

Knowledge, Attitudes, and Practice of Drivers Towards Traffic Rules and Regulations in Multan, Pakistan

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ABSTRACT: Traffic rules are an important agenda for the developing countries and the situation has become worsened particularly in Pakistan. Most of the road accidents are resulting due to lack of knowledge, negative attitudes and risky practices of drivers towards traffic rules and regulations. To highlight the knowledge, attitude and practices of professional drivers towards traffic rules, this research work was initiated. The objective of research was to determine and explore the knowledge, attitudes and practice towards traffic regulations of professional drivers in Multan (Punjab), Pakistan, also to acquire the relationship between demographic features, Knowledge, attitudes and practices of professional drivers towards traffic rules. Emphasis had also been given to the primary data generation and allied aspects such as construction of the data gathering instrument (Questionnaire), content management, sampling, execution, testing and refinement of the instrument for getting hold of the quality data which ultimately determines quality of the ultimate research. The study explored that many of professional drivers in Multan (Pakistan) had inadequate knowledge, less positive attitudes and risky practices towards traffic regulations. Implementation of effective and standard intervention programs may increase the driver's knowledge, positive attitudes and safe practices towards traffic rules and regulations.

KEYWORDS: Road Accidents, Knowledge, Attitudes, Practices, Professional Drivers, Demographic Features, Traffic Rules and Regulations, Multan Pakistan

1. Introduction

Globally road traffic accidents and injuries are among the foremost cause of death and disability, with a disproportionate number occurring in developing countries. Road traffic injuries are currently ranked ninth globally among the leading causes of disability adjusted life years lost, and the ranking is projected to rise to third by 2020 (Nantulya and Reich 2002).

In Pakistan, road accidents are very common and the situation has become worsened day by day. Experts in the different research reports reported that most accidents are caused by different factors such as careless driving, violation of traffic rules, bad roads and faulty old vehicles. According to the World Health Organization (WHO) report (published in 2013) road accidents will become the fifth major cause of deaths by 2030. Over 3400 people die on the world's roads every day and tens of millions of people are injured or disabled every year. Children, pedestrians, cyclists and older people are among the most vulnerable of road users. WHO had predicted that road accidents were claiming 30,310 lives in Pakistan annually. This indicates that approximately 20 people out of 100,000 die in road accidents in a year, making Pakistan rank 67 globally for a higher percentage of road traffic accidents (Kazmi 2017).

A research about the knowledge, attitudes, and practices of 2200 drivers towards traffic rules in Tehran and Zahedan showed that the rate of road traffic crashes can be reduced by increasing the levels of knowledge of drivers and by altering their practices and attitudes. A significant relationship was observed between safer attitudes and decreases in the rate of traffic crashes (Mirzaei 2014).

The knowledge, attitudes, and practice of drivers towards traffic rules and regulations are the main factors in decreasing traffic injuries and deaths, such as safe driving, adequate knowledge and less bad attitude of drivers towards traffic laws can contribute to lessen the traffic injuries and deaths.

1.1. Research questions

1. What is the level of awareness possessed by professional drivers of Multan?
2. What are the attitudes among professional drivers towards traffic rules and regulations?

3. What are the practices of the professional drivers towards traffic rules?
4. What are the relationships between Demographic characteristics and attitude, awareness and practices of drivers?
5. What are the impacts of awareness, attitude and practices of drivers on traffic accidents?

1.2. Research objectives

The need for this research was to assess the awareness, attitude and practices of professional drivers towards traffic rules and regulations in Multan, Pakistan. Knowledge about traffic laws and rules are very helpful to keep road and life safe. Awareness about traffic rules can save the life of both Driver and pedestrian. If we ignore these rules then we have to pay fine either in the form of money or prison. Even we get severe injury or death.

General objective: the general objective of this study was to explore the awareness, attitude and practices of the professional drivers towards road traffic rules and regulations in Multan, Pakistan.

Specific objectives: This research had the following objectives for the exploration of the aspect of traffic rules and regulations followed by professional drivers in Multan, Pakistan.

