Attitude Function as a Moderator in Values-Attitudes-Behavior Relations

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Abstract

The aim of the present study was to find whether attitude functions could be useful in predicting aberrant driving. One of the attitudes’ functions is to express values; hence, we hypothesized that attitudes whose function is to express values will better predict traffic violations. We explored: (i) values in relation to attitudes towards aberrant driving behavior by regression analysis; (ii) and we explored moderating role of attitude functions in value-attitude-behavior relations. The study sample included 305 respondents who completed self-report questionnaires. Current research confirms previous results and also shows that values do predict attitudes when individual had formed his/her attitudes based on values and attitudes mediate values – behavior link when value-expressive function is dominating.

Keywords: values, attitudes, attitude functions, driving behaviour;

1. Introduction

The World Health Organization (WHO, 2004) data show that 1.2 million people are killed in traffic accidents each year, which constitutes 3242 deaths per day. Around 20 million people suffer injuries and 50 million people become disabled in traffic accidents annually.

According to the data of the Road Traffic Safety Directorate (CSDD 2010), the situation on the roads of Latvia is improving every year, however, from a global perspective, the number of traffic accidents remains large. The situation has generally improved in the past years (CSDD, 2010). In the time period between 2001 and 2009 the number of fatal accidents in Latvia reduced by 54%, which constituted the best indicator in the European Union (CARE, 2010). Nevertheless, Latvia remains among the five countries with the highest number of traffic fatalities per ten thousand inhabitants (CARE, 2010).

When analyzing the causes of traffic accidents, one may discuss the environment (the road surface, weather conditions), the means of transportation (the technical state of the means of transportation), or the people. What’s more, the people are one of the chief causes of traffic accidents. Human behavior on the road is determined by the attitude to driving, the psychological condition at the moment of driving, the cognitive processes, and the personality. In literature (Dewar & Olson, 2002; Underwood, et al., 1997) all of these factors, which are important

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causes of traffic accidents and which can be ascribed to the human (rather than weather conditions, the technical conditions of the vehicles or the road surface quality), are called the human factor.

Age and gender, which also constitute the human factor, are of significance in the prediction of traffic accidents and risky driving. Nearly every study (for example, Krahe & Fenske, 2002; Özkan & Lajunen, 2005; Rhodes & Pivik, 2010) confirms the statistical data of the traffic police, showing that adolescents and males are riskier drivers.

As for the human factor, studies show that personality traits significantly correlate with risky driving and the violation of traffic rules (Oltedal & Rundmo, 2006; Sümer, Lajunen, & Özkan, 2005). Anxiety as a personality trait is a predictor of risky driving – individuals with high indicators of anxiety show more risky behavior on the road (Shahar, 2009). Risky driving depends more on the personality factors and the attitude towards risky driving than on the car driving skills (Iversen, 2004). Studies on car driving skills show that the majority of drivers consider themselves to be an above average driver, which leads researchers to the conclusion that humans have an illusory view of their own driving skills (Sundström, 2008). These are only a few of the human factors that predict risky driving. Values and attitudes likewise are human factors, and the link between individual values and behavior in the context of drivers’ behavior has not been studied, whereas the link between attitudes and risky driving has been rather widely explored.

The already mentioned attitude towards reckless driving is a significant predictor of risky driving (for example, Fernandes, Soames Job, & Hatfield, 2007; Iversen, 2004). “Attitudes may be viewed as units of social knowledge that are based on experience, convictions and feelings caused by the object of this attitude” (Zanna & Rempel, 1988, pp. 7). Individuals develop their attitudes differently and these may have various causes. Attitudes are a psychological construct, which, based on the functional approach of attitudes (Herek, 1987; Katz, 1960), has several functions. Authors of the functional approach stress that, by knowing what constitutes the basis of this attitude, it becomes easier to change it. In its turn, changing the attitude (social campaigns) is one of the ways to change human behavior. This means that by changing the attitude to reckless driving it should be possible to reduce the number of risky drivers.

Herek (1987) talks about four attitude functions: experiential-schematic, ego-defensive, social-expressive and value-expressive function. The value-expressive function foresees that the development of an individual’s attitude to the object is based on his or her values. The values constitute a more stable construct than the attitudes, and the results of previous studies prove the link between this construct and the attitudes (for example, Maio & Olson, 1994). Attitudes based on values are better predictors of behavior. As opposed to attitudes, values are more stable and act as criteria standards (Schwartz, 2009). “Values are abstract goals which serve as the guiding principles in people’s lives” (Schwartz, 1992). Values can predict the choice of voters in elections (Caprara, Schwartz, Capanna, Vecchione, & Barbaranelli, 2006), the everyday behavior (Bardi & Schwartz, 2003), the choice of a profession (Knafo & Sagiv, 2004), and consumers’ choice (Verplanken, & Holland, 2002). Values can be a good additional predictor of human behavior in traffic situations. The study aims to clarify whether values predict the attitude to reckless driving if the attitude is based on the value-expressive function and whether the attitude function moderates the value-attitude-behavior relations.

