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Results from a road safety survey in Kuwait

Dr. Hana AlSaeid, Dr. Mahdi Shehab, Dr. Anwar Ali Al-Naki, Dr. Mohammad T. A. Alkhamis and Eng. Fawaz A. Alrashidi
Civil Engineering Department, College of Technological Studies (PAAET)
P.O. Box 2458, Mishref 40175 Kuwait

Abstract: The aim of this paper is to provide and analysis and an assessment of road safety in Kuwait and to assess the level of car accidents in the state. The paper presents a brief literature review on the relevant studies in the filed. The study itself includes a questionnaire design that has been piloted then data was collected in 2013. The study then reports on the findings of the study. A total of 700 questionnaires were distributed. Response rate was very good. About 65% return rate was achieved with a total of 427 questionnaire returned. The main results of the study show that socio economic characteristics, attitudinal characteristics and behavioral characteristics affect the , attitudes and work commitment factors all contribute to the performance of road users on the Kuwait's roads that may lead to accidents occuring. .
Keywords: Traffic safety in Kuwait, attitudes to road safety, socio economic characteristics, attitudinal surveys

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I. INTRODUCTION

There is a lack of and research work in the area of analysis and investigations of road accidents in Kuwait and in other similar countries, including Persian Gulf. Very few recent studies are available in literature, while most the available literature is dated and thus the conclusions that have been drawn from them may by now be significantly out of date (Bener and Jadaan, 1990 & Bener et al., 2003). The accident rates and severities in Kuwait and in other similar Gulf countries are of the highest in the world and the investigations into accident causes and possible measures and policies to mitigate these accidents are urgently needed. For example, in 2007, mortality rates of 29, 37.1 and 16.9 per 100,000 were seen in Saudi Arabia, United Arab Emirates (UAE) and Kuwait respectively due to road traffic accidents (W.H.O. 2011). These rates are specifically when compared with the west, for example in the UK the rates of 6.1 for the and 14.8 for the USA (W.H.O. 2011). Therefore, there is urgent needs to introduce policies and studies to attempt to alter these alarming figures.

In 2002 AL-Ghamdi invetsigate and analysed road traffic accidents in the capital city of Saudi Arabia, Riyadh. The majority of severe accidents (58.7%) where found to be happening on the sections of the road that are straight not at intersections . (AL-Ghamdi 2002)also found that excessive speed was the main factor associated with accidents and the severity of accidents as well. Also, pedestrian accidents that were caused by vehicles colliding with pedestrians who were crossing the roads were also blamed on high speeds. (AL-Ghamdi 2002) reported in addition that at intersections accidents (26% of total accidents), speed has been identified as a factor as well as running red lights. Ali H. Ziyab and Saeed Akhtar (Ziyab and Akhtar 2011) reported in their paper that accidents trends in road traffic incidents in Kuwait over a period of ten years (2000 to 2009), show that an increase of 76.5% in vehicle ownership in the State of Kuwait, has contributed to an increase of 121.3% increase in road traffic crashes during the same period (ibid.). Further work on this includes Al-Madani and Al-Janahi (2002) and Koushki and Balghunaim (1991).

In order to reduce or potentially eliminate the causes of accidents, investigations must identify the causal factors so that preventative measures can be identified. This paper presents a study and analysis of accident data in Kuwait including accident rates. This is an initial stage of the investigation, that is to present and review the current situation and assess the users attitudes and behaviour against these statistics. Further and future investigation are urgently needed in order to attain significant enhancement in road safety in Kuwait.

One of the main purpose of this research is to collect, analyse and invetsigate road accident statistics using all sources in Kuwait. These include local authorities, local government, other governmental data sources, , , traffic departments and police reports in Kuwait.Some tcertain sources of data such as collision reports, police reports, and hospital records in Kuwait, were more difficult to aquire because there is not a unified and unique system for data gathering in Kuwait. In addition,

there are a number of authorities involved in gathering, assessing, reporting and storing accident data in the country. These organisations include local council, traffic police, , Ministry of Traffic and local authorities .