1. To study and explore the awareness level, attitudes and practices of professional male drivers towards road traffic rules and regulations in Multan.
2. To assess the ability of different professional drivers to observe safety rules while on the road
3. To determine the relationship between demographic features and Awareness, attitudes and practices of professional drivers towards traffic regulations.
4. To predict the impact of Awareness and practices towards the attitudes of professional drivers.
5. To predict the effect of awareness, attitudes and practices towards traffic accident.

2. Review of literature

What has already been done in reference to traffic laws and road accidents is necessary for further exploration in this area. Many studies had found in literature about traffic rules and drivers attitude towards these rules that have been summarized below:

(Batool 2012) had studied about personal attitude of drivers as a key factor in Road Traffic accidents in Pakistan. A sample of 428 drivers was taken from all the urban areas of Pakistan. A multi-method approach was adopted for data evaluation. Results showed that being affluent, female and student negatively influence driving behaviors in the country. Research findings were used to recommend targeted as well as general information based road safety solutions.

(Chakrabarty, Gupta, and Bhatnagar 2013) had studied a research about awareness of traffic safety among drivers in Delhi-India. The study indicated that increasing number of road accidents coupled with increasing vehicle population. Inexperienced drivers often experience anxiety due to their underdeveloped & declining skills which influence their behavior towards driving. In this study, a purposive sample of 102 drivers was selected and road-sign test was conducted from them. The study concluded that maximum level of awareness about road-sign on hills road (89%), seat belt usage while driving (89%), the safe way of stopping during emergency (40%), safe place of parking the vehicle (39%) and road workings (27%). Overall, drivers had an average level of awareness 52% to 77%.

(Issa 2016) had determine the effect of driver's personal characteristics on traffic accidents in Tabuk-Saudi Arabia. This study showed that in Saudi Arabia a high incidence of road accidents had been recorded in last several years due to various factors. The aim of this paper was to examine which factors contributed to road accidents & evaluate statistically the effect of certain drivers' personal character on road accident in study area. The study concluded that young drivers (less than 30 years) are involved in 60% of the accidents & more than 80% of the accidents related to human factors. The findings showed that the variables age of drivers & their educational level had significant relationships with road accidents. The findings suggested that to raise public awareness of road safety issues and to educate drivers in safe driving practice.

(Juma 2015) had studied assessment of road users awareness on strategies for controlling road accidents in Kigoma-Municipality. The study indicated that road traffic accidents are on the increase in Kigoma, causing injuries, loss of lives and damage of properties. Using a combination of qualitative & quantitative methods, the researcher had used stratified random sampling. Sample of 100 respondents had drawn from 4 major groups, namely pedestrians and passengers, drivers & motorists/cyclists. Research results showed that the knowledge of traffic rules varies greatly among respondents by type of road users with vehicle drivers scoring highest and pedestrians being the least knowledge of all.

(Oppong 2012) had done statistical analysis of road accidents fatality in Ghana using Poisson regression. The study indicated that road accidents in this country are

known to be the second major cause of death after Malaria and it is reported that there is an average of 1909 people who are killed by road accidents annually. The objective of this research was to perform descriptive analysis of the data, to model road accidents fatality in Ghana using Poisson regression, and to validate the models with Negative binomial regression. The results of Poisson analysis showed that there was over dispersion in the data. Negative binomial regression analysis was therefore used to validate the Poisson regression model. The result showed that people in the age group of 16-25 were mostly killed in road accidents.

(Muvuringi 2012) had studied road traffic accidents in Zimbabwe, influencing factors impact and strategies. The study indicated that Zimbabwe's key risk factors that contribute to RTIs included reckless driving, violation of traffic laws, damaged vehicles, and bad roads. The objective of this study was to analyze the situation on road traffic injuries in Zimbabwe in order to make recommendations towards reduction of the burden of road traffic injuries. The researcher concluded that there is negligence of road safety regulations by road users, poor law enforcement and corruption.

