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Research Article

Attitudes and Awareness of Traffic Safety among Drivers in Tripoli-Libya

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Abstract: Road accidents are one of the major challenges faced by most countries worldwide. It has been recognized as one of the major causes for human and economic losses both in developed and developing countries. Road accidents cause social and economic problems. This study investigated age and gender related differences in driver's attitudes towards violations of traffic laws in Tripoli-Libya. A total of 384 drivers were sampled for the study drawn from, work places as companies and banks in the city center and universities and other gatherings within Tripoli the metropolis. The results of the study showed that age and gender have significant influence on attitudes and knowledge of traffic laws, but not by a large margin. Males had a better knowledge on traffic law compared with the female respondents 74% of male and 61% of female. Implications and explanations for knowledge of traffic laws as well as traffic safety campaigns and methodological issues are discussed, also highlighted, suggestions for further research.

Keywords: Attitudes, drivers, knowledge, road accidents, traffic law

INTRODUCTION

Road safety is a serious public problem throughout the world. Approximately 1.2 million people die each year in traffic-related accidents worldwide (WHO, 2004b**)**. In addition to its absolute impact, road safety is also an issue of social equity. More than 90% of the victims of these accidents, about one million people, are in low-and middle-income countries. This disparity holds when accounting for the distribution of population; the traffic fatality rate in low-and middle-income countries is 20.2 deaths/100,000 populations, whereas the rate is only 12.6 for high-income countries. In addition, more than half of the victims are vulnerable road users, including bicyclists, pedestrians and other unprotected travelers (WHO, 2004b). As a developing country, Libya also faces the problem of high road accidents rate (Fig. 1).

Over 2000 deaths and 6000 server injuries reported each year in Libya (Alrabotti, 2006). With its growing economy and rising population, the number of vehicles on the road is also rapidly increasing. Total registered vehicles recorded in 1995 were 109,750 and as the population increased up to 67% by 2010, the number of registered vehicles also increased to 2,424,385 in 2010. About 10% of the death rate in Libya is caused by road accidents, which is much higher compared with developed countries such as European Countries and US. Libya recorded 22.3 deaths out of 10,000 vehicles registered. Other Arab countries such as Qatar and Saudi Arabia recorded 7.3 and 14.8 deaths, respectively, out of 10,000 vehicles registered (Bener *et al*., 2010).

LITERATURE REVIEW

A few studies have addressed certain driving behaviors and attitudes using a series of cross-sectional surveys in the U.S. commissioned by Prevention Magazine. Schechtman *et al*. (1999) attempted to relate drinking habits (frequency and amount) to seat belt use, speed limit obedience and drunk driving over 11 years. They found no evidence to link drinking habits with seat belt use and speed limit obedience. However, evidence indicated links between frequency and amount of drinking with drunk driving, as expected.

Shinar *et al*. (2001) used more recent Prevention Magazine survey data to investigate associations between seat belt use, speed limit observance, drunk driving and four demographic characteristics (gender, age, education and income). Their four-way ANOVA models using 1994-1995 data indicated that females

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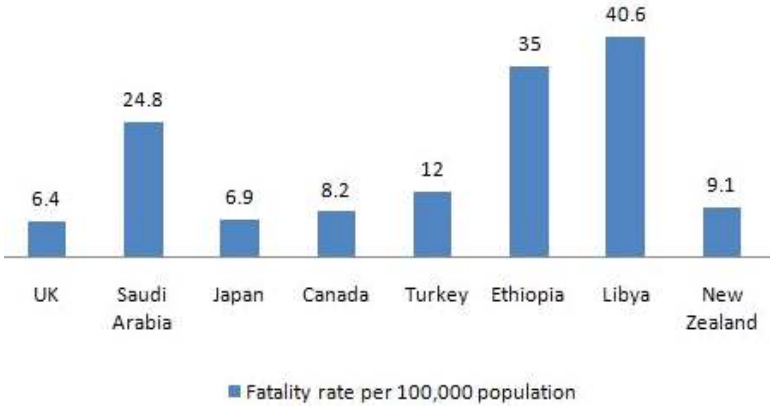

Fig. 1: Traffic fatality for selected countries, 2010; general traffic department

reported more law obedience than males in all behavioral categories. Rates of seat belt use increased with age and education level for both males and females. Interestingly, higher education and income levels were associated with speeding.