The collection of traffic accidents therefore, has proven more challenging than expected. A questionnaire was designed therefore to investigate public preferences and attitudes to road safety issues in Kuwait. The survey design, the pilot survey, analysis and discussions of results and recommendations from the study as well as limitations are discussed in the paper. Finally, recommendations for possible measures and polices that can tackle the safety and accident problems are presented.

II. METHODOLOGY

Survey Design

A detailed questionnaire targeting road users was prepared and implemented in 2013. Data on actual trips and travel patterns, ability to change trvel behaviour, driving behaviour, , and socio economic factors have been collected. The questionnaire was used after that to collect the data after being piloted and modified accordingly. over the period of September-November 2013. The choice of September- November period was specifically selected to avoid school holidays and to attempt to capture as much as possible a random representative sample of the population The aim was to collect data from all sectors that represent government, public and private sectors, as well as health and education sectors in Kuwait.

Approximately a total of 700 questionnaires were handed out in order to guarantee a return of at least 400 completed questionnaires. The number of completed surveys was 427. This was a rate of 64.6%. completion The data collection occured over a period of two and half months (75 days during September to November 2013). At each selected organisation, a volunteer was selected to be in charge of distributing the questionnaires and collecting them back. A short training period was required to train the volunteers and discuss all the arrangement and instructions needed to collect data. The questionnaires were then collected a week later. It should be noted here that all respondents, that includes students and employees had access to a private car and the survey included both Kuwaitis and non-Kuwaitis The surveys were carried out at a large number of public and private sectors and government organisations.

III. RESULTS AND DISCUSSION

This section present the analysis of the results of the survey and the discussions of the results. The data collected in the surveys include not only information on the journeys, car ownership and use, socio economic data, frequency of travel, but also frequently used mode of travel, and other travel characteristics.. A number of attributes and information were also collected to reveal factors concerning safety aspects and driving characteristics relating to speeding behaviour and general attitudes concerning safety. .Respondents were asked on the frequencies they were caught speeding, Results from these questions are presented in Figure below. Results show that a significant percentage of respondents saying that they have previously been caught speeding (that is a percentage of more than 46% of respondents fall into this category). On the other hand 52% of respondents said they have never been caught speeding. It should be noted however that some respondents might have preferred not to reveal the fact that they have been caught speeding as one might expect. The percentage of those caught speeding could have been therefore a bit higher. In terms of those who didn't answer this question, only 2% of respondents did not answer.

Regarding the mode of travel, the results show that those who admitted that they were caught speeding said that they were driving alone. This group – those driving alone – accounts for about 28% of those caught around once in the past year, about 6% of those caught around once a month, about 14% of those caught several times a year and about 5% of those caught several times a month. On the other hand, of the total number of respondents there was about 54% reported that they have never been caught speeding while driving alone. Taxi passengers were as expected the least likely to be caught speeding. Out of the total taxi riders, only 5% reported that they had been caught around once over the past year and only 1% caught several times a year., Finally, about 93% of respondents reported that while beinga taxi passenger they were never caught speeding

In terms of being caught speeding, the next group of, the second highest group of respondents caught speeding were those who caught speeding while driving to the shops. In terms of number of times being caught speeding, , about 5.6% of respondents reported that they had been caught speeding about once a month, 7.06% said they had been caught several times a year and about 4% had been caught speeding several times a month. A percentage of 62% of respondents reported that they had never been caught speeding while driving to the shops. Driving with a family member represented the next highest category of responses regarding being caught speeding. A percentage of about 19% of respondents reported being caught about once over the past year, 3% reported that they have been caught about once a month, 6% several

times a year and 8% saying they had been caught several times a month. The majority of respondents however (about 70%) reported that they had never been caught while driving with a family member. The next group in the list was those who were travelling as a passenger in a car saying that they have been caught speeding while driving to other purposes and while driving to work.

