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Study on the Use of Seat Belt by Nigerian Drivers

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Abstract: The use of seat belts while driving vehicles to prevent injuries and deaths has been well reported in the literature. The use of seat belt while driving became mandatory in January, 2005 in Nigeria; the main aim of this study is to determine the level of usage of seat belt while driving for commercial vehicle drivers as well as private vehicle drivers. In the collection of data collection, observatory method was used and the data analyzed using percentages. A total number of 462 vehicles and thus drivers were observed. It was observed that 20 percent of the commercial vehicle drivers use seat belt while 80 percent of the private vehicle drivers were observed to use seat belt. It is then suggested that a three stage approach should be adopted namely; enlightenment campaign by relevant agencies as the first stage, threat of enforcement of compliance as the second stage and actual enforcement should be last stage

Key words: seat belt, private vehicles, commercial vehicles, observatory method

INTRODUCTION

Mori *et al* (2008) reported that about 1.2 million deaths were attributable to vehicular accidents worldwide in year 2002. They also added that between 20 millions and 50 millions people worldwide were estimated to be crippled or injured as a result of vehicular accidents. Similarly, Subramanian (2006) noted that vehicular accidents are the leading causes of death in the United States. Also, in Thailand, about 13,000 people died in vehicular accidents and hundreds of thousands are either injured or crippled (Mungnimit, 2001). He further observed that the economic losses due to vehicular accidents amount to 2.55 percent of the country's Gross Domesticle Product (GDP) and thus inhibit both economical and social development in that country.

Bener and Crundall (2005) reported that vehicular accidents are increasingly being regarded as a growing public health problem in Bedouin Arabian Gulf countries. In a similar manner, Scurfield *et al* (2005) quoted a World Health Organization report that vehicular injuries and deaths are regarded as a major public health issue worldwide.

The use of seat belts has been found to be effective for the reduction in the number of accidents attributable to vehicles. In fact, Evans (1986) noted that the use of seat belt by drivers could reduce fatalities on roads by 41 percent. Also, Elvik and Vaa (2004) found that the use of seat belts while driving vehicles could reduce the chance of death by 40 to 50 percent. Moreover, Petridou *et al* (1998), Peden *et al* (2004), Milne (1979), Evans (2004) and Campbell (1987) supported the assertion that the use of seat belt while driving vehicles has the tendency to reduce accidents and injuries on the roads.

In Nigeria with about 120 million people, the number of people who were injured in vehicular accidents according to Nigeria Police and Federal Roandd Safety Corps in year 1980 was 25, 484 and reduced to 17, 390 in year 2006. Also, the reported number of deaths was 8,736 in year 1980 and reduced to 4, 944 in year 2006 (Table1 and Table 2).

In order to be in line with other countries to combat vehicular accidents, Federal Road Safety Corps in Nigeria in January 2004 made the use of seat belt while driving mandatory.

The use of seat belt by drivers has been studied in various countries. According to European Transport Safety Council (2006) and Whelan (2003), about 90 percent of seat belt usage was attributable to front seat occupants in Australia, Germany, France and United Kingdom and same percentage for rear occupants in Australia and Germany.

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However, there seems to be very scant, if any to the author's knowledge, any study on the use of seat belt by drivers in Nigeria. This study is an attempt to fill this gap in the literature. The study was carried out in Ogun State of Nigeria with a population of about 3.7 millions and an area of 16, 400 square kilometres. The state shares boundary with Lagos State, former capital of Nigeria.

Methodology:

To obtain the data on the usage of seat belt by drivers of vehicles, observational method was used. Four observational locations were selected in Abeokuta to observe all drivers whether private or commercial. The locations were selected by considering the entry points to the city and were:

1. Abeokuta-Lagos Road (Itosin Roundabout)
2. Abeokuta-Ibadan (Obantoko)
3. Abeokuta-Sagamu Road (Itoku Roundabout)
4. Abeokuta-Ayetoro Road (Lafenwa Junction)

At each of the location, four people with two on either side of the road were used to collect the data.

The data collection form contain information such as location, names of observer, starting time, ending time, number of drivers wearing seat belt, total number of drivers observed, type of vehicle driven (commercial or private). The data collected were analyzed using percentages.

