

The Relationship between Personality Characteristics and Driving Behavior

Bahram Esmaeili, Hamid Reza Imani Far, Hossein Hosseini, Mohammad Sharifi

Abstract—The present study investigated the relationship between personality characteristics of drivers and the number and amount of fines they have in a year. This study was carried out on 120 male taxi drivers that worked at least seven hours in a day in Lamerd - a city in the south of IRAN. Subjects were chosen voluntarily among those available. Predictive variables were the NEO –five great personality factors (1. conscientiousness 2. Openness to Experience 3. Neuroticism 4. Extraversion 5. Agreeableness) the criterion variables were the number and amount of fines the drivers have had the last three years. The result of regression analysis showed that conscientiousness factor was able to negatively predict the number and amount of financial fines the drivers had during the last three years. The openness factor positively predicted the number of fines they had in last 3 years and the amount of financial fines during the last year. The extraversion factor both meaningfully and positively could predict only the amount of financial fines they had during the last year. Increasing age was associated with decreasing driving offenses as well as financial loss. The findings can be useful in recognizing the high-risk drivers and leading them to counseling centers. They can also be used to inform the drivers about their personality and its relation with their accident rate. Such criteria would be of great importance in employing drivers in different places such as companies, offices etc...

Keywords—drivers, financial fines, neo five-factor personality

I. INTRODUCTION

PERSONALITY is the impression an individual makes on others. It refers to his/her social skills, charismatic qualities and the like. Personality is generally defined as the individual unique and relatively stable patterns of behavior, thoughts and emotions. Personality psychology is a branch of psychology that studies personality and individual differences. Personality psychology is not the only branch of psychology whose subject matter is poorly defined. What, for example, is the subject matter of social psychology? It seems to be an evaluation of how "situations" influence social behavior [5].

The purpose of present research is to study the relation between a driver personality and the amount of his financial fines. The findings of such studies can be used for recognizing the high-risk drivers and providing useful suggestions for decreasing the accident rate in society. They can also help different organizations to employ low-risk drivers. Traffic engineers mostly consider transportation base construction and other non-human factors as the main causes of accidents and drivers' disobedience of traffic rules [6] - [4] - [9] while researchers see their personality important in this regard [2] - [13], [14].

Bahram Esmaeili is with the Farhangia university : Rajaee Teacher Training University of Shiraz, Iran, in addition Bahram Esmaeili is with the education organization of Fars province, Iran (corresponding author, phone: +987112289201; e-mail: esmaeili.ba@gmail.com).

Hamid Reza Imani Far and Hossein Hosseini were with Payam Noor University of Lamerd, Iran, (e-mail: hosseini1351@yahoo.com/ e-mail: imanifar@gmail.com).

Mohammad Sharifi is with the Farhangian university: Rajaee Teacher Training University of Shiraz, Iran, (phone: +987112289201; fax: +987112281090) (e-mail: sharifbm@yahoo.co.uk).

Regarding the factors affecting the driver's personality, Personality psychologists in the early 1990s almost all together came to the conclusion that the individual differences in average people tend to be based on five dimensions: 1) Neuroticism, Agreeableness, conscientiousness, extraversion and openness [8]- [16]-[18]. Although it is unlikely to be an internal correlation among these factors, specifically between Neuroticism & extraversion, and extraversion & openness, All these factors together develop a complete set of behavior orientation, constant feelings, and cognition patterns [17].

People with high extraversion are mostly positivist, optimistic, inclined to risk, tending to crowded places and adventures. Those with high conscientiousness are likely stronger and more independent, capable, responsible and meticulous.

Those with Agreeableness are friendly and very eager and interested in others and are eager to help others. Those with high Neuroticism are relatively uncertain and easily get agitated, upset, angry and violent. Theoretically, a nervous person tends to do certain behavior under the pressure of the society.

Those who possess the openness dimension are of the ability to accept various experiences and different cultures, and to be more curious and imaginative [10]. Generally the five factors of personality have integratively presented a model for personality theories [7, p.260]. Five-factor model that included self report items is based on participants' experiences, attitudes, motivation and individual senses [1].

II. METHODOLOGY AND INSTRUMENT

This study was carried out on 120 male taxi drivers that worked at least seven hours in a day in Lamerd - a city in the south of IRAN. Subjects were chosen voluntarily among those available. The five-NEO great personality factors were the predictive variables. The criterion variables were the number and amount of fines the drivers have had the last three years. In this study, the R-NEOPI Questionnaire has been used. This questionnaire [15] as one of the recent tools in the field was introduced by McCrae and Costa (1985) as the NEO Personality Inventory.

This test is based on the five-factor model which describes individuals in terms of five fundamental traits: conscientiousness, Openness to Experience, Neuroticism, Extraversion and Agreeableness. The Five Factor Model was developed by the study of adjectives where it was assumed that over time all important measures of personality would be encoded into language.

