

Relationship between Risky Driving Behavior and Sensation – Seeking and Sex among Students of Islamic Azad University – Bandar Abbas, Iran, in 2012

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ABSTRACT

Introduction: Preventing car accidents is one the most important health issues. This research was conducted to investigate the relationship between risky driving behavior, sensation-seeking, and sex.

Methodology: The sample group consisted of 200 people who were chosen by the multi-stage random cluster sampling method among the students of Islamic Azad University- Bandar Abbas Branch. Manchester's driving habits scale was used to measure their driving behavior, and the Zukerman sensation seeking scale was used to examine their rate of sensation-seeking.

Results: The total score of sensation-seeking and its three subdivisions (experience seeking, inhibition, and sensitivity to monotony had a positive and significant correlation with their total score of driving behavior. A similar correlation was also found with traffic violations and driving speed. Boredom susceptibility also had a positive and significant correlation with driving mistakes. There was also a significant difference in the driving behavior between men and women, with dangerous driving behavior, in particular traffic violations, being greater for men than for women. Sensation-seeking was found to be much greater in men than in women, especially inhibition and boredom susceptibility.

Conclusions: The results of this research showed that risky driving behavior and driving speed can be predicted by using the sensation-seeking construct. To reduce risky driving behavior, it is suggested that plans be made for identifying and counseling sensation-seekers.

KEYWORDS: sensation-seeking, driving speed, risky driving behavior.

1. INTRODUCTION

The World Health Organization (WHO) has indicated that injuries resulting from car accidents are the third most-frequent reason for mortality in the world. Car accidents are one of the most common reasons of mortality among youth and adults (Kaplan and Sadook, 1997). WHO has found that preventing car accidents was the most important health issue in the entire world in 1993. Parsa (2002) warned about the increase in the number of car accidents in Iran and suggested that the number of car accidents resulting in death in Iran was 32 times greater than in developed countries and two to three times greater than in developing countries. He added that the statistics show that more than 90% of car accidents in underdeveloped countries, among the ages of 20 to 45, occurred due to human factors. It is important to note that most of these statistics only include road accidents and do not include accidents that caused injuries or deaths in urban traffic. Older and Spicer (1986) believed that road accidents are affected by drivers' situations, the environment, and the car itself and Shinar (1988) believed that the human element was the most important factor. We can point to sensation-seeking as the one of the human elements that contributes to car accidents. Zukerman (1994) changed his description of sensation-seeking to describe it as a feature that can be explained by various, new, complex, and strong excitements, as well as experiences that tend to involve physical, social, legal, and financial risks. Except for Zukerman, other experts also have presented some descriptions of the sensation-seeking construct. Among these experts, Kopstein, Crum, Celentano and Martin (2001) explained sensation-seeking as looking for various, novel, complex, and new excitements and experiences and as the tendency to accept physical, social, and financial risks in order to have these experiences. Zukerman (1983) suggested that the sensation-seeking construct is a series of correlated elements rather than a single construct. He identified four elements or subdivisions that describe the general characteristics of sensation-seeking:

1. Thrill and adventure seeking (TAS)

2. Experience seeking (ES)

3. Disinhibition (DI)

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4. Boredom Susceptibility (BS)

Hirschberger, Florian, Mikulincer, Goldenberg and Pyszczynski (2002) described risky behaviors as the behaviors that are defined as self destructive. In their opinion, people do not commit behaviors against themselves purposely, and their risky behaviors are indicators of their choices between short-term interests and long-term costs. Most people, and even many experts, believe that speed is the major reason for car accidents, and much research has been conducted concerning this issue. However, Horberry et al. (2004) believed that slow driving was not a guarantee of safety. In fact, they presented statistics that showed that the accident rate at 5% below the speed limit was the same as the accident rate at 5% above the speed limit. Based on their findings, they also suggested that driving with mediocre speed is the safest way to drive. Tejero and Choliz (2002) believed that experienced drivers in sudden dangerous situations control the car automatically and prevent accidents. They explained that the driver's situation clearly affects her or his action. A vast array of elements can influence a driver's situation including environmental conditions. For example, long-term driving on a monotonous road can reduce the alertness of the driver, and this situation is even more dangerous at night.

Iverson and Randemo (2002) investigated Norwegian citizens' attitudes toward traffic safety, driving behaviors, and being involved in the accidents. The purpose of their research was to identify the determining factors of risky behaviors and being involved in traffic accidents. In 2001 and 2000, a statistical sample consisting of 2614 people was chosen randomly from people who were licensed to drive in Norway, and these people completed a research questionnaire. The questionnaire included attitude measurement scales, risky behaviors, and the rate of being involved in accidents. The results showed that people's attitudes toward traffic safety issues, in particular their attitudes toward violence and speed, affected risky traffic behaviors. In turn, the risky behaviors affected the number of accidents. Increasing age and the gender of the driver, i.e., females result in changes in attitudes and risky behaviors. Investigated the rule breaking variable in driving behavior. They were aware that Norway has restrictive norms and rules concerning vehicular traffic, and, as a result, the number of accidents are low. Even so, the researchers accepted the role of personal elements in the exhibition of risky driving behaviors.

