

Observational Study of the Use of Seat Belt among Vehicle Drivers in Selected Cities of North Central Nigeria

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ABSTRACT

The Federal Road Safety Corp was introduced in the early 1988 to curb the increasing traffic road accident and its fatality. Despite the effort of this agency, its common sight to see motorist drive their vehicle without the use of safety belts, especially in the local government areas. 28,275 drivers were observed in 18 towns within 6 state capital, Jos, Makurdi, Lafia, Lokoja, Ilorin and Minna, and 12 local government council headquarters, Bokoss, Panshin, Gboko, Katsina-Ala, Nassarawa-Toto, Obi, Okene, Kabba, Offa, Ofun, Bida, and Rijau in North Central Nigeria. While 15,434 (54.58%) were observed using their seat belts, 12,841 (45.42%) drivers were not using their seatbelts. Of the 28,275 drivers observed, 17,141 (60.62%) were observed in the six state capitals. 11, 274 (65.77%) complied with the use of seat belts while 5867 (34.22%) did not. Of the 8935 drivers observed in the local government headquarters, 2168 (24.26%) complied with the use of seat belt, while 6767 (75.73%) did not. Comparing with literature it is clear that, while compliance has improved in the state capitals, it is very low at the local government level. It is recommended that the Federal Road Safety Corps should re-strategize for the local government councils in order to improve compliance.

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Introduction

A road traffic accident (RTA) is any occurrence that affects the normal working of the roadway, resulting into injuries, damaged to property or fatality. It occurs in all forms, involving motorcycles, cars, heavy duty vehicles, pedestrians, passengers, etc. It is estimated that 1.2 million road traffic deaths occur and about 50 million people are injured in the world every year [1], in which most of them are in the developing countries.

In developing countries, road traffic accident have been on the increase since the 1970 when most countries introduced motorized transportation in general and in some cases become more deadly than diseases that historically affected the population [2]. A major cause of deaths and injuries in an automobile crash is the occupant being thrown by inertia during a collision. The seat belts, prevents vehicle occupants from being ejected from the vehicles or hitting other objects in the vehicle. These deaths and injuries can be reduced drastically because seat belts retain occupants in their seats. Efforts at reducing road traffic accidents by The American Association of State Highway and Transportation Officials (AASHTO) lead to identifying causes and devices for preventing the increasing fatalities. From the result of various studies, [3] found that vehicle occupants not wearing seatbelts at the time of the crash are 50% more likely to be hospitalized from crash-related injuries.

Experience from developed nations indicates that the use of seat belts is one of the most effective ways to reduce road accident fatalities [4]. Studies have also shown that when a road accident occurs, the use of the seat belt prevents certain types of injuries to vehicle occupants or mitigates their severity [5]. A safety seat belt which restrains the body in the original position to a seat has proved to reduce the risk of fatal injury. The seat belt apart from helping the driver to control the vehicle in a crash situation, also prevent injuries to passengers caused by being thrown into each other or even through the windshield or door of the vehicles during a crash [4,6].

Seat belts first came into use in the 1930's when several U.S.A. physicians equipped their cars with lap belt and urge manufacturer to provide them in all new cars [7]. They, however, did not really begin to appear in vehicles (especially as seatbelts) until the 1950's [8]. Studies also showed that even then the use of seatbelts did not increase much above 10%. In Nigeria, the Federal Road Safety Corp was introduced in the early 1988 to curb the increasing traffic road accident and its fatality. Despite the efforts by this agency, it is common sight to see motorist drive their vehicle without the use of safety belts especially in the local government areas. A compliance of 53% has been reported in Benin, Edo State [9], an average of 18.7% in five municipal councils of Oyo State, Nigeria [10] and 57%

compliance of in Makurdi, Benue State [11]. Observers positioned at 41 locations in Kumasi, Ghana reported only 17.6% compliance [12]. Comparatively, a compliance level of 67% was reported as at 1980 when compulsory seat belt law was introduced in Hawaii, and 51.8% in Trinidad and Tobago [13, 14]. The objective of this study is to determine the level of compliance in the use of safety belt among motorist in the state capital and 18 local government council areas of the six states of North Central Nigeria.

Methodology

The survey was carried out in six states capitals of Nasarawa, Plateau, Niger, Benue, Kogi, and Kwara State in North Central Nigeria and 12 local government council headquarters namely; Nassarawa-Toto, Obi, Bokoss, Pankshin, Bida, Rijau, Gboko, Katsina Ala, Okene, Kabba, Offa, and Ofun, over a period of two weeks in May 2016 from 9 am to 4 pm.

The samples in this study were car drivers driving on major roads in the selected states and local government headquarters during week days and weekends when road safety officials were not around to coarse compliance. The observation method was used and subjects were not aware they were being watched. The percentage method and chi-square test was performed to determine compliance to the use of safety belt by motorists.

