PREDICTION FOR DRIVING BEHAVIOR IN CONNECTION WITH SOCIO-DEMOGRAPHIC CHARACTERISTICS, INDIVIDUAL ANOMIA AND INDIVIDUAL VALUE SYSTEM

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Abstract

The aim of the research was to examine characteristics of individual value system and individual anomia prediction for driving behavior. A total of 108 respondents participated in the study. The results showed that the value system integrity / disintegrity indicator predicts distracted driving, explaining 18% of variation and being statistically significant. Internal vacuum and age are statistically significant and negatively predict risky driving in 17% of variation. Age as a statistically significant factor is associated with a safe and courteous driving, this explains 12% of variation. Value system integrity / disintegrity indicator and gender are significantly negatively associated with the summary indicator of dangerous driving, this explains 22% of variation. Age is significantly negatively associated with distracted driving, explaining 30% of variation. An individual deviation from prescribed rules or customs and gender are significantly associated with aggressive behavior against other drivers, explaining 28% of variation. Age is significantly associated with risky driving; this model explains 13% of variation. Age is significantly negatively associated with the summary indicator of dangerous driving, explaining 37% of variation. The results can serve as the basis to create new measures for driving behavior regulation and they might also be applicable to psychologists’ professional activity.

Keywords: aggressive driving, distracted driving, driving behavior, individual anomia, individual values, risky driving, safe driving

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Relevance

Several countries have made efforts to reduce the number of fatal road accidents, but the total number of accidents remains unacceptably high numbering 1.25 million people per year (World Health Organization, 2013).

Although the number of fatal road accidents in Latvia has decreased over recent years, it is still quite high in comparison with other countries of the European Union (Smorti, & Guarnieri, 2016). In 2012, there was a significant reduction in road traffic accidents, but unfortunately there was an increase of road traffic accidents in 2013 and 2014 (CSDD, 2015).

Road accidents occur due to a number of factors: vehicle factors, environmental factors and human factors (Lazdins, Martinsone, 2014). Previous research has shown that the human factor was the primary cause for about 40% of road accidents and it was indirectly involved in another 50% of accidents. Thus, approximately 90% of road accidents are directly or indirectly related to the human factors (Bogdan, Mairean, & Havrneanu, 2016; Suhr, 2016; Kovacsova, Lajunen, & Roskova, 2016; Bumgarner, Webb, & Dula, 2016). Environmental factors (roadways conditions, weather conditions) are the possible reasons for about 34% of accidents and vehicle factors as causes of accidents are mentioned only in 13% of cases (Dewar & Olson, 2002). By the concept of the human factor we understand human psychological conditions, cognitive processes, personality factors, demographic factors, attitudes (Muzikante & Renge, 2008).

Currently there is no clear evidence of whether the individual’s essential values influence his or her driving behavior. No studies related to this issue have been found. Therefore, it is necessary to examine whether individual’s anomie and values predetermine driving behavior.

The aim of the research was to examine characteristics of the individual’s value system and anomia as possible predictors of driving behavior.

Materials and methods

A total of 108 respondents participated in the study. Valid questionnaires selected amounted to 108. All respondents spoke Latvian. The study included 40 males (37.0%) and 68 females (63.0%) who filled in a questionnaire on the Internet. Their age varied from 19 to 58 years.
Three sources of data were used. The first one was the “Latvian driving behaviour survey”. Participants were asked to estimate how often they proceeded as described in situations presented in statements using a 5-point Likert scale (from 1 - never to 5 - very often). The final version of the survey comprised 26 statements (Perepjolkina & Voita, 2011).

The second source was “Survey of individual anomia” which consisted of 136 statements which were to be evaluated using a 5-point Likert scale (1 - strongly disagree, 5 - strongly agree). Individual anomia survey measured three individual anomia dimensions and six of its subdimensions - normlessness (an individual’s deviation from prescribed rules or customs and social distrust), social isolation (estrangement from others, cultural isolation), meaninglessness (lack of goal clarity, generalized sense of meaninglessness) (Ļevina, Mārtinsone, 2016).

Within the context of the third survey “values and levels of availability relations in different spheres of life” participants were offered two tables. The aim of the first one was to establish a hierarchy of 12 values and the second table was to assess which of those values it would be easier to reach from the participant’s point of view.

These proposed values comprised the following ones: 1. active, dynamic life; 2. health; 3. interesting work, 4 natural and artistic beauty to enjoy; 5. love; 6. materials providing life; 7. good and trusted friends; 8. self-confidence (absence of doubts); 9. knowledge, the opportunity to expand one’s horizons, education; 10. freedom and independence of action and activities; 11. happy family life; 12. creativity (Fantalova, 1992, adapted by S. Jirgena, 1999).

**Results and their discussion**

First step regression analysis included gender and age to predict risky driving. This model explained 9% of its variations and age was considered to be significantly negatively associated with risky driving. Based on Pearson correlation coefficient the second step included not only gender and age, but also an internal blank, explaining 17% of this model and being significantly negative.

To predict safe and courteous driving, the first step regression analysis included gender and age, this model explaining 12% of variation. Age was considered to be
significantly associated with safe and courteous driving. Based on Pearson correlation coefficient the second step included not only gender and age but also the neutral zone that explained 13% of this model, but was not statistically significant.

To predict the summary indicator of dangerous driving the first step regression analysis included gender and age. This model explained 17% of variation and gender, being significantly negatively associated with summary indicator. Value system integrity / disintegrity indicator as an addition explained 22% of this model and it was significantly negatively associated with the summary indicator.

To predict distracted driving, the first step regression analysis included gender and age, this model explained 16% of the variation, but it was not statistically significant. Based on Pearson correlation coefficient, the second step included not only gender and age but also an individual’s deviation from prescribed rules or customs, social distrust, estrangement from others. Among these three parameters, age was considered to be significantly associated with distracted driving, which explains 30% of the model.