Jonah, Thiessen and Au-Yeung (2001) investigated 40 prior research projects that addressed the relationship between excitement-seeking and sensation-seeking and risky driving, and they found that only four of the research projects had not confirmed this relationship, while the other 36 projects, conducted in various countries all over the world, including Canada, the United States, England, Holland, Sweden, and Finland, had reported the existence of this relationship between these constructs and that it was stronger in men than in women. These researchers conducted a project about the relationship between sensation-seeking and risky driving behavior, comparing some elements in two groups of people with high and low sensation-seeking, and they concluded that people with high scores in sensation-seeking did not wear their seat belts as often as other drivers and that they drove their cars on the highway at speeds exceeding 120 km/h. In addition, they consumed alcoholic drinks 2-7 times a week before driving, and they did not believe that they would be arrested by the police. They often had arguments or fights with other drivers, and, even though most of them were fined by the police, they said that aggressive driving and high speeds were exciting and fun.

Jonah et al. (2001), Jonah (1997), and Schwebel et al. (2006) showed that there is a meaningful correlation between sensation-seeking and risky, harsh driving behavior. Mathews, Tesuda, Iin and Ouzky (1999) also showed that sensation-seeking has a positive relationship with the frequency of crimes but not with the rate of accidents. Clement and Jonah (1984), Furnham and Saipe (1993) and Rimmo and Aberg (1999) also found a positive relationship between sensation-seeking, risky driving behavior and the frequency of crimes and harsh behaviors. Furnham and Saipe (1993) and Matthews, Tsuda, Xin and Ozeki (1999) concluded from the results of their research that sensation-seeking has a positive relationship with the number of crimes and has no relationship with driving accidents. Sumer (2003) investigated personality patterns and related personality characteristics to the number of driving accidents and concluded that the findings showed that sensation-seeking has extensive, direct effects on the frequency of bad driving behaviors. Jonah et al. (2001) showed that when a person's sensation-seeking is high, it is more likely that person will drive faster, drive after consuming alcoholic drinks, and not wear a seat belt.

Iverson and Randemo (2002) investigated the relationship between personality, risky driving, and the rate of driving accidents among Norwegian drivers. They knew that some personality characteristics, such as control place, anger and violence, sensation-seeking, and personal disorders, were related to risky driving behavior. The researchers generally believed that the driver's behavior is a major factor that affects the possibility of having an accident. For example, a meaningful difference has been observed between severe accidents involving introverted and extroverted people, with the former being more careful drivers. Concerning the relationship between sensation-seeking and risky driving behavior, Iverson and Randemo (2002) mentioned different research efforts, some of which did not indicate a positive relationship between these factors, because sensation-seekers, who have a tendency to drive fast, also are concerned about safety. However, other research has found a positive correlation between sensation-seeking score and risky driving behaviors, Horberry et al. (2004), Krahe (2005), Lonczak, Neighbors and Donovan(2006), Ozkan and Lojna (2005) and Waylen and Mckenna (2002), who concluded that men and young drivers have a disproportionate share of the total accidents. Men have more anti-social behaviors while they are driving, and two of those behaviors, i.e., speed and the frequency of traffic

crimes, are the best predictors of accident rates. Rozen Blom and Wolf (2002) believed that sensation seeking appears between the ages of 9 and 14 and reaches its peak at about age 20. After this age, sensation-seeking decreases steadily. This construct is seen more often among men than women. Ulleberg (2002) investigated personality subgroups of young drivers and the relationship between the tendency to take risks and the rate of involvement in accidents. Burger and Caldwell (2000), Franken (1988) and Watson, Clark, Mcintyre, and Hamaker (1992) also conducted research and reported a significant difference between sensation-seeking behaviors in the two genders, with men showing a greater extent of sensation-seeking than women.

Wilkson, Lishter, and Pitz (2009) found that being a female, having low cultural levels, having low levels of connection to the family, and being a part of a very weak social situation led to increase sensation-seeking; they also found that women who drank alcohol had three or four risky behaviors. Zakletka, Mont, and Baeolosk (2009) showed that sensation-seeking is a meaningful predictor for driving behaviors when the driver has consumed alcohol. Brookland and Begg (2011) showed that negative attitudes among males toward the restrictions imposed by the driving teache rand negative attitudes among females toward the GDLS were strongly associated with risky driving and involvement in crashes as young adults. WHO has indicated that injuries resulting from car accidents are the third leading cause of fatalities in the world? In Iran, the number of car accidents leading to death is 32 times greater than that of developed countries and two to three times greater than that of developing countries. The general objective of this study was to determine the relationship between risky driving behavior and sensation-seeking and sex among students of Islamic Azad University-Bandar Abbas, Iran, in 2012. The specific objectives of this study were:

- 1. To determine the relationship between people's sensation-seeking and their driving behavior
- 2. To determine the relationship between people's sensation-seeking and their driving speed
- 3. To determine the relationship between people's driving behavior and their driving speed
- 4. To determine the difference between the driving behaviors of men and women
- 5. To determine the difference between sensation-seeking of men and women

2. MATERIALS AND METHODS

2.1. Study design and sampling

A descriptive design was used in this study. The study population consisted of all the students who are studying at the M.A. level at Islamic University- Bandar Abbas Branch who had valid driver's licenses and drove a car during the last year. Two hundred such subjects (100 men and 100 women) were chosen by the multi-level cluster sampling method from the people who met the criteria stated above.