(Hammoudi 2014) had explored the causes and strategies to reduce road traffic accidents in Abu Dhabi. The study showed an increasing number of RTAs in the UAE with young drivers suffering injuries and the number of traffic violations increasing. The aim of this study was to benchmark the causes of RTAs in the UAE and to reduce the risk and occurrence of accidents by developing and testing a car accident reduction methodology for UAE. The researcher had used structured questionnaire to collect quantitative data among 291 drivers. The study was based on triangulation method. The researcher concluded that aggressive driving behavior was the most unsafe driving behavior, speeding, tailgating, not using indicators and jumping road traffic lights. Research had proposed methods to reduce RTAs in Abu Dhabi including traffic enforcement, traffic campaigns and education traffic safety programs.

(Hamza 2005) had studied road accidents, causalities and their injury patterns in Libya. The research showed that accident rate in Libya, on any comparable basis, is much larger than that in the Europe and USA. The researcher obtained information from several sources in Libya during three field trips, and population statistics were obtained from the secretariat of planning. The researcher examined the data using established methods used in UE and USA. The overall results indicated that motor vehicles accidents are the most common single cause of avoidable death and disabilities in Libya based on several factors such as the poor state of the infrastructure, the lack of road safety features, the aging population and the lack of adequate medical facilities.

(Tajvar et al. 2015) had studied a research about knowledge, attitudes and practice of drivers towards traffic regulations in Bandar-Abbas, Iran. The study indicated that the knowledge, attitudes & practice of drivers towards traffic regulations are key factor in decreasing traffic injuries and death. The objective of this research was to study the knowledge, attitudes & practice of taxi drivers towards traffic regulations in Bandar-Iran, and to determine the relationship between demographic features and knowledge, attitudes & practice of traffic rules. To study these factors 241 drivers taken as a sample. The researcher developed a questionnaire & a check list and the Chi-squared test were used. The study determined that there was a significant difference between the knowledge and work experience of drivers. The researcher concluded that many of the taxi drivers in had inadequate knowledge, less positive attitudes and risky practice towards regulations.

3. Proposed methodology

3.1. Research design/data description

Study design of this research was cross-sectional. The study had focused on male professional drivers of government and private employees who operated four wheeler vehicles within the city of Multan, Pakistan. A random sample of 308 male professional drivers has been taken and information obtained from these drivers was further used for statistical analysis.

3.2. Sampling design

For this research, stratified random sampling design was used. Stratification is done on the basis of public and private sectors job of the professional drivers. Hence Information gathered from the professional drivers of public and private sectors universities, colleges and vehicle terminals. For the allocation of sample size; Proportional allocation had been used. Public and private Institutions are the strata and each institute is a stratum. Finally, a total of 308 male drivers were drawn from each stratum.

Table 1. Institutions and terminals of Multan from where the data taken along with sample size

Institutions	Sample composition 'n'
Bahaudin Zikriya University, Multan (Public)	80
Nawaz Shareef University, Multan (Public)	5

University of Education, Multan. (Public)	6
The Women University, Multan. (Public)	12
Govt. Emerson College, Multan. (Public)	5
Govt. Girls College 6 nos. Multan. (Public)	5
Punjab College, Multan. (Private)	15
Terminal A (Private)	85
Terminal B(Private)	95

3.3. Instrument of primary data collection: The questionnaire

This research required primary data as the study objectives can only be achieved in this way. So we went for primary data. A well-equipped instrument: the Questionnaire was used for primary data collection. The questionnaire was divided into main four parts in order to assess the awareness, attitudes and practices of professional drivers. The first part covered demographic characteristics of the drivers. The second part covered checklist of road signs (to assess the knowledge of professional drivers about traffic rules) which are placed on main roads of Multan city. The third part was analyzed to identify the attitude; the researcher had used questions that showed drivers attitude towards traffic rules and forth part was analyzed to identify the practices of professional drivers.

