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Full Length Research Paper

Components of travel behaviour and behavioural attitudes in Kuwait

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The main aim of this study is to assess the level of household use and ownership of private cars in the city of Kuwait using data collected from a household survey on travel patterns and social economic data. Kuwait has a population of about four millions; 35% of them are Kuwaitis and 65% are non-Kuwaitis. The main findings from the research suggest a huge lack of awareness and public support to sustainable options of travel including cycling and walking in Kuwait. This might be a result of the very hot weather in specific during the summer months. However, there is still an unhealthy tendency to using the private car as the main option for travel where possible. Transport policies related to raising awareness as well as restraining policies that discourage the complete dependence on private cars are urgently needed in the country. The situation of Kuwait is very similar to other neighbouring countries, although it might be of a lesser extent. Further research into sustainability is urgently needed in order to reveal public awareness of the principles and concepts of sustainability and to attempt to build a sustainable transport system.

Keywords: Travel behaviour in Kuwait, transport sustainability, transport policies, raising awareness

INTRODUCTION

There a huge lack of studies on transport mobility, sustainability and travel behaviour in developing countries in particular those with huge oil-based wealth. One of such countries is the State of Kuwait with a population of about four million population with only 35% are Kuwaitis and the rest are non-Kuwaitis. Previous work on these issues include work by Alhussein, 2011, Al-Mosaind, 1998, Al-Madani et al., 2002, Bener et al, 2003. This current research report on a recent survey carried out in Kuwait and investigated attitudes and preferences towards a number of transport policies which are with the aim of having a better understanding of the

main constituents of travel behaviour in Kuwait. It is hoped that through this article, the current traveller behaviour will be analysed, to provide directions and guidelines for transport policy in the country as well as directions for future research.

Land use is one of the main factors that influence travel behaviour in any area. Mohareb (2010) carried out an analysis of the different factors affecting land use in Arab cities and the effect which these various land uses have on the methods of transportation used to access these areas. Arab cities have advanced in a completely different form to those adopted in the Western cities.

Originally, Arab cities were developed whereby daily socio-cultural activities were located within walking distance of residential zones. However, after the Western colonisation, there the urban developments forms changed over time. As a result of that and the discovery of oil in these regions, a heavy reliance on the private car was observed (Mohareb, 2010). This has led to an increased need for motorised transportation for residents to travel and be transported between daily activities. The population of most of the Gulf states has increased exponentially over the past few decades as a result of the economic changes in these regions. These changes range from 3% to over 15% in the period of 2000-2015. Over the same period of time the rate of change in some western countries was in the region of 1-2% (United Nations, 2012).

The paper presents an investigation and modelling of travel behaviour and attitudes for households in Kuwait. There is a major problem in Kuwait of reliable data, especially accidents and crash data, travel behaviour and sustainability data. It should also be recognised that the attitudes and public awareness about road use and sustainability have not been studied adequately in Kuwait. Therefore, there is a great need for a data collection and information gathering task to identify what is available and what is not available of such data, how reliable the data is, where the major gaps in such data are, what the significant factors contributing to traffic behaviour in Kuwait are, etc. Also, public perception and attitudes towards safety issues need more attention and research and more advanced modelling and analyses are also needed to increase the rigour of the research and the confidence in the results (see Saeed et al., 2015). Therefore, there is a clear need for more research to clarify the statistics, trends and the problems with the travel behaviour issues in Kuwait and also to recommend potential countermeasures.

DATA COLLECTION AND METHODOLOGY

In order to improve understanding of travel behaviour constituents in Kuwait and identify the causal factors that affect them, it is important to investigate travellers' attitudes. An investigation and analysis of the attitudes to travel and factors associated with the transport system in Kuwait are presented. The study is also aiming at investigating attitudes towards possible countermeasures and policies to overcome common transport problems. Therefore, the current study is very relevant and it provides recommendations to policy decision makers to understand behaviour and attitudes of the users of the transport system and provides appropriate solutions to them.

A household survey was used to collect data on household travel patterns and socio-economic variables in the city of Kuwait. A road user's questionnaire has

been designed and piloted in May 2013 and the main survey was finalised and carried out over the period of September-November 2013. The questionnaire has four main sections. These are current travel patterns, information about driving behaviour, information on ability to change time of travel and information on socio economic characteristics. The questionnaire was comprehensive in order to collect as much as possible of data related to driving behaviour, household characteristics and attitudes to safety. For the main survey, the number of questionnaires which were distributed has been 700 in order to guarantee a return of at least 400 completed questionnaires. The number of completed surveys was 427, with a completion rate of about 64.6 per cent. The preliminary findings and statistics different mode choices used by individuals in their journeys, travel attitudes and perceptions have been investigated.