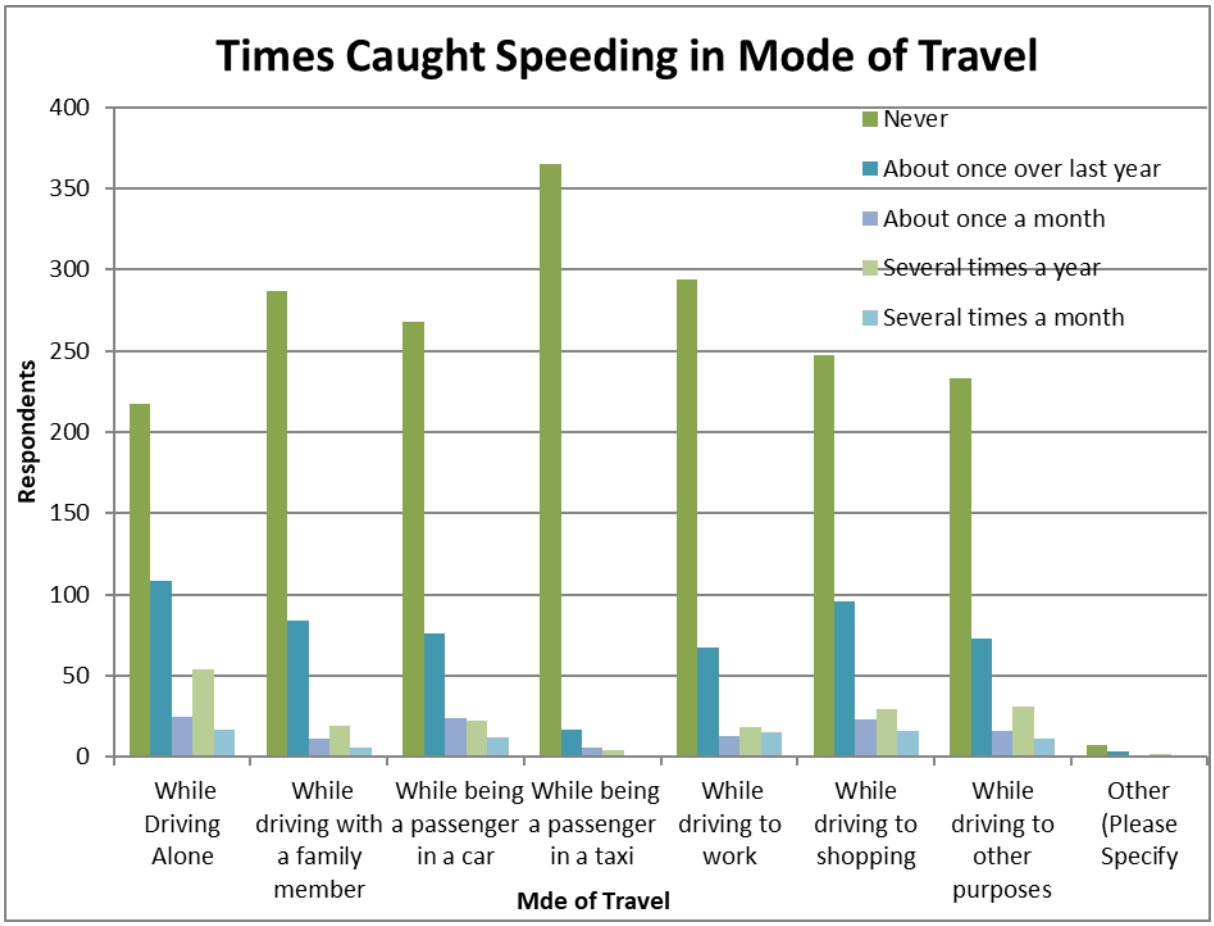

Figure 1 Times respondent caught speeding using current mode of travel

Reporting on how often respondents being at a hurry or experienced being late driving to work, respondentsreported that interestingly, a high number of respondents – 36.17% of all responses to the survey – indicated that they have been in a hurry or late while driving to work. 22.29% of all responses indicated that they have been in a hurry or late when driving to work at least 2-3 times a week, 4.49% said this was true 4-5 times a week and 12.09% said they were always in a hurry or late when driving to work. When driving for shopping trips, a considerable number admitted that they were not in a hurry. A percentage of 51.34% of the total responses indicated that they have never been in a hurry or late while driving for shopping trips, compared to 26.65% who said they had been in a hurry or late about once when on shopping trips. A total percentage of 12.22% of respondents indicated they have been in a hurry or late when going on a shopping trip 2-3 times a week, 2.69% 4-5 times a week and 7.09% said they are always in a hurry or late when going shopping.

reporting on their work trips, 25.06% of total responses reported that they have never been in a hurry or late before. A total of 115 responses indicated that other things cause them to be in a hurry or late when driving. Out of the total of 115 "other than work or shopping" responses, 53.04% reported that they are never in a hurry or late, 26.96% said they have been in a hurry or late about once and 12.17% have been in a hurry or late 2-3 times a week. of the total respondents, only 7% of them indicated being late or in a hurry 4-5 times a week and only about 1% of respondents are always in a hurry and late.