To predict aggressive behavior against other road users, the first step regression analysis included gender and age, this model explaining 13% of variation and gender being significantly associated with aggressive behavior against other travellers. Based on Pearson correlation coefficient the second step included not only gender and age but also an individual’s deviation from prescribed rules or customs, social distrust, generalized sense of meaninglessness, cultural isolation. Among these three parameters, only individual’s deviation from prescribed rules or customs was significantly associated with aggressive behavior against other road users, explaining 28% of this model.

To predict risky driving, the first step regression analysis included gender and age, this model explaining 9% of its variations and age being significantly associated with risky driving. Based on Pearson correlation coefficient, the second step included not only gender and age but also an individual’s deviation from prescribed rules or customs, social distrust, estrangement from others, explaining 37% of this model, but not being statistically significant.

To predict the summary indicator of dangerous driving first step regression analysis included gender and age, this model explaining 17% of variation. Gender was significantly
negatively associated with the summary indicator of dangerous driving. Based on Pearson correlation coefficient the second step included not only gender and age but also an individual’s deviation from prescribed rules or customs, social distrust, estrangement from others and cultural isolation. But only age was found to be significantly negatively associated with the summary indicator of dangerous driving, this explaining 43% of the model.

The results show that distracted driving can be predicted by value system integrity / disintegrity indicator. This means that if an individual’s values do not match the real possibility of reaching these values and their motivation sphere is affected and characterised with frustration, internal discomfort, internal conflicts, self-realization shortages and an unclear person’s identity, it is more likely that this person will not focus full attention on immediate driving tasks while driving.

The results show, firstly, that risky driving is significantly associated with age and internal blank. In particular, young drivers often become involved in risky activities while driving in traffic as well as individuals who find their expected values to be more necessary and important than those they have at the time. Some of these results are in line with previous studies. Summarising the results of different studies allows us to conclude that the best traffic accidents and violations predictors are age and gender (Krahe & Fenske, 2002; Ozkan & Lajunen, 2005; Rhodes & Pivik, 2010; Stradling & Parker, 1997; Underwood, Chapman, Wright, & Crundall, 1997).

Our results indicated that a safe and courteous driving can be predicted by age. Probably it can be attributed to young people’s lack of experience and immaturity, as well as the physiological process of growth that takes place in a young age. According to the preliminary results of the study, many young people looking for self-affirmation are more likely to choose a more risky driving instead of safe and courteous driving. Our findings are consistent with the other research results that consider the age one of the factors that increase the possibility of driving in risky and aggressive way (Tasca, 2000).

The results show that the summary indicator of dangerous driving is gender, which is in line with the previous studies. Males often drive cars intoxicated and they rarely wear seat belts,
regardless of their age (Lancaster & Ward, 2002). Males tend to show higher rates of thoughts of revenge and physical aggression (Deffenbacher, Petrilli, Lynch, Oetting, & Swaim, 2003). It is also emphasized that one of the factors that increase the possibility of aggressive driving is simply being a male (Tasca, 2000). Also the summary indicator of dangerous driving can be predicted by value system integrity / disintegrity indicator. If an individual’s values do not match the real possibility of reaching these values and their motivation sphere is affected and characterised with frustration, internal discomfort, internal conflicts, self-realization shortages and an unclear person’s identity, it is more likely that this person will drive a car in aggressive, risky and dangerous way.

The results show that distracted driving can be predicted by age, which is in line with the previous research. Unfortunately, almost all young drivers admit that they use mobile phones while driving (Nelson et al., 2009) and approximately 95% of them admit that they write text messages while driving (Atchley et al., 2011), but at the same time they are aware it is not a safe way of driving.

The results show that aggressive behavior against other road users is predicted by gender, as well as deviation from prescribed rules or customs which may indicate the fact that males are more likely to lack respect to rules and regulations and they are more likely to be ready to show it in action and to behave aggressively towards others road users, which is partly in accordance with previous research. Males have a tendency to show higher rates of thoughts of revenge and physical aggression (Deffenbacher, Petrilli, Lynch, Oetting, & Swaim, 2003).

The results show that risky driving can be predicted by age, which is in line with the previous research. The research emphasized that age is one of the factors that increase the possibility of driving in risky and aggressive way (Tasca, 2000).

The results show that the summary indicator of dangerous driving is predicted by gender and age, which is in line with the previous research, describing age and gender as the best traffic accidents’ and violations’ predictors (Krahe & Fenske, 2002; Ozkan & Lajunen, 2005; Rhodes & Pivik, 2010; Stradling & Parker, 1997; Underwood, Chapman, Wright, & Crundall, 1997). Both of these factors are highlighted as factors that increase the possibility of driving a car in a risky and aggressive manner (Tasca, 2000).
Conclusion

In Latvia until now there have not been any studies about links between the individual value’s system, the individual anomia and driving behavior relationships. That is why this issue requires future investigations. This study confirms already existing and proven assumptions on the problem of the driving behavior, but also gives an idea about the factors that may affect it incidentally.

The research was limited due to the size of the sample, participants’ alignment, use of new instruments, as well as by data collection method. It would be desirable to undertake a similar research in a larger sample size and with the use of approbated instruments. Moreover, it would be interesting to find out the factors of individual value system and individual anomia prediction for an objective number of accidents and violations caused by the driver. It would be useful to obtain objective data about the number of the road accidents and violations, their participants and to investigate the distribution of males’ and females’ groups.

The study results may be considered as a basis for a new research on the problem of driving behavior. They can also be used in psychologists’s professional work, in particular, in counseling the persons about their driving behavior.

References

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