RESULTS AND DISCUSSION

As shown in Table 3, the use of seat belt at the locations ranged between 72 percent and 85 percent for private vehicles and between 12 percent and 26 percent for commercial vehicles. For private vehicles, Abeokuta-Lagos Road recorded the lowest usage of seat belt with 72 percent while Abeokuta-Sagamu Road recorded the highest percentage of 85 percent. For commercial drivers, the lowest percentage of seat belt usage was recorded at Abeokuta-Sagamu Road with 12 percent and the highest of 26 percent at Abeokuta-Ibadan Road.

Table 1: Reported Road Accident Cases

Number									
Cases	1980	1990	2000	2001	2002	2003	2004	2005	2006
Fatal	7,197	6,299	5,909	6,966	7,531	5,401	6,362	6,132	2,600
Serious	11,983	8,855	6,017	8,185	15,942	7,432	8,509	7,849	5,550
Minor	12,958	6,673	5,010	5,379	6,398	4,373	4,740	4,678	964
Total	32,138	21,827	16,936	20,530	29,871	17,206	19,611	18,659	9,114

Source: Nigeria Police Force and Federal Road Safety Corps

Table 2: Reported Road Accident Casualties

Number									
Casualties	1980	1990	2000	2001	2002	2003	2004	2005	2006
Number of Persons Injured	25,484	19,195	21,409	21,698	22,970	16,171	20,925	16,888	17,390
Number of PersonsKilled	8,736	8,902	8,790	9,946	9,240	7,697	8,161	8,980	4,944
Total	34,220	28,097	30,199	31,644	32,210	23,868	29,086	25,868	22,334

Source: Nigeria Police Force and Federal Road Safety Corps

Table 3: Distribution of drivers using seat belt at selected locations

Location	Number of Drivers Observed	Distribution of Drivers Observed		Distribution of Drivers Using Seat Belt		Percentage Distribution of Drivers Using Seat Belt	
		Commercial	Private	Commercial	Private	Commercial	Private
Abeokuta-Lagos Road	130	87	43	17	31	20	72
Abeokuta- Ibadan Road	144	98	46	25	39	26	858
Abeokuta-Sagamu Road	66	25	41	03	35	12	85
Abeokuta- Ayetoro Road	122	54	58	8	45	15	78
TOTAL	462	264	188	53	150	20	80

On the whole, only 20 percent of the commercial vehicle drivers use seat belt while driving compared to 80 percent of private vehicle drivers.

Discussion:

The main aim of the study was to obtain data on the usage of seat belt while driving to serve as a basis on which future enlightening campaign on its use could be based. Generally, percentage of usage of seat belt was 20 percent by commercial vehicle drivers which is far lower than 64 percent obtained by Cook *et al* (2008) for commercial vehicle drivers and 67 percent reported by Kim and Yamashita (2007) as well as 48

percent found by Knoblanch *et al* (2003). This shows that there is apathy on the side of commercial drivers in Nigeria on the use of seat belt while driving which have serious implication on the advantages derivable from its use. Interestingly, 80 percent of private vehicle drivers use seat belt while driving and this compares favourably with 70 percent obtained for light vehicle drivers in urban roads in Norway and 90 percent for United Kingdom as reported by Elvik and Vaa (2004) as well as Evans (1991). It also is also slightly lower than 81 percent reported by in 2006 by Glassbrenner and Ye (2006) for United States of America.

Various reasons have been adduced for non usage of seat belt by drivers despite the obvious advantages derivable from its use. Some studies (Begg and Langley 2000; Kim and Yamashita 2007; Chliaoutakis *et al* 2000) stated that discomfort was cited as one of the reasons by some drivers. Researchers such as Kim and Yamashita (2007); Fockler and Cooper (1990) also stated that frequent stops was stated by some commercial vehicle drivers while Begg and Langley (2000) also reported that some drivers opined that not having the habit of using the seat belt while driving was another reason.

Simsekoglu and Lajunen (2008) also found that 'situational conditions', 'not believing the effectiveness of seat belt while underestimating the danger', 'discomfort' and 'not having a habit' were other reasons stated for not using the seat belt while driving. However, for commercial vehicle drivers in Nigeria, non enforcement of the use as well as low enlightenment campaign among other factors may be the reasons for the very low percentage of users. It may be expedient begin a massive campaign on the use of seat belt while driving at motor parks. Relevant unions of this category of drivers should also be involved in the campaign. After this the threat of enforcement and actual enforcement should be embarked upon.