Based on a study by Koushki *et al*. (1998) on drivers in Kuwait, those who did not keen on wearing seat belts were reported to violate twice as more traffic regulations compared with those who did. Most of those who chose to not wear the seat belts were young drivers and female drivers. These two categories of drivers were also reported to have bad driving behaviors such as changing lanes without giving proper signals and changing speed abruptly. They concluded that drivers who are not keen on wearing seat belts tend to drive more precariously.

Shinar *et al*. (2001) utilized a survey data from Prevention Magazine in his study on the relationship between four demographic characteristic (i.e., gender, income, age and education) and seat belt use, speed limit compliance and drunk driving. They used the data from the year 1994 to 1995 on four-way ANOVA models and found that female drivers were more law-abiding compared with males in all aspects of driving behavior. For both male and female drivers, their awareness in using seat belt increased as their age and education level increased. The severity of punishment is a factor that is within the control of traffic authorities. Research has shown that it is important that the severity of a penalty is consistent with the severity of the offence and that it be substantial for it to influence illegal behavior (SWOV, 2011).

Iversen and Rundmo (2004) analyzed the relationship between risky behavior, attitudes and accident involvement and concluded that the attitudes of the driver contribute significantly in prediction of behavior. They found that involvement in near accidents and involvement in accidents had an influence on risky behavior and explained a 21% of the total variance. Eiksund (2009) in a study on the difference in attitudes to traffic safety and driver behavior in urban and rural Norway, found that among other variables such as culture, demographic characteristics and attitudes to driving explained significant amounts of variation in driver behavior in both rural and urban areas.

Farah (2011) studied the difference between gender and age in overtaking maneuvers on rural highways and found differences in age and gender with respect to frequency of overtaking time duration, overtaking, following distances, critical overtaking gaps and overtaking speed. Young males were found to have, higher overtaking speeds, shorter overtaking times and closer following distances than old males and females. Vlahogianni and Golias (2012) also observed differences in behavior between female drivers and young males during overtaking.

Vlahogianni (2013) in the case of back-to-lane maneuver, Vlahogianni, concluded gender as a critical factor that influences the duration of overtaking in two lane highways. Male drivers were observed to take longer time to return to their original lane than female drivers. Alexander *et al*. (2002) revealed that older drivers of men and women require larger gaps than younger drivers. Yan *et al*. (2007) also established that older drivers tend to accept larger gaps than younger drivers as driving slowly, turn the steering wheel, more slowly and keep higher car following distances.

Deaths from road traffic accidents are much more prevalent amongst the under 25 sec than other causes of death often reported by the media such as hangings, shootings, stabbings, alcohol or drug abuse. Between the ages of 15-24 a young person is twice more likely to die from a road traffic accident than be fatally assaulted by firearms, a sharp/blunt object or intentional self-harm via hanging combined. Those in the 15-24 age categories are also four times more likely to die from a road traffic accident than from drug, alcohol or other substance poisoning.