2.2. Instruments

In this project, two separate instruments were used: Zukerman's Sensation-Seeking Scale (SSS) and Driving Habits scale.

2.2.1. Zukerman's Sensation-Seeking Scale (SSS)

This scale is the summarized from of fourth version of Zukerman's sensation-seeking scale that was provided in 1978. The stages of changes of Zukerman's sensation-seeking scale included the stages of changes from the first version to the sixth version. Many studies have been done based on the factor analysis pattern provided by this scale. Zukerman's sensation-seeking scale of the fifth version was extracted from the personality test questionnaires developed by Hamze Ganji (2002). This scale was formed from four subgroups, i.e., thrill-and adventure-seeking, experience-seeking, disinhibition, and boredom susceptibility, and, for each subgroup, 10 test elements were considered. This scale included 40 two-part elements. Every element of the test is separate and is identified by A and B items, in a way that participants can answer one item from each element of the scale. The participants indicated their answers by putting a cross mark on the answer sheet in response to the items of the scale element. Not processed scores of participants in each one of four elements is from zero to ten which is determined by the scoring key and then by referring to the table of converting scores, the scores of participants got their real value.

The ability of internal similarity, which was calculated in the fourth and fifth scales among the American and English sample by Zukerman Isnek (1978), showed that the ability of similarity of the total scale in the American and English samples was the same. A total of 40 element scales show an appropriate internal similarity in the fifth version, and its range is from 0.83 to 0.86.

2.2.2. Driving Habits scale

This scale includes Manchester's driving habits questionnaire with 28 questions, with 11 elements of the questionnaire added to the elements of the major scale by Goudarzi (2005) in 2003. This questionnaire also is used for investigating the driving behavior of participants, as well as specifying the rate and quality of the driving mistakes. Manchester's driving habits scale has three subscales that are described in the study conducted by Stradling and Midouz (2000) based on English drivers. The first subscale is lapses, i.e., the errors that are the resultof neglect and forgetfulness, which include one to eight elements. The second subscale is errors and mistakes, which includes nine to 16 elements. The third subscale is violation and breaking the law, which includes 17 to 24 elements; the rest of the questions are not part of any of the subscales.

The validity of this scale was obtained by Goudarzi based on two traffic officers'opinions.A0.98 agreement coefficient was obtained for the relevance of the elements to driving behaviors, and the relevance of

the subscale elements to the three ingredients of mistakes, errors, and violations was indicated by the 0.95 and 0.96 agreement coefficients that were obtained.

The stability of Manchester's driving habits scale in this study provided a Cronbach's alpha coefficient of 0.879 using the internal consistency method. In addition, the total driving habits scale's internal consistency was apparent in that a Cronbach's alpha value of 0.92 was obtained. These values indicate that the added questions improved the internal consistency.

3. RESULTS

Table 1 shows the age and the percent of participants in this project. Of 200 participants in this study, 90 participants, or 45% of the total, were in the age range of 21 to 24. Only 21 participants were older 25, amounting to just 10.5% of the total. In this part, the relevant frequency to the majors of participants in this project is presented. Descriptive information for the speed variable is presented in Table 2. The Table shows that the highest score, the lowest score, and the average score are 400 km/h, 48 km/h, and 144.65 km/h, respectively.

To investigate the first hypothesis of this research: There is a positive and significant relationship between the rate of people's sensation-seeking and their driving behavior. To investigate the second hypothesis of this research: There is positive and significant relationship between people's rate of sensation-seeking and their driving speed. Concentration on the data in Table 3 indicate that there is positive relationship between sensationseeking and driving-speed variables, and this relevance equals 0.28 (r = 0.28), which is statistically significant at the 0.0001 level. Thus, there is a meaningful correlation between the scores of driving speed and its score in the sensation-seeking scale. To investigate the third hypothesis of this research: There is a positive and meaningful relationship between the driving behavior of people and their driving speed. The data in Table 4 show that there is a positive relationship between driving behavior and the driving speed variable, and this relevance equals0.2 (r = 0.2), which is statistically significant at the 0.002 levels. Thus, there is a significant correlation between the scores of driving speed and its scores on the driving-habits scale. The fourth hypothesis of this research: There is a significant difference in driving behavior between men and women.

Concentration on The data in Table 5 indicate that the value obtained for driving behavior was 1.97 (t = 1.97), which is statistically meaningful at the 0.05 level. Thus, we conclude that there is a meaningful difference in the driving behaviors of men and women and that risky driving behavior is greater in men than it is in women.

To investigate the fifth hypothesis of this research: There is a significant difference in sensation-seeking between men and women.

