



ASSESSMENT OF MOTORISTS' COMPLIANCE TO SEAT BELT REGULATION IN NIGERIA

Dike Declan N.¹, Akponye Magnus C.², Nze Ibeawuchi C.^{*3}

^{1,2} Department of Transport Management Technology, School Of Management Technology,
Federal University Of Technology, Owerri Nigeria

^{*3} Department of Maritime Management Technology, School Of Management Technology,
Federal University Of Technology, Owerri Nigeria

Abstract:

The work is an attempt to assess the level of compliance by motorists to seat belt regulation in Nigeria. Specifically it evaluates the seat belts usage rates along Enugu- Port Harcourt, ENU-PHC and Port Harcourt- Enugu, PHC-ENU traffic corridors based on vehicle type and front seat occupants. Data was collected from two sites at Osisioma junction in Aba Abia state, Nigeria by direct observations at designated points. The findings of the observation were treated with percentage analysis where each category of vehicle is treated separately with percentage table analysis. Results on the road side observation survey of seat belt use revealed that wearing seat belt along Enugu- Port Harcourt, ENU-PHC and Port Harcourt- Enugu, PHC-ENU traffic corridor is very low. The overall wearing rate for the aforementioned routes was 24.8%, 26.0% and 23.8% for all occupants, drivers and front seat passengers respectively. It is concluded that the overall wearing rates were consistently higher for drivers than for front seat passengers in most vehicle categories and routes sampled. Thus we recommend that the enforcement officials pay close attention to taxis, buses, luxury buses, pickup/vans, trucks and articulated vehicle occupants who tend to significantly show lower seat belt use since this can save more lives when these types of vehicles get involved in traffic crashes.

Keywords: Seatbelt; Casualty; Traffic Crash; Collision; Regulation.

Cite This Article: Dike Declan N., Akponye Magnus C., and Nze Ibeawuchi C. (2018). "ASSESSMENT OF MOTORISTS' COMPLIANCE TO SEAT BELT REGULATION IN NIGERIA." *International Journal of Engineering Technologies and Management Research*, 5(3), 166-180. DOI: 10.5281/zenodo.1218168.

1. Introduction

The Federal Road Safety Commission Establishment Act (2007), part II, section 10 (4) (ee) mandates members of the Corp to arrest and prosecute persons reasonably suspected of having committed any traffic offence including driving a vehicle not fitted with seat belt or where fitted, not wearing same while the vehicle is in motion; while the National Road Transport Regulation 2012, part XII, 126 (1) stipulates that every vehicle shall have fitted in the Front and REAR SEATS, seat belts and child safety seats which shall be securely worn by the driver and THE OTHER OCCUPANTS of the vehicle while the vehicle is in motion.

A seatbelt is designed to protect the occupants of a vehicle against any dangerous movement in the event of a crash or sudden stop. A seatbelt reduces the severity or even the possibility of an injury in a crash by preventing the occupants from colliding with interior elements of the vehicle or other passengers. It keeps occupants positioned correctly for maximum safety, and prevents them from being ejected from the vehicle. Seatbelts have been adjudged the most single traffic safety device for preventing death and injuries.

Ever since the enforcement of seat-belt law commenced in the country, lots of efforts by the Federal Road Safety Commission and other stakeholders have been directed at ensuring that all front vehicle occupants belt-up. In spite of these efforts, lives and properties have been lost in Road Traffic Crashes (RTC) which has dealt a big blow to the economy of the nation and equally traumatize its victims or in some cases cut short their lives thereby bringing about trauma in many homes. Several studies have determined the use of seat belts to be one of the major contributing factors in the reduction of fatalities and injury severities associated with motor vehicle crashes. Some studies have found that there is a relationship between drivers and their front passengers in terms of seat belts usage.