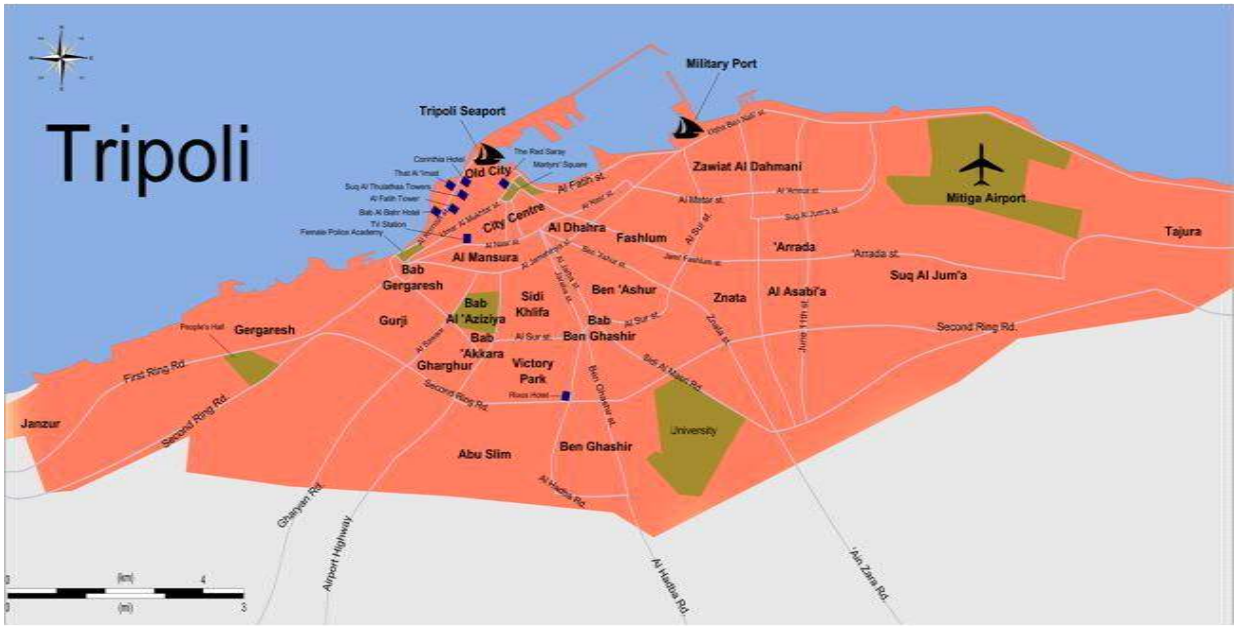

Fig. 2: Map of Tripoli, (Google map Tripoli location http://www.libyana.org/cities/index.htm)

MATERIALS AND METHODS

The sample design: In Libya, there are some big cities such as Benghazi, Al Kufrah, Surt, Sabha, Misratah, AzZawiyah, Al Jabal Al Akhdar and Tripoli. This study focused on Tripoli (Fig. 2) because it has a high number of cars with the people also having access to public transport. Apart from that, the study sites are well distributed with people from the entire city because there are administrative offices and many companies located there.

Questionnaire design: Based on relevant validated variables from previous studies (Alexander *et al*., 2002; Eiksund, 2009; Shinar *et al*., 2001; Farah, 2011; Vlahogianni and Golias, 2012; Vlahogianni, 2013), to knowledge of attitudes and awareness of traffic safety among drivers in Tripoli, Libya.

Data collection: A total of 500 interviews distributed on respondents‟ just 384 interviews were completed. Respondents consisted of 210 males and 174 females. The survey response rate was 76.8%.

RESULTS AND DISCUSSION

Description of respondents: The total number of the participants in this study was 384 drivers in the City of Tripoli. Minimum age was 18 year and maximum was > = 42 years old. More than half of the participants 310 (80.7%) live in the city. The highest percentage of participants was (27.3%) an age group of 26-33 years old. The proportion of males‟ drivers was more than females, as show Table 1.

Table 1: Demographic information of the participants (n = 384)

Situation	Number	(%)
Gender		
Male	210	54.7
Female	174	45.3
Total	384	100.0
Age		
18-25 years old	92	24.0
26-33 years old	105	27.3
34-41 years old	84	21.9
> = 42 years old	103	26.8
Total	384	100.0
Nationality		
Libyan	184	47.9
Non Libyan	200	52.1
Total	384	100.0
Profession		
Government employees	66	17.2
Business man	146	38.0
Retired person	102	26.6
Student	70	18.2
Total	384	100.0
Education		
Primary	2	0.5
Intermediate	10	2.6
Secondary	225	58.6
University level	147	38.3
Total	384	100.0

Of the 384 respondents, 54.7% were males and 45.3% were females. As required by law in Libya that any person below age 18 cannot drive, it was found that no respondent was below 18 years. Majority of the respondents (27.3%) were between the ages of 26 to 33. also 26.8% of the respondents were over 40 years of age.

