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PREFACE

17th International conference Transport Means 2013 takes place at Kaunas University of Technology and Klaipėda University on 24th – 25th October 2013. It continues long tradition and reflects the most relevant scientific and practical problems of transport engineering.

The aims of the conference are to share the latest information on the issues of transport means engineering and transportation technologies, to develop international relations of Lithuanian professionals in the science of transport as well as to get students interested in the transport research.

The reports cover a vide variety of topics related to the most pressing issues of today’s transport systems development.

The main areas covered in plenary session and in the sections are: design development, maintenance and exploitation of transport means, implementation of advanced transport technologies, development of defense transport, environmental and social impact, advanced and intelligent transport systems, transport demand management, traffic control, specifics of transport infrastructure, safety and pollution problems, integrated and sustainable transport, modeling and simulation of transport systems and elements.

In the invitations to the conference, sent five months before the conference starts, the instructions how to prepare reports and how to model the manuscripts are provided as well as the deadlines for the reports are indicated.

Those who wish to participate in the conference should send the texts of the reports that meet relevant requirements under indicated deadlines. Each report must include: a short description of the idea or technique being presented, a brief introduction orienting to the importance an uniqueness of the submission, a thorough description of research course and comments on the results.

The submissions are matched to the expertise according to the interests and are forwarded to the selected reviewers.

Scientific Editorial Committee revises, groups the properly prepared reports according to the theme and design the conference programme.

The Proceedings are compendium of selected reports presented at the Conference.

Chairman of the Division of Technical Sciences of Lithuanian Academy of Sciences
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Changes in Learner Drivers' Attitudes to Road Safety and the Fear of Driving during the Driving Course

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Abstract

In this article, the attitude of Lithuanian learner drivers and new drivers towards safe driving and the fear of driving are analysed. Two measurements of the mentioned constructs were taken: the moment when the future drivers started studies in the driving schools, and two months later, after they had completed the driving course and passed examinations. The research data revealed that since the beginning of the course, learner drivers had changed their attitude to traffic safety and started driving more cautiously (now the drivers declare their negative approach to risky driving demonstrated by other drivers), and the fear of driving among the learners diminishes.

KEY WORDS: attitude to safe driving, the fear of driving, a learner driver, a novice driver.

1. Introduction

By the data of fatalities on the roads in 2012, Lithuania is at the top of the list in the European Union. The number of road fatalities per million of population in Lithuania reaches 100 people. During the first half of 2013, there were 209 accidents because of beginners’ and young drivers’ (under the year of 25) fault [12]. Scientists together with practitioners seek to understand the factors determining risky driving of this target group. It is presumed that driving schools are providing attitudes or changes regarding any other psychological factors, which may be subsequent assumptions of accidents [8, 7].

Many researchers [8, 17] claim that behaviour on the roads is closely related to an individual approach to risky driving. Attitude to risky driving is a positive or negative evaluation of behaviour (safe or dangerous driving) [1]. As researchers [9, 21] state, during the study process individuals who are starting to drive often have a formed attitude towards driving, though it is not steady. Data of research shows that new information and practical driving may have influence on attitude change [6, 14]. Hence, it is important that a negative attitude to risky driving were built in the driving schools [2, 16].

Driver emotions also matter in the period of driving learning. There is no straight answer to the question of how emotions are changing during the learning process of driving, and what relationship they have with the attitude to safe driving and risky driving. The fear of driving has been scarcely investigated [19].

The research carried [4, 15, 19] revealed that drivers experience the fear of driving when they lack competence of driving their vehicle (i.e. they have poor driving skills). Moreover, the results of research proved that drivers are afraid of those driving cases when they get into accidents and would cause damage for others and themselves; they are also cautious about other drivers’ reactions regarding their driving, they try to evade making a driving maneuver, to drive at a high speed, over bridges, through tunnels, to change lanes, they also fear night driving, especially in less known areas, and travelling with someone who criticizes [10, 18].