Current travel patterns

The respondents in the survey were asked to report on their travel to work journey's characteristics. A total of 61.3% indicated that they mainly use the car and drive to work. A total of 13.8% of them reported that they use an informal car sharing mode of travel and finally a percentage of 10.62% reported that they used a formal car sharing mode to travel to work. Another 14.3% reported that they employ a private driver and that they use that option regularly. Regularly walking to work was not an option mentioned by anyone. About 19% of respondents reported that they would sometimes or seldom walk to work. However, 80% of those who would consider walking, their actual mode of travel was driving a private car and 20% share a ride in a private car. The percentage of "never would choose to walk" was about 52%. These results are expected especially as the very high temperatures all through the year would make it for most travellers very difficult to walk or cycle.

Respondents were also asked to report on the most important factors that affect their choice of their mode of travel. A total of 78% of drivers reported that speed was the most important factor to them when they made their decision. The second factor which was reported important is the frequency of availability of the option selected. A total of 59% of respondents said that frequency was the most important factor. Privacy was also mentioned as the most important factor for respondents' choice of the mode of travel.

In terms of journey characteristics, respondents reported on the average journey time of their journey. For the private car users, the average journey time was reported to be 15.67 minutes. For car sharing travellers, the average journey time reported was 9 minutes. For respondents who reported that they use private drivers, they indicated that the average journey time of their

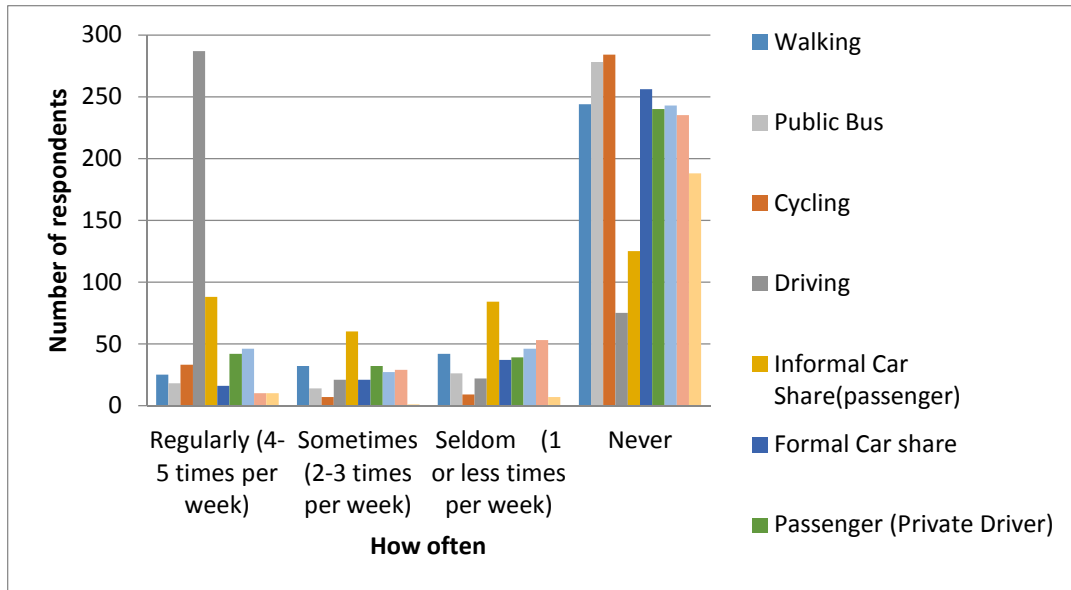


Figure 1. The Mode of travel during the journey to work (*10⁻¹)

journey was 13.4 minutes. Only two respondents in that category did report on the journey time question.

Respondents were also asked to report on their fuelling frequency. That is how often they fuel their vehicles. Respondents who responded to that question indicated that in average they refuel their vehicles on average once every 4.1 days. This is a higher frequency for fuelling vehicles than it is in the west. This might be a result of the fact that most private cars in Kuwait have very large engines and that individuals make many more journeys in any typical day than a similar individual in the west. In addition, the lack of using public transport options in Kuwait, results in higher usage of private cars and also fuel.