The statistical results (means and standard deviations) for the 5 items on self-reported knowledge of attitudes and awareness of traffic safety among

Table 2: Means, standard deviations and Cronbach's alphas for study scale scores

Item	Mean	Mean rank	S.D.
I always read traffic instruction	4.00	2.56	0.847
I am very keen to know the new road signs and regulations	4.23	3.00	0.714
I have enough traffic culture that let me drive safe	4.32	3.15	0.721
I help other to understand traffic signs	4.22	3.01	0.783
I share information with other drivers and passengers	4.37	3.28	0.693

Likert scale scores: 1 = strongly agree and 5 = strongly disagree; S.D.: Standard deviation

drivers in Tripoli, Libya. Knowledge of traffic laws suggests that majority of drivers reported "occasionally" violating traffic laws.

The Total Mean for these items in Table 2 is 4.22.

Gender differences in attitudes towards traffic law: The statistical tests showed significant gender effect with regard to knowledge and attitudes towards traffic law. Frequency of attitudes these laws compared to males. The means in Table 3 indicate that male have a lower frequency of attitudes towards traffic law than females (M = 4.25 for females compared with M = 4.20 for males).

Age differences in the attitudes towards traffic law: Figure 3 shows the level of knowledge possessed by the Libyan respondents regarding traffic law. A total of 32.5% respondents never heard or read about the traffic law. Male respondents had a better knowledge on traffic law compared with the female respondents, with 74% of male respondents had knowledge on traffic law compared with only 61% of female respondents who had the knowledge.

As we shown previously in gender differences in the knowledge and attitudes towards traffic law. Statistical analyses of the results indicate significant age effect on the frequency of knowledge of some traffic laws in Tripoli-Libya. Results of statistical analysis for drivers respondents within the age groups was 18-25 (M = 4.08) and 26-33 (M = 4.10, reported a higher frequency in awareness and knowledge of traffic laws for older respondents between the ages of 41-50 (M = 4.19) or above 50 years (M = 4.30). However, there is no significant difference among age group with reference to attitudes that influence driving as shown in Table 4.

The impact of traffic law in reducing the road accidents in Tripoli, Libya, was assessed by asking the respondents their level of agreement towards the statement "the traffic law helps in reducing road accidents in Libya" Based on, Fig. 4, majority of the respondents which accounted for 74.4% of them agreed with the statement while only 18.5% disagreed. Another 7.1% of the respondents neither agreed nor disagreed with the statement.

Concerning the increase of road accidents in the city of Tripoli, 54% of the respondents chose drivers" negligence and speeding as the main cause of the increase (Fig. 5). The second highest reason chosen by the respondents was the high traffic volume, which was 19%.

The respondents who drivers were asked on the possibility of them to change their driving behavior if a police officer was present. Referring to Table 5, 47% of the male respondents, Libyans and non-Libyans, said that they would drive with good behavior if a police officer was present. The rest of the male respondents (53%) said they would not change their driving behavior. Only 45.15% of the female respondents would change their driving behavior in the presence of a police officer.

