

## The impact of Human Factors in traffic Accident path of "Sirjan –Bandar Abbas" in the year of 2012-The ways of its controlling and decreasing

Ardeshir Zahedi<sup>1\*</sup>, Hamid Bahrami Nejad<sup>2</sup>

<sup>1,2</sup>Technical and Soil Mechanics Laboratory of Kerman

*Received: April 20, 2015*

*Accepted: June 15, 2015*

### ABSTRACT

The severe traffic accident have got the financial and bodies damage in Sirjan- Bandar Abbas path, with regarding to the diversity and complicated of traffic problems and special attention to this path due to the fundamental path, it is essential to search and investigate about the reasons of such events as well as the human factors are the main factor of traffic accident, searching microscopic about 4255 persons traffic accident in the year of 2012 direct and indirect dergin arising from such events with the aim of providing effective programs for preventing of increasing traffic accident and practical solving for controlling and traffic accident and practical solving for controlling and decreasing the damage is the main purpose of this study which shall be applied to other similar highways, so it is questioned and studied the experts view on the volume of the different factors in the occurrence of the said traffic accident, so it is shown by this study and experts view that the all of these accidents were the neglect and failure of human factor which no observance of length distance percent the most and breach of security law of ways and Railway article 4 percent , are the least factors among other factors.

**KEY WORDS:** Traffic accident, Human factor, high way, performance of the rules, the ways against the accident

### 1. INTRODUCTION

The traffic accidents are the main factors of death and financial damage in the world and bring. Abut threat on the social and economical and cultural of the above society. According to the declaration of W.H.W yearly about one million and two hundred and thousand persons are killed from traffic accident and Fifty million damaged in the world, According to the lawful Medical organization of Iran "in 2006, about twenty seven thousand and five hundred sixty seven killed and 276762 Persons are damage. The international standard index of traffic accident for each 10.000 Vehicles are about 2/5 – 1 Persons as compared to the European countries 2 Persons, America 1 Persons , Japan 1.4 Persons , Australia 1/8 persons and under developing countries like Turkey, Malaysia, Thailand between 12/7 – 5/7 Persons. In Iran during 2005 between 1, -18 Person in each 10.000 Vehicles which are 2 percents of national gross input.

The damage of the road accident are more severe than inner – city path due to the high speed of the Vehicles but the geometric features of highways and their following of the special rules cause the difference between the reason and features of the accident events as to other road traffic accident. Analyzing of these events in highways for knowing their features, help us to create effective programs for preventing. Of increasing of highways. Accident. "Sirjan – Bandar Abbas" path is one of the most important and sensitive highways which 2/3 of provinces use it to center, south and east also different vehicles with different action. For considering the volume of human factors in the occurrence and repetition of the traffic accident and imposing of severe financial and body\s damages have even done practical ways for the decreasing of traffic accident and failures arising from them. According to the information of the data from human factors, ways, Vehicles, the human factors have been the main and effective ways of the accident above 95-90 %. so it is essential to know the human and his / her physical and mental features for his traffic behavior, shall be the field for providing plan : and programs of the Practical for reducing of such events. The complicated of human behavior arising from different factors such as social , economical , cultural , educational have in effect on the way and practical traffic action of the driver , pedestrian , passenger and traffic user and have got the main role for creating of secure traffic behavior and their law-obeying.

#### Solving the problems:

According to the date from the police report in 2005 about 4188 number of accidents have been Occurred in "Sirjan – Bandar Abbas Path", Including 79 Persons : death , 225 number damages , 3984 Persons damage with 92 persons killed and 321 persons damage , with applying coefficient of 2 and 4.5 according 16 for killer and damage person, correcting statistic of the mentioned items due to the unavailability of real static of the lawful medical from killing damage about 642, 414 accordingly have been killed or damaged . so with the

calculating of financial average expenses of these events (without calculating disability) ,, about 41502000000 (RIs) have been expensed in 2005.

1-The blood money of any killed person was about 350 millions (RIs) without (considering Haram months)

2-The average of treatment, abed, unemployment of the damaged person were about 20 millions (RIs)

3-the average of expenses detrimental to each vehicles 20 million (RIs) , (Average 3 vehicleless in each accident) finally , for controlling the mentioned conditions to decreasing the expenses arising from traffic events of mentioned highway whether social , family , legal , mental damage , in shall be necessary to find the reasons and search the roots.

The importance and studying necessity:

"Sirjan – Bandar Abbas path" is one of the busiest main path which has an important role for connecting the roads of the province.

And one of the most danger's path of the country which has got 4288 number of accidents in 2012 , So it is essential to consider and investigate on the reasons of the accident occurrence for achieving practical ways of controlling and reducing of the direct and indirect expenses arising there of and providing security for the vehicles passing of this path. The traffic events of the stated path from the Origin sirjan to the destination of the arrival of Bandar Abbas province is about 300 kilometer with advantages of the data states in the diagram and experts use for analysis and investigation.