Concentration on The data in Table 6 show that the obtained t in sensation-seeking was 3 (t = 3), which is statistically meaningful at the 0.003 level. Thus, we conclude that there is a meaningful difference in sensation-seeking between men and women and that sensation-seeking is greater in men than in women

4. **DISCUSSION**

The investigation of the first research hypothesis showed that there is a positive and significant relationship between the rate of people's sensation-seeking and their driving behavior. The driving errors subgroup only had a relationship with boredom susceptibility, so we can say that people who become bored while they are driving may make mistakes to break the boredom. This finding is not unimaginable. The driving violations subgroup indicated a positive and significant relationship with total score of sensation-seeking and with the other subgroups, except for the thrill and adventure-seeking subgroup. The existence of these relationships shows that the level of driving violations was higher in the younger drivers who are seeking new experiences. From the psychiatric point of view, by considering that most of the research participants were in the last years of their youth, we can say that the tendency to experience new things is seen frequently in such people (Samani and Fouladchang, 2007). Reviewing information from various sources also indicated that people in this age group have a kind of egocentricism and, from a cognitive perspective; they feel that they are unbeatable. They tend to experience behaviors that somehow are considered to be norm-breaking behaviors. This can manifest itself in different forms of traffic violations. Traffic violations have almost strong and significant relationship with inhibition, which was a totally unexpected outcome. Certainly, the people who don't have enough internal inhibition power break more rules, including rules or norms that have become a part of the law. The existence of a relationship between boredom susceptibility and the rate of driving violations is quite justifiable. Breaking traffic rules can act as a way out for some youngsters who hate boredom, and, finally, the existence of a relationship between total score of sensation-seeking and traffic violations shows that the more people seek excitement, the more traffic violations they accumulate. Reviewing information from various sources show that, in general, the greater the extent that people are willing to go in their sensation-seeking activities, the more their behaviors become inconsistent with what society expects. One of these inconsistencies can be driving violations. Driving behavior generally must follow some rules or principles in every society, i.e., traffic rules. Sensationseeking subgroups, in particular disinhibition, are among the subgroups that result when sensation-seekers show a lack of interest in abiding by the social rules and current norms in society. This finding is similar to the research results of Matthews et al. (1999), as well as the findings of Furnham and Saipe (1993), Clement and Jonah (1984), and Rimmo and Aberg (1999). All of these researchers believed that there is apositive relationship

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between sensation-seeking and the frequency of traffic violations. Jonah et al. (2001) also said that, when sensation-seeking is high, the possibility of speeding, not wearing a seat belt, and drinking alcohol and driving increases. Investigating the columns of the Table revealed the unexpected observation that thrill and adventureseeking behavior had no meaningful correlation with any of the subgroups or the total scales of dangerous driving behavior. This finding is exactly the same as obtained results by Goudarzi and Shirazi (2006). Perhaps, by considering the related questions in the Zukerman questionnaire that investigated the thrill- and adventureseeking, we can say there is the possibility that the rate of thrill and adventure-seeking in the sample group didn't have enough dispersal or variation to be able to find any correlation with related changes to the dangerous driving behavior. Another possibility is that adventure-seeking people, by having various adventures, reach the optimum level of excitation and don't need to engage in dangerous driving behaviors any more. Another interpretation might be that it is possible that these people, by having various adventures, have experienced enough excitement as a result of their acts, and, therefore, they don't try to satisfy their adventurous needs in controlled situations, but try to satisfy these needs in controlled situations. The last line of the correlation matrix is related to the relationship between dangerous driving behaviors and sensation-seeking subgroups and the total scale of sensation-seeking. Except the sensation-seeking subgroup that is explained above, risky driving behaviors had a relationship with three other subgroups, i.e. experience seeking, boredom susceptibility, and disinhibition. A positive and meaningful relationship also was observed with the total score of sensationseeking. These findings were not unexpected at all, certainly, by considering sample groups age in the research, the tendency to experience the new occasions that lead to a feeling of independence from parents and, in general, from elders, can be accompanied by risky driving behaviors as a new occasion which beside the mentioned feeling, also covers the need to avoid boredom, and certainly, the people who don't have proper inhibition power, have more tendency to experience risky driving. It is emphasized again that age is an effective factor in this research. Samani and Fouladchang (2007) wrote about the features of these ages (late youth). indicating that some of them believe that they have special driving skills and that there is no possibility of an accident and a mistake for them. They think that they will never crash, because they have special and unique driving skills. On the other hand, Rozen Bloum (2003) suggested that people who are sensation-seekers think less about the consequences of danger. These results are in agreement with the results obtained by the following researchers: RozenBloum (2003), McGregor (1998), McKee et al. (1998), Jonah et al. (2001), Jonah (1997), Shouble et al. (2006), Sumer (2003), Iverson and Randmo (2002), Goudarzi and Shirazi (2009) believed that youngsters are sensation-seeker, adventurers, and ready for impulsive behavior. Reviewing the different sources showed that impulsive behavior is a kind of behavior that is done without thinking and often will be followed by regret. If risky driving behaviors are interpreted as a kind of impulsive behavior, we can say that Hougan et al.'s research is in agreement with our current findings. Grisou et al. (2001) and Goudarzi and Rostami (2004) had the same idea about violation and crime, and we can consider them to be in agreement with the current research. On the other hand, Iverson and Randmo (2002) mentioned different research in which the results showed that there was no relationship between sensation-seeking and risky driving behavior, which was justified by saying that such people pay close attention to safety regulations when they are driving at high speeds.

Investigating the second hypothesis showed that there is a positive and significant relationship between people's sensation seeking and their driving speed, and it was observed except in the thrill- and adventureseeking subgroup. Other subgroups of the sensation-seeking variable had a positive and significant relationship with speed. It seems that the people who are adventurers don't necessarily like to speed while they are driving, but it was observed that the relationship between the disinhibition variable and speed was the strongest relationship and is completely justifiable. As was mentioned above, when disinhibition is weak in people, they are influenced more by their excitement and they may engage in some questionable behaviors, such as driving at high speeds. The relationship between experience seeking and speed comes next, and all of them together cause the existence of the positive relationship between the total variable of sensation seeking and the driving speed among the sample group. Experiencing driving at high speeds for people who are the same ages as the people in the current sample group can be challenging. The resulting excitement can also break their feelings of boredom. And the people who are sensation-seekers may generally look for this excitement in high-speed driving. These results are similar to the findings of Jonah et al. (2001) and Goudarzi and Shirazi (2006), but they are not in agreement with the findings of KhodaPanahi (1999). Thus, the reason that Khoda Panahi's results may not be meaningful might be the specific characteristics of his sample group or probably no sensitivity of Arent's sensation-seeking scale in evaluating some of the sensation seeking aspects that influence driving speed. For example, the questions of Arent's scale may evaluate adventurous characteristics, which our research showed to have no meaningful relationship with estimated driving speed in ideal situations.

Investigating the third hypothesis showed that there is a positive and significant relationship between driving behavior of people and their driving speed. And it was observed that there was no relationship between two factors of driving mistakes and errors and speed but, traffic violations as a subgroup and total score of driving behavior showed a positive and significant relationship with speed. This means that the higher driving speed will result in more traffic violations and, generally, more dangerous driving behaviors will appear. This relationship seems quite logical. One of the most dangerous driving behaviors is high speed, which is considered to be a violation itself. The results of this research is in agreement with the findings of Goudarzi and Shirazi (2006) and Iverson and Randmo (2004), but there were no similar results based on the correlation between

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subdivisions of driving behavior and speed in other Iranian studies or in research performed in other countries, because each one of these factors was not considered as an independent factor in other research. Instead, they were constantly investigated in combination with driving behavior. Thus, to investigate the above possibilities, additional research must be conducted. Usually in human science research, after obtaining the major findings of the research, the effects of demography variables on these findings are examined. In this research, the effect of gender as the most important independent variable of demography on two groups of research findings also was investigated through t-tests of the independent groups.

Investing the fourth hypothesis showed that there is a significant difference in driving behavior between men and women. As the hypothesis test shows, no significant difference was observed in two subdivisions of driving mistakes and errors between men and women. The difference was low in both groups. Butmen obtained a higher average in the case of traffic violations and the total score of risky driving behavior. In this case, there was no similar research among internal and external research efforts that could be used to compare with our results. Thus, for more investigation, other research should be conducted. Of course, we can mention Ozka and Lanjunen(2005) research, in which they concluded that men break more laws and drive more violently than women. Waylen and Mckina (2002), Harbery et al. (2004), and Lonczak et al. (2006)also suggested that men have more accidents in comparison with women, that they have more traffic violations, and that they show more anti-social behaviors when they are driving. Ulleberg (2002) and Rozen Bloum and Wolf (2002) concluded from their research that men are threaten more than women by driving dangers. Reviewing the sources showed that, in general, law breaking can be one of the behavioral characteristics of the late teens and early youth, and this feature occurs less frequently in girls. Maybe it is because girls have fewer tendencies to get involved with police and are more afraid to engage in risky-driving behaviors. For a girl, standing, non-financial violations, which may occur because of risky driving (such as temporary and permanent detentions)are more difficult in comparison with boys.

Investigating the fifth hypothesis showed that there is a significant difference in sensation-seeking between men and women. As the hypothesis test shows, there was no significant difference in thrill- and adventureseeking and experience seeking subgroups among the men and women who answered the questions. However, dishibition and boredom susceptibility and the total score of sensation-seeking are meaningfully higher in men. Samani and Fouladchang (2007) quoted from several research sources that this issue can have a biological origin. They also quoted from other research that social norms determine this difference. The mentioned research also investigated emotional excitation theories and suggested that men get excited sooner than women and recover later. Samani and Fouladchang (2007) suggested that women adjust emotion and inhibition skills more effectively than men. These findings are in agreement with the research results of Franken (1988), Burger and Caldwell(2000), Watson et al. (1992), Hilgard et al. (1987), Zukerman (1979), Arentt(1994) and Ulleberg (2002), who believed that men are, in general, more sensation-seekers than women. Forabosco and Ruch (1994) also believed that the rate of sensation-seeking, disinhibition, and boredom susceptibility was higher in men than in women, which is in agreement with the current research. Jackson and Wilson (1993) also believed that some features are more apparent in men, with sensation seeking being a prime example. On the other hand, some of the researchers, among them Grinberg (1995), Pufal(1999), Hansen and Broik (2001) believed that there is no meaningful difference between the sensation-seeking of men and women, but these research results are not in agreement with the findings of the current research. Finally, the followings are listed as the limitations of this study:

1. The questionnaire items had two choices, which caused some limitations in freedom of test takers to give more accurate answers.

2. The items on the questionnaire were long, and it could reduce the accuracy coefficient in answering the last questions due to the tiredness of the test takers.

3. There were a limited number of participants in the research.

4. There was some possibility of the existence of bias in people's replies, because, in fact, the tools used in this research required participants to conduct self-estimates.

Conclusion

In summary, this study showed that there was a significant difference between risky driving behavior, especially driving violations, of men and women. The male respondents showed more risky behaviors and broke more laws. In addition, there was a significant difference between sensation-seeking of men and women. Male students especially showed higher scores in disinhibition and boredom susceptibility. In general, the results of this research showed that risky driving behavior and driving speed can be predicted by the sensation-seeking construct. To avoid and reduce risky driving behavior, it was suggested that plans must be made for recognizing the sensation-seekers.

Table1. Age distribution of the participants in this research							
age	Frequency persentage	frequency					
18-20	44.5	89					
21-24	45	90					
25<	10.5	21					
Total	100	200					

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	Table 2.	Descriptive	information	for the speed	variable
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statistic	Numberal value
Mean	144.65
Standard deviation	46.8
Range	360
Minimum	48
maximum	400

Table 3. Correlation between driving speed and sensation-seeking and its subscales

variable	Mean	number	Standard deviation	Corelationcoefficent with driving speed	Р
BS	3.1	200	1.6	0.18	0.01
ES	3	200	1.6	0.26	0.0001
DIS	3.1	200	1.9	0.39	0.0001
TAS	6.3	200	2.4	-0.006	0.94
Total	15.53	200	4.9	0.28	0.0001

Table 4. Correlation between driving speed and driving behavior and its subgroups

Variable	number	Mean	Standard deviation	Corelationcoefficent with driving speed	Р
Driving lapses	200	6.4	3.5	0.05	0.44
Driving errors	200	7.7	4.6	0.07	0.29
Driving violations	200	12.7	6.7	0.3	0.000
Total scor	200	46.1	22.3	0.2	0.002

 Table 5. Independent t-test to specify the difference between the scores of different subgroups of driving behavior and their total score among men and women participants

Variable	sex	number	Standard deviation	mean	df	t	Р
Driving lapses	Females	100	3.7	6.5	198	0.5	0.60
	males	100	3.3	6.2			
Driving errors	Females	100	4.4	7.7	198	0.08	0.93
	males	100	4.8	7.8			
Divide violations	Females	100	5.8	11.4	198	2.7	0.006
	Males	100	7.3	14			
Total scor	Females	100	20.7	43.1	198	1.97	0.05
	males	100	23.5	49.1			

 Table6. Independent T- test to specify the difference between the score of different subgroups of sensation seeking and its total score among men and women participants

Variable	Sex	number	mean	Standard deviation	df	t	Р
TAS	Females	100	6.4	2.3	198	0.8	0.38
	males	100	6.1	2.4			
ES	Females	100	2.8	1.7	198	1.6	0.10
	males	100	3.2	1.5			
DIS	Females	100	2.5	1.7	198	4.4	0.0001
	Males	100	3.7	1.9			
BS	Females	100	2.6	1.4	198	4	0.0001
	males	100	3.5	1.6			
Total scor	Females	100	14.5	5	198	3	0.003
	males	100	16.6	4.6			

REFERENCES

- Arnett, J. (1994). Sensation seeking. A new conceptalization and a new scale *.Personality and Individual Difference, vol.16*, p.289-296.
- Brookland, R., Begg, D. (2011). Adolescent, and their parents, attitudes towards graduated driver licensing and subsequent risky driving and crashes in young adulthood. *Journal of Safety Research. Vol.* 42(2), P. 109-115
- Burger, J.M and Caldwell, D.F. (2000). Personality, Social activities, job search behavior and interview success: distinguishing between PANAS trait positive affect and NEO extraversion. *Motivation and Emotion*, *Vol.24*(1), P.51-63.
- Cestac, J., Paran, F., Delhomme, V. (2011). Young drivers' sensation seeking, subjective norms, and perceived behavioral control and their roles in predicting speeding intention: How risk-taking motivations evolve with gender and driving experience, *Safety Science, Vol. 49*(3), P. 424-432.
- Clement,R;and Jonah,B.A.(1984).Field dependence sensation seeking and driving behavior.*Personality and Individual Differences*, Vol.5, P.87-93.