Considering the Libyans and non-Libyans together, male respondents were found to be slightly

Table 3: Traffic attitudes between genders

	Gender	Mean rank	Mean	p-value
I always read traffic instruction	Male	183.73	3.93	0.066
	Female	203.09	4.09	
I am very keen to know the new road signs and regulations	Male	189.80	4.21	0.558
	Female	195.76	4.25	
I have enough traffic culture that let me drive safe	Male	196.30	4.35	0.409
	Female	187.91	4.28	
I help other to understand traffic signs	Male	186.50	4.18	0.204
	Female	199.74	4.26	
I share information with other drivers and passengers	Male	191.38	4.35	0.806
	Female	193.85	4.40	

Table 4: Frequency of driver's attitudes and knowledge towards traffic law

	Age groups				
Item	18-25	26-33	34-41	> = 42	Total
I always read traffic instruction	4.07	3.88	3.89	4.16	4.00
I am very keen to know the new road signs and regulations	4.27	4.07	4.21	4.32	4.22
I have enough traffic culture that let me drive safe	4.40	4.20	4.32	4.33	4.32
I help other to understand traffic signs	4.29	4.05	4.18	4.33	4.22
I share information with other drivers and passengers	4.37	4.33	4.39	4.38	4.37
Total mean	4.08	4.10	4.19	4.30	4.22

Table 5: The behavior change in the presence of police according to respondent's gender and nationality

Respondent's gender	Behavior change	Respondent's nationality			
		Libyan (%)	Non-Libyan (%)	Total (%)	Chi-square tests
Male	Yes	61.3	32.7	47	0.000
	No	38.7	67.3	53	
Female	Yes	54.8	35.5	45.15	0.000
	No	45.2	64.5	54.85	

Table 6: The behavior change in case of receiving traffic penalty according to respondent's age

Respondent's statement	Behavior change	Age groups				
		18-25 (%)	26-33 (%)	34-41 (%)	>42 (%)	Chi-square tests
Receiving traffic penalty	Yes	68.3	61.7	46.8	41.6	0.002
	No	31.7	38.3	53.2	58.4	
Behavior change in the existence of police	Yes	63.9	52.7	41.6	59.2	0.015
	No	36.1	47.3	58.4	40.8	

