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RATES OF INFORMATION AWARENESS ON AGGRESSIVE DRIVING AS THE INDICATORS OF THE EXISTING PROBLEMS IN THE SECTOR OF SPECIAL EDUCATION

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Abstract

In the road traffic field the biggest danger is caused by a phenomenon of „aggressive driving". The topicality of the problematic issue is noted by such organizations like the WHO and the UNO; as a result of this the term "aggressive driving" was introduced in Latvia on the legislative level. In the territory of Latvia a multistage study was performed; its aim was to study ideas of drivers on aggressive driving. During the study the following methods were used: method of associations, method of unfinished sentence, structured, partially structured and non-structured interview, personal differential method, socially demographic questionnaire and Aggressive Driving Questionnaire (Jenenkova, 2009). In all, 2160 drivers representing all regions of Latvia were questioned.

As a result of the study one of the components of ideas on aggressive driving was found out – information awareness, which is considered in this article. Information awareness is represented by the following component parts: self- evaluation of terminology knowledge (expected level), level of term understanding (expected level), term knowledge (real level), level of term understanding (real level), level of agreement with the formulation, information sources. During the comparative analysis of drivers' group and inspectors' group of the road traffic not only their differences by these components were discovered, but also the current problems in relation to the terminology knowledge and understanding were found out.

Key words: *aggressive driving, dangerous driving, drivers and inspectors, information awareness, problems in terminology, road traffic.*

Introduction

Problem of Research

In the reports of the World Health Organization (WHO) it is noted that 20-50 million people receive traumas in the road traffic accidents every year (Murray, Lopez, Mathers & Stein, 2001, Peden, Scurfield, Sleet, Mohan, Hyder, Jarawan & Mathers, 2004). Moreover, approximately 1,3 million more people get traumas, which are life-incompatible and lead to death (World Health Organization, 2008). Thus the nowadays situation proves that 3 thousand people die every day in the road traffic accidents, and the statistics point to death case increase as a result of the road traffic accidents during the recent years.

The age categories of economically active people suffer the most in the road traffic accidents, and the accidents not only take lives, traumatize state of mind and health, but also worsen the eco-

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nomical condition of the victim families (Transport Research Laboratory, 2003; WHO, 2008). Thus, equally to the crisis processes in the economical and the political sectors crisis is observed also in the safety sector and, namely, in the road safety sector. So, the General Assembly of the United Nations notified about the existence of the road safety global crisis (General Assembly of the United Nations, 2009).

In relation to the European region it is stated in the WHO's reports that in the Baltic States (Estonia, Latvia and Lithuania) and in the countries of the South Europe the rate of mortality in road traffic accidents is much higher than in the countries of the North Europe (Denmark, Iceland, Norway, Finland and Sweden) (Sethi, Racioppi, Frerick & Frempong, 2008; European Road Safety Observatory, 2008; Breuer, 2009).

To understand the general situation in Latvia it is important to analyze the data in the road traffic sector. Thus, summarizing the statistical data, it can be said that it is the first time in 2011 when increase of number of motor transport registered in the Road Traffic Safety Directorate is seen; besides, as of 01.01.12 there are total 786058 vehicles registered in Latvia, only 79% of them have passed the official checkup (CSDD, 2012d). Only 821425 people have active driver's licenses as of 01.12.2011, besides, in numerical expression – prevalence belongs to men - 60%; as of 01.08.12 the age proportion remains (CSDD, 2012a). It must be noted that the composition of students trained in driving schools has been leveled by the age feature. In 2011 22983 people received driver's licenses, 53% of them are women; besides, analogue tendency is observed during recent years as well (CSDD, 2012c).

The number of road traffic accidents with dead persons has decreased in 2011, but increase of accidents with victims and injured people has been stated, as well as increase of cases when drivers use psychoactive drugs (CSDD, 2012b).

Thus, data of the countries within the European Union and, namely, Latvia, show that the road traffic safety is an important issue, which requires solution.

Research Focus

The most dangerous behavior, as a result of which the road traffic accidents take place, is the aggressive driving. So, for instance, according to the data obtained in the course of study by the AAA Foundation for Traffic Safety - 56% of accidents with lethal outcome are connected with aggressive driving, and about 80% of respondents believe that aggressive driving is a serious problem in the road traffic safety sector (AAA Foundation for Traffic Safety, 2008).

Aggressive driving is a problem in the road traffic safety sector and causes increased attention in different countries of the world (UNECE, 2004). Studies performed by Gallup Europe show that 48% of respondents from the EU and 66% of respondents from the USA had become victims of aggressive driving, which had admitted it (EOS Gallup Europe, 2003).

Aggressive driving can be singled out as the most dangerous behavior at the wheel, as a result of which the road traffic accidents are caused. So, for instance, according to the Gallup Europe data, during the study 48% of the EU's respondents and 66% of the USA's respondents admitted that they had been victims of drivers' aggressive driving style (EOS Gallup Europe, 2003). Aggressive driving has been acknowledged on the UNO and the WHO level as one of the most important reasons of road traffic accidents.

To fight against aggressive driving manner by cars, the European Economic Commission (EEC) initiated the UNO to perform the road traffic safety measures on the continent of Eurasia, which were supported by governments of different countries (UNECE, 2004).

At the EEC (European Economic Commission) seminar within the frames of the UNO, on aggressive driving issue, Bernard Perisset noted that among all factors, which are in the middle of the road transport accidents, the main role belongs to human behavior, and in this context particular concern is caused by aggressive driving (UNECE, 2004).

Despite the importance and topicality of this issue, it should be noted that there are problems affecting the used terminology. So, attempts of various researchers to give the definition of the phenomenon "aggressive driving", have not led to united terminology.

Considering this issue, for instance, Hauber shows a tendency to define, and he emphasizes the

everyday knowledge more (Hauber, 1980). Mizell, studying aggressive driving, includes such behavior in this definition, which is deliberate and has a purpose of harming (Mizell, 1997). Shinar, basing on the frustration-aggressive model, performs categorization of aggressive driving into hostile and instrumental, as well as separates the definition of aggressive driver and aggressive driving (Shinar, 1998). Elliott speaks about the necessity of singling out a special category of such behavior on the road like the road rage. He suggests considering such behavior within the frames of the criminal law (Elliott, 1999).

Evaluation of aggressive driving, in the judgment of Neuman and Tasca, must be implemented taking into consideration not only the driver's psychological condition, but also the environmental factors (Neuman, Pfefer, Slack, Hardy, Raub, Lucke & Wark, 2003).

Difficulties, which exist when introducing terminology, can be demonstrated with an example of term introduction in the territory of the USA. So, James and Nahl have executed study of definitions, which were adopted in 14 states. Comparative analysis showed that only 11 speech expressions of 30 had a specific form of expression. Besides, if there is no full and precise formulation, subjectivism was present in all formulations among all states (James & Nahl, 2000a).

As an example, one can mention the most volumetric parts of formulations, which were met in the states of Arizona and New Jersey. Arizona. «Drivers could be charged with aggressive driving if they are cited for a combination of any three of the following charges: committing two or more listed offenses that include failing to obey a traffic control device; passing on the right or on the shoulder; tailgating or following too closely; failing to signal lane changes or to change lane properly; failing to yield the right-of-way; running a red light or stop sign; driving over the "core" area entering or exiting a highway; passing a vehicle on the right by traveling off the pavement» (Aggressive Driving Laws USA, 2000, p. 1).

New Jersey. «The aggressive driver is identified through the following violations of traffic regulations: Speeding (breaking the speed limit); Following Too Close (less than safe distance); Driving While Intoxicated; Disregard Of Traffic Signs and Signals; Driving While Suspended» (Aggressive Driving Laws USA, 2000, p. 1).

It is not the perfection of terminology that has led to modifications in formulations during this period of time. So, for instance, formulations from the states studied before sound differently now. Arizona. "Speeding and least two of the following: failure to obey traffic control device, passing on the right out of regular lanes of traffic, unsafe lane change, following too closely, failure to yield right of way; and is an immediate hazard to another person or vehicle" (Aggressive Driving Laws USA, 2012, p. 1).

A term „aggressive driving" was removed from the legislation base in the state of New Jersey and punishment for aggressive driving today is ensured within the frames of the existing laws (Aggressive Driving Laws USA, 2012, p. 1).

According to the data of the Canadian National Police (RCMP), for instance, the term of aggressive driving includes: "driving which creates undue risk or endangers the safety of another person or vehicle; involves the operation of a motor vehicle in manner which endangers or is likely to endanger person or property; aggressive driving may range from personal risk-taking behavior to hostile action toward another person". Besides, aggressive driving can be characterized by such violations: "speeding and excessive speeding, follow too closely (tailgating), unsafe lane change – weave in and out of traffic, rolling through stop signs, fail to stop for yellow and/or red light, blocking intersections, fail to yield" (Canadian national police, 2012, p. 1).

The term „aggressive driving" was introduced in Latvia as well, which includes the following content:

"1) Execution of several consecutive violations, which are connected with establishment of situations that are dangerous to the road traffic or situations putting obstacles in the way of it.

2) Vehicle driving in such way that a violation of the road traffic rules is committed and the hindrances for even flow of the vehicles are created; or interests of drivers of other vehicles are ignored (repeated change of driving lanes with outstripping, lead of several vehicles, which are in traffic jam or moving in a column on the wrong side, or the lane, which is meant for movement of passenger vehicles of public use, on the roadside, pavement, footway, bikeway or other places not meant for movement of vehicles" (MK noteikumi, 2004, 2006, 2009).

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Thus, lack of united terminology and differences in its interpretation, which are shown by the analysis of studies among different world countries, shows that this issue is interesting for further study activity. The multi-stage study performed in the territory of Latvia reflects various aspects of the problematic issue of aggressive driving (EH). Drivers, driving motor transport, follow their own ideas about aggressive driving; besides, the level of their information awareness may differ by various indicators. In connection with this, this article analyzes such a block of issues connected with information awareness of drivers regarding aggressive driving.

Methodology of Research

General Background of Research

In the course of a multi-stage study different aspects of the phenomenon of "aggressive driving" were studied (Jenenkova, 2009a,b,c,d,e; Jenenkova, 2010a,b). In all, 2160 respondents took part in the study. All Latvia was represented in the study, because the respondents from all regions of Latvia were surveyed.

Sample of Research

The number of participants of this study was 300 people, 150 of them were drivers, and 150 – road traffic inspectors. Drivers were represented by men at the age to 30 years, because, according to the statistical data of road traffic accidents in Latvia, male drivers younger than 30 years are the most dangerous for the road traffic participants. Besides, it was discovered during the previous stages of the study that the respondents had described this group as the group of potentially dangerous drivers or the risk group. Additionally, during the previous stages of the study, respondents singled out the group of road traffic inspectors. On the one hand road inspectors participate in the traffic; on the other hand they control and organize the process of traffic. The respondents indicated the fact that the inspectors opinion about the phenomena of aggressive driving style is opposite the point of view of young drivers. Besides, the inspectors can be the experts in this case. From the point of view of the road traffic safety it was significant to learn and compare the information awareness of both these groups.

Instrument and Procedures

The following methods were applied during the study: association method; incomplete sentence method; structured, partially structured and non-structured interview; personal differential method; Aggressive Driving Questionnaire (Jenenkova, 2009).

In this article the results are represented, which were obtained in the course of study with the help of the ADQ. The ADQ is meant for research of representations about aggressive driving and includes the following semantic blocks: phenomenon observability; tendencies of the phenomenon under observation; thoughts of the respondents, connected with aggressive driving; characteristics given by the respondents to the present drivers (sex-age, social, personality related); self-concept of knowledge and understanding of normative terminology; manifestations, causes, provoking the factors of the present phenomenon; feelings and reactions caused to the respondents in relation to the present phenomenon; information awareness of the respondents; evaluation of the level of aggressive driving in Latvia and neighboring countries; measures that are directed to decrease the phenomenon under research in the society. As a result of the study a great amount of data were obtained, which can be presented in various subject blocks.

Detailed analysis of each of the ascertained semantic blocks, including, with the respective topically substantiated description of instruments, was set forth not only in multiple reports at the international conferences, but also described in individual articles with the corresponding topics. Presence of various semantic blocks in the Inquirer, which are included in the common topic concerning the perception of aggressive driving by drivers, allows, if necessary, using of individual thematic blocks of inquirer in studies. The article contains analysis of such blocks of inquirer,

which allow discovering the topic of information awareness about aggressive driving. Because the block of information awareness is considered in this article, only this block of meaning will be represented here. Participation in the research was voluntary. Confidentiality was guaranteed to the respondents.

Data Analysis

In the course of the whole multi-stage study the following methods of statistical data analysis were applied: frequency analysis, central tendency statistical rates, determination of Cronbach's Alpha rates for control of results' credibility and coherence, One-Sample Kolmogorov-Smirnov Test for determination of results' normal distribution; Spearman's rank correlation for analysis of interconnections; χ^2 criterion and Mann-Whitney test for analysis of results' differences, factor analysis (Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization), cluster analysis. To process the results the SPSS program was applied.

The following methods of statistical data analysis were applied in this article for analysis of the issue of information awareness about aggressive driving: One-Sample Kolmogorov-Smirnov Test for determination of results' normal distribution, Pearson Chi-Square tests, Mann-Whitney test for analysis of results' differences, cluster analysis.

Results of Research

Information Awareness

Information awareness of respondents in relation to determination of aggressive driving was defined by such factors as self-evaluation of terminology knowledge (expected level), level of term understanding (expected level), term knowledge (real level), level of term understanding (real level), level of agreement with the formulation, information sources.

Self-evaluation of Terminology Knowledge

In the course of study respondents of both groups evaluated their knowledge of terminology (without having the officially adopted formulation. This evaluation's indicator – "Self-evaluation of terminology knowledge" (I_1).

Distribution of factor for the group of drivers differs considerably from the standard one (Kolmogorov-Smirnov $Z=2.459$, $p<0.05$). Distribution of this factor for the group of road traffic inspectors differs considerably from the standard one (Kolmogorov-Smirnov $Z=3.099$, $p<0.05$). Self-evaluation of terminology knowledge by the road traffic inspectors is higher than it is for the drivers; and these differences are statistically significant (Mann-Whitney $U=9166$, $Z=-2.928$, $p<0.05$).

Level of Term Understanding (expected level)

Respondents evaluated the level of intelligibility of the adopted terminology from their point of view. This evaluation was performed without providing them with the officially adopted formulation and refers to the supposed level of intelligibility. This evaluation's indicator – "Level of term understanding (expected level)" (I_2). Distribution of factor for the group of drivers differs considerably from the standard one (Kolmogorov-Smirnov $Z=2.378$, $p<0.01$). Distribution of this factor for the group of road traffic inspectors differs considerably from the standard one as well (Kolmogorov-Smirnov $Z=2.886$, $p<0.01$). The term (expected level) for the road traffic inspectors is clearer than for the drivers; these differences are statistically significant (Mann-Whitney $U=8796.5$, $Z=-3.412$, $p<0.05$).

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Term Knowledge (real level)

Evaluation of real knowledge of respondents was performed considering their answers to the question about the sum of penalty sanctions for this type of violation. Besides, the fact was taken into consideration relating to their knowledge about calculation of penalty points for aggressive driving, as well as the correctness of the answer relating to the calculated penalty points was analyzed. Evaluation of real knowledge instead of knowledge declared by respondents was performed. This evaluation's indicator – "Term knowledge (real level)" (I_3).

Thus, the factor "real term knowledge" contains the following components: knowledge about applicable penalty provisions, knowledge about calculation of penalty points, knowledge about the correct sum of the calculated penalty points.

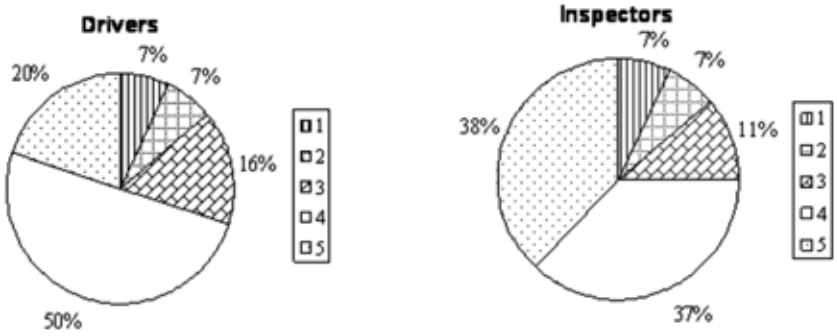
1. The correct answer regarding the sum of penalty provisions was given only by 58.7% of respondents. In the group of road traffic inspectors 92.7% of respondents gave the correct answer about the penalty provisions, whereas among drivers the correct answer was given only by 24.7%. The differences are statistically significant (χ^2 =143.017, df=1, p<0.01).
2. Calculation of penalty points was marked only by 2.3% of respondents. Among drivers the answer was given by 2% of respondents, among inspectors of road traffic – 2.7%. There are no statistical differences in the answers of two groups (χ^2 =1.143, df=2, p=0.565).
3. Knowledge about the correct sum of calculated penalty points is observed for 2% of respondents. The correct sum of penalty points among drivers was written by 1.3% of respondents, in the group of road traffic inspectors – 2.7%. In both groups a very low level of correct answers to this question is observed; there are no statistically significant differences (χ^2 =0.680, df=1, p=0.409).

Aggregated rate for the factor I_3 is calculated as the sum of correct answers by all three components: knowledge about the applicable penalty provisions, knowledge about calculation of penalty points, knowledge about the correct sum of calculated penalty points. Inspectors demonstrate much higher level of terminology level and these diferences are statistically significant (Mann-Whitney U=3880, Z=-11.384, p<0.05).

Level of Term Understanding (real level)

To answer the question on the level of intelligibility of legislatively adopted terminology specific formulations from the road traffic rules, intelligibility of which was evaluated by respondents, were given. This evaluation's indicator – "Level of term understanding (real level)" (I_4). Thus, in relation to the level of term understanding (real level) two parts of formulation of the term „aggressive driving" were mentioned from the road traffic rules, which the respondents evaluated separately by the criterion of understanding. The factor was evaluated by understanding of such a formulation (1) "Performing several violations following each other and connected with causing of dangerous situations for oneself and other car drivers".

The first part of the formulation of aggressive driving fro the RTR (road traffic rules) is more understandable for inspectors than for drivers; these differences are statistically significant (Mann-Whitney U=9416.5, Z=-2.590, p<0.05). Figure 1 represents the level of understanding of the first part of the official formulation of aggressive driving. When trying to understand the first part we observe significant statistical differences regarding drivers and inspectors (χ^2 =13.471, df=4, p=0.009). The first part is completely clear only for 20% of drivers, whereas among inspectors we have 39%. In this part of formulation 80% of drivers and 61% of inspectors need explanations and supplements. Among respondents, in each questioned group, there are 7% of respondents, which do not understand this formulation at all.



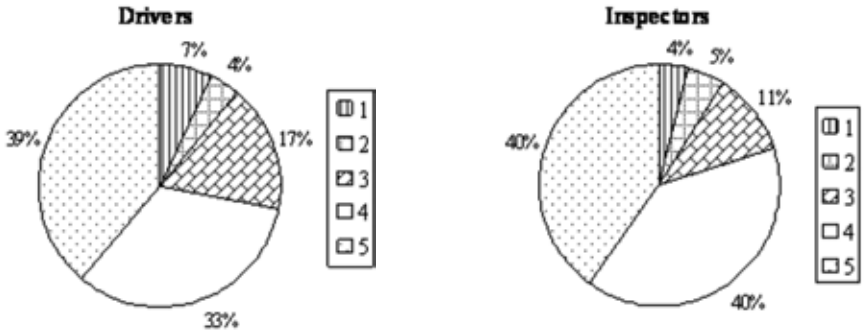
1. Completely unclear; 2. Unclear, explanations are needed, with examples; 3. Slightly unclear, explanations are needed, with examples; 4. In general clear, but explanations and additions are needed; 5. Completely clear

Figure 1: Level of understanding of formulation of aggressive driving (Part 1) by drivers and inspectors.

The factor is evaluated by understanding of formulation (2) like "About aggressive driving, causing obstacles to other road traffic participants, which is expressed in multiple change of driving lanes overtaking vehicles from different sides and exceeding the allowed driving speed, or overtaking of several standing or slowly moving vehicles along the opposite driving lane or driving on the public transport lane, wayside, pavement, footway, bicycle lane or other places, which are not meant for vehicle driving, or tram overtaking on the opposite direction rail bed".

The distribution of the factor for the group of drivers differs significantly from the standard one (Kolmogorov-Smirnov Z=2. 960, $p<0.01$). Distribution of the factor for the inspector group differs significantly from the standard one as well (Kolmogorov-Smirnov Z=3.289, $p<0.01$). There are no statistically significant differences regarding understanding of the second formulation among groups (Mann-Whitney Z=-0.984, p=0.325).

Figure 2 shows the level of understanding of the second part of the official formulation of aggressive driving. No significant differences are seen in the understanding of the second part (χ^2 =5.440, df=4, p=0.245). The second part is completely clear to 39% of drivers; among inspectors we have 40%. In this part of formulation 61% of drivers and 60% of inspectors need explanations and supplements. There are 7% of drivers and 4% of inspectors among the respondents, which do not understand this formulation at all.



1. Completely unclear; 2. Unclear, explanations are needed, with examples; 3. Slightly unclear, explanations are needed, with examples; 4. In general clear, but explanations and additions are needed; 5. Completely clear

Figure 2: Level of understanding of formulation of aggressive driving (Part 2) by drivers and inspectors.

Value of factor I_4 is calculated as a sum of points collected during evaluation of understanding of both parts of formulation. Inspectors demonstrante much higher level of understanding than drivers; and these differences are statistically significant (Mann-Whitney U=9416, Z=-2.220, p=0.026).

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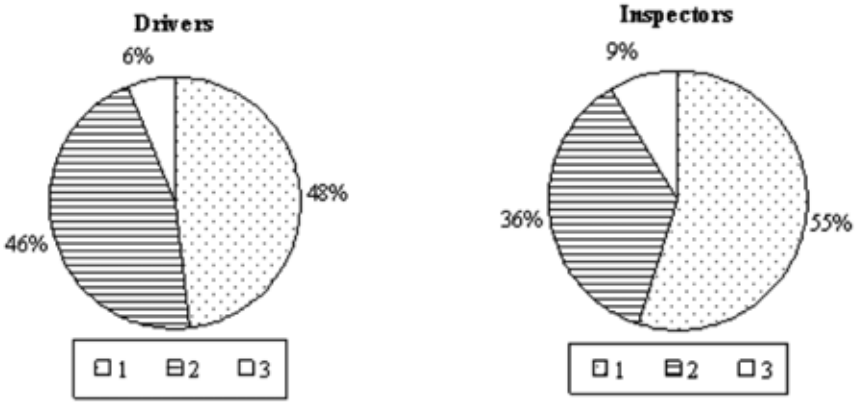
Level of Agreement with the Formulation

After evaluation of understanding of the given formulations from the RTR the respondents marked the level of their agreement with these formulations. Individually, for each formulation, the respondents evaluated the level of their agreement with it. This evaluation's indicator – "Level of agreement with the formulation" (I_5).

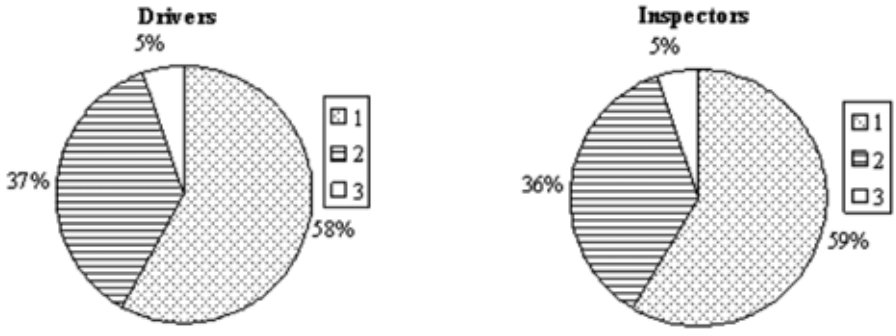
In all 51.7% of respondents agree with the first formulation, 7.3% do not agree, 41% partially agree. 48% of drivers and 55% of inspectors expressed their agreement with the first formulation. 6% of drivers and 8.7% of inspectors do not agree with this formulation at all (Figure 3). There are no statistically significant differences among groups in relation to the level of agreement with the first formulation (χ^2 =3.337, df=2, p=0.189).



1. Agree 2. Partially agree 3. Do not agree

Figure 3: Level of agreement with the formulation of aggressive driving (Part 1) for drivers and inspectors.

In all 58.7% of respondents agree with the second formulation, 5.3% do not agree, 36% partially agree. 58% of drivers and 58.7% expressed their agreement with the second formulation. 5.3% of drivers and 5.3% of inspectors do not agree with this formulation at all (Figure 4). There are no statistically significant differences among groups in relation to the level of agreement with the second formulation (χ^2 =0.060, df=2, p=0.971).



1. Agree 2. Partially agree 3. Do not agree

Figure 4: Level of agreement with the formulation of aggressive driving (Part 2) for drivers and inspectors.

Aggregated value of factor I_5 is calculated as a sum of points collected during the analysis of both parts of formulation. The level of agreement with the offered formulation does not significantly differ for inspectors and drivers (Mann-Whitney U=10469.5, Z=-1.114, p=0.265).

Information Sources

The respondents name the following information sources most frequently: personal experience 60% (55% of drivers and 65% of inspectors, (χ^2 =2.722, df=1, p=0.099); acquaintances, friends 42% (61% of drivers and 23% of inspectors, (χ^2 =11.521, df=1, p<0.001); television 39% (56% of drivers and 21% of inspectors, significant differences - Pearson Chi-Square Tests, p<.001). Drivers have marked the following sources as the information sources most often - acquaintances, friends 61%, television 56%, and personal experience 55%. Inspectors have marked the following sources as the information sources most often - personal experience 65%.

Radio, as the information source, was marked by drivers more often - 33%, than by inspectors - 17% (χ2 =44.588, df=1, p<0.001); newspapers – drivers marked them more often - 28%, than inspectors - 6% (significant differences - χ2 =10.150, df=1, p<0.001, magazines - drivers marked them more often - 8%, than inspectors 3% (χ2 =1.418, df=1, p=0.234).

It is important to note data for the following important sources: Road traffic rules and other documents -16% (χ2 =2.480, df=1, p=0.115); Road Traffic Safety Directorate - 9% (χ2 =2.722, df=1,p=0.099); car drivers' training courses – 7% (12% of drivers and 2% of inspectors; there are differences between groups (χ2 = 38.006, df=1, p<0.001).

Interconnection between Factors of Information Awareness

There is statistically significant direct correlation between such factors of information awareness like self-evaluation of terminology knowledge (I_1) and the expected term understanding (I_2), besides, this correlation is much closer for the inspectors (r=0.615), than it is for the drivers (r=0.437). For the inspectors the self-evaluation of terminology knowledge and the expected term understanding are connected with the real term and formulation understanding as well (r(I_1,I_4)=0.248, r(I_2,I_4)=0.378); for the drivers these correlations are not statistically significant. Besides, drivers show rather weak, but significant, correlation between the real term knowledge and its understanding (r(I_3, I_4)=0.199).

Cluster Analysis of Rates of Information Awareness

Two-stage cluster analysis in the space of factors I_1, I_2, I_3, I_4, I_5 allowed dividing all respondents into more informed CL1_I and less informed CL2_I (Figure 5). 55% of respondents enter in the cluster of more informed CL1_I, 45% - in the cluster of less informed CL2_I.

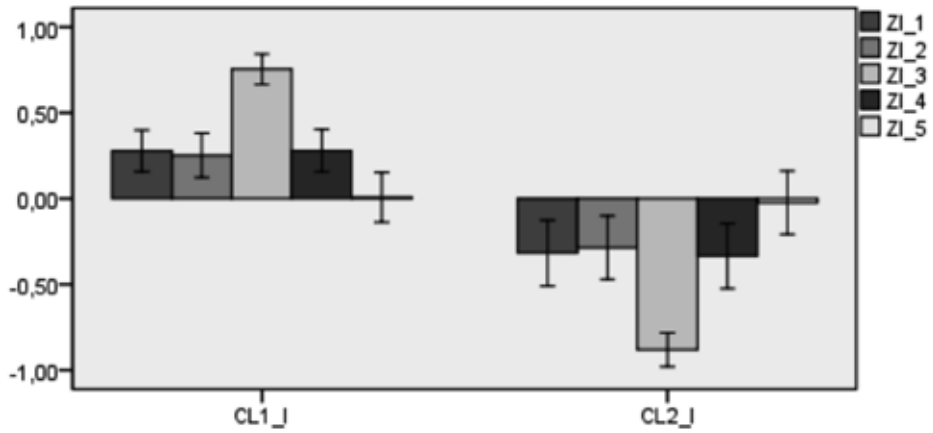


Figure 5: Average value of standardized factors of information awareness in the clusters of more and less informed respondents.

Figure 5 represents standardized values of rates of information awareness that were considered earlier: "Self-evaluation of terminology knowledge" (ZI_1); "Level of term understanding (expected level)" (ZI_2); "Term knowledge (real level)" (ZI_3); "Level of term understanding (real level)"

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(ZI_4); "Level of agreement with the formulation" (ZI_5), which have been represented in the cluster of more informed respondents (CL1_I) and less informed respondents (CL2_I). More informed respondents in the cluster (CL1_I) evaluate all factors of information awareness: ZI_1, ZI_2, ZI_3, ZI_4, ZI_5, higher than on the average in total, whereas the respondents with less level of information awareness in the cluster (CL2_I) evaluate all the above listed factors of information awareness lower than on the average in total.

The singled out clusters significantly differ by all rates of information awareness (Mann-Whitney U=7666(I_1), U=7862(I_2), U=1326(I_3), U=7437(I_4), $p<0.001$), except I_5 (Mann-Whitney U=10501, Z=-1.114, p=0.528). Besides, the factor I_3 has the most differentiating action, which is reflecting the real knowledge of terminology.

There is statistically significant dependence between the information awareness of respondents and their belonging to drivers or inspectors ($\chi^2 = 87.74$, df=1, p=0.078). The cluster of more informed respondents has only 25% of drivers, which constitutes 27% of all drivers participating in the survey. 81% of inspectors belong to the more informed respondents.

Discussion

Information Awareness about Aggressive Driving

Respondents of both groups tend to evaluate their knowledge on a high level. Inspectors not only evaluate their knowledge higher than drivers, but they demonstrate much higher real knowledge level, but the drivers have increased self-evaluation in these issues and they tend to overestimate their knowledge. Although it must be noted that in both groups there are lacks of knowledge in relation to the calculated penalty points, it proves specific difference of knowledge in this field. This might point to the peculiarities of application of this clause of road traffic rules in the territory of Latvia. On the one hand, this might point to its infrequent use; on the other hand, it can be explained by not that considerable sum both in money terms and in calculated penalty points. It can be confirmed by the analysis of similar data in other countries (James & Nahl, 2000b; Aggressive Driving Laws USA, 2012; Canadian national police, 2012).

There are differences evaluating the valid normative formulation, so, the first part of formulation was clearer for inspectors than for drivers, although more than a half of respondents – both drivers and inspectors – noted necessity to correct it. Then second part of aggressive driving formulation was clearer than the first one – both for drivers and inspectors. Yet the second part of formulation needs addition and clarification as well, because its full understanding was noted by less than a half of respondents - both drivers and inspectors. One must note that before mentioning of the normative term sample the respondents evaluated term understanding higher than average, probably, they thought that the term was clearer to them than it proved to be in reality. The level of agreement with the suggested formulations by the aggregated factor for inspectors and drivers does not materially differ.

The formulation itself may influence the level of understanding and agreement with the officially adopted terminology on aggressive driving. So, presence of subjectivism and inaccuracy is seen in the formulations of aggressive driving, to one or another extent. It is proved by studies performed by James and Nahl (James & Nahl, 2000b).

Drivers, within the meaning of information awareness, more often than inspectors, orient themselves to acquaintances, friends and television. For inspectors the leading position among information sources is taken by personal experience; and they mentioned it more often than drivers did. One must note that among drivers personal experience took the third place as the information source; and more than a half of respondents mentioned it. Besides, inspectors, unlike drivers, do not perceive newspapers and radio stations as information sources in this issue. Respondents of both groups do not tend to refer to the RTR and other documents, RTSD and car driving training courses as to the information sources.

Between the two groups there are differences in the structure and power of information correlations. Inspectors have more integrated picture of correlations than drivers, besides, correlations between are higher for them.

Sector of education and mass communication media influences the process of formation of ideas of drivers, including, about aggressive driving. In case of deficiencies in the work of educational institutions, including, driving schools, the missing knowledge may be filled in from other sources, namely, from the mass communication media. This procedure not only influences the distortion of the actual (real) information, but also may facilitate formation of imaginary knowledge and false perception, which is extremely dangerous for the road traffic safety. Importance of the modern, full and precise acquisition of knowledge in the sector of special education, which concerns the road traffic safety training, is determined by some more points. So, in connection with the objective difficulties, which exist while formulating the definition of aggressive driving, special meaning is attributed not only to knowledge of specific information, but also its clear understanding. So, the analysis of works of such researchers like: Hauber, Shinar, Elliott, Tasca, Neuman, Pfefer, Slack, Hardy, Raub, Lucke, Wark, points to these difficulties (Hauber, 1980; Shinar, 1998; Elliott, 1999; Tasca, 2000; Neuman, Pfefer, Slack, Hardy, Raub, Lucke & Wark, 2003; EOS Gallup Europe, 2003; AAA Foundation for Traffic Safety, 2008). Thus, the quality of training in driving schools impacts not only formation of theoretical knowledge basis in the sector of road safety and practical skills of motor transport driving, but also the perception of road situation and further behavior of drivers.

Considering and analyzing various studies in the sector of transport psychology, analogue studies were not discovered. Study of information awareness among different groups of drivers, as well as among students of driving schools could be the next line of studies. One of the variants of the future direction for studies could be the study of correlation of the committed road traffic violations and the information awareness level.

Conclusions

Thus, summarizing the obtained results in relation to information awareness of respondents, it can be stated that drivers, having low level of knowledge about aggressive driving, are tended to overestimate the level of their knowledge. Respondents from both groups are not tended to mention the calculated penalty points for this type of violation.

The first part of the official formulation was less clear for drivers than for inspectors, whereas understanding of the second part does not between drivers and inspectors. Only slightly more than a half of respondents – both drivers and inspectors – have noted their full agreement with the adopted terminology. There are no statistical differences between the groups regarding this issue.

Insufficient term's understanding could have affected the choice of information sources, in relation to aggressive driving, which are mainly followed by the drivers.

Drivers tend to use more different information sources. Besides, they do it more often than inspectors. Information sources used by them are doubtful, from the point of view of normatives information's acquisition.

Drivers have a less integral picture of interconnections in the field of information awareness than inspectors have. Inspectors show closer relations between components of information awareness as well. Thus, the information fields of drivers and inspectors have differences not only in quantitative sense but also in qualitative meaning.

In relation to the obtained results it should be noted that the discovered issues require solution on different levels. For instance, accumulation of precise theoretical knowledge of the road traffic rules (RTR) of the future driver cannot be the final target of theoretical training in driving schools. The semantic understanding of normative requirements is important, as well as their direct and constant application in practice. Besides, direction of attention in the field of car drivers' training must be oriented not only to the current and adopted documents (normative standards), but also to the future permanent self-educating in this sector. It becomes possible only having drivers' information orientation to the primary normative sources, and not to the subjective interpretations, which are expressed through mass media. On the one hand, level of understanding and agreement of the respondents with the official term may indicate the existing problems in terminology itself. So, level of term understanding and level of agreement with the term show the necessity of further correction of this formulation.

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References

AAA Foundation for Traffic Safety. (2008). *2008 Traffic Safety Culture Index.* Washington, DC: Retrieved 5.06.2010, from http://www.aaafoundation.org/pdf/2008TSCIndexFinalReport.pdf.

Aggressive Driving Laws. (2000). Highway Safety Laws by USA. Aggressive Driving Laws, Governors. Highway Safety Association, October. USA. Retrieved 20.12.2000, from http://www.ghsa.org/html/stateinfo/laws/aggressivedriving_laws.html.

Aggressive Driving Laws. (2012). Highway Safety Laws by USA. Aggressive Driving Laws, Governors Highway Safety Association, August. USA. Retrieved 5.09.2012, from http://www.ghsa.org/html/stateinfo/laws/aggressivedriving_laws.html

Canadian national police. (2012). *Road Safety: Aggressive Driving*. RCMP. Retrieved 8.08.2012, from http:bc.rcmp-grc.gc.ca/ViewPage.action?siteNodeId=370&languageId=1&contentId=6730

Contact Law. (2012). *Motoring offences.* Thomson Reuters UK Ltd, London. Retrieved 4.10.2012, from http://www.contactlaw.co.uk/motoring-offences.html

CSDD, (2012a). Aktīvo vadītāju apliecību skaita dinamika uz 01.12.2011. [Active dynamics of the number of licenses]. Retrieved 5.07.2012, from

http://www.csdd.lv/lat/noderiga_informacija/statistika/vaditaja_apliecibas/

CSDD. (2012b) Ceļu satiksmes negadījumu skaits. [Road traffic accidents]. Retrieved 5.07.2012, from http://www.csdd.lv/lat/noderiga_informacija/statistika/celu_satiksmes_negadijumi/

CSDD. (2012c). Jauno autovadītāju skaita dinamika. [The trend of young drivers]. Retrieved 5.07.2012, from http://www.csdd.lv/lat/noderiga_informacija/statistika/vaditaja_apliecibas/

CSDD. (2012d). Reģistrēto transportlīdzekļu skaits. [Number of vehicles registered]. Retrieved 5.07.2012, from http://www.csdd.lv/lat/noderiga_informacija/statistika/transportlidzekli/

Breuer, D. (2009). *European status report on road safety*. Towards safer roads and healthier transport choices. Rome, Italy

EOS Gallup Europe. (2003). *Aggressive driving behaviour is a global issue*. UNECE. Retrieved 5/07/2012, from http://www.unece.org/fileadmin/DAM/trans/roadsafe/docs/EOSGallup.doc

Elliott, B. (1999). Road rage - media hype or serious road safety issue? Paper presented at the *Third International Conference on Injury Prevention and Control*. May 9-12, Brisbane, Australia, 14pp.

European Road Safety Observatory. (2008). *Annual statistical report* 2008. Brussels.

General Assembly of the United Nations. (2009). Global road safety crisis Improving global road safety. *Sixty-fourth session A/64/266*, 7 August. Item 48 of the provisional agenda.

Hauber, A.R. (1980). The social psychology of driving behaviour and the traffic environment: Research on aggressive behaviour in traffic. *International Review of Applied Psychology*, *29*, 461-474.

James, L. & Nahl, D. (2000a). Road rage and aggressive driving: Steering clear of highway warfare. Amherst, NY: Prometheus Books.

James, L. & Nahl, D. (2000b). Aggressive Driving is Emotionally Impaired Driving. University of Hawai.

Jenenkova, O. (2009a) Aggressive Driving: The Differences of Social Representation. Paper Presentation. *The 3th International Scientific - Practical Conference "Business, Studies and Me",* Shiauliai.

Jenenkova, O. (2009b). The problem of Aggressive driving and road safety. Paper presentation. *XXVII International Baltic Road Conference*, Riga.

Jenenkova, O. (2009c) Social representations on aggressive car driving of different groups of drivers. Paper Presentation. *The 51st International Scientific Conference of Daugavpils University*. *(Daugavpils).*

Jenenkova, O. (2009d). The complex psychological approach to the decision of problems of Aggressive Driving. *Psycho-social work in modern society: problems and solutions. The proceedings of the annual international scientific conference*. St. Petersburg State Institute of Psychology and Social Work.

Jenenkova, O. (2009e). The description of the phenomenon of the aggressive car driving, reaction on the aggressive car driving and the social psychological picture of the aggressive drivers from the point of view of chosen groups of Latvian society. *Journal of International Scientific Publications: Language, Individual and Society, 3*.

Jenenkova, O. (2010a). The road traffic safety and the notions of inhabitants of Latvia of the Phenomenon „aggressive driving". *Procedia - Social and Behavioral Sciences*, *5,* 2398-2403. doi:10.1016/j.sbspro.2010.07.470.

Jenenkova, O. (2010b). The Representations of inhabitants of Latvia about reasons of aggressive vehicle driving. *Procedia - Social and Behavioral Sciences, 5*, 520-525. doi:10.1016/j.sbspro.2010.07.136.

Mizell, L. (1997). *Aggressive driving in Aggressive Driving: Three Studies*. AAA Foundation for Traffic Safety, Washington D.C., pp. 1-13

MK noteikumi (2004). Pārkāpumu uzskaites punktu sistēmas piemērošanas noteikumi. [Penalty point system]. 30.06. Ministru kabineta noteikumi 551. *Latvijas Vēstnesis, 102* (3050).

MK noteikumi (2006). Pārkāpumu uzskaites punktu sistēmas piemērošanas noteikumi. [Penalty point system]. 12.10. Ministru kabineta noteikumi 840. *Latvijas Vestnesis, 163* (3531).

MK noteikumi (2009). Pārkāpumu uzskaites punktu sistēmas piemērošanas noteikumi. [Penalty point system]. 30.01. Ministru kabineta noteikumi 69. *Latvijas Vēstnesis, 17* (4003).

Murray, C., Lopez, A., Mathers, C. & Stein, C. (2001). *The Global Burden of Disease 2000 project: aims, methods and data sources*. GPE Discussion Paper No. 36. Geneva, World Health Organization.

Neuman, T. R., Pfefer, R., Slack, K. L., Hardy, K. K., Raub, R., Lucke, R., & Wark, R. (2003). *Guidance for implementation of the AASHTO Strategic Highway Safety Plan. Volume 1: A guide for addressing aggressive-driving collisions. NCHRP Report 500.* Washington, DC: Transportation Research Board.

Peden, M., Scurfield, R., Sleet, D., Mohan, D., Hyder, A. A., Jarawan, E., & Mathers, C. (2004). *World report on road traffic injury prevention*. World Health Organization, Geneva.

Sethi, D., Racioppi, F., Frerick, B., & Frempong, N. (2008). *Progress in preventing injuries in the WHO* European Region. WHO Regional Office for Europe, Rome.

Shinar, D. (1998) Aggressive driving: the contribution of the drivers and the situation. *Transportation Research Part F 1*, pp. 137-160

Tasca, L. (2000). *A review of the literature on aggressive driving research.* Ontario Advisory Group on Safe Driving Secretariat: Road User Safety Branch.

Transport Research Laboratory, Department for International Development (2003). *Guidelines for estimating the cost of road crashes in developing countries* (project R7780). London. Retrieved 12.08.2010, from

http://www.transport-links.org/transport_links/fi learea/publications

United Nations Economic Commission for Europe (UNECE). (2004). A framework for national road safety campaigns. *Transport Division Palais des Nations - CH - 1211* Geneva 10, Switzerland Website: http://www.unece.org/trans/roadsafe/rs4rs.html

UNECE. (2004). *Aggressive driving behaviour (background paper)*. Fourth Road Safety Week

(5 – 11.04). Retrieved 12.08.2010, http://www.unece.org/trans/roadsafe/rs4aggr.html

World Health Organization. (2008). *The global burden of disease: 2004 update.* Geneva, WHO.

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