

The relation between personality traits and aggressive driving

Felicia Aurica, HAIDU¹,
Elena LOSÎ²
Claudia VLAICU³

Abstract

Aggressive driving is not only the result of simple lapses and errors while driving. The main goal of this study was to determine the ways in which personality traits was related to aggressive behaviour during driving; the research tools represented by DECAS inventory used to find out if there are correlations between personality traits and types of driving. In our analyses, we selected participants between 20 and 55 years of old and their driving experience; gender was not a significant factor and as such was not controlled for in the analyses. Regression analyses showed that the data fit well with our theoretical model. The relationship between openness and aggressive driving is mediated by the driver's anger, whereas agreeableness and conscientiousness had both a direct and indirect relations with aggressive driving. Our research study accounts for a relatively high percentage of the aggressive driving variance, suggesting the usefulness of assessing global personality traits for the prediction of aggressive driving.

Keywords: Personality traits, dangerous driving, negative emotions/ cognitions and risky driving.

¹ Ph Candidate in Psychology, *Ion Creanga* Pedagogical State University, Romania, felicia.psiholog@gmail.com

² Associate Proffesor, *Ion Creanga* Pedagogical State University, Romania, lenadonica@yahoo.com

³ Associate professor, *Valahia* University, Targoviște, Romania, claudia.vlaicu@valahia.ro

The relation between personality traits and aggressive driving

Felicia Aurica Haidu, Elena Losîu, Claudia Vlaicu

1. Introduction

The revision of the existing theory enables us to recognize that aggressiveness has been studied by various disciplines and theoretical approaches, finding a wide variety of definitions and considerations regarding it. Within the most relevant approaches, it is possible to describe biological, psychoanalytical, ethological and psychological explanations of aggressiveness. In some earlier studies we explained and critically approached the theories of aggression (Haidu, F., 2020) and in the present paper we try to see to what extent the personality traits determine the types of aggressive driving and to what extent they influence dangerous driving, negative emotions/ cognitions and risky driving.

2. Literature review

Aggressive behaviour is defined as any form of behaviour aimed to exert psychological and physical pain on another person (Baron & Richardson, 1994; Berkowitz, 1993). Similarly, drivers' aggression can be defined as any form of a drivers' behaviour that is conducted with the intention to hurt (physically or psychologically) or cause damage to other road users (Ellison-Potter, Bell, & Deffenbacher, 2001;). According to aggression researchers, the amount of anger felt during a frustrating situation depends on both the person's interpretation of the situation and the objective situational characteristics (Berkowitz, 1993). The drivers who express aggression in traffic impose their behaviour onto others without paying any attention to others' intentions and rights in traffic. Aggressive behaviour results in a higher risk for accidents and a greater number of traffic accidents with casualties. Research has confirmed that anger, arguing with other drivers and aggressive driving are all connected with traffic accidents (Hemenway & Solnick, 1993).

To reduce or eliminate aggressive driving, it is necessary to implement measures that will treat its determinant and not its manifestation. Therefore, behavioural research is needed to determine the causes of aggressive behaviour.

The relation between personality traits and aggressive driving

Felicia Aurica Haidu, Elena Losî, Claudia Vlaicu

Personality traits can be defined as dimensions of individual differences that have a consistent pattern of thoughts, feelings, and behaviour (McCrae & Costa, 1990).

The personality traits included in the five-factor model (FFM) (i.e., neuroticism, extraversion, openness, agreeability, conscientiousness) (Costa & McCrae, 1992) or in DECAS Inventory (openness, constiousness, extraversion, ageeability and emotional stability) may provide insight into aggressive driving behaviour. Aggressive drivers are characterised by impatience, disrespect for other drivers, inconsiderateness and hostility. These characteristics are associated with consistent behaviour patterns and personality traits. However, the results from research included personality dimensions included only in Decas Inventory. Some studies confirmed the relation of certain dimensions with aggressive behaviour (Dragan Jovanovic' , Krsto Lipovac b, Predrag Stanojevic' , Dragana Stanojevic, 2010), whereas others studies confirmed the relations of other personality dimensions (Blawal, H.,Hitomi S.,Tomio MiwacTakayuki, Morikawa, 2020).