Results and Discussion

Results of observational study of the use of seat belts among vehicle drivers in selected cities of North Central Nigeria are presented in Figures 1-3 and Tables 1-3. Figure 1 shows the number of drivers observed against their various locations in each state of North Central Nigeria. From the figure, it is clear that Benue State has the highest number of drivers wearing their seat belts with 3440 drivers representing 32.86%, followed by Niger State with 3272 drivers representing 39.68% while Kogi State has the least with 2612 representing 67.65%. On the other hand, Benue State also had 4860 drivers with no seat belt, making it the highest. This is followed by Plateau State with 2340 drivers while Nassarawa is least with 1830 drivers. The high rate of no seat belt indicated that most car users view the use of seat belt as fulfilling traffic law rather than for their own safety benefits.

Figure 2 shows the number of drivers observed against their various locations in each state capital of the North Central Nigeria. From the figure, Minna was highest with 2843 drivers wearing their seat belt, followed by Makurdi with 2700 drivers while Ilorin had 2371 drivers. This high compliance to the use of seat belt in the state capitals showed active presence of road safety officials on roads within the metropolises. Conversely, it was observed from the figure that Makurdi had 1680 drivers

with no seat belt representing the highest, followed by Ilorin with 1389 while the least was Lafia with 890 drivers.

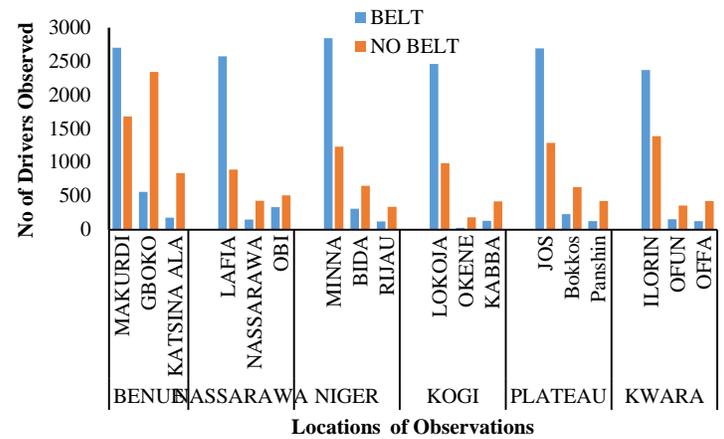


Fig. 1: Number of Drivers against States in North Central Nigeria

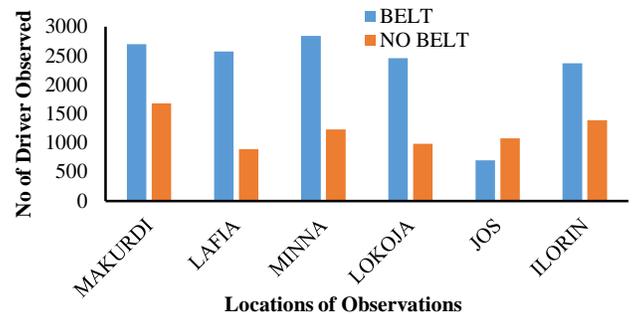


Fig. 2: Number of Drivers against State Capitals in North Central Nigeria

Figure 3 shows the number of drivers observed in 12 local government area headquarters of the six states of the North Central Nigeria. From the figure, Gboko LGA was highest with 560 drivers wearing their seat belts, followed by Obi LGA with 335 drivers while Okene had least with 25 drivers without putting on their seat belts. On the other hand, Gboko LGA still topped with 2340 drivers not wearing seat belts, followed by Katsina-Ala LGA with 840 drivers while Okene LGA was still least with 183 drivers. The high rate of drivers without seat belt indicated the non-availability of road safety officials/law enforcement agents in these areas.

Figure 4 shows the percentages of drivers observed in the selected 12 local government area headquarters of the six states of the North Central Nigeria. From the figure, Lafia LGA was highest with 74.29% of drivers wearing their seat belt, followed by Lokoja with 71.35% while Okene LGA was least with 8.92%. However, Katsina-Ala LGA was highest with 82.35% of

drivers without seat belts, followed by Gboko LGA with 80.65% and the least was Lokoja LGA with 28.65%.

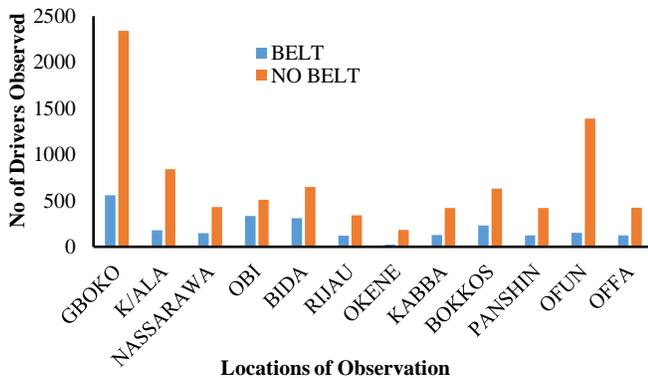


Fig. 3: Number of Drivers against Local Government Areas in North Central Nigeria