2. Method

2.1. Participants

A total of 305 car drivers took part in this study, of which 49.5 % were female and 50.5% male. The average age of participants was $M = 40.64$ years ($SD = 12.22$, ages 18 to 75), the annual mileage $M = 24870$ km, $SD = 41507$, the driving experience in years $M = 15.95$, $SD = 11.19$. 
2.2. Measures

Values. The Portrait Values Questionnaire Latvian version was used to determine individual values (PVQ; Schwartz, Melech, Lehmann, Burgess, & Harris, 2001). Scale reliability coefficients (Cronbach’s alpha) vary between 0.50 and 0.68.

Attitudes. Attitudes to reckless driving Inventory (Iversen, 2004) Latvian version. Reliability coefficients (Cronbach’s alpha): attitude to violations $\alpha = 0.81$, attitude to risk-taking $\alpha = 0.67$, attitude to driving while intoxicated $\alpha = 0.69$.

Driving behaviour. Drivers Behaviour Questionnaire (DBQ; Reason, Manstead, Stradling, Baxter, & Campbell, 1990) Latvian version. Questionnaire scale reliability coefficients Cronbach’s alpha: Violations $\alpha = 0.85$, Errors $\alpha = 0.75$, Lapses $\alpha = 0.82$.

Attitude functions. Attitude Function Inventory (AFI, Herek, 1987) Latvian version. Questionnaire scale reliability coefficients Cronbach’s alpha: experiential-schematic function $\alpha = 0.62$, social function $\alpha = 0.56$. Ego-defensive and value-expressive functions each have one statement.

Demographic data. Age, gender, number of kilometres driven per year, number of years of driving experience, traffic accidents in the last 3 years.

2.3. Procedure

The first part of respondents (105 respondents) completed the online version of the questionnaire on the website of the Latvian Road Traffic Safety Directorate (CSDD). The second part of respondents (200 respondents) was selected by using the database of the marketing and public opinion research centre (SKDS). All participation in this study was voluntary and it was not rewarded financially.

3. Results

In order to test the research hypothesis a hierarchic regression analysis was performed in two groups.

Because of the fact that the research hypothesis concerns the moderating role of attitude functions in the relationship between values, attitudes and behavior, the respondents were divided into two groups. The first group included the respondents with the value-expressive function as the main attitude function, whereas the second group included respondents with a different function (experiential-schematic, ego-defensive or social-expressive function) as the main attitude function. Respondents with two or more main functions, or no main functions at all, were excluded from further analysis. The main functions are those functions, which have the highest values.

The research hypothesis is based on the assumption that one of the attitude functions if to express values, and it is known that not every attitude develops with a goal to express values. A hierarchic regression analysis was conducted in order to clarify the relations between values and attitudes, the attitude function acting as a moderator in this relation. The regression analysis was conducted for each group separately, by entering age and gender in the first step. In the second step eight values were entered (independent variable), which had a statistically significant correlation with the general attitude (security and achievement were not entered). The dependent variable constitutes the general attitude to reckless driving.

The hierarchic regression analysis shows (see Table 1) that only in the value-expressive attitude function group do values make a statistically significant prediction of the general attitude to reckless driving $F(12, 43) = 2.73$, $p < 0.01$, respectively, the values in the group with other dominant attitude functions are $F(12, 49) = 1.79$, $p = ns$. For both groups the age and gender data entered in the first step does not predict the general attitude (see Table 1). Of all values in the value-expressive group the values power and tradition make the most significant prediction of the general attitude to reckless driving.

In order to test the research hypothesis on the moderating role of attitude functions within value-attitude-behavior relations a mediation analysis was performed in two groups – the value-express function group and the other attitude function group. The mediation analysis made use of the Sobel test SPSS (Preacher & Hayes, 2004).
The first figure shows that in the group with a domination of the value-expressive attitude function among its respondents, the attitude to reckless driving acts as a mediator between the values power and violations, because the total effect through the mediator becomes statistically insignificant, whereas the indirect effect is statistically significant \( z = 2.49, p < .01 \), which means, that the general attitude to reckless driving acts as a mediator. In the second group with a domination of other attitude functions the total effect of power on violations remains statistically significant, also when the attitude to reckless driving as a mediator is added, and this indirect effect is statistically insignificant \( z = 0.85, p = ns \). Attitude functions act as a moderator.