Respondents were then asked to report on the importance of various criteria to their most recent trips undertaken by most used mode of travel. Respondents reported that safety, comfort and reliability of the travel mode were the most important factors. A total of 80%, 78.8% and 70.3% of respondents reported that the three factors are very important to them.

Respondents didn't seem to be aware of the importance of environmental issues to them. At least these issues were not high up in the list of preferences to most respondents who drove cars as their main option of travel. Only 24% of respondents regarded environmental issues as very important. On the other hand, for the respondents who reported that car sharing was their most used option of travel, only 14.1% of them regarded environmental issues as not important. For that category of respondents (using car sharing), it was found that safety, reliability and environmental friendliness accounted for the most important factor when choosing their mode. However, these only accounted for a total of

7%, 8% and 9% of the overall survey group. For those driven by private chauffeurs, comfort was the factor of utmost importance to them. This makes sense of course as these are the highest income group of all respondents.

Assessment of attitudes and preferences to available modes of transport in Kuwait

The questionnaire included a section which offers the respondents the opportunity of selecting another alternative options of travel which have advantages and benefits related to the environment and of using more sustainable options of travel in general. The responses show that overall people were positive in terms of accepting the principles of sustainability and choosing better options of travel once their awareness level has increased. A total of 9% of respondents reported that they would walk instead of using private transport. It is interesting to note that that option was observed to be 0% in the main section of the survey. Other analysis of this section reveal that the percentage of respondents who said they would never walk dropped from to 33%, with increases even taking place throughout all of the other options.

The option of a public transport was introduced as a possible option in the list of more sustainable options of travel. The public buses were not very popular however with the respondents. It was found that only three individuals reported that they would use the bus at all and only one person used it on a weekly basis. The use of the car/van was observed to be still the most popular mode of transport with 35% of respondents reported that it is their most favourite option. This might be due to the fact

that buses are used mainly by workmen and the lowest income group category of travellers. Therefore, they are perceived to be of a second class mode of transport and not up to the level of service required for the higher income class of travellers.

What was very interesting was that the percentage of people who reported that they would use a private driver increased to 19%. The number of people reported that they would use taxis also has increased to a total of 53% now indicating that they perceive taxi to be a more sustainable option of travel. Respondents' preferences were investigated with the hypothetical scenario of "what is the current mode of transport is not available to you", they reported on the adoption of an alternated mode of transport with the following. The private driver percentage represented the preferred option for 43.7% of respondents. A further 40% would choose to take a taxi. The lowest mode represented here was that of the private bus, with only 5% of respondents indicating that it would be a choice they would partake in.

The respondents were then asked to rank all the options of travel in order of availability to them, cost, reliability and safety of use of the options, on a five-points scale (1 being good and 5 bad). It was unsurprisingly revealed that the private car was the most preferred option in terms of availability and cost of use to majority of respondents. A car sharing option, based on family and friends car sharing option was the second best option of travel in terms of both availability and cost of use. The private driver option was third option in terms of availability but worst option in terms of cost. In terms of safety and reliability the private driver was ranked third.

The taxi was ranked last in terms of cost but second best in terms of availability. Cost, reliability and safety are the only scenarios where the car sharing option was rated better than that of the taxi.

Public attitudes on the environment

Respondents were questioned on their awareness level and perceptions of how they and in turn the general public are effected by specific traffic situations on issues related to pollution, traffic congestion, delays, noise, etc. From the results, it appears that majority of respondents feel that pollution is a major influence on health and economy and 84% and 63% of respondents reported concern and awareness of its effects. Traffic congestion in the city was perceived as a major issue which affects both the individual and the general public. A percentage of 73% -77% of respondents reported awareness and concerns with traffic congestion. No respondents reported that traffic congestion in the city was no problem for them. When respondents were asked about their perception of awareness and seriousness of congestion for the general public it was reported that 49% and 71% were the percentages of awareness and its impacts for

the public. Therefore, each respondent thought that his/her awareness of the congestion issues and its seriousness level of its impacts were higher than that of general public.

Delays was the second criterion investigated that is related to traffic problems in the city. Delays was similar to congestion in terms of its perceived level of awareness and its impacts. A percentage of 72% of individuals reported awareness of delays and that delays due to congestion were a serious issue for them. Similar to congestion assessment, no individuals said it was not an issue in any way. An overall percentage of 62% of respondents reported awareness and that delay is a severe problem to them with only 25% reported that delays was a moderate problem in the city both for themselves and for the public.