The purposes of the studying:

The first aim of this studying is the knowing and finding the effective reasons of traffic accident events of sirjan – Bandar Abbas path and human factor effects , the second purpose is the finding of effective measures in preventing of such events beside the endeavor for exercising of the effective management in traffic accident and providing effective ways of controlling human factors for reducing of traffic events and depth of clash of the reducing of traffic events and depth of clash of the vehicles in the highway are the third and fourth aim of this studying.

The ways of performing study:

The main purpose of this studying is investigating of human factors in "sirjan – Bandar Abbas" for achieving this purpose using explanatory – analytic research method and referring to the available data (documents) , the extent of the human factors in one such events have been studied and relating data of this accident analyzed on the basis of accident types , the main reason , the type of the quality vehicles in accident , the place of the accident in kilometer, time of the accident , number of the killers and damage persons , the age range and education of the guilty driver, then a questioner of the traffic accidents has been done by experts in the filed of the different reasons of accident events on diagrams .

The ways of doing research:

With regarding to this issue and its purpose and diagram studying of sirjan – Bandar abbas path traffic accident in 2012 , the ways of this studying has been an explanatory method , so with dividing and considering of the reasons for traffic accident of this path , the resulting arising from the questioner by experts.

The static society and studying sample:

The static society include of the all accident occurring in sirjan – Bandar abbas path in 2012, due to the analysis of all diagrams the sampling hasn't been done and the accident has been studied on the basis of the type of accident, the main reason, the type of the quality vehicles in accidents, the place of the accident in kilometer, the time, number of the killers and damage person, the age range and education of the guilty driver using by the data in the diagram. The static society for investigating were the all experts of the country and the sampling were the employed officer in Tehran and province of Tehran, the method of sampling were selective.

Chapter III: The static and all data relating to 4288 number of traffic accidents in 2012 as per the following able from number one to four.

Table 1: overflow distribution of accident type from the view of occurrence according to the year's month.

Type of the guilty vehicles						The main reason						Type of accident						subject	
Other	Motor cycle	Truck	Bus and minibuses	Van	car	Other	Brach	Of article	Ways	Violent Of the speed	Mobster Vance of	Mo ofction to the front	Total	damage	Hurt	Death		matter	
0	2	39	32	25	182	7	5	33	23	70	71	61	270	246	23	19	5	5	Farvardin
4	8	44	30	25	173	8	12	31	36	61	70	66	284	262	17	14	8	8	Ordibehesht
5	6	50	20	32	209	9	9	30	49	66	87	72	322	299	25	17	6	6	Khordad
6	8	24	16	39	256	7	7	39	47	86	95	68	349	334	13	10	5	5	Tir
1	17	47	34	52	281	10	16	55	54	89	111	97	432	385	54	35	14	12	Mordad
2	7	46	34	64	372	8	17	69	28	82	206	115	525	487	46	29	11	9	Shahrivar
4	4	42	24	39	260	9	16	34	25	59	127	103	373	353	22	14	6	6	Mehr
8	10	36	26	40	272	10	20	47	66	36	88	125	392	362	34	21	10	9	Aban
3	3	38	34	37	283	11	22	23	58	67	125	82	388	361	31	23	5	4	Azar

6	3	35	17	37	254	6	16	46	45	59	100	80	352	332	24	18	6	2	Dey
4	4	30	14	27	223	4	17	34	36	53	76	82	302	281	20	16	7	5	Bahaman
4	4	35	17	30	209	7	13	14	35	63	65	102	299	282	12	9	9	8	Esfand
47	76	466	278	447	2974	96	170	455	502	791	1221	1053	4288	3984	321	225	92	79	Total

Table 2: The distribution of accident overflow from the point of occurrence place in months of the year

Accident time		The place of accident occurring in kilometer											Subject
Night	Day	Kilometer from 101 to 110	Kilometer from 91 to 100	Kilometer from 81 to 90	Kilometer from 101 to 110	Kilometer from 71 to 80	Kilometer from 61 to 70	Kilometer from 51 to 60	Kilometer from 41 to 50	Kilometer from 31 to 40	Kilometer from 21 to 30	Kilometer from 11 to 20	Article
78	192	14	21	5	6	15	4	8	12	30	74	80	Farvardin
100	184	12	13	12	10	9	12	13	18	27	56	102	Ordibehesht
100	222	15	12	19	19	12	12	15	19	31	58	112	Khordad
139	210	6	16	27	20	8	11	17	23	32	57	132	Tir
150	282	13	23	26	23	16	25	25	30	47	64	140	Mordad
156	369	8	22	18	29	25	27	53	48	58	89	148	Shahrivar
118	255	6	11	18	9	38	40	48	47	50	54	52	Mehr
201	191	11	21	18	23	44	9	35	40	76	59	56	Aban
177	211	14	13	18	21	19	32	52	45	65	51	60	Azar
164	188	11	12	15	18	28	19	15	34	30	5	160	Dey
122	180	9	8	10	13	23	87	22	18	24	35	55	Bahman
112	187	12	19	7	9	9	12	23	75	16	55	62	Esfant
1617	2671	131	191	193	200	246	290	326	409	486	657	1159	total

The results relating

The results relating to the explanatory static arising from view knowing are done by officer experts by using questioner as the following tables and charts. It is noted that static society of this view knowing , are the all the official experts of the country and sampling extent are 80 persons of mentioned officer employment of Tehran – traffic police and road police of Tehran province , which are used for sampling the selective method.