3.4. Statistical analysis

Data analysis was done using SPSS16 statistical software and Microsoft Excel 2010. Data Screening/ handling and modification have been carried out through MS-Excel and statistical inquiry was done by using SPSS 16. The proposed methodology used in this study was:

- ✦ Descriptive Analysis (Univariate Summary Statistics (mean, mode and standard deviation) for quantitative variables, Frequency and percentage distribution for qualitative variables).
- ✦ Statistical Testing (Cross-tabulation and Chi-Square test)
- ✦ Modelling (Multiple Linear Regression Model)

4. Results

The findings that this research work explored and identified are mentioned below:

4.1. Descriptive analysis

The univariate summary statistics for quantitative variables was given in Table 2.

Table 2. Summary statistics of quantitative variables

Variables	Descriptive Statistics			
	n	Mean	Mode	Standard deviation
Age	308	1.41	2	0.622
Work hours	308	0.90	1	.338
Salary	308	1.56	1	.731
Working days per week	308	1.69	2	0.491
Experience	308	0.92	0	0.839

The following tables 3, 4, 5 and 6 illustrate the questions about demographic characteristics, knowledge, attitude and practices and also the frequency and percentage distribution of professional driver's responses to demographic features, Knowledge, attitude and practice items towards traffic rules and regulations, respectively.

Table 3. Demographic characteristics of the drivers

Variables	Category	n	%
Age (years)	< 25	22	7.0
	26 – 35	137	43.8
	> 36	149	47.6
Living area of drivers	Urban	275	87.9
	Rural	33	10.5
Sector of job	Public	104	33.2
	Private	204	65.2

Working hours per day	<7	34	10.9
	8-12	270	86.3
	>13	4	1.3
Experience of driving	7 and below	121	38.7
	8 – 12	90	28.8
	13 and above	97	31.0
Education of drivers	Middle and below	217	69.3
	Metric	70	22.4
	FA and above	21	6.7
Salary of drivers	<12000	9	2.9
	13000 – 17000	154	49.2
	18000 – 23000	110	35.1
	>24000	35	11.2
Working days per week	1 – 3	4	1.3
	4 – 5	88	28.1
	6 – 7	216	69.0

Table 4. Frequency and percentage of the responses to the knowledge items

Knowledge Items (Recognition of Road Signs)	Yes		No	
	n	%	n	%
End of speed limit imposed	228	72.8	80	25.6
Left turn prohibited	230	73.5	78	24.9
U-turn	297	94.9	11	3.5
Road is closed	63	20.1	245	78.3
Minor crossroad joining from left	86	27.5	222	70.9
Danger ahead	19	6.1	289	92.3

Overtaking prohibited	259	82.7	49	15.7
Go straight or left	79	25.2	229	73.2
Give way or completely stop	11	3.5	297	94.9
No entry for vehicles exceeding height more than 16	89	28.4	219	70.0
Narrow bridge	143	45.7	165	52.7
No entry for vehicle exceeding weight more than 7 ton	86	27.5	222	70.9

Table 5. Frequency and percentage of the responses to the practice items

Practice items	Yes		No		Sometimes	
	N	%	%	%	n	%
Waiting for the vehicles which are already in the circle to pass?	188	60.1	2	0.6	118	37.7
Looking for vehicles coming from right?	214	68.4	5	1.6	89	28.4
Merging with the vehicles, you wait for vehicles of main road to pass?	104	33.2	1	0.3	203	64.9
Looking into review mirror before overtaking?	276	88.2	5	1.6	27	8.6
Using indicator when turning?	294	93.9	7	2.2	7	2.2
Looking road signs speed limit indications while driving?	75	24.0	49	15.7	184	58.8
What is Average driving speed limit in city?	301	96.2	4	1.3	3	1.0
What is Average driving speed limit out of city?	37	11.8	158	50.5	113	36.1

Using a seat belt?	123	39.3	59	18.8	126	40.3
Do you Stop at marked lines before zebra crossing at traffic lights?	195	62.3	81	25.9	32	10.2