Nambisan and Vasudevan (2007a) report that seat belt usage by drivers can impact other occupants in the vehicles. A study by Nambisan and Vasudevan (2007b) show that when drivers use seat belts, the rates of using seat belts by passengers either male or female are higher. Nambisan and Vasudevan (2007b) explain how seat belt usage rates of front passengers may increase seat belt use rates by drivers. When seat belt usage increases among drivers and passengers, some severities of injuries will decrease as well (Bendak, 2005). Blincoe et al. (2002) reports that the probability of fatal crashes can rise to 73 percent based on many factors such as, vehicle type and position of occupants. Evans and Frick (1988) state that the fatality risk to drivers is nearly equal to that of front passengers.

With the present spate of Road Traffic Crashes on our roads and its attendant carnage, it is essential to know the level of compliance to this regulation in order to reduce the severity of injuries during Road Traffic Crashes.

Available data suggest that approximately 1.2 million people die annually and with up to 50 million people more injured in road traffic crashes worldwide. This costs the global community about US\$518 billion (Peden et al, 2004). Projections show that, between 2000 and 2020 road traffic deaths will increase substantially in low-income and middle-income countries (Peden et al, 2004).

This underscores the fact that road traffic death and injuries are a major public-health burden, especially in low and middle income countries. Without appropriate action, by 2020, road traffic injuries are predicted to be the third leading contributor to the global burden of disease and injury (Murray and Lopez, 1996).

There are three “collisions” that occur in every road traffic crash (RTC) where occupants are unrestrained. The first collision involves the vehicle and another object, e.g. another vehicle(s), a stationary object (tree, signpost, ditch) or a human or animal. The second collision occurs between the unbelted occupant and the vehicle interior, e.g. the driver hits his chest on the

steering wheel or his head on the window. Finally, the third collision occurs when the internal organs of the body hit against the chest wall or the skeletal structure. It is the second collision that is most responsible for injuries, and can be reduced significantly by the use of seat-belts and child restraints (FIA Foundation, 2009).

The most frequent and most serious injuries occurring in frontal impacts to occupants unrestrained by seat-belts are to the head, followed in importance by the chest and then the abdomen. Among disabling injuries, those to the leg and neck occur most frequently (Mackay, 1997; Hobbs, 2001).

However, the overall research work was structured to identify opportunities to positively influence seat-belt wearing behaviour, which might be exploited by future communication campaigns and contribute towards reducing road-user casualties. This survey covers the level of compliance with the use of seatbelt by motorists along Port Harcourt-Enugu (PHC-ENU) and Enugu-Port Harcourt (ENU-PHC) routes in the Abia state axis and the possible practical guidance on how to reduce the effects of Road Traffic Crash (RTC) on occupants of a vehicle by strict compliance to the use of seat belts.

Specifically, the objective is to determine the level of compliance to seat belt use by motorists in Nigeria, and the critical question remains what is the overall seat belt wearing rate among different categories of motorists and vehicles along the sampled route? The application of suitable analytical tools may proffer tentative answer to this research question.

2. Materials and Methods

The research uses the survey method to design questions for easy responses from the respondents. Also the field observation method was used to have a better picture of what happens on the aforementioned routes. The survey method is suitable enough to capture the compliance rate of front seat vehicle occupants (drivers and passengers) with the Federal Road Safety Commission regulation on seat belt use coupled with some other factors that might militate against its use.

The study was carried out at Osisioma junction in Osisioma Ngwa Local Government Area of Abia State because of the busy nature of the junction. The population of study is finite i.e. it can be counted. The questionnaire was distributed to commuters, especially front seat occupants travelling to different routes, public and private vehicle drivers in different areas of Osisioma Local Government Area. This study was done in two stages. First, data was collected from two sites around Osisioma junction, Osisioma Ngwa local government area by direct observations. Second stage was the administration of questionnaire at motor parks, transport companies and work places. This was done to ascertain the seat belt use among drivers and their front seat passengers.

A total of five thousand six hundred and thirty two (5632) vehicles were observed in an effort to view seat belt use by front occupants. The data was classified based on person type (drivers or passenger), vehicle type (private cars, taxi, pick-up, buses, luxury buses, light and heavy trucks and articulated vehicles) and seat usage. Data was collected between 0700hrs and 1800hrs on the

13th of October, 2013. Though the day started on a rainy note, it later cleared out and was clement for the remaining part of the day. A U-turn on the Enugu-Port Harcourt route was selected while the observation point for the Port Harcourt-Enugu was conducted at a black spot (large porthole) close to an intersection (Udeagbala Road) along the highway. At these points, vehicles move slower allowing observers to accurately record seat belt usage and other information. Every second vehicle approaching from Enugu road and those heading towards Enugu road were selected regardless of vehicle type. This strategy provided enough time for the observer to complete data recording before the next vehicle to be sampled arrives.