Table 3: Distribution of the overflow of answering persons according to the non effect of the defined regulation and practical of suitable standard length distance with no observance by drivers.

Percent	Overflow	Item
38	31	Very high
27	22	High
13/8	11	Average
13/8	11	Low
6/1	9	Very low
100	80	Total

The result from the total answering have shown that 8/38 percent believe that no affetence of defined regulation and practical in the field of the suitable standard distance with front vehicles with no observance by the drivers are very high , 5/27 Percent say high , 8/13 Percent average ; 8/13 Percent low , 1/6 Percent very low.

Table 4: Distribution of the overflow of the answering persons according to the.

Overflow percent	Overflow	Item
35	28	Very high
30	24	High
15	12	Average
7/5	6	Low
12/5	10	Very low
100	80	total

Table 5: the overflow of answering persons as to an effective different type of vehicles highway with sudden drivers changing.

Overflow percent	Overflow	Item
10	8	Very high
40	32	High
23/8	19	Average
15	12	Low
11/2	9	Very low
100	80	total

## 2. DISCUSSION AND RESULT

The following results have been down by explanatory research from diagrams for driving accident sirjan – Bandar abbas path in 2012: 92 Percent were damage type.

- A) The most numbers of the accidents were about 3984 numbers equal to 12/9 Percent in shahrivar
- B) The most numbers of the accidents were about 525 numbers equal to 24/12 percent in sshahrivar month.
- C) The most numbers of the accident lead to deth with 12 person equal to 19/15 percent in mordad month
- D) The most number of the accident killers with 14 Person equal to 22/19 percent in mordad month
- E) The most number of the accident lead to hurt with 35 number equal to 15/ 56 in mordad month.
- F) The most number of the damaged accident persons with 65 Persons equal to 16 / 82 percent in Mordad month.

### 3. Suggestions:

The following offers have been done by analytic the resulting this studying.

- A) Installation , Constant using of controlling camera of the speed in the manner of taking photos of the vehicles with non-allowing speed , its photo and notice shall be delivered to the guilty – Driver's residence.
- B) Installation of light equipment in all over the highway which cause the improving of the driver's carefulness and seeing.
- C) Installation of circuit cameras in the busiest points specially in the distance of sirjan to Bandar abbas police station for exercise of supervision ? direct police controlling of the local traffic events.
- D) Widening the road of Haji abad and changing it to the way of the highway for guilding the heavy and semi-heavy vehicles which are passing from the highway and exercising the passing limitation for them of sirjan – Bandar Abbas highway.

## REFERENCES

1. Lyman S, Ferguson SA, Braver ER et al. Older driver involvements in police reported crashes and fatal crashes: Trends and projections. *Inj Prev* 2002; 8:116–120.
2. 8:116–120.
3. Preusser DF, Williams AF, Ferguson SA et al. Fatal crash risk for older drivers at intersections. *Accid Anal Prev* 1998;30:151–159.
4. Marottoli R, Mendes de Leon C, Glass T. Driving cessation and increased depressive symptoms. *J Am Geriatr Soc* 1997;45:202–206.
5. Windsor TD, Anstey KJ, Butterworth P et al. The role of perceived control in explaining depressive symptoms associated with driving cessation in a ongitudinal study. *Gerontologist* 2007;47:215–223.
6. Ball K, Roenker DL, Wadley VG et al. Can high-risk older drivers be identified through performance-based measures in a department of motor vehicles setting? *J Am Geriatr Soc* 2006;54:77–84.
7. Anstey KJ, Wood J, Lord S et al. Cognitive, sensory and physical factors enabling driving safety in older adults. *Clin Psychol Rev* 2005;25:45–65.
8. Attebo K, Mitchell P, Smith W. Visual acuity and the causes of visual loss in Australia: The Blue Mountains Eye Study. *Ophthalmology* 1996;103:357–364.
9. 364.
10. Owsley C, McGwin G. Vision impairment and driving. *Surv Ophthalmol* 1999;43:535–550.
11. Burg A. The relationship between vision test scores and driving record: General findings. State of California: Institute of Transportation and Traffic Engineering in cooperation with Department of Motor Vehicles, 1967, pp 1–89.
12. Burg A. Vision test scores and driving record: Additional findings. California Standard Agreement, 1968.
13. Johnson CA, Keltner JL. Incidence of visual field loss in 20,000 eyes and its relationship to driving performance. *Arch Ophthalmol* 1983;101:371–375.
14. Gresset J, Meyer F. Risk of accidents among elderly car drivers with visual acuity equal to 6/12 or 6/15 and lack of binocular vision. *Ophthal Physiol Opt* 1994;14:33–37.
15. 1994;14:33–37.
16. Owsley C, McGwin G, Ball K. Vision impairment, eye disease, and injurious motor vehicle crashes in the elderly. *Ophthalmic Epidemiol* 1998;5:101–113.
17. Charman WN. Vision and driving: A literature review and commentary. *Ophthalmic Physiol Opt* 1997;17:371–391.