- Christopher, W., Kahler Nichea, S., Spillane, J., Metrik, A., Leventhal, M., Monti, M. (2009).
 Sensation seeking as a predictor of treatment compliance and smoking cessation treatment outcomes in heavy social drinkers. *Pharmacology Biochemistry and Behavior. Volume 93(3), P. 285-290*
- Forabosco, G and Ruch, W. (1994). Sensation Seeking, social attitudes and humor appreciation in Italy. *Personality and Individual Differences*, Vol. 16(4), p.515-528.
- Franken, R.E. (1988). Sensation Seeking decision making styles, and preference for individual responsibility. *Personality and Individual Differences, Vol*. 9, P.139-146.
- Furnham, A and Saipe, J. (1993). Personality characteristics of convicted drivers, *Personality and Individual Differences*, *Vol.14*, P.329-336.
- Ganji, H. (2002). Assessment personality, Tehran, Savalan publication.
- Goodarzi, M., Shirazi, M. (2006). Study relationship between sensation seeking, risky driving behavior, *Journal of psychology*, *vol*.9(1), pp. 14-31.
- Greenberg. K. (1995). New look: unconscious cognition reclaimed. American Psychologist, Vol.47, P.766-779.
- Grisso, T., Barnun, R., Fletcher. K., Cauffman. E and Peuschold, D. (2001). Massachusetts youth screening instrument for mental health needs of jurenile justice youths.J.am.acad.child adolesc.*Psychiatry*, *Vol.40*(5), P.541-54
- Hansen, E.B and Breivik, G. (2001). Sensation seeking as a predictor of positive and negative risk behavior among adolescents, *Personality and Individual Differences*, *Vol. 30(4)*, P.627-640.
- Heshmati, R., Hoseinifar, J., Rezaeinejad, S and Miri, M. (2010). sensation seeking and marital adjustment in handicapped veterans suffering from PTSD, *Procedia Social and Behavioral Sciences. Vol. 5, P. 1783-1787.*
- Hirschberger, G., Florian, V., Mikulincer, M., Goldenberg, J and Pyszczynski, T. (2002). Gender differences in the willingness to engage in risky behavior: Terror management perspective. *Death studies*, *Vol.26*(2),P.117-141.
- Horberry, T., Harteley, L., Gobetti, k., Walker, F., Johnson, B., Gersbach, S and Ludlow, j. (2004). Speed choice bydrivers: The issue of driving Too slowly, *Ergonomics*, *Vol.47*(14), P.1561-1570.
- Iversen, H and Rundmo, T. (2004). Attitudes towards traffic safety, driving behavior and accident involvement among the Norwegian public, *Ergonomics.Vol*. 47(5), P.555-572.
- Iversen, H and Rundmo, T. (2002). Personality, risky driving and accident involvement among Norwegian drivers. *Personality and Individual Differences*, Vol 33(8), P.1251-1263.
- Jackson, C and Wilson, G.D. (1993). Mad or Sad? The personality of bikers. *Personality and Individual Differences*, Vol. 14(1), P.241-242.
- Jonah, B.A. (1997). Sensation seeking and risky driving: a review and synthesis of the literature. Accident analysis and Prevention. Vol. 29(5), P.651-665.
- Jonah, B.A., Thiessen, R and Au-Yeung, E. (2001). Sensation Seeking, risky driving and behavioral adaptation, *Accident Analysis and Prevention*, Vol. 33(5), P.679-684.
- Khodapanahi, M. (1999). Study relationship between sensation seeking, exercise, speed driving and to enter into parthership religious *Journal of psychology*, *vol.9(1)*, pp.14-31
- Kopstein, A.N., Crum, R.M., Celentano, D.D and Martin, S.S. (2001). Sensation Seeking needs among 8th and 11th graders: characteristics associated with cigarette and marijuana use. *Drug and Alcohol Dependence, Vol.* 62, P.195-203.
- Krahe, B. (2005). Predictors of Woman's aggressive driving behavior. Aggressive Behavior, Vol.31(6), P.537-546.
- Lonczak, H.S., Neighbors, C and Donovan, D.M. (2006). Predicting risky and angry driving as a function of gender. Aggressive behavior, Vol.19, P.302-322.
- McGregor, C;Drake, S; Rebert,A; and Paul, C.(1998). Experience of non-factor over abuse among heroin users in Adelaide. *Addiction, Vol*.93(5),P.701-711.
- -McKee, S.A; and Hinson, Wall, A.M.(1998). Alcohol outcome expectancies and coping styles as Prediction of alcohol use in young adults. *Journal of Addictive Behavior. Vol.* 23, P.17-22.
- Martin, C.A. (2002). Sensation seeking, puberty and nicotine, alcohol and mariguana use in adolescense. *Journal of the American Academy of child and Adolesent Psychiatry*. Vol.10, P.32-38.
- Matthews, G. (1999). *Violation and thrill in Prediction types of road traffic crashes*. International Conference on Traffic and Transportion Psychology.Valencia, Spain, May.26-29.
- Matthews, G., Tsuda, A., Xin, G and Ozeki, Y. (1999). Individual differences in driver stress vulnerability in a Japanese sample, *Ergonomics*, *Vol*. 42(3), P.401-415.
- Older, S.J and Spicer, B.R. (1986). Traffic conflicts: a development in accident research. *Human* factors, Vol. 18, P.335-350.
- Ozkan, T and Lajunen, T. (2005). Why are there sex differences in risky driving? Aggressive behavior, Vol .31(6), P.547-558.
- Parsa, H. (2002). Driving in the difficult conditions ,Tehran,Amirali publication.
- Pufal. S.I. (1999). Self actualization and other personality dimensions as predictors of mental health of intellectually gifted students. *Roper Review*, *Vol.22(1)*, p.44-47.