Respondents were asked to report on their activities that cause them to be late or at a hurry. A large percentage of respondents did not comment on this question. Figure shows the work trips are most associated with being in a hurry or late compared with, for example, shopping trips.

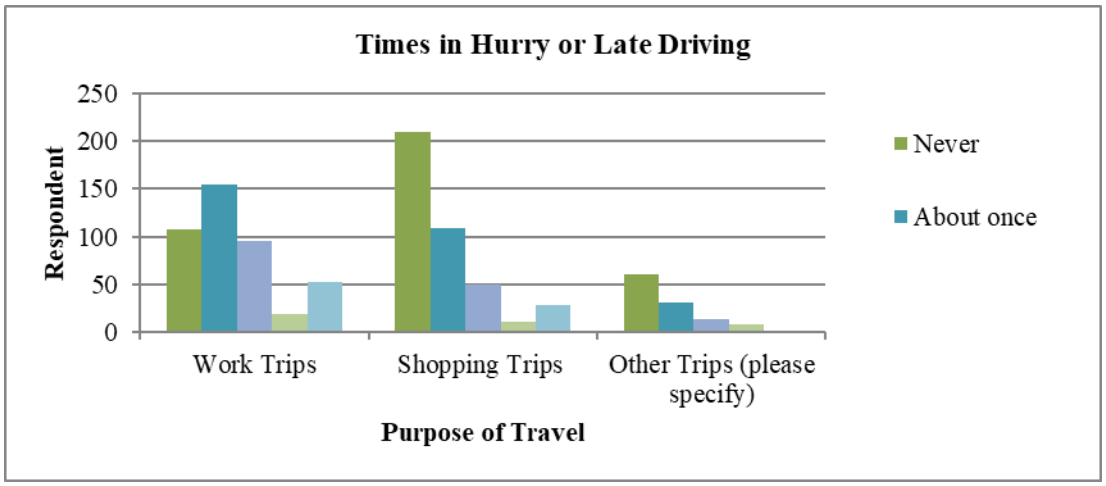

Figure 2 How often respondents are in a hurry or late when driving

Respondents were then asked to report on their most common and maximum driving speeds. Figure shows the analysis of the responses on that question. The Figure shows that the maximum reported speed was 120 km/h, this was reported byby a high number of respondents. In terms of shopping trips, a total of 131 respondents reported driving at 120 km/hr as their maximum speed, while 102 respondents reported that this was their maximum speed when driving to work and 95 respondents reported driving at 120 km as a usual speed to drive to work. Out of the total respondents, about 110 respondents reported driving at a speed of 80 km/h, and 119 at 100 km/h as their usual speed during their shopping trips. For the work trips, about 100 respondents indicated that they drive at a speed of 80 km/h as their usual speed, while 103 respondents reported driving at 100 km/h. As seen in **Figure** Figure 3, as the speed increases, the number of respondents driving at both usual and maximum speed decreases.