The research on the fear of driving carried out abroad is rather controversial. Researchers [7] compared drivers aged 16-25 and those over 35 years of age and determined that younger drivers demonstrated less fear of driving and had a greater positive attitude to risky driving. Thus, some researchers [15] believe that in order to encourage drivers to choose safer driving, their fears should be increased. This view is supported by other researchers [11, 13] who claim the fear of pain may be an effective measure to reduce dangerous behaviour on the road. Other researchers [20], however, disclosed that fearful drivers make more driving errors.

Bearing in mind that research in this field as carried out in Lithuania is absolutely insufficient, the aim of this work is to evaluate the attitude of learner drivers and beginners to traffic safety and the diversity of the fear of driving during the period of the course of driving, starting with the beginning of the course and finishing with the driving examinations on theory and practice.

2. Method

Participants. 107 learner drivers participated in the survey (44 men and 63 women) (age average was M = 21 years old, standard deviation SD = 6,7). The participants of the survey studied in the driving schools of Klaipėda city.

Methods of research. The Driving Cognitions Questionnaire (DCQ) was presented in the research (Taylor et al., 2007) where the fear of driving associated with accidents, the fear related to unexpected driving situations, and the social fear of driving (20 statements) were assessed. Alongside, the Questionnaire on the Attitude to Safe Driving was
used (Iversen and Rundmo, 2004) (16 statements), where the attitude to the safety on road was measured in 3 subscales: the attitude to the breach of rules and exceed of speed limit, the evaluation of other drivers’ risky driving, and drink-driving.

**The procedure of the survey.** The participants were inquired twice: once at the start of the driving course, and the second time – at the end of the course (after two months).

3. Results of research

The results of the investigation revealed that, starting with the beginning of the driving course, the learners’ statistic attitude to the safe driving significantly changed after 2 months, they demonstrated diversity in evaluation of risky drivers (p<0.001), and the change in the fear of driving was statistically important in all three subscales: ‘the fear of driving related to accidents’ (p=0.007), ‘the social fear of driving’ (p<0.001), and ‘the fear related to unexpected situations on the road’ (p=0.004) (Table 1).

![Table 1](image)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subscales fear of driving</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of driving associated with accidents (1 measurement)</td>
<td>13.96</td>
<td>4.45</td>
<td>2.805</td>
<td>67</td>
<td>0.007</td>
</tr>
<tr>
<td>Fear of driving associated with accidents (2 measurement)</td>
<td>12.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social fear of driving (1 measurement)</td>
<td>12.07</td>
<td>2.65</td>
<td>4.224</td>
<td>68</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Social fear of driving (2 measurement)</td>
<td>10.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear related to unexpected driving situations (1 measurement)</td>
<td>13.52</td>
<td>3.01</td>
<td>3.010</td>
<td>64</td>
<td>0.004</td>
</tr>
<tr>
<td>Fear related to unexpected driving situations (2 measurement)</td>
<td>12.40</td>
<td></td>
<td></td>
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<tr>
<td><strong>Subscales of attitude to the safety on road</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude to the breach of rules and exceed of speed limit (1 measurement)</td>
<td>24.09</td>
<td>5.29</td>
<td>1.424</td>
<td>10</td>
<td>0.185</td>
</tr>
<tr>
<td>Attitude to the breach of rules and exceed of speed limit (2 measurement)</td>
<td>21.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude to the evaluation of other drivers’ risky driving (1 measurement)</td>
<td>9.39</td>
<td>2.29</td>
<td>11.442</td>
<td>56</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Attitude to the evaluation of other drivers’ risky driving (2 measurement)</td>
<td>5.91</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude to the drink-driving (1 measurement)</td>
<td>2.84</td>
<td>1.21</td>
<td>1.751</td>
<td>31</td>
<td>0.090</td>
</tr>
<tr>
<td>Attitude to the drink-driving (2 measurement)</td>
<td>2.47</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Since the change of fear to drive was statistically significant in all the three sub-scales, an analysis of the sub-scale statements on the fear to drive was carried out between the first and the second measures (Table 2). Eleven statements fear of driving (out of the twenty Driving Cognitions Questionnaire statements) had a statistically significant relationship. The results show that the participants start thinking that people whom they care about will not criticize when they drive a car (p=0.039), will not think they are bad drivers (p=0.005) and will not laugh at them (p=0.028). Furthermore, they believe that they will have more control over the situation if other cars hit theirs (p=0.010). As a result, the participants tend to think that they will not be hurt (p=0.002), they will not hurt anyone (p=0.005) and no one will die in such an accident (p=0.034).