Table 1. Summary of linear regression analysis

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<tr>
<th></th>
<th>Value-expressive function</th>
<th>Other function</th>
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<td><strong>Step 1</strong></td>
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<td>Age</td>
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<td>Gender</td>
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<td><strong>Step 2</strong></td>
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<tr>
<td>Age</td>
<td>-.02</td>
<td>.01</td>
</tr>
<tr>
<td>Gender</td>
<td>-.15</td>
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</tr>
<tr>
<td>Hedonism</td>
<td>-.03</td>
<td>.12</td>
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<tr>
<td>Stimulation</td>
<td>.28</td>
<td>.15</td>
</tr>
<tr>
<td>Universalism</td>
<td>-.01</td>
<td>.16</td>
</tr>
<tr>
<td>Benevolence</td>
<td>-.19</td>
<td>.17</td>
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<tr>
<td>Tradition</td>
<td>-.32</td>
<td>.14</td>
</tr>
<tr>
<td>Conformity</td>
<td>.08</td>
<td>.14</td>
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* \( p<.05 \), ** \( p<.01 \), *** \( p<.001 \)

The figure clearly shows that the value-attitude-behavior relations are of significance only in cases when the function of the attitude is to express values. In cases when the attitude is constituted by a different motivation, values are not connected to the attitude and these can have direct impact on the behavior. Attitude also makes a significant prediction of violations in case of other functions, which testifies that values constitute only one of the variables that predict behavior.
4. Discussion

The aim of the study was to establish whether the attitude functions act as a moderator between values, attitudes and behavior. In theory, the attitude functions are motives that make the individual express a certain attitude, and one of the attitude functions is the value-expressive function. As the main goal of the value-expressive function is to show an attitude, which corresponds with the central values and the self-concept of an individual (Maio & Olson, 1994), it is presumed, that in cases when the value-expressive function is the dominant function of an individual’s attitude to reckless driving, values are better predictors of behavior (violations), while the attitude to reckless driving mediates this correlation.

Initially the correlation between values and attitudes was tested in cases where these mediate the attitude functions. Maio & Olson (1994) note that stronger correlations should develop between values and attitudes in cases when attitudes have the value-expressive function rather than a different attitude function. This Maio and Olson’s assumption is confirmed because, indeed, within the group in which the attitude is constituted by the value-expressive function, the value makes a statistically significant prediction of the general attitude to violations. In the second group with other attitude functions being dominant, none of the values made a significant prediction of the general attitude. Thus, the theoretical approach, that attitude functions mediate and strengthen the relations between values and the attitude, is approved. The most significant predictors of attitude within this selection are the values power and tradition. The significance of these values in the prediction of the general attitude to reckless driving is most probably connected to the contents of each specific attitude (driving behavior). If the attitude to a different object is studied, other values may appear more significant. Results of previously conducted studies show that the value power significantly predicts violations (Muzikante & Reņģe, 2008).

By adding behavior (violations) to the value-attitude-behavior model, a mediation analysis was conducted for the value power, which appeared to be a significant predictor of violations. The mediation analysis showed that in the value-expressive attitude function group, in the case of the value power, the general attitude to reckless driving functions as a mediator between values and behavior. It means that individuals who consider the value power to be important and whose attitude to reckless driving expresses their values, violate the rules on the road to a larger extent than the drivers who consider the value power to be equally important, however, whose attitude to reckless driving is not based on values.

4.1. Limitations of the study and implications for further studies

The behavior was measured by a self-report questionnaire, which can be considered a limitation of the study, as it is not an objective measurement. Wåhlberg and his colleagues (Wåhlberg, Dorn, & Kline, 2010) emphasize that such behavior measures are insufficient. Nevertheless, other authors stress (Parker & Manstead, 1996) that self-report questionnaires (questionnaires concerning the driver’s behavior) are significant predictors of actual traffic accidents, therefore the questionnaire is regarded to be a satisfactory tool in studying drivers’ behavior. However, in order to broaden the extent of generalization of the research results on drivers’ behavior, the study should make use of police data on traffic accidents.

4.2. Conclusion

Research results show that values can predict both behavior and attitude, which, in turn, predict behavior. An attitude change is one of the general ways of reducing the number of traffic accidents. The research results can be used in the improvement of social campaign results, as they reveal the importance of values within decision-making regarding the driving behavior.

References