The response on the questionnaire was analyzed using the percentage method as data was collected, presented and analyzed in frequencies and as well converted to percentages for respective vehicle categories.

3. Results and Discussion

Table 3.1: Seat Belt Compliance Level along ENU-PHC Traffic Corridor for Private Car Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	445	34.4	Average Compliance
Drivers Without Seat Belt	365	28.3	
Passengers On Seat Belt	264	20.4	
Passengers Without Seat Belt	218	16.9	
Total	1292	100	

Source: Field work, 2013

Table 3.1 shows the level of compliance of seat belt in ENU-PHC traffic corridor for the private category. It is revealed that out of One thousand, two hundred and ninety two (1,292) occupants in the private car vehicles surveyed, Four hundred and forty five (445) drivers were found using seat belts which represented 34.4% of the survey. Three hundred and sixty five (365) drivers were not using seat belt which represented 28.3% of the survey. On the other hand, two hundred and sixty four (264) passengers were observed to use the seat belt while two hundred and eighteen (218) were not using seat belts which represented 20.4% and 16.9% respectively of the passenger occupant surveyed in this category. This implies that the compliance level of front seat with the Federal Road Safety Commission (FRSC) seat belt regulation in this category is average since the number of seat belt usage among the drivers and passenger occupant are higher than the non-users of seat belt for both driver and passenger occupants surveyed.

Table 3.2: Seat Belt Compliance Level along ENU-PHC Traffic Corridor- Taxi Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	18	4.3	Very Low Compliance
Drivers Without Seat Belt	206	48.9	
Passengers On Seat Belt	18	4.3	
Passengers Without Seat Belt	179	42.5	
Total	421	100	

Source: Field work, 2013

Table 3.2 illustrates the percentage compliance with the FRSC seat belt regulation along the Enugu-Port-Harcourt traffic corridor for TAXIs. The survey revealed that a total of Four hundred and twenty one (421) TAXI occupants were surveyed, eighteen (18) drivers were found belted-up which represented 4.3% of the survey, two hundred and six (206) drivers were not on seat belt and this represented 48.9 percent of the survey. However, eighteen (18) passengers were observed to have worn seat belt while one hundred and seventy nine (179) were not compliant which represented 4.3% and 42.5% respectively. This implies that the average usage of seat belt by vehicle occupants in this category is very low.

Table 3.3: Seat Belt Compliance Level along ENU-PHC Traffic Corridor- Pick-Up/Van Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	60	20.3	Low Compliance
Drivers Without Seat Belt	99	33.4	
Passengers On Seat Belt	55	18.6	
Passengers Without Seat Belt	82	27.7	
Total	1664	100	

Source: Field work, 2013

In table 3.3, vehicle occupants for the PICK-UP/VAN category along ENU-PHC route exhibited a LOW COMPLIANCE with the seat belt regulation. It was discovered that out of one thousand six hundred and sixty four (1664) PICK-UP/VAN vehicles surveyed, sixty drivers (60) and fifty five (55) passengers fastened their seat belt which represented 20.3% and 33.4% compliance respectively, while ninety nine (99) drivers and eighty two (82) passengers with 33.4% and 27.7% compliance respectively did not fasten their seat belt.

Table 3.4: Seat Belt Compliance Level along ENU-PHC Traffic Corridor- Mini Bus Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	154	8.9	Very Low Compliance
Drivers Without Seat Belt	770	44.6	
Passengers On Seat Belt	114	6.6	
Passengers Without Seat Belt	688	39.9	
Total	1726	100	

Source: Field work, 2013

Table 3.4 depicts the compliance rate of MINI BUS vehicle category along the ENU-PHC traffic corridor. For a number of MINI BUSES totaling one thousand seven hundred and twenty six (1726) vehicles of the aforementioned category observed, one hundred and fifty four (154) drivers, one hundred and fourteen (114) passengers used the seat belt which represented 8.9% and 6.6% compliance respectively while seven hundred and seventy (770) drivers alongside six hundred and eighty eight (688) front seat passenger were not belted-up. This however, shows a non-compliance rate of 44.6% and 39.9% respectively. This depicts a very low compliance level for the MINI BUS category.