3. Research methodology

Aggressive driving is not the result of simple lapses and errors while driving. It is highly connected to personality traits. This research study about aggression and driving used an inventory composed of a set of items which shall be presented as follows. The participants were drivers aged between 20 and 55 who came to our psychology office either for obtaining the driving licence or for renewing it. In a previous study we searched for a connection between the demographic characteristics of drivers (e.g., gender, age) and driving-related anger and aggressive driving. But we discovered that demographic variables do not influence significantly the types of aggressive driving (age, gender, professional or marital status, religion) so we saw no reason to pre-select the participants.

From the review of the literature presented above, we can see that all of the FFM (Costa & McCrae, 1992) dimensions have been connected with risky driving in general or aggressive driving, and with other driving outcomes. Our intention is to determine the following:

The relation between personality traits and aggressive driving

Felicia Aurica Haidu, Elena Losîu, Claudia Vlaicu

- ✓ Which dimensions of DECAS Inventory are connected with dangerous driving, aggressive and negative cognitions/emotions?
- ✓ Is there a significant association between DECAS personality traits and general dangerous driving
- ✓ Is there a significant association between DECAS personality traits and risky driving
- ✓ Is there a significant association between DECAS personality traits and negative cognitions/emotions
- ✓ Is driving-related anger a mediator between personality traits and aggressive behaviour while driving?

Using the model presented afterwards, we may suggest a structural model that will use personality traits as predictors, aggressive driving as a criterion, and driving-related anger as a mediator between personality traits and aggressive driving.

Research tools

The basis of DECAS Personality Inventory is the Big-Five personality model which is the theory with the highest level of scientific dissemination and validation worldwide. The five personality dimensions evaluated by this tool are:

- **Openness** identifies independent, creative people with a rich general culture, oriented towards debating ideas and theories. At the low pole we find pragmatic and conformist people, who prefer conservative, traditional values.

- **Extraversion** is specific to exuberant, sociable, energetic people, who are easily noticed in a group of people. At the low pole are the silent, shy and formal people in manifestation, who adopt a passive, reserved attitude.

- **Consciousness** is associated with disciplined people, with a high sense of duty and a need strong professional achievement. At the lower end are flexible people, who tend to postpone tasks or give up easily if they encounter problems.

- **Agreeability** is specific to tolerant, understanding people, who show team spirit. At the low pole we find individualistic people, less confident in others, with a high competitive spirit and focused on the task to the detriment of human relations.

The relation between personality traits and aggressive driving

Felicia Aurica Haidu, Elena Losî, Claudia Vlaicu

- **Emotional stability** is associated with emotional maturity. These people are calm, confident and successfully cope with stress. At the lower end are vulnerable and emotionally unstable individuals; they get easily discouraged or are irritated by obstacles.

The results of the application of methods and techniques of evaluation and psychological assistance are the following:

The DECAS personality test - personality profile in the "Big-Five" version for personality assessment - is imposed as a standard in the classification and description of human personality, highlighting five major personality dimensions, postulated in the Big-Five model: *Openness, Extraversion, Conscientiousness, Pleasure and Emotional Stability*. Following the combination of the five personality dimensions, we find relevant information about the personality of the evaluated person, about the preferred (usual) behaviour of the evaluated person. This does not eliminate the possibility that in certain situations the person behaves in a different way than the typical one for his personality profile.