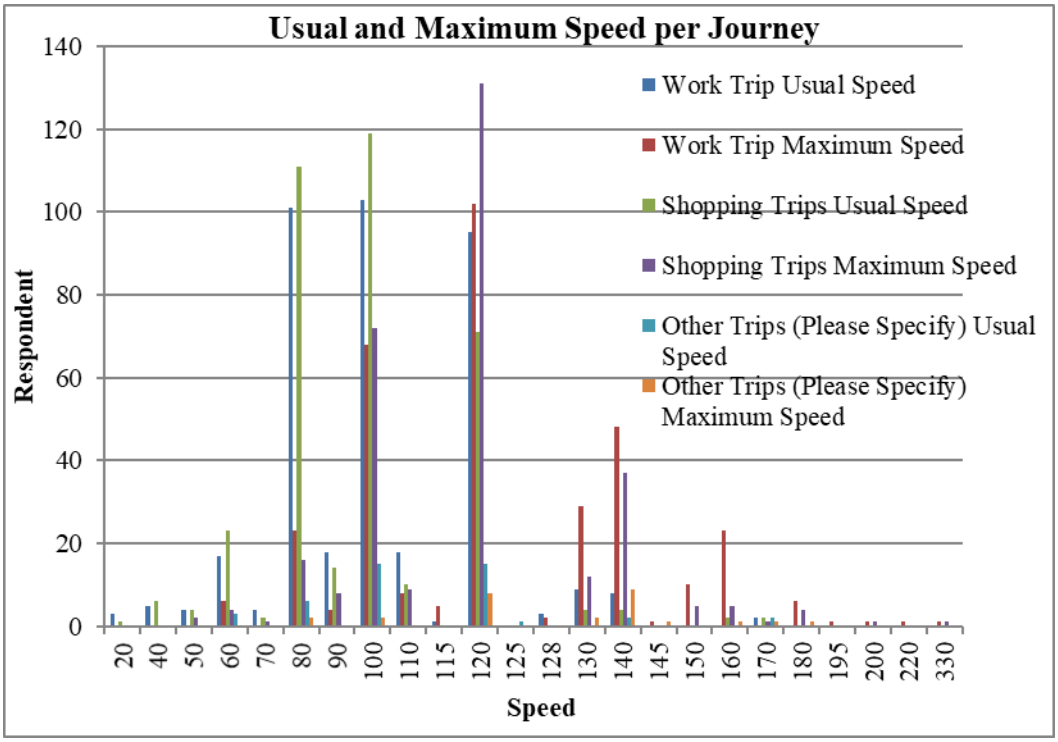

Figure 3 Usual and maximum speed per journey

In terms of learning driving, respondents were asked to report on this. It is interesting to see that respondents who reported that they learned driving skills by themselves without assistance was the highest percentage of about 31%. Figure 4 shows the distribution of respondents in terms of

learning driving skills. Similarly, people who reported that they learned driving from a family member such as parents or so, were the second highest group, followed by those taught by a friend. The percentage of respondents who reported that they learned driving skills at a driving school or a driving instructor was only 13%. . This is only higher than those who learned how to drive by other means but not specified these means. The percentage of those was 2.0% of total respondents.