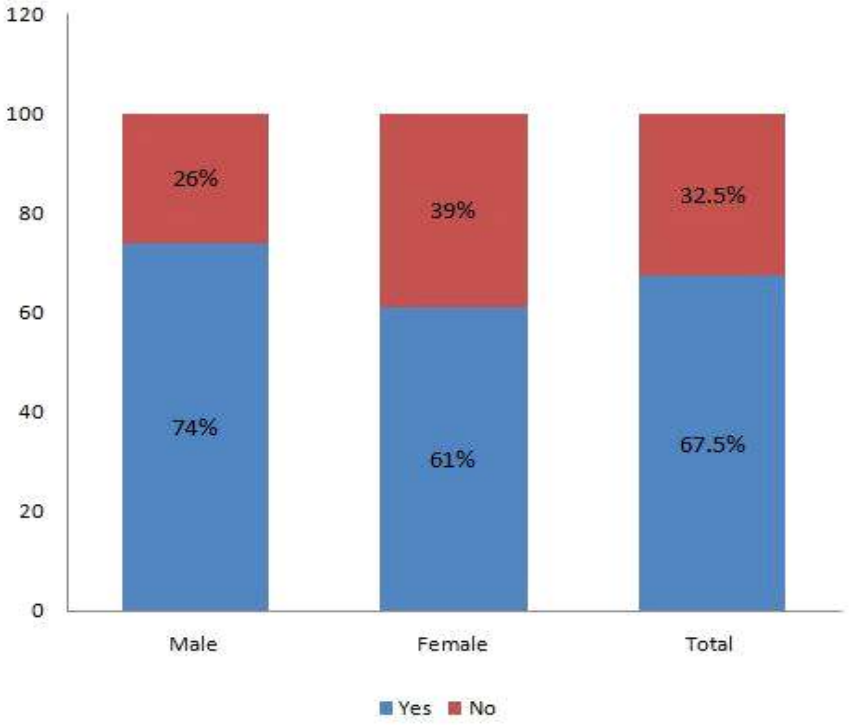

Fig. 3: Libyan knowledge of on traffic law by gender

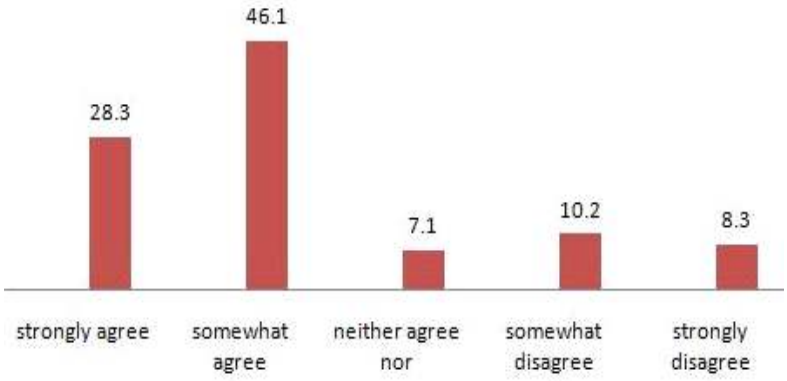

Fig. 4: Respondents" opinions towards the impact of traffic law in reducing traffic accidents

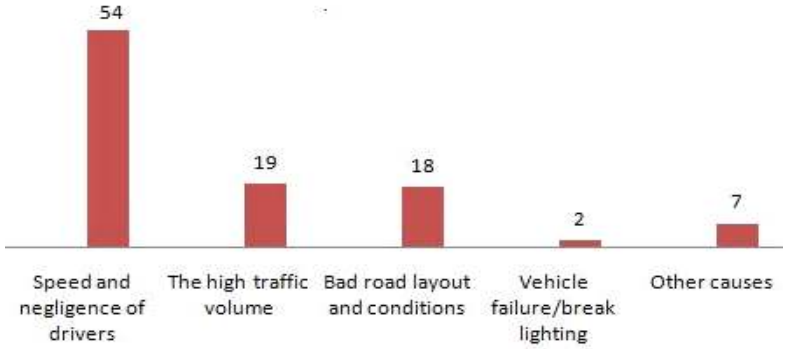

Fig. 5: Causes of traffic accidents in Tripoli, Libya

more readily to change their driving behavior in the presence of a police officer compared with the female respondents, with only 1.85% difference between them. However, referring to nationality, the Libyans were more readily to change compared with the non-Libyans (Table 6).

CONCLUSION

This study investigated the difference between age and gender in awareness, knowledge and attitudes of drivers for traffic law in Tripoli-Libya. The study showed a difference of males (especially younger males) to female in the knowledge and awareness of traffic laws. This means that males (especially age group 18-25 years old) have a higher tendency of not complying with traffic laws than females in Tripoli-Libya. This confirms and supports many of the findings in previous studies such as Farah (2011) and Vlahogianni (2013).

Road traffic accidents cannot be prevented completely, but some of the injuries and deaths can be minimized or prevented by simple protective ways such as driver attitude, the road conditions, car conditions, speed control or using seat belts. This study aimed to knowledge of attitudes and awareness of traffic safety among drivers in Tripoli, Libya. Most of the participants, mentioned that lack of awareness among drivers for traffic laws and regulation, high speed and drivers "non-compliance with traffic rules and regulation were the most important cause of traffic accidents. Results showed that there are differences between male and female respondents" level of knowledge regarding traffic law, with male respondents being more knowledgeable. Majority agreed (28.3% strongly agreed and 46.1% somewhat agreed) that the traffic law has an impact in reducing road accidents. Most of them also agreed that the road accident in Tripoli was mainly caused by the drivers‟ behavior. In addition, the results showed that young drivers (18 to 33 years old) received penalties more than older drivers. It is also found that the Libyans have the tendency to behave and drive better when the police are present.

RECOMMENDATIONS

- Speed is one of the main reasons for accidents in Libya, so must apply the law to those who drive their car at high speed.
- The efforts should be intensified to teach drivers to understand the traffic lights.
- All media should be utilized to increase the traffic awareness among people and drivers and the dangers of traffic accidents.
- Benefit from the experiences of developed countries to reduce the risk of traffic accidents.

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