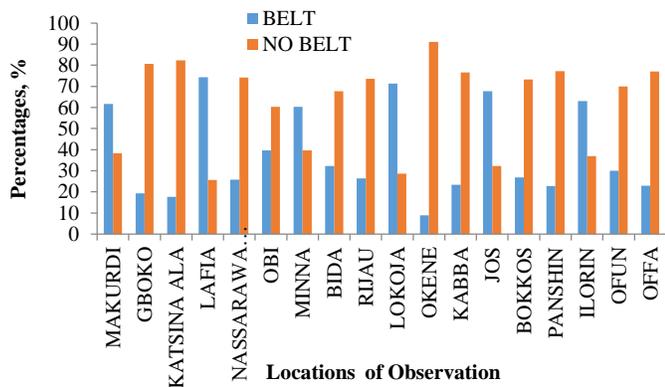


Fig. 4: Percentages of Drivers against Selected Local Government Areas of North Central Nigeria

Figure 5 shows the summary of the percentage of drivers observed in the 6 states of the North Central Nigeria. From the figure, Nassarawa State was highest with 46.59% of drivers wearing their seat belt, followed by Niger State with 39.68% and the least was Benue State with 32.86%. Conversely, Benue State is highest with 67.11% of drivers not wearing their seat belts, followed by Kogi State with 65.43% and the least was Nassarawa State with 53.41%. The low rates of seat belt use are also attributed to the low perceived risk of being involved in an accident. This is based on risk compensation, which postulates that under certain conditions individuals compensate for reduced risk by acting more carelessly and recklessly. Based on this concept, when drivers wear safety belts, they feel safer and exhibit more risky driving behaviors than they otherwise would, thereby reducing the beneficial effects of belt use [15].

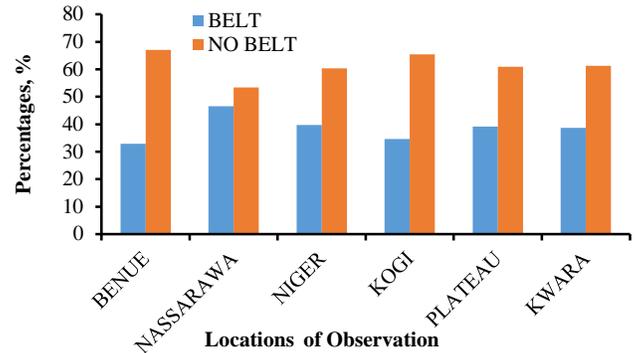


Fig. 5: Percentages of Drivers against States of the North Central Nigeria

Table 1 shows the compliance to safety seat belt usage among car users for the locations. The compliance practice of usage of safety belt is higher (57.95%) for town area respondents compared with outside-town respondents (42.05%). This shows that the outside-town respondents were not likely to comply with safety belt usage compared to urban respondents.

Table 1: Compliance of Safety Belt on Location

Location	Comply	(%)	Not comply	(%)
Outside				
Town	15	13.05	43	36.95
Town centre	2329	44.9	265	5.1
Total	2344	57.95	308	42.05

Table 2 shows the compliance to safety seat belt usage among car users for private and commercial vehicles in the absence of road safety officers during weekend. The result showed that the non-compliance rate is higher for both private and commercial vehicle owners (69.2%) while the compliance rate is 30.8%. This indicates that car users who have not been caught by road safety officers for not using safety belt are more likely not to comply compared with those who have been caught. The compliance level is low among car users owing to the fact that road safety officers do not work during weekends like Saturdays and Sundays.

Table 3 shows the chi-square statistics at 0.05% significance for drivers and location at various states of the north central Nigeria. The result indicated statistical significance difference parameters. They indicate that the location of the drivers affect their wearing of seat belts.

Table 2. Compliance of Motorist on Safety Belt in the Absence of Safety Officers (Weekends)

Type of vehicle	Comply	(%)	Not comply	(%)
Private	51	6.55	335	43.45
Commercial	305	24.25	325	25.75
Total	356	30.8	660	69.2

Table 3. Chi-square Statistics for Vehicle Drivers in States of the North Central Nigeria

States	χ^2	p-value
Benue	57.08	< 0.0001
Nassarawa	57.08	< 0.0001
Niger	27.60	< 0.0001
Kogi	93.795	< 0.0001
Plateau	52.79	< 0.0001
Kwara	38.48	< 0.0001

Conclusion

It is universally accepted that vehicle crashes cannot be totally prevented, but that the resultant injuries and severity can be prevented or minimized by protective devices like seat belts for car occupants especially car drivers and front seat passengers. Based on the findings, it can be concluded that, the rate of non-usage of vehicle seat belt is higher in all the states of the north central Nigeria. Also, the non-compliance with seat belt usage is due to insufficient road safety officials especially outside the state capitals of north central Nigeria also the low perceived risk of being involved in an accident.

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