Table 3.5: Seat Belt Compliance Level along ENU-PHC Traffic Corridor- Luxury Bus Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	5	4.3	Very Low Compliance
Drivers Without Seat Belt	54	46.6	
Passengers On Seat Belt	4	3.4	
Passengers Without Seat Belt	53	45.7	
Total	116	100	

Source: Field work, 2013

Table 3.5 shows the level of compliance of seat belt usage in Enugu-PHC traffic corridor for the LUXURY BUS category. We discovered that out of one hundred and sixteen (116) front seat occupants in the luxury buses surveyed, only five (5) drivers were on seat belt which represented 4.3% of the survey. Fifty four (54) drivers were not on seat belt which represented 46.6% of the survey. On the other hand, four (4) front seat passengers were observed to have used the seat belt while fifty three (53) front seat passengers were not using the seat belt which represented 3.4% and 45.7% respectively. This shows a low degree of compliance since the number of seat belt usage among the drivers and front seat passengers are lower than that of the non-users of seat belt for both drivers and front seat passengers.

Table 3.6: Seat Belt Compliance Level along ENU-PHC Traffic Corridor- Light Truck Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	11	6.0	Very Low Compliance
Drivers Without Seat Belt	93	50.8	
Passengers On Seat Belt	8	4.4	
Passengers Without Seat Belt	71	38.8	
Total	183	100	

Source: Field work, 2013

In table 3.6, vehicle occupants for the LIGHT TRUCK category along ENU-PHC route exhibited a LOW COMPLIANCE with the seat belt regulation. It was discovered that out of one hundred and eighty three (183) LIGHT TRUCK vehicles surveyed, eleven (11) drivers and eight (8) passengers fastened their seat belt which represented 6.0% and 4.4% compliance respectively, while ninety three (93) drivers and seventy one (71) passengers with 33.4% and 27.7% compliance respectively did not fasten their seat belt.

Table 3.7: Seat Belt Compliance Level along ENU-PHC Traffic Corridor- Big Truck Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	16	5.6	Very Low Compliance
Drivers Without Seat Belt	139	48.3	
Passengers On Seat Belt	11	3.8	
Passengers Without Seat Belt	122	42.4	
Total	288	100	

Source: Field work, 2013

Table 3.7 depicts the compliance rate of BIG TRUCK vehicle category along the Enugu-PHC traffic corridor. For a number of BIG TRUCK totaling two hundred and eighty eight (288)

vehicles of the aforementioned category observed, sixteen (16) drivers, eleven (11) front seat passengers used the seat belt which represented 5.6% and 3.8% compliance respectively while one hundred and thirty nine (139) drivers alongside one hundred and twenty two (122) front seat passenger were not belted-up. This however, shows a non-compliance rate of 44.6% and 39.9% respectively. This depicts a very low compliance level for the BIG TRUCK category.

Table 3.8: Seat Belt Compliance Level along ENU-PHC Traffic Corridor- Articulated Truck Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	12	2.1	Very Low Compliance
Drivers Without Seat Belt	293	50.8	
Passengers On Seat Belt	14	2.4	
Passengers Without Seat Belt	258	44.7	
Total	577	100	

Source: Field work, 2013

A brief glance at table 3.8 reveals a very low rate of compliance with the seat belt regulation. It was discovered in this category that out of five hundred and seventy seven occupants sampled in this category, an all time low number of twelve (12) drivers were seen with their seat belt fastened which represents 2.1% of the survey and a total number Two hundred and ninety three drivers were not on seat belt (50%). However, fourteen (14) front seat passengers were seen on seat belt while two hundred and fifty eight (258) were non-compliant to the seat belt regulation and this represented 2.4% and 44.7% respectively of the sample surveyed. One can see that drivers and passengers in this category recorded the lowest level of compliance to the seat belt regulation.