After two months since the beginning of their driving lessons, learner drivers think there is a low chance they would not be able to breathe (p=0.013) or that they would be so disturbed that they could not drive (p=0.034) or move if they were in an unexpected driving situation (p=0.003). Moreover, the participants fear less that their heart will fail while driving (p=0.015).
Table 2

<table>
<thead>
<tr>
<th>Subscales the fear of driving</th>
<th>Statements</th>
<th>Average ranks</th>
<th>Statistical significance criterion</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 measurement</td>
<td>2 measurement</td>
<td></td>
</tr>
<tr>
<td>Fear of driving associated with accidents</td>
<td>I cannot control if other cars hit me</td>
<td>25.30</td>
<td>-2.062</td>
<td>0.039</td>
</tr>
<tr>
<td></td>
<td>I will be injured</td>
<td>22.61</td>
<td>-2.480</td>
<td>0.013</td>
</tr>
<tr>
<td></td>
<td>I will injure someone</td>
<td>32.15</td>
<td>-2.589</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>I will die in a car accident</td>
<td>35.19</td>
<td>-2.126</td>
<td>0.034</td>
</tr>
<tr>
<td>Social fear of driving</td>
<td>People that I care for will criticize me</td>
<td>27.08</td>
<td>-3.065</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>People will think that I am a bad driver</td>
<td>29.04</td>
<td>-2.786</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>People will laugh at me</td>
<td>28.36</td>
<td>-2.786</td>
<td>0.005</td>
</tr>
<tr>
<td>Fear related to unexpected driving situations</td>
<td>I will be nervous and unable to drive</td>
<td>18.76</td>
<td>-3.045</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>My heart will stop beating</td>
<td>6.90</td>
<td>-2.437</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>I will not be able to take a breath</td>
<td>13.39</td>
<td>-2.193</td>
<td>0.028</td>
</tr>
<tr>
<td></td>
<td>I will not be able to move</td>
<td>15.84</td>
<td>-2.953</td>
<td>0.003</td>
</tr>
</tbody>
</table>

In order to determine the links between the fear of driving (including measurements I and II) and the attitude to road safety (including measurements I and II), Spearman’s Rank Correlation Coefficient has been applied (Table 3).

Table 3

<table>
<thead>
<tr>
<th>Fear of driving</th>
<th>Attitude to road safety</th>
<th>Attitude to road safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 measurement</td>
<td>Correlation Coefficient</td>
<td>0.321</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.482</td>
</tr>
<tr>
<td>2 measurement</td>
<td>Correlation Coefficient</td>
<td>0.500</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.391</td>
</tr>
</tbody>
</table>

Statistically significant relations were not found between attitude to road safety and fear of driving.

4. Conclusions

After two months since the start of the driving course, the attitude to other drivers’ risky driving among the target group members became more negative. The learner drivers were more critical about the drivers exceeding speed limit and lacking responsibility on the road. This proclaims the idea that the training of driving rules promotes a safer approach and, consequently, encourages more cautious behaviour on the road. Unfortunately, attitudes to other driving components did not change. The learner drivers possibly evaluated other drivers’ risky behaviour on the road more negatively than their own.

After two months since the start of the driving course, the learner drivers’ fear of driving diversified. The fear of driving related with accident probability, the driving panic, and the social fear of driving reduced. During the period of training, the learner drivers gained theoretical and practical competence to handle vehicles, hence, the fear of driving decreased; in the future, this is likely to determine less driving errors made by drivers.
References


6. **Falk B.** Do drivers become less risk-prone after answering a questionnaire on risky driving behaviour. Accident Analysis and Prevention, 2010, V. 42, 235-244.