With respect to noise issues, the respondents were asked to report the level of awareness and seriousness of noise for them and for the public. In that case, 71% of respondents reported awareness of the issue for themselves whereas only 19.8% thought that the public will be aware of this issue as a problem. Pedestrians and cyclist safety problems were also investigated and 72% and 59% of respondents expressed awareness and knowledge of these issues.

Lastly, the problem of fumes in the city was investigated. 61% of respondents reported that they were aware of the problem and only 32% of them reported that it is a serious problem. In terms of this assessment from the public point of view the percentages were lower of 26% and 16%.

Implications of various transport problems and perceptions of some possible policy solutions were then investigated. These policies included charging policies. These are policies which involves introducing or increasing level of pricing; for example parking charges, congestion charges and increasing public transport fares. Over 45% of respondents who were surveyed reported that charging would result in a reduction in the level of congestion. Congestion is perceived as a major problem related to transport as discussed above. The respondents were also asked to report on their opinions on how would the revenues raised from any charging policies spent. The views reported included spending related to the transport system in order to improve transport provision. The responses included for example 49% and 61% of respondents agreed that the revenue generated would be best spent to improve public transport and that parking charges should be allocated to improve parking facilities and information provision. Policies which are aimed at reducing the impacts of environmental pollution were also popular with respondents expressing preferences that revenues from charging policies to be allocated to such policies.

Interestingly, 50% of respondents stated that if a public transport system was also in need of further spending to improve its level of service and that they would use it

should it get improved.

Finally, the general characteristics of the survey sample include age, gender, position in the household and marital status. The average age of respondents in the sample was 32 years old. In terms of gender, 62% were males and 38% females. In terms of position in the family, 43.7% of the sample were heads of the family, 12% were sons, 10% were daughters and the rest were wives, and other sons and daughters. Married individuals represented 67%, with 33% indicating that they were single. University graduates represented 45% of the sample group, followed by those possessing a diploma at 25%. Therefore the sample might be biased towards mostly the educated population.

Discussions and conclusions

The purpose of this study has been to investigate and model travel behaviour and attitudes and preferences towards the available options for travel in Kuwait. A household survey was used to collect data on household travel patterns and socio-economic variables in the city of Kuwait. With the absence of similar studies on the attitudes and preferences of travellers on the different options of travel, this paper provides an initial understanding of the main factors which contribute to travellers choices and preferences of the current option. These are important for decision makers and policy organisations in order to have a better understanding of the travellers opinions and needs and therefore to design the right options for them.

There is a huge lack of studies therefore in these countries such as Kuwait as well as other Middle East countries who share similar traffic and travel characteristics. The specific characteristics of socio-economic patterns as well as travel behaviour attitudes in this country make it a unique area, which has its own characteristics and patterns, hence the need for the research.

Results showed that the majority of individuals drove their own vehicle to work indicating that they regularly drive to work. A significant number of respondents indicated that they utilised a formal or no formal car share programme. No respondents indicated that they would regularly walk or cycle to work.

When asked about the factors which affect their choices, speed of access was the first factor reported. The second most important factor affecting the car as the mode chosen was the frequency of this mode, privacy was another factor which influenced the decision making process. From data provided by the respondents, it was found that on average, citizens have a journey time of 15.67 minutes, while those partaking in informal car shares averaged 9.0 minutes. When we take a further look at this individual's reason for choosing this mode, we

see that they needed their car before or after work, which was one of the main influences on their modal choice.

When the respondents were asked about the importance of various characteristics of their current mode of travel, safety was the most important factor followed by comfort and reliability. Environmental friendliness of this mode was not important to most respondents. For those availing of car sharing programmes of one sort or another, it was found that safety, reliability and environmental friendliness accounted for the most important factor when choosing their mode.

Finally, recommendations based on the research presented in this paper includes the importance of raising awareness and education of the public in order to encourage them to increase their use of the public modes of transport and the more sustainable options such as walking and cycling. It is also equally important to raise the standards of the public transport services in order for these modes to attract sufficient patronage to achieve sustainability. Further research into sustainability is urgently needed in order to reveal public awareness of the principles and concepts of sustainability and to attempt to build a sustainable transport system.

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