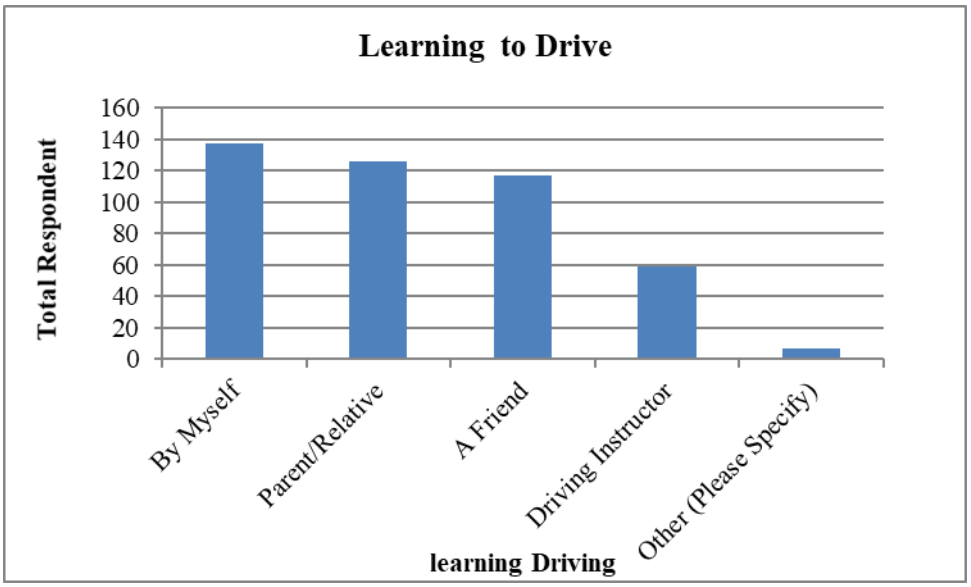

Figure 4 How respondents learn to drive

Regarding driving illegally before formally obtaining driving licence, respondents were asked to report any of this practice before obtaining a formal driving licence. Of the total number of respondents, about 43% of respondents admitted that they had driven illegally before they obtained their driving licence. A percentage of 57% reported that they have never driven legally before they obtained their driving licence. Figure shows all responses to question of illegal driving before obtaining their driving licence.

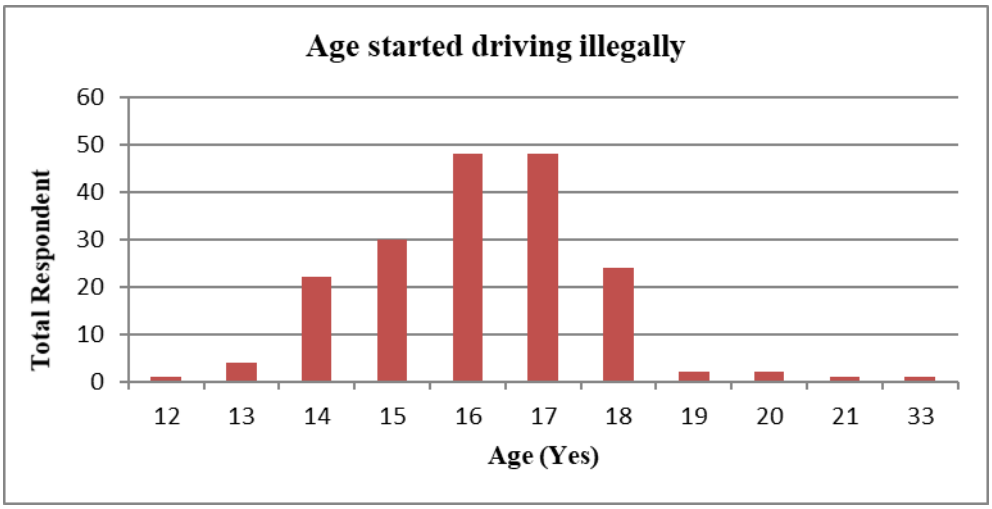

Figure 5 Age respondents started driving before obtaining a driving licence

When respondents were asked about illegally driving before obtaining their driving licence, a percentage of 56.91% (a total of 243 respondents) reported that they had never driven illegally before obtaining their licence. This is over half of the respondents surveyed (427 respondents). A total of 183 respondents (42.86%) reported driving illegally before obtaining reaching the legal age. It can be seen from Figure 5 that 16 and 17 year olds were the age group that was most inclined to drive illegally before obtaining their driving licences. This percentage represents26.23% of