4. Analysis of the research results

4.1. The Association Between DECAS Personality Traits and Dangerous Driving

Table 1. Descriptive statistics of DECAS scales

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losû, Claudia Vlaicu

DECAS Scale	Level	Frequency	%	% cumulative
Openness	Below average	49	27.7	27.7
	Average	21	11.9	39.5
	Above average	107	60.5	100.0
Extraversion	Below average	42	23.7	23.7
	Average	24	13.6	37.3
	Above average	111	62.7	100.0
Consciousness	Below average	72	40.7	40.7
	Average	38	21.5	62.1
	Above average	67	37.9	100.0
Agreeability	Below average	57	32.2	32.2
	Average	21	11.9	44.1
	Above average	99	55.9	100.0
Emotional stability	Below average	43	24.3	24.3
	Average	19	10.7	35.0
	Above average	115	65.0	100.0

(source: Authors)

1. Descriptive DECAS Statistics

Table 1 shows that most participants have an above average level at all DECAS scales, except for the *Conscientiousness* scale, where approximately 41% of respondents have a below average level.

2. Correlation between DECAS general dangerous driving

The Kolmogorov-Smirnov test for the assessment of the normality of the distributions indicates that the scores on the Dangerous Driving scale deviate from a Gaussian distribution, for all

The relation between personality traits and aggressive driving

Felicia Aurica Haidu, Elena Losîu, Claudia Vlaicu

DECAS scales, both in the group of participants with below average scores and in the group with average and above average scores (Table 2.1). Therefore, to test the hypothesis that there is a significant association between DECAS personality traits and general dangerous driving, we used the Kruskal-Wallis H non-parametric test.

Tabel 2.1 Kolmogorov-Smirnov Z Test to verify the normality of distributions

DECAS Scale	DECAS Scale Level					
	Below average		Average		Above average	
	K-S z	p	K-S z	p	K-S z	p
Openness	.230	<.001	.176	.087	.238	<.001
Extraversion	.268	<.001	.206	.010	.212	<.001
Consciousness	.201	<.001	.216	<.001	.258	<.001
Agreeability	.217	<.001	.234	.004	.222	<.001
Emotional stability	.199	<.001	.268	<.001	.219	<.001

(source: Authors)

Table 2.2 shows the results of the Kruskal-Wallis H omnibus test for the association between DECAS scales and dangerous driving. Thus, we observe that for the *Opening*, *Extraversion* and *Consciousness* scales the data do not indicate a statistically significant association with the general dangerous driving ($p > 0.05$). In contrast, there is a statistically significant association between the level of agreeableness and dangerous driving [$H(2) = 26,990$, $p < .001$] and between the level of emotional stability and dangerous driving [$H(2) = 15,921$, $p < .001$]. To see more accurately between which levels of pleasantness and emotional stability there are significant differences in dangerous driving, we used Mann-Whitney U post-hoc tests. To avoid an unwanted increase in type I error (false positive) due to multiple comparisons, we applied the Bonferroni correction and adjusted the significance threshold of the tests to 0.0167. Thus, all p-values associated with post-hoc tests were compared with the adjusted threshold value. The results are presented in Table 2.3

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losî, Claudia Vlaicu

Tabel 2.2 Kruskal-Wallis H Test to test correlation between DECAS Scales and general risky driving

DECAS Scale	Level	Median	Mean	SD	Ranks mean	H	df	p
Openness	Below average	32.0	34.14	7.18	84.42	.750	2	.687
	Average	35.0	35.38	7.49	95.36			
	Above average	32.0	34.90	9.29	89.85			
Extraversion	Below average	31.0	32.88	6.58	76.38	3.377	2	.185
	Average	34.50	37.00	10.21	93.92			
	Above average	32.0	34.96	8.70	92.71			
Consciousness	Below average	31.0	34.93	8.08	87.67	1.706	2	.426
	Average	31.0	34.18	7.75	81.49			
	Above average	32.0	34.87	9.44	94.69			
Agreeability	Below average	36.0	39.09	11.85	117.40	26.990	2	<.001
	Average	32.0	33.81	6.29	85.40			
	Above average	31.0	32.44	5.05	73.41			
Emotional stability Openness	Below average	36.0	37.74	11.26	114.55	15.921	2	<.001
	Below average	32.0	34.68	7.00	94.92			
	Average	31.0	33.63	7.27	78.47			