Table 6. Frequency and Percentage of the responses to the attitude items

Attitude items	Yes		No	
	n	%	n	%
Do you have a Driving license?	291	93.0	17	5.4
Did you go to Driving school to learn to drive?	9	2.9	299	95.5
Have you read Any booklet regarding rules of road?	91	29.1	217	69.3
Do you think Overtake from left is not a good practice for the drivers?	147	47	161	51.4
Use wrong side of the road to take short cut while driving is dangerous?	32	10.2	276	88.2
You wish to take a U-turn, but divider is far, will you follow correct direction?	290	92.7	18	5.8
Using high beam at night is a risk for drivers?	63	20.1	245	78.3
Stop your vehicle on road in such way that it can cause obstruction is bad attitude?	188	60.1	120	38.3
Using a mobile phone while driving is dangerous?	140	44.7	168	53.7
Driving under influence of drugs and medicines is dangerous?	286	91.4	22	7.0
Using a seat belt?	182	58.1	126	40.3
Smoking while driving is risky?	286	91.4	22	7

4.2. Statistical testing (Chi-square/cross-tabulation)

The relationship between demographic features and driver’s knowledge are presented in Table 7. Results indicate that no significant relationship found between age, sector

of job, driving experience, salary of drivers, working hours and drivers knowledge ($p > 0.05$). A significant relationship observed between drivers education, working hours per day, living area of drivers and knowledge ($p < 0.05$).

Table 7. Relationship between demographic features and drivers knowledge

Variables	Category	Adequate knowledge		Inadequate knowledge		Result of the Analysis		
		n	%	n	%	χ^2	df	P
Age(years)	< 25	4	10.5	18	6.7	0.814	2	0.666
	26 – 35	17	44.7	120	44.4			
	>36	17	44.7	132	48.9			
Total		38	100	270	100			
Living area of drivers	Urban	38	100	237	87.8	5.202	1	0.023
	Rural	0	0	33	12.2			
Total		38	100	270	100			
Sector of job	Public	21	55.3	183	67.8	2.333	1	0.127
	Private	17	44.7	87	32.2			
Total		38	100	270	100			
Working hours per day	<7	10	26.3	24	8.9	10.694	2	0.005
	8-12	28	73.7	242	89.6			
	>13	0	0	4	1.5			
Total		38	100	270	100			
Experience of driving	7 and below	18	47.4	103	38.1	1.215	2	0.545
	8 – 12	10	26.3	80	29.6			
	13 and above	10	26.3	87	32.2			
Total		38	100	270	100			

Education of drivers	Middle and below	15	39.5	202	74.8	24.136	2	0.000
	Metric	15	39.5	55	20.4			
	FA and above	8	21.1	13	4.8			
Total		38	100	270	100			
Salary of drivers	<12000	0	0	9	3.3	3.782	3	0.286
	13000 – 17000	24	63.2	130	48.1			
	18000 – 23000	11	28.9	99	36.7			
	>24000	3	7.9	32	11.9			
Total		38	100	270	100			
Working days per week	1 – 3	1	2.6	3	1.1	3.322	2	0.190
	4 – 5	15	39.5	73	27.0			
	6 – 7	22	57.9	194	71.6			
Total		38	100	270	100			

The relationship between demographic features and driver's practice was given in Table 8. Results showed that driver area, working hours per day, education of drivers, salary of drivers and driving experience were significant. Also, most of the drivers 64(48%) with risky practice were in the age of 26-35. 93 (54%) drivers over 36 years of age were under the safe practice indicated that as age increases careful and safe practices would be observed.

Table 8. Relationship between demographic features and drivers' practices

Variables	Category	Risky Practice		Safe Practice		Result of the Analysis		
		n	%	n	%	χ^2	df	P

