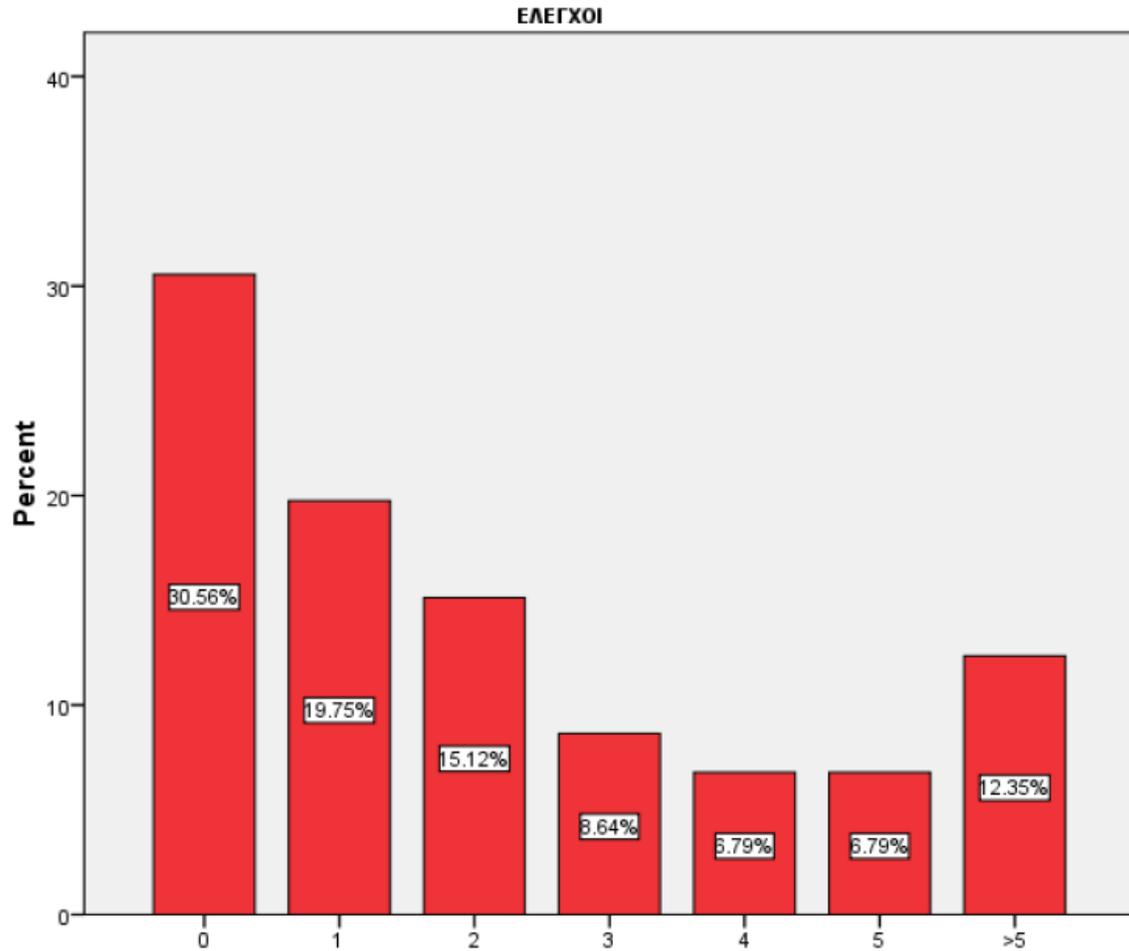


Figure 15. How many times have you been checked by traffic police in the past 5 years? (%ποσοστό)

Naturally, these numbers reflect the entire sample and the picture changes if we separate non-professional drivers and professionals, as seen in figure 16. Over 1/3 of the sample has never been checked in the past 5 years and another 1/5 has only been checked once. This means that at most, half of them have been checked once. Only 12.35% of the random sample has been checked more than 5 times.