respondents each for the 16 and 17 year old age groups. On the other hand, the 15 year olds, a total of 30 respondents (16.39%), were the third highest age group to admit to driving illegally prior to obtaining their driving licence, followed by 18 year olds, 24 (13.11%) of whom drove illegally prior to obtaining their driving licence. The 22 respondents of 14 years old who admitted driving illegally before obtaining a driving licence make up 12.02% of respondents. This is more than the total of the age groups of 19, 20, 21 and 33 year olds put together. This is a total of 3.28%. One 12 year old (0.55%) and four 13 years old (2.19%) admitted that they drove before obtaining a licence.

IV. CONCLUSIONS AND RECOMMENDATIONS

Data was collected for this research using a questionnaire to collect information on road safety from the road users in the State of Kuwait. The accident numbers and severities are very high in the country and one of the highest in the world. The data collected include mode of travel, frequency of travel and travel characteristics. In terms of safety aspects and driving characteristics relevant to speeding, a number of attributes and information were collected. In addition, respondents were asked to report on how often they had been caught speeding, on whether they drove illegally before obtaining their driving license and about their driving attitudes and speeding behaviour. . From the results, it appears that a considerable percentage of respondents had been caught speeding(that is a percentage over 46%) of respondents were caught speeding at some stage in the previous year. It can be claimed of course that the percentage can be higher as some respondents might not wanted to admit the wrong doing. The data has been analysed in relation to the mode of travel, to show that those most often caught speeding were the respondents who drive alone. Taxi riders, on the other hand, were the group least likely to report being caught speeding, with about 93% of responses indicating that they had never been caught speeding while a passenger in a taxi. those driving to the shops were the next highest group of respondents caught speeding . The third highest response was from those who were driving with a family member . This last percentage was about 30% of respondents reporting being caught at least once.

The study respondents reported on the frequency of them being in a hurry or late when driving to work, shopping or other activities. Just under 60% reported that they experienced being at a hurry or late during their journeys to work. at some stage during the week. On the other hand, while driving on shopping trips, a considerable number admitted that they did not experience being in a hurry or late while driving. When asked to detail the kind of activities they experiencing being late at most responses were on the work trips. Other activities such as shopping or social trips were not mentioned.

Respondents were asked their usual and maximum driving speeds. The maximum speed reported as a response to this question was 120 km/h. On the other hand, 135 respondents reported that they drove at 120 km/hr while driving to shopping. Another 107 respondents reported that they drive to work at 120 km/h as their usual speed Finally, out of all respondents, 93 reported that they drove at 120 km/h as their usual speed. Respondents were then asked to report on how they learned to drive. Results show that 31% of respondents reported learning driving by themselves while around 13% of respondents reported that they learned driving at a driving school or using a driving instructor. Respondents were then asked to report on their illegal driving activities, before obtaining their driving licence. Out of all respondents, about 40% admitted illegal driving activities before obtaining a legal driving license. Results also showed that the age group of 16 and 17 years olds were the most likely to drive illegally before obtaining their driving licence. This is one of the very alarming results of this study. The above results show that the main causes of unsafe driving behaviour in the case of Kuwait include high driving speeds, speeding on the roads and illegal driving without a driving licence. What is needed therefore are stronger enforcement, measures to educate and raise awareness of road users, and stronger penalty system in place. Finally, this research is just the beginning of a long journey of investigations and management of road safety in a country that has the facilities, the resources and the willingness to achieve very good standards in road safety.. Further research is still needed to have a better understanding of all factors that affect safety.

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