The first researchers in this area gave study participants long lists of adjectives and told them to rate them on how much each applied then used a technique called factor analysis to try and boil down their answers to underlying independent factors.

III. RESULTS

In addition to the descriptive results of the study (Table I), the results of the symmetric regression analysis (Tables II, III, IV and V) showed that the Agreeableness factor negatively and significantly could predict the number and amount of the fines the drivers had in a year and during the last three years. Conscientiousness factor also predicted positively and significantly the amount of financial fines in the past year. The extraversion factor both meaningfully and positively could predict the amount of financial fines they had during the last year and the number of offenses during the last three years. Increasing age was associated with decreasing driving offenses as well as financial loss (Table VI).

TABLE I

SUMMARY DESCRIPTIVE STATISTICS OF 120 MALES DRIVERS WITH DRIVING OFFENSES

	Hours	Age	The amount of fines in the last year	Total fines in first year	The amount of fines in the last three years	The number of fines in the past three years
Mean	8/42	31/35	10400	95%	28400	2/33
sd	2/255	7/634	1/605	1/091	4/206	2/680

TABLE II

MECHANISM OF EFFECT OF INDEPENDENT VARIABLES ON THE NUMBER OF DRIVING OFFENSES IN THE PAST YEAR

Dependent Variable	Independent Variable	B	SE B	β	t	Sig.
Number of driving offenses in the past year	Neuroticism	-0/028	0/022	-0/131	-1/268	0/208
	Extraversion	0/041	0/023	0/161	1/763	0/081
	Openness	0/044	0/023	0/179	1/925	0/057
	Agreeableness	-0/064	0/025	-0/239	-2/547	0/012
	Conscientiousness	-0/013	0/026	-0/050	-0/480	0/632
R ² = /129		F = 2/787		Sig = 0/015		

TABLE III

MECHANISM OF EFFECT OF INDEPENDENT VARIABLES ON THE NUMBER OF DRIVING OFFENSES IN THE PAST THREE YEARS

Dependent Variable	Independent Variable	B	SEB	β	t	Sig.
Number of driving offenses in the past three years	Neuroticism	-0/048	0/053	-0/093	-0/0905	0/367
	Extraversion	0/128	0/057	0/203	2/236	0/027
	Openness	0/033	0/056	0/054	0/587	0/558
	Agreeableness	-0/133	0/061	-0/203	-2/178	0/031
	Conscientiousness	-0/0124	0/064	-0/202	-1/937	0/055
Sig = 0/008		F = 3/070		R ² = 0/140		

TABLE IV

MECHANISM OF EFFECT OF INDEPENDENT VARIABLES ON FINANCIAL FINE TO DRIVE IN A YEAR

Dependent Variable	Independent Variable	B	SEB	β	T	Sig
Total Fine To Drive In The Past Year	Neuroticism	-357/115	320/911	-0/115	-1/113	0/268
	Extraversion	721/694	344/646	0/192	2/094	0/038
	Openness	785/728	399/114	0/215	2/317	0/022
	Agreeableness	733/727	369/054	-0/187	-1/988	0/049
	Conscientiousness	238/214	385/517	-0/065	-0/618	0/538
R ² = 0/125		F = 2/698		Sig = 0/017		

TABLE V

THE MECHANISM DRIVING THE EFFECT OF INDEPENDENT VARIABLES ON THE OVERALL FINANCIAL FINES IN THE PAST THREE YEARS

Dependent Variable	Independent Variable	B	SEB	β	T	Sig
Total Fine To Drive	Neuroticism	-615/725	877/872	-0/072	-0/701	0/485

In The Past Year						
Extraversion	1503/965	942/802	0/146	1/595	0/113	
Openness	-976/423	927/669	0/097	-1/053	0/295	
Agreeableness	2175/227	1009/570	0/202	-2/155	0/033	
Conscientiousness	2049/348	1054/606	0/204	-1/943	0/054	
R ² 0/133		F = 2/851		Sig = 0/013		

TABLE VI
CORRELATION BETWEEN AGE AND TOTAL FINANCIAL FINES IN THE PAST THREE YEARS

Variables	Total	r	Sig.
Age and Total Financial Fines In The Past Three Years	120	-0/779	0/01

IV. CONCLUSION

So far different scholars have given different answers to this question "Which one of the above factors has the most influence in the disobedience rate of drivers"? Extraversion factor [5], flexibility [14]-[3] Agreeableness [2], were reported. Various research results can be justified through questionnaire type, geographical and cultural region, the sample, and methodology. But the results of the meta-analysis of personality characteristics on the amount of traffic accidents have shown that in addition to transport in infrastructure and traffic characteristics, personality characteristics also can be powerful factors to predict accidents and driving offenses [4]-[12]-[11]. Due to high rates of accidents in countries, [9] recognizing the high-risk drivers and introducing them to counseling centers is of great importance. It is recommended that drivers should be informed of their personality characteristics and their correlation with the rate of accidents.

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