Conclusion:

From the foregoing, it is established that there is a very low number of commercial drivers using seat belt while driving. In fact, only 20 percent of the commercial vehicle drivers observed actually use seat belt compared with 80 percent of private vehicle drivers that use seat belt. It is concluded that there may be a need to start up a massive enlightenment campaign at motor parks and involve the relevant unions on the advantages derivable on the use of seat belt while driving on Nigerian roads.

Threat enforcement of the use as well as actual enforcement should latter be used to ensure compliance.

REFERENCES

Begg, D.J. and D.J. Langley, 2000. Seat belt use and related behaviour among young adults. Journal of Safety Research, 31: 211-220.

Bener, A. and D. Crundall, 2005. Road traffic accidents in the United Arab Emirates compared to Western Countries. Advances in Transportation Studies: An International Journal Section, A6: 5-12.

Campbell, B.J., 1978. Safety belt injury reduction related to crash severity and front seat position. Journal of Trauma., 27(7): 733-739.

Chliaoutakis, E.J., C. Gnardellis, I. Drakou, C. Darviri, V. Sboukis, 2000. Modelling the factors related to the seat belt use by the Young drivers of Athens. Accident Analysis and Prevention., 32: 815-825.

Cook, L.J. J.L. Hoggins and L.M. Olson, 2008. Observed seat belt usage among drivers of heavy commercial vehicles drivers in Letah. Accident Analysis and Prevention., 40: 1300-1304.

Elvik, R. and T. Vaa, 2004. *Handbook of Road Safety Measures*. Elsevier. Amsterdam.

European Transport Safety Council, 2006. *Promoting seat belt use*. ETSC. Brussels.

Evans, L., 1986. The effectiveness of safety belt in preventing fatalities. Accident Analysis and Prevention, 18: 229-241.

Evans, L., 1991. *Traffic Safety and the Driver*. VAN Nostrand Reinhold, New York.

Evans, L., 2004. *Traffic Safety*. Michigan.

Glassbrenner, D. and J. Ye, 2006. *Traffic Safety Facts*. from www.nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/RNotes/2006/810677/810677.html. Accessed on April 25: 2009.

Knoblauch, R., *et al*., 2003. *Safety Belt Usage by Commercial Motor Vehicle Drivers*. Publication DTMC-01-P-00071. Federal Motor Carrier Safety Administration.

Milne, P., 1979. *Fitting and wearing of seat belts in Australia: The History of Successful Countermeasure*. Federal Office of Road Safety. Department of Transport, Melbourne.

Mori, M., S. Horino S. Kitajima M. Ueyama, T. Ebara and T. Itani, 2008. Ergonomics solution for crossing collisions based on field assessment of visual environment at Urban intersections in Japan. Applied Ergonomics, 39: 697-709.

Mungnimit, S., 2001. *Road Traffic Accident Losses*. Transport and Communications Policy and Planning Bureau, Ministry of Transport and Communications. Thailand.

Peden, M., R. Scurfield, D. Sleet, D. Mohan, A. Hyder, E. Jarawan and C. Mathers, 2004. *The World Report of Road Traffic Injury Prevention*, World Health Organization, Geneva, Switzerland.

Petridou, E., A. Skalkidou, N. Ioannou, D. Trichooulos, Hellenic Road Traffic Police, 2008. Fatalities from non-use of seat belts and helmets in Greece: a nationwide appraisal. Accident Analysis and Prevention, 30: 87-91.

Scurfield, R., D. Sleet, D. Mohan, A.A. Hyder, E. Jarawan, C.D. Mathers, D. Scurfield and M. Peden, 2004. *World Report on Road Traffic Injury Prevention.* World Health Organization, Geneva.

Simsekoglu, O. and Lajunen Timo, 200). Why Turks do not use seat belts? An Interview Study. Accident Analysis and Prevention., 40: 470-478.

Subramanian, R., 2006. Motor vehicle crashes as a leading cause of death in the United States, 2003. Traffic Safety Facts (DOT HS 810 690). *National Center for Statistics and Analysis*. Washington, D.C.

Whelan, M., K. Diamantopoulou, T. Senserrick and M.H. Cameron, 2003. Establishing a benchmark of safety on Meibourne Roads during 2001. Melbourne *Monash University Accident Research Center*. Report, No 198.