- Rimmo, P and Aberg, L. (2000). on the distinction between violations and errors: sensation seeking associations. Transportation research Part F. *Traffic Psychology and Behavior*, Vol.2(3),P.151-166.
- Rimmo, P.A., Aberg, L. (1999). On the distinction between violations and errors: Sensation seeking associations, transportation research part F. *Traffic Psychology and Behavior, Vol.* 2, P.151-166.
- Rimmo, P.A. (2002). Aberrant driving behavior: homogenity of a four-factor structure in samples differing in age and gender. *Ergonomics. Vol.* 45(8), P.569-582.
- Rosenbloom, T and Wolf, Y. (2002). Sensation seeking and detection of risky road signals: a developmental perspective. *Accident analysis and Prevention.Vol.* 34(5), P.569-580.
- Sadock, B.J and Sadock, V.A. (2000). *Comprehensive Textbook of Psychiatry*. Philadelphia: lippincott Williams and Wilkins.

Samani, S., Fouladchang, M., (2007). Adolescence psychology, Shiraz, Molk solyman publication.

- Schroth, M.L and Lund, E. (1994). Relationships between need achievement, sensation seeking and cognitive performance, Personality and Individual Differences, Vol .16(6), P.861-867.
- Schwebel, D.C., Severson, J., Ball, K.K and Rizzo, M. (2006). Individual difference factor in risky driving: the roles of anger/hostility, conscientiousness, and sensation seeking, *Ergonomics*, *Vol.38*, P.801-810.

Shinar, D. (1988). Psychology on the road: the human factor in traffic safety. New York: Wiley, P.27-32.

- Stradling, S.G and Meadows, M.S. (2000). *Highway code and aggressive violations in UK drivers*. Global Web Conference on Aggressive Driving Issues. Transport Research Institute.
- Sumer, N. (2003). Personality and behavioral predictors of traffic accidents: testing a contextual mediated model. *Accident analysis and Prevention. Vol.* 35(6), P.949-964.
- Tejero, P and Choliz, M. (2002). Driving on the motorway: the effect of alternating speed on driver's activation level and mental effort. *Ergonomics, Vol.* 45(9), P.605-618.
- Tonetti, L., Adan, A., Caci, H., De Pascalis, V., Fabbri, M., Natale, V. (2010). Morningness-eveningness preference and sensation seeking, *European Psychiatry Volume 25(2)*, P 111-115
- Ulleberg, P. (2002). Personality subtypes of young drivers. Relationship to risk-taking preferences, accident involvement, and response to a traffic safety campaign. *Traffic psychology and behavior*. *Vol.4(4)*, P.279-297.
- Wagner, M.K .(2001). Behavioral characteristics related to substance abuse and risk- taking, sensation seeking, anxiety sensitivity, and self reinforcement. *Addictive Behaviors, Vol.* 26,P.115-120.
- Watson, D., Clark, L.A., Mcintyre, C.W and Hamaker, S. (1992). Affect, Personality and social activity. Journal of Personality and Social Psychology, Vol.63, P.1011-1025.
- Waylen, A and McKenna, F. (2002). The attitudes and behavior of pre-drivers. 67 th road safety congress. Britax.
- Wilson, F., Stimpson, JP and Hilsenrath, PE. (2009). Gasoline prices and their relationship to rising motorcycle fatalities, 1990-2007. *Amerrican Journal of Public Health*, vol.99(10), pp.1753-8.
- Zakletskaia, L., Mundt, M., Balousek, S., Wilson, E and Fleming, E. (2009). Alcohol-Impaired Driving Behavior and Sensation-Seeking Disposition in a College Population Receiving Routine Care at Campus Health Services Centers, Accid Anal Prev, vol. 41(3), PP. 380–386.
- Zuckerman, M. (1994). *Behavioral expressions and biosocial bases of Sensation Seeking*. New York: Cambridge University Press.
- Zukerman, M. (1979). Sensation seeking beyond the optimal level of arousal. Hillsdale, NG: Lawrence Erlbum associates.
- Zukerman, M. (1971). Dimensions of sensation seeking, *Journal of Consulting and Clinical Psychology, Vol* .36(1), P.45-52.
- Zukerman, M and Eysenck, H.J. (1978). Sensation seeking in England and America: Cross-Culture age and sex comparison, *Journalof Consulting and Clinical Psychology.Vol.46*, P.139-149.
- Zuckerman, M and Neeb, M. (1990). Demographi influences of sensation seeking and exporessions of sensation in religion, smoking and driving habits. *Personality and Individual Differences*, Vol. 20(4), P.197-206.
- Zukerman, M and Neeb, M. (1980). Demographic influence in sensation seeking in religion, smoking and driving habits. *Personality and Individual Differences*, *Vol.1*, P.197-206.