(source: Authors)

Regarding the association between Emotional Stability and general dangerous driving, post-hoc tests (Table 2.3) show significant differences in dangerous driving between individuals with an below average level of emotional stability and an above average level of emotional stability. As indicated by the averages and medians presented in Table 2, a lower level of emotional stability is associated with higher scores on the Dangerous Driving scale. Thus, individuals with a below-average level of emotional stability scored significantly

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losîu, Claudia Vlaicu

higher on Dangerous Driving compared to individuals with above-average scores. According to Cohen (1988), these differences (effects) are low to moderate.

Table 2.3. Post-hoc Mann-Whitney U Tests to test the differences between groups

DECAS Scale	Comparison	Mann-Whitney U	Z	p	Cohen's d
Agreeability	Below average	368.000	-2.604	.009	0.56
	Average	884.500	-1.078	.281	0.24
	Above average	1433.000	-5.130	<.001	0.73
Emotional Stability	Below average	299.000	-1.679	.093	0.33
	Average	870.500	-1.424	.154	0.15
	Above average	1483.500	-3.879	<.001	0.43

(source: Authors)

3. Correlation between DECAS and negative cognitions/emotions

The Kolmogorov-Smirnov test for assessing the normality of distributions indicates that scores on the Cognitive / Negative Emotions scale deviate from a Gaussian distribution for all DECAS scales, both in the group of participants with below average scores and in the group of those with average and above scores. average (Table 3.1.). Therefore, to test the hypothesis that there is a significant association between DECAS personality traits and negative cognitions / emotions, we used the Kruskal-Wallis H non-parametric test.

Table 3.1. Kolmogorov-Smirnov Z Test to verify the normality of distributions

Scale DECAS	Scale level DECAS
-------------	-------------------

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losîu, Claudia Vlaicu

	Under average		Average/mean		Above mean/average	
	K-S z	p	K-S z	p	K-S z	p
Openness	.202	<.001	.185	.060	.149	<.001
Extraversion	.181	.001	.156	.136	.163	<.001
Consciousness	.204	<.001	.180	.003	.177	<.001
Agreeability	.131	.017	.297	<.001	.187	<.001
Emotional Stability	.151	.015	.175	.128	.210	<.001

(source: Authors)

In Table 3.2. the results of the Kruskal-Wallis H omnibus test are displayed for the association between DECAS scales and negative cognitions / emotions. Thus, we observe that for the Open, Extraversion and Consciousness scales the data do not indicate a statistically significant association with negative cognitions / emotions ($p > 0.05$). In contrast, there is a statistically significant association between the level of agreeableness and negative cognitions / emotions [$H(2) = 20,033, p < .001$] and between the level of emotional stability and negative cognitions / emotions [$H(2) = 11,819, p = .003$]. To see exactly between what levels of agreeableness and emotional stability there are significant differences in terms of negative cognitions / emotions, we used Mann-Whitney U post-hoc tests. To avoid an unwanted increase in type I error (false positive) due to multiple comparisons, we applied the Bonferroni correction and adjusted the significance threshold of the tests to 0.0167. Thus, all p-values associated with post-hoc tests were compared with the adjusted threshold value. The results are presented in Table 3.3.

Table 3.2. Kruskal Wallis H test to test the association between DECAS scales and negative cognitions / emotions.

DECAS Scale	Level	Media n	Mean	SD	Ranks mean	H	df	p
Openness	Below average	11.0	12.94	4.12	82.81	1.245	2	.537
	Average	13.0	13.72	3.91	96.36			
	Above	12.0	13.11	3.48	90.39			

The relation between personality traits and aggressive driving

Felicia Aurica Haidu, Elena Losî, Claudia Vlaicu

	average							
Extraversion	Below average	11.0	12.19	3.05	76.45	3.357	2	.187
	Average	13.0	14.13	5.07	93.79			
	Above average	12.0	13.28	3.55	92.71			
Consciousness	Below average	11.50	13.11	3.96	86.62	2.001	2	.368
	Average	11.50	12.82	3.90	81.95			
	Above average	12.0	13.34	3.38	95.56			
Agreeability	Below average	14.0	14.90	4.07	113.70	20.03 3	2	<.001
	Average	11.0	12.71	3.70	82.02			
	Above average	11.0	12.21	3.11	76.26			
Emotional stability	Below average	14.0	14.58	3.76	111.28	11.81 9	2	.003
Openness	Below average	13.0	13.32	3.90	92.29			
	Average	11.0	12.57	3.53	80.13			

(source: Authors)

Regarding the association between Emotional Stability and negative cognitions / emotions, post-hoc tests (Table 3.3) show significant differences in negative cognitions / emotions between individuals with below-average levels of emotional stability and above-average levels of emotional stability. As indicated by the averages and medians presented in Table 3.2, a lower level of emotional stability is associated with higher scores on the Cognitive / Negative Emotions scale. Thus, individuals with a below-average level of emotional stability scored significantly higher on Cognitions / Negative Emotions compared to individuals with above-average scores. According to Cohen (1988), these differences (effects) are moderate.

Table 3.3. Mann Whitney U post hoc tests to test for differences between groups.

DECAS Scale	Comparison	Mann-Whitney U	Z	p	Cohen's d
-------------	------------	----------------	---	---	-----------

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losî, Claudia Vlaicu

Agreabilitate	sub medie - medie	377.500	-2.505	.012	0.56
	medie - peste medie	965.000	-.520	.603	0.15
	sub medie - peste medie	1634.500	-4.395	<.001	0.74
Stabilitate emoțională	sub medie - medie	322.500	-1.320	.187	0.33
	medie - peste medie	944.000	-.956	.339	0.20
	sub medie - peste medie	1600.500	-3.431	<.001	0.55

4. Correlation between DECAS and Aggressive Driving

The Kolmogorov-Smirnov test for the assessment of normality of distributions indicates that the scores on the Aggressive Driving scale deviate from a Gaussian distribution, for all DECAS scales, both in the group of participants with below average scores and in the group of those with average and above average scores (Table 4.1.). Therefore, to test the hypothesis that there is a significant association between DECAS personality traits and aggressive driving, we used the Kruskal-Wallis H non-parametric test.

Table 4.1. Kolmogorov-Smirnov Z test to verify the normality of the distributions.

DECAS Scale	Level Scale DECAS					
	Below Mean/average		Mean/average		Above mean/average	
	K-S z	p	K-S z	p	K-S z	p
Openness	.274	<.001	.355	<.001	.365	<.001
Extraversion	.366	<.001	.333	<.001	.356	<.001
Consciousness	.318	<.001	.407	<.001	.384	<.001
Agreeability	.310	<.001	.332	<.001	.411	<.001
Emotional Stability	.341	<.001	.338	<.001	.361	<.001

(source: Authors)

In Table 4.2. the results of the Kruskal-Wallis H omnibus test are displayed for the association between DECAS scales and aggressive driving. Thus, we note that for the Open, Extraversion and

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losîu, Claudia Vlaicu

Consciousness scales the data do not indicate a statistically significant association with aggressive driving ($p > 0.05$). In contrast, there is a statistically significant association between the level of agreeableness and aggressive driving [$H(2) = 14,696, p < .001$] and between the level of emotional stability and aggressive driving [$H(2) = 7,410, p = .025$]. To see exactly between what levels of pleasantness and emotional stability there are significant differences in aggressive driving, we used Mann-Whitney U post-hoc tests. To avoid an unwanted increase in type I error (false positive) due to multiple comparisons, we applied the Bonferroni correction and adjusted the significance threshold of the tests to 0.0167. Thus, all p-values associated with post-hoc tests were compared with the adjusted threshold value. The results are presented in Table 4.3.

Table 4.2. Kruskal-Wallis H test to test the association between DECAS scales and aggressive driving.

DECAS Scale	Level	Media n	Mean	SD	Ranks mean	H	df	p
Openness	Below average	7.0	7.84	1.28	94.89	1.313	2	.519
	Average	7.0	8.43	2.90	89.62			
	Above average	7.0	8.12	3.26	86.18			
Extraversion	Below average	7.0	7.81	2.36	85.14	1.020	2	.601
	Average	7.0	8.21	1.79	96.52			
	Above average	7.0	8.15	3.13	88.83			
Consciousness	Below average	7.0	8.27	2.61	92.65	.837	2	.658
	Average	7.0	7.80	1.34	86.07			
	Above average	7.0	8.04	3.54	86.74			
Agreeability	Below average	8.0	9.23	4.49	106.41	14.69 6	2	<.00 1

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losî, Claudia Vlaicu

	Average	7.0	7.71	1.01	91.81			
	Above average	7.0	7.50	1.10	78.38			
Emotional Stability	Below average	8.0	8.80	4.37	104.20	7.410	2	.025
	Average	7.0	7.74	1.05	91.82			
	Above average	7.0	7.87	2.16	82.85			

(source: Authors)

Regarding the association between agreeableness and aggressive driving, post-hoc tests (Table 4.3) show significant differences in terms of aggressive driving between individuals with a below average level of agreeableness and those with an above average level of agreeableness. As indicated by the means and medians presented in Table 4.2, a lower level of agreeableness is associated with higher scores on the Aggressive Driving scale. Thus, individuals with a below average level of agreeableness obtained significantly higher scores on the Aggressive Driving scale compared to individuals with above average scores. According to Cohen (1988), these differences (effects) are moderate.

Regarding the association between Emotional Stability and Aggressive Driving, post-hoc tests (Table 4.3) show significant differences in aggressive driving between individuals with below-average levels of emotional stability and those with above-average levels of emotional stability. As indicated by the averages and medians presented in Table 4.2, a lower level of emotional stability is associated with higher scores on the Aggressive Driving scale. Thus, individuals with a below-average level of emotional stability scored significantly higher on Aggressive Driving compared to individuals with above-average scores. According to Cohen (1988), these differences (effects) are low to moderate.

Table 4.3. Mann-Whitney U post-hoc tests to test differences between groups.

DECAS Scale	Comparison	Mann-Whitney U	Z	p	Cohen's d
-------------	------------	----------------	---	---	-----------

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losî, Claudia Vlaicu

Agreeability	Below average-average	486.000	-1.361	.173	0.47
	Average-above average	868.000	-1.481	.139	0.21
	Below average-average	1941.500	-3.784	<.001	0.53
Emotional stability	Below average-average	346.000	-1.028	.304	0.33
	Average-above average	976.500	-.902	.367	0.08
	Below average-average	1881.500	-2.694	.007	0.27

(source: Authors)

5. The Association Between DECAS and Risky Driving

The Kolmogorov-Smirnov test for the assessment of normality of distributions indicates that the scores on the Risky Driving scale deviate from a Gaussian distribution, for all DECAS scales, both in the group of participants with below average scores and in the group of those with average and above average scores (Table 5.1.). Therefore, to test the hypothesis that there is a significant association between DECAS personality traits and risky driving, we used the Kruskal-Wallis H non-parametric test.

Table 5.1. Kolmogorov-Smirnov Z test to verify the normality of the distributions.

DECAS Scale	Level Scale DECAS					
	Below average		Average		Above average	
	K-S z	p	K-S z	p	K-S z	p
Openness	.297	<.001	.247	.002	.329	<.001
Extraversion	.347	<.001	.272	<.001	.320	<.001
Consciousness	.304	<.001	.362	<.001	.344	<.001
Agreeability	.268	<.001	.247	.002	.413	<.001
Emotional Stability	.303	<.001	.284	<.001	.364	<.001

(source: Authors)

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losîu, Claudia Vlaicu

In Table 5.2. the results of the Kruskal-Wallis H omnibus test are displayed for the association between DECAS scales and risky driving. Thus, we note that for the Open, Extraversion and Consciousness scales the data do not indicate a statistically significant association with risky driving ($p > 0.05$). In contrast, there is a statistically significant association between the level of agreeableness and risky driving [$H(2) = 24.608, p < .001$] and between the level of emotional stability and aggressive driving [$H(2) = 9.406, p = .009$]. To see exactly between what levels of pleasantness and emotional stability there are significant differences in risky driving, we used Mann-Whitney U post-hoc tests. To avoid an unwanted increase in type I error (false positive) due to multiple comparisons, we applied the Bonferroni correction and adjusted the significance threshold of the tests to 0.0167. Thus, all p-values associated with post-hoc tests were compared with the adjusted threshold value. The results are presented in Table 5.3.

Table 5.2. Kruskal-Wallis H test to test the association between DECAS scales and risky driving.

DECAS Scale	Level	Median	Mean	SD	Ranks mean	H	df	p
Openness	Below average	12.0	13.37	2.36	90.15	.653	2	.722
	Average	13.0	13.24	1.67	95.64			
	Above average	12.0	13.66	3.76	87.17			
Extraversion	Below average	12.0	12.88	2.23	79.02	4.506	2	.105
	Average	13.0	14.67	4.17	103.58			
	Above average	12.0	13.53	3.27	89.62			
Consciousness	Below average	12.0	13.56	2.66	91.10	.968	2	.616
	Average	12.0	13.58	3.42	82.59			

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losû, Claudia Vlaicu

	Above average	12.0	13.48	3.67	90.38			
Agreeability	Below average	13.0	14.96	4.78	111.42	24.608	2	<.001
	Average	13.0	13.38	1.88	96.81			
	Above average	12.0	12.74	1.72	74.43			
Emotional stability	Below average	13.0	14.37	4.60	103.48	9.406	2	.009
Openness	Below average	13.0	13.63	2.49	102.84			
	Average	12.0	13.20	2.61	81.30			

(source: Authors)

Regarding the association between agreeableness and risky driving, post-hoc tests (Table 5.3) show significant differences in terms of risky driving, between individuals with an above average level of agreeableness and those with an below average level of agreeableness. As indicated by the means and medians presented in Table 5.2, a lower level of agreeableness is associated with higher scores on the Risky Driving scale. Thus, individuals with an above average level of agreeableness obtained significantly lower scores on the Risky Driving scale compared to individuals with below average scores. According to Cohen (1988), these differences (effects) are moderate.

Regarding the association between Emotional Stability and risky driving, post-hoc tests (Table 5.3) show significant differences in terms of risky driving, it is between individuals with a below average level of emotional stability and an above average level of emotional stability. As indicated by the averages and medians presented in Table 5.2, a lower level of emotional stability is associated with higher scores on the Risky Driving scale. Thus, individuals with a below-average level of emotional stability scored significantly higher on Risky Driving compared to individuals with above-average scores. According to Cohen (1988), these differences (effects) are low to moderate.

Table 5.3. Mann-Whitney U post-hoc tests to test differences between

The relation between personality traits and aggressive driving
Felicia Aurica Haidu, Elena Losî, Claudia Vlaicu

groups.

DECAS Scale	Comparison	Mann-Whitney U	Z	p	Cohen's d
Agreeability	Below average-average	484.000	-1.339	.181	0.44
	Average-above average	761.000	-2.376	.017	0.36
	Below average-average	1658.000	-4.874	<.001	0.62
Emotional Stability	Below average-average	393.500	-.240	.811	0.20
	Average-above average	814.500	-2.070	.038	0.17
	Below average-average	1865.000	-2.723	.006	0.31

Conclusions:

- There is a statistically significant association between the level of agreeableness and dangerous driving
- A lower level of emotional stability is associated with higher scores on the Dangerous Driving scale
- For the Open, Extraversion and Consciousness scales the data do not indicate a statistically significant association with negative cognitions / emotions. In contrast, there is a statistically significant association between the level of agreeableness and negative cognitions / emotions and between the level of emotional stability and negative cognitions / emotions
- Individuals with a below-average level of emotional stability scored significantly higher on Cognitions / Negative Emotions compared to individuals with above-average scores;
- There is a statistically significant association between the level of agreeableness and aggressive driving and between the level of emotional stability and aggressive driving.
- A lower level of agreeableness is associated with higher scores on the Aggressive Driving scale.
- A lower level of emotional stability is associated with higher scores on the Aggressive Driving scale.
- A lower level of agreeableness is associated with higher scores on the Risky Driving scale..

The relation between personality traits and aggressive driving

Felicia Aurica Haidu, Elena Losîu, Claudia Vlaicu

Limitations and implications of the study

How personality traits influence aggressive driving remains to be explored. The relationship between personalities and aggressive driving may be mediated by other factors and traits such as the way to dispose anger. Finally, the participants were recruited only in one city of Bucharest; sample representativeness may be improved by recruiting participants from different cities of Romania.

Aggressive driving plays an important role in traffic safety; the current scale can help identify dangerous drivers, and be used by traffic organizations and driving schools. Furthermore, personality traits are effective predictors of aggressive driving behaviors. For example, emotionally unstable drivers should cultivate patience and improve tolerance under bad traffic conditions by attending therapeutic or anger management programmes. For further research, the mechanism underlying associations of personality traits with the DECAS should be explored.

References

- Baron, R. A., & Richardson, D. R. (1994). *Human aggression* (2nd ed.). New York: Plenum Press.
- Berkowitz, L. (1993). *Aggression: Its causes, consequences, and control*. New York: McGraw-Hill
- Blawal, Hussain, Hitomi, Sato, Tomio Miwac Takayuki Morikawa. (2020). Influence of personality traits on aberrant driving behaviors: A comparison of Japanese, Chinese, and Vietnamese drivers *Journal of Safety Research, Volume 75, pp 178-188*
- Costa, P. T., & McCrae, R. R. (1992). Revised NEO personality inventory (NEO-PI-R) and *NEO five factor inventory (NEO-FF-I) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Costa, P. T., McCrae, R. R., & Dembroski, T. M. (1989). Agreeableness versus antagonism: Explication of a potential risk factor for CHD. In A. W. Siegman & T.M. Dembroski (Eds.), *In search*

The relation between personality traits and aggressive driving

Felicia Aurica Haidu, Elena Losî, Claudia Vlaicu

- of coronary prone behavior (pp. 41–63).
Hillsdale, NJ: Erlbaum, Dragan Jovanovic', Krsto Lipovac b, Predrag Stanojevic, Dragana Stanojevic' (2011), The effects of personality traits on driving-related anger and aggressive behaviour in traffic among Serbian drivers, *Transportation Research Part F: Traffic Psychology and Behaviour, Volume 14, Issue 1, January 2011, pp. 43-53*
- Deffenbacher, J. L., Huff, M. E., Lynch, R. S., Oetting, E. R., & Salvatore, N. F. (2000). Characteristics and treatment of high-anger drivers. *Journal of Counseling Psychology, 47*, 5–17.
- Deffenbacher, J. L., Lynch, R. S., Filetti, L. B., Dahlen, E. R., & Oetting, E. R. (2003). Anger, aggression, risky behavior, and crash-related outcomes in three groups of drivers., *Behaviour Research and Therapy, 41*, 333–349.
- Haidu., F., Vlaicu., C., (2020), Psychological Theories Of Aggression. Critical Perspective, *Journal of Education, Society and Multiculturalism, Year I, Vol. 1 NO. 1*
- Hemenway, D., & Solnick, S. (1993). Fuzzy dice, dream cars and indecent gestures: Correlates of driver behavior. *Accident Analysis and Prevention, 25*, 161–170