Age (years)	< 25	14	10.4	8	4.6	6.327	2	0.42
	26 – 35	64	47.8	73	41.9			
	>36	56	41.8	93	53.4			
Total		134	100	174	100			
Living area of drivers	Urban	108	80.6	167	95.9	18.718	1	0.001
	Rural	26	19.4	7	4.0			
Total		134	100	174	100			
Sector of job	Public	91	67.9	113	64.9	0.298	1	0.585
	Private	43	32.1	61	35.1			
Total		134	100	174	100			
Working hours per day	<7	17	12.7	17	9.8	4.744	2	0.02
	8-12	115	85.8	155	89.1			
	>13	2	1.5	2	1.1			
Total		134	100	174	100			
Experience of driving	7 and below	61	45.5	60	34.5	5.171	2	0.04
	8 – 12	39	29.1	51	29.3			
	13 and above	34	25.4	63	36.2			
Total		134	100	174	100			
Education of drivers	Middle and below	108	80.6	109	62.6	11.722	2	0.003
	Metric	20	14.9	50	28.7			
	FA and above	6	4.4	15	8.6			
Total		134	100	174	100			
Salary of drivers	<12000	9	6.7	0	0	15.207	3	0.002
	13000 – 17000	72	53.7	82	47.1			
	18000 – 23000	40	29.9	70	40.2			
	>24000	13	9.7	22	12.6			
Total		134	100	174	100			
Working days per week	1 – 3	3	2.2	1	0.6	5.718	2	0.57
	4 – 5	30	22.4	58	33.3			
	6 – 7	101	75.4	115	66.1			
Total		134	100	174	100			

The relationship between demographic features and driver’s attitude was given in Table 9. The results indicated that driver’s education, driving experience, working hour per week and salary of drivers were significant with the demographic factors.

Table 9. Relationship between demographic features and drivers attitude

Variables	Category	Negative Attitude		Positive Attitude		Result of the Analysis		
		N	%	N	%	χ^2	Df	P
Age(years)	< 25	15	7.4	7	6.6	1.896	2	0.387
	26 – 35	95	47.0	42	39.6			
	>36	92	45.5	57	53.8			
Total		202	100	106	100			
Living area of drivers	Urban	179	88.6	96	90.6	0.277	1	0.599
	Rural	23	11.4	10	9.4			
Total		202	100	106	100			
Sector of job	Public	67	33.2	37	34.9	0.094	1	0.759
	Private	135	66.8	69	65.1			
Total		202	100	106	100			
Working hours per day	<7	18	8.9	16	15.1	4.647	2	0.098
	8-12	180	89.1	90	84.9			
	>13	4	1.9	0	0			
Total		202	100	106	100			
Experience of driving	7 and below	89	44.1	32	30.2	5.622	2	0.040
	8 – 12	54	26.7	36	33.9			
	13 and above	59	29.2	38	35.8			
Total		202	100	106	100			
Education of drivers	Middle and below	153	75.7	64	60.4	10.885	2	0.004
	Metric	41	20.3	29	27.4			
	FA and above	8	3.9	13	12.3			
Total		202	100	106	100			

Salary of drivers	<12000	6	2.9	3	2.8	12.733	3	0.005
	13000 – 17000	113	55.9	41	38.7			
	18000 – 23000	58	28.7	52	49.1			
	>24000	25	12.4	10	9.4			
Total		202	100	106	100			
Working days per week	1 – 3	0	0	4	3.8	20.586	2	0.000
	4 – 5	45	22.3	43	40.6			
	6 – 7	157	77.7	59	55.7			
Total		202	100	106	100			

4.3. Modelling.

Multiple linear regression models were fitted to predict the impact of knowledge and practices of drivers on the attitude of drivers about the traffic regulation, and to identify the contributing factors that contributed towards the incidence of accidents met by the drivers. The fitted models (Model I,II) and the results are presented in Table 10 and 11. The results showed that knowledge and practice variables were significant ($p < 0.05$) and had an influence upon the attitude of drivers towards traffic rules. Also, the knowledge and practice were contributing factors ($p < 0.05$) in regards to the occurrence of road accidents by the drivers.

Model-I

$$Y_{ATD} = \alpha + \beta_1 X_{PRC} + \beta_2 X_{KNW}$$

$$\text{Attitude of professional driver} = 7.395 - 0.094 X_{PRC} - 0.121 X_{KNW}$$

Model-II

$$Y_{R.ACID} = \alpha + \beta_1 X_{PRC} + \beta_2 X_{KNW} + \beta_3 X_{ATD}$$

$$\text{Road Accidents} = 3.229 - 0.182 X_{PRC} - 0.129 X_{KNW} - 0.013 X_{ATD}$$

Table 10. Result of multiple linear regression-I

Variables	B	S.E(β)	t	P
Intercept	7.395	0.250	29.557	0.000
Practice	- 0.094	0.027	-3.438	0.001
knowledge	- 0.121	0.041	-2.989	0.003

Table 11. Result of multiple linear regression-II

Variables	β	S.E(β)	T	P
Intercept	3.229	0.490	6.592	0.000
Practice	- 0.182	0.042	4.372	0.000
Awareness	- 0.129	0.071	-1.826	0.004
Attitudes	- 0 .013	0.098	-.136	.892

Conclusion

Our study explored that many of the professional drivers in Multan had inadequate knowledge about traffic sign boards, less aware, involved in risky practice and showed a negative attitude towards traffic rules that result in injuries and deaths of both drivers and pedestrians. Significant relationship was found between different demographics features and knowledge, attitude, practice of drivers. Lack of knowledge about traffic laws and practices of drivers are the contributing factors in regards to the bad attitude of professional drivers. Also, the deterministic effect of knowledge, attitude and practice on road accidents had been observed.

This study suggests that the Government of Pakistan should focus upon these factors (Knowledge, attitude and practices of professional drivers) that may be helpful in the controlling of traffic rules violation and mitigation of road traffic accidents. Also, start effective awareness programs regarding traffic safety rules and also determine the effectiveness of law enforcement to control the traffic rules violation.

References

- Batool, Zahara. 2012. Attitudes towards road safety and aberrant behaviour of drivers in Pakistan, University of Leeds.
- Chakrabarty, Neelima, Kamini Gupta, and Ankit Bhatnagar. 2013. "A survey on Awareness of Traffic Safety among Drivers in Delhi-India." *The SIJ Transactions on Industrial, Financial and business management (IFBM)* no. 1 (2):106-109.
- Hammoudi, Abdulla AL. 2014. *Causes and strategies to reduce road traffic accidents in Abu Dhabi*, Health Sciences, Cardiff Metropolitan University.
- Hamza, Mohamed Ali D. 2005. *A study of Road Accidents, Causalities and their injury patterns in Libya*, Newcastle University.
- Issa, Yazan. 2016. "Effect of driver's personal characteristics on traffic accidents in Tabuk city in Saudi Arabia." *Journal of transport literature* no. 10 (3):25-29.
- Juma, Shaban Haruna. 2015. *Assessment of Road user's Awareness on Strategies for Controlling Road Traffic Accidents: A Case Study of Kigoma-Ujiji Municipality*, The Open University Of Tanzania.
- Kazmi, S. Kamal Hayder. 2017. Alarming road accidents rate in Pakistan; rules and laws need overhaul. *Pakistan & Gulf Economist*.
- Mirzaei, Hafezi-Nejad, Sadegh Sabagh, Ansari Moghaddam, Eslami, Rakhshani, Rahimi-Movaghar. 2014. "Dominant role of drivers' attitude in prevention of road traffic crashes: a study on knowledge, attitude, and practice of drivers in Iran." *PubMed* no. 66:36-42.
- Muvuringi, Mervis Patience. 2012. *Road traffic accidents in Zimbabwe, influencing factors impact and strategies*, Development Policy and Practice, Vrije Unuversity Amsterdam, KIT (Royal Tropical Institute).
- Nantulya, Vinand M., and Michael R Reich. 2002. "He Neglected Epidemic: Road Traffic Injuries in Developing Countries." *PMC* no. 324 (7346) 1139–1141.
- Oppong, Richard Asumadu. 2012. *Statistical analysis of road accidents fatality in Ghana using Poisson regression*, Department of Mathematics, Kwame Nkrumah University of science and technology.
- Tajvar, Abdolhamid, Mir Saeed Yekaninejad, Teamur Aghamolaei, Soudabeh Hamedi Shahraki, Abdolhossein Madani and Leila Omid. 2015. "Knowledge, attitudes, and practice of drivers towards traffic regulations in Bandar-Abbas, Iran. ." *PMC* no. 7(8):1566–1574.