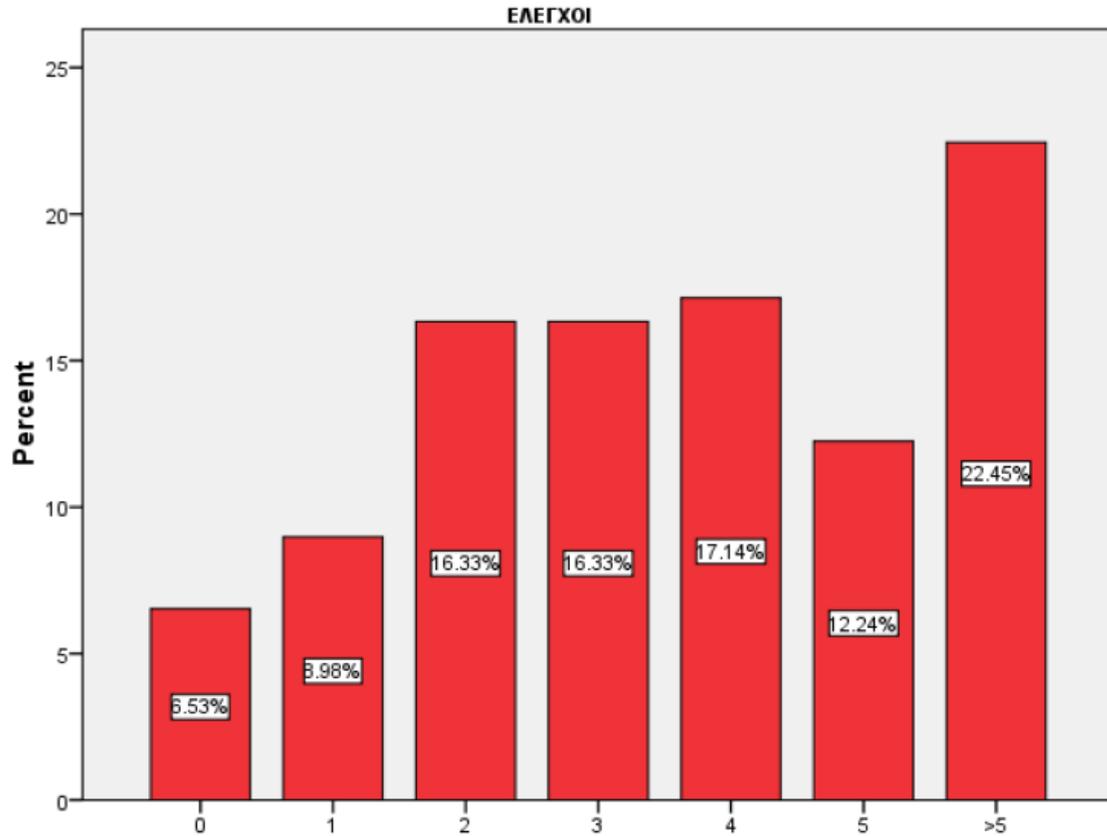


**CHECKS
PERCENT**

TIMES CHECKED

Figure 16. How many times have you been checked by traffic police in the past 5 years? (%ποσοστό) NON-PROFESSIONALS

The picture is different as far as professionals are concerned. Here, as shown on figure 17, professionals have been checked more times than non-professional drivers.



CHECKS
PERCENT

TIMES CHECKED

Figure 17. How many times have you been checked by traffic police in the past 5 years? (% percentage) PROFESSIONALS

A percentage of about 22% has been checked more than 5 times and about half of them have been checked between 2 and 4 times. A small percentage of 6.5% has never been checked in the 5 year period.

4. CONCLUSIONS

This exploratory survey into the views of drivers, professionals and non-professionals, has resulted in interesting conclusions, which need further examination.

The survey has found that respondents consider the following as the factors that contribute the most to traffic accidents:

- Poor road surface condition
- Aggressive driving
- Multiple violations by other drivers
- Traffic police presence/control
- Signage/signs/information

Also, non-professional drivers, as opposed to professional drivers, are checked less often, as 1/3 of them have not been checked even once by traffic police in the preceding 5 years.

Based on the above, further research is proposed with the objective of examining accident causing factors. This research that may include file analysis, focus groups as well as field research with questionnaires (possible over the telephone with a random sample) may lead to safer conclusions regarding traffic behaviour and safety.