Table 3.9: Seat Belt Compliance Level along PHC-ENU Traffic Corridor- Private Car Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	449	25.0	Average Compliance
Drivers Without Seat Belt	345	19.2	
Passengers On Seat Belt	329	18.3	
Passengers Without Seat Belt	647	37.5	
Total	1797	100	

Source: Field work, 2013

Table 3.9 illustrates the use of seat belt along PHC-ENU traffic corridor for the private category of cars. Out of one thousand seven hundred and ninety seven private car occupants surveyed, four hundred and forty nine (449) were found using seat belts which represented 25% of the survey while drivers not wearing their seat belt amounted to three hundred and forty five (345) at 19.2%. Conversely, three hundred and twenty nine (329) front seat passengers were observed to have fastened their seat belt while six hundred and forty seven (647) front seat passengers were not and this represented 18.3% and 37.5% respectively.

Table 3.10: Seat Belt Compliance Level Along PHC-ENU Traffic Corridor- Taxi Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	41	9.0	Very Low Compliance
Drivers Without Seat Belt	192	42.2	
Passengers On Seat Belt	15	3.3	
Passengers Without Seat Belt	207	45.5	
Total	455	100	

Source: Field work, 2013

Table 3.10 represents the extent to which the Federal road safety commission seat belt regulation is being complied with on PHC-Enugu traffic corridor for the TAXI vehicle category. It was gathered that for the four hundred and fifty five (455) taxi vehicles surveyed, forty one (41) drivers were found to be on seat belt which represented 9.0% of the survey; one hundred and ninety two drivers were not using seat belt which represented 42.2%. On the other hand fifteen (15) passengers were found using the seat belt while two hundred and seven (207) passengers, were observed not to have used the seat belt which represented 3.3% and 45% respectively. The implication of this is that the coverage of seat belt usage/compliance in this category is very low since the number of seat belt usage among drivers and passengers occupant is very low than the non-users of seat belts.

Table 3.11: Seat Belt Compliance Level along PHC-ENU Traffic Corridor- Pick-Up/Van Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	54	12.2	Very Low Compliance
Drivers Without Seat Belt	159	36.0	
Passengers On Seat Belt	35	7.9	
Passengers Without Seat Belt	194	43.9	
Total	442	100	

Source: Field work, 2013

Table 3.11 represents the percentage compliance with the FRSC seat belt regulation along the PHC-ENU traffic corridor for PICK-UP/VAN. The survey revealed that a total of Four hundred and forty two (442) PICK-UP/VAN occupants were surveyed; fifty four (54) drivers were found belted-up which represented 12.2% of the survey, one hundred and fifty nine (159) drivers were not on seat belt and this represented 36.0% of the survey. However, thirty five (35) passengers were observed to have worn seat belt while one hundred and ninety four (194) were not compliant which represented 7.9% and 43.9% respectively. This implies that the average usage of seat belt by vehicle occupants in this category is very low.

Table 3.12: Seat Belt Compliance Level along PHC-ENU Traffic Corridor- Mini Bus Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	137	7.0	Very Low Compliance
Drivers Without Seat Belt	761	38.9	
Passengers On Seat Belt	150	7.7	
Passengers Without Seat Belt	910	46.5	
Total	1958	100	

Source: Field work, 2013

Table 3.12 reveals the compliance rate of MINI BUS vehicle category along the PHC-ENU traffic corridor. For a number of MINI BUSES totaling one thousand nine hundred and fifty eight (1958) vehicles of the aforementioned category observed, one hundred and thirty seven (137) drivers, one hundred and fifty (150) passengers used the seat belt which represented 7.0% and 7.7% compliance respectively while seven hundred and sixty one (761) drivers alongside nine hundred and ten (688) front seat passengers were not belted-up. This however, shows a non-compliance rate of 38.9% and 46.5% respectively. This depicts a very low compliance level for the MINI BUS category.

Table 3.13: Seat Belt Compliance Level along PHC-ENU Traffic Corridor- Luxury Bus Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	2	0.6	Very Low Compliance
Drivers Without Seat Belt	165	49.4	
Passengers On Seat Belt	1	0.3	
Passengers Without Seat Belt	166	49.7	
Total	334	100	

Source: Field work, 2013

The table 3.13 shows the level of compliance of seat belt usage in PHC-ENU traffic corridor for the LUXURY BUS category. We discovered that out of one hundred and sixty six (166) front seat occupants in the luxury buses surveyed, only two (2) drivers were on seat belt which represented 0.6% of the survey. One hundred and sixty five (165) drivers were not on seat belt which represented 49.4% of the survey. On the other hand, one (1) front seat passengers was observed to have used the seat belt while one hundred and sixty six (166) front seat passengers were not using the seat belt which represented 0.3% and 49.7% respectively. This shows a low degree of compliance since the number of seat belt usage among the drivers and front seat passengers are lower than that of the non-users of seat belt for both drivers and front seat passengers.

Table 3.14: Seat Belt Compliance Level along PHC-ENU Traffic Corridor- Light Truck Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	22	9.2	Very Low Compliance
Drivers Without Seat Belt	88	36.7	
Passengers On Seat Belt	21	8.8	
Passengers Without Seat Belt	109	45.4	
Total	240	100	

Source: Field work, 2013

In table 3.14, vehicle occupants for the LIGHT TRUCK category along PHC-ENU route exhibited a LOW COMPLIANCE with the seat belt regulation. It was discovered that out of two hundred and forty (240) LIGHT TRUK vehicles surveyed, twenty two (22) drivers and twenty one (21) passengers fastened their seat belt which represented 9.2% and 8.8% compliance respectively, while eighty eight (88) drivers and one hundred and nine (109) passengers with 36.7% and 45.4% non-compliance respectively did not fasten their seat belt.

Table 3.15: Seat Belt Compliance Level along ENU- PHC Traffic Corridor- Big Truck Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	16	4.7	Very Low Compliance
Drivers Without Seat Belt	149	46.3	
Passengers On Seat Belt	14	4.1	
Passengers Without Seat Belt	163	47.7	
Total	342	100	

Source: Field work, 2013

Table 3.15 above depicts the compliance rate of BIG TRUCK vehicle category along the PHC-ENU traffic corridor. For a number of BIG TRUCKS totaling three hundred and forty two (342) vehicles of the aforementioned category observed, sixteen (16) drivers, fourteen (14) front seat passengers used the seat belt which represented 4.7% and 4.1% compliance respectively while one hundred and forty nine (149) drivers alongside one hundred and sixty three (163) front seat passenger were not belted-up. This however, shows a non-compliance rate of 46.3% and 47.7% respectively. This depicts a very low compliance level for the BIG TRUCK category.

Table 3.16: Seat Belt Compliance Level along PHC-ENU Traffic Corridor- Articulated Truck Category

Variable	Frequency	Percentage	Remark
Drivers On Seat Belt	27	4.1	Very Low Compliance
Drivers Without Seat Belt	289	44.3	
Passengers On Seat Belt	24	3.7	
Passengers Without Seat Belt	312	47.9	
Total	652	100	

Source: Field work, 2013

A brief glance at table 3.16 reveals a very low rate of compliance with the seat belt regulation. It was discovered in this category that out of six hundred and fifty two occupants sampled in this category, an all time low number of twenty seven (27) drivers were seen with their seat belt fastened which represents 4.1% of the survey and a total number Two hundred and eighty nine (289) drivers were not on seat belt (44.3%). However, twenty four (24) front seat passengers were seen on seat belt while three hundred and twelve (312) were non-compliant to the seat belt regulation and this represented 3.7% and 47.9% respectively of the sample surveyed. One can see that drivers and passengers in this category recorded the lowest level of compliance to the seat belt regulation.

Table 3.17: Overall Seat Belt Wearing Rates in ENU-PHC and PHC-ENU Traffic Corridor

Occupant Group	No. Observed	No. On Seat Belt	Usage Rate
All Occupants	10244	2542	24.8%
Drivers	5632	1465	26.0%
Front Seat Passengers	4612	1077	23.4%

Source: Field work, 2013

Table 3.17 gives the aggregate seat belt usage rate derived from the total number of vehicle occupants, drivers and front seat passengers that were on belt along the survey route, ENU- PHC and PHC- ENU respectively.

However, in a disaggregate manner it was discovered that along ENU-PHC expressway 445 drivers were on seat belt while along PHC-ENU expressway recorded 449. This however, shows PHC-ENU has a slight increase in terms of compliance than ENU-PHC. The reason may be that private vehicle owners that ply the route are mainly civil servants heading to their places of work and in this category of people are mostly educated persons who are aware of the importance of seat belt.

On the other, passengers in PHC-ENU expressway recorded a higher compliance i.e. 329 as against 264 recorded in Private vehicle carrying passengers. This difference could be attributed to the fact that Private vehicle drivers along PHC-ENU fastened their seat belt mores and would advise their passengers to do same.

In the Taxi category, drivers along ENU-PHC traffic corridor recorded a low compliance (18) with the seat belt regulation while drivers along PHC-ENU route recorded an average compliance (41). One would want to know why there is this difference between the two corridors. The answer may not be farfetched as the Federal Road Safety Corps (FRSC) personnel are stationed not too far from the point of observation. Furthermore, Taxi vehicles having crossed the observant eyes of the law enforcement agents along ENU-PHC route and heading towards Osioma their stopping point, aptly remove their seat belts as they no longer expect the prying eyes of traffic personnel. More so, passengers on both ENU-PHC and PHC-ENU traffic corridors recorded a low compliance with the seat belt regulation. A near explanation for the low compliance could be that since the drivers seldom fasten their seat belts, passengers tend to care less.

In the Pick-Up/Van Category, a closer look at the drivers' level of compliance with the seat belt regulation along ENU-PHC is higher than that of PHC-ENU with both having 60 and 54 respectively. It would be worthy of note to state that whereas most of the Pick-up/Van vehicles drivers that had their seat belts fastened were company vehicle, load carrying pick-ups and some security patrol vehicles were non-compliant. The passengers on this category along ENU-PHC registered an average compliance (55) PHC-ENU recorded a low compliance (35).

In the Mini Bus Category, drivers' compliance level along ENU-PHC may seem to be slightly higher than that of PHC-ENU but a closer look at the totality of drivers observed, one would quickly figure out that the non-compliance rate on both corridors is outrageous which simply makes the compliance rate insignificant as compared with the non-compliance level. This simply means that enforcement needs to be stepped up on vehicles in this category. The passengers revealed a similar trend. It was observed that most BUS drivers who fastened their seat belt were employees to registered commercial fleet operators. Due to their seat belt compliance policy, drivers compel their front seat occupants to put on their seat belts. Private commercial vehicle owners who fasten their seat belt however influence their front seat occupants to be on seat belt. Moreover, the compliance rate of passengers towards seat belt is very low.

In the Luxury Bus Category, the general compliance of both drivers and passengers were very poor in both corridors. This goes a long way to suggest that luxury bus occupants gave little or no regard for seat belt.

The Light Truck Category shows few drivers were compliant with the seat belt regulation. However, drivers plying the PHC-ENU traffic corridor registered a higher rate of 22 against 11 from ENU-PHC traffic corridor. It was further observed that most light trucks that had their driver on seat belt equally had their passengers on seat belt though the compliance rate was higher in PHC-ENU traffic corridor than in ENU-PHC with both sides recording 21 and 8 respectively.

In the Big Truck Category, PHC-ENU traffic corridor has the same number of drivers that complied with the seat belt regulation with ENU-PHC. There is however a difference of ten when it comes to the number of drivers that did not comply as ENU-PHC recorded 139 non-compliant drivers while PHC-ENU recorded 149 non-compliant drivers. Passengers of the BIG TRUCK category do not seem to be interested in putting on their seat belt. Maybe they see themselves as in vehicles higher than most vehicles and untouchable during Road Traffic Crash (RTC). With ENU-PHC traffic corridor recording 11 while PHC-ENU registering 14, PHC-ENU traffic corridor happens to have a higher compliance.

In the Articulated Truck Category, drivers plying PHC-ENU notwithstanding the very low compliance rate have a higher number of drivers on seat belt than ENU-PHC route. PHC-ENU recorded 27 seat belt compliant drivers while ENU-PHC recorded 12. It was observed that passengers in this category of vehicle equally recorded a low level of compliance with PHC-ENU still leading with 24 recorded as the number of seat belt compliant passengers while ENU-PHC had 14 passengers on seat belt.

In Summary, it was observed that vehicles on the PHC-ENU traffic corridor were more compliant with the Federal Road Safety Commission (FRSC) seat belt regulation than ENU-PHC traffic corridor. This could be attributed to the following reasons.

- a) Presence of law enforcement agencies lined up after the observation/counting point.
- b) Vehicle occupants along ENU-PHC corridor after crossing the various law enforcement agencies before the observation/counting point relieve themselves of the seat belt as some were seen removing the seat belt.
- c) Furthermore, there is this false belief that was stumbled upon during the course of investigation that fastening of seat belt is not necessary one is in a city, that it is only worn while on an express road.
- d) Vehicles plying PHC-ENU are mainly civil servants who wouldn't want to be found wanting in any road traffic offence thereby wasting their time on the road.
- e) Also, while vehicle occupants on PHC-ENU traffic corridor aware of the law enforcers ahead and whom are mainly civil servants who wouldn't want to waste their hard earned salary on paying fine for traffic offences, their counterparts on ENU-PHC traffic corridor are mainly business men and woman who think they can use their money to by their way out of any traffic offence apprehended for.

In the light of the above, it is equally pertinent to note the policy implications of compliance/non-compliance of seat belt regulation in Nigeria. The effort of this research sought to identify the level of compliance with the Federal Road Safety Commission (FRSC) seat belt regulation and its implications to the wellbeing of vehicle occupants. The mandatory seat belt law is among the long list of highway and vehicle safety regulations aimed at reducing the risk of injury in road traffic crash (RTC). Results showed various factors that affect the use of seat belt by vehicle occupants while a vehicle is in motion.

According to the United States National Centre for injury prevention and control, a division of unintentional injury prevention, Motor vehicle crashes are the leading cause of death in the first three decades of American's lives. In 2009 alone, crashes killed over 33,000 people and injured another 2.2 million—more than 70% of these were in passenger vehicles and trucks.

More than half of the people killed in car crashes were not restrained at the time of the crash. Wearing a seat belt is the most effective way to prevent death and serious injury in a crash. From the above, it is very clear that failure to restrain oneself with the seat belt while a vehicle is in motion has significant impact on the severity of injury during any road traffic crash. However, the issue of non-compliance with the seat belt legislation in Nigeria is a general challenge facing not only policy makers but also traffic law enforcement agents and all stakeholders that make use of the road. The situation should therefore be improved upon as a better seat belt use culture would save lives and equally make the emergency wards less occupied.

4. Conclusion and Recommendations

Based on the information gathered from the literature review as well as the observation and attitudinal survey data the following conclusion may be drawn: On Seat Belt Usage along ENU-PHC and PHC-ENU Traffic Corridor, the road side observation survey of seat belt use revealed that wearing seat belt along ENU-PHC and PHC-ENU traffic corridor is very low. The overall wearing rate for the aforementioned routes was 24.8%, 26.0% and 23.8% for all occupants, drivers and front seat passengers respectively. The overall wearing rates were consistently higher for drivers than for front seat passengers in most vehicle categories and route. Concerning vehicle type such as private cars than vehicle types such as taxis, pick-up/van, buses, minibuses, trucks, articulated vehicles.

The Reasons for Non-Use of Seat Belts may be that majority of respondents were not ignorant of the seat belt law and were aware of the benefits of using it. Many were also aware of the penalty and dangers associated with non-use. This degree of awareness is a good indication that the relevant authorities especially the Federal Road Safety Corps (FRSC) is at work. However, many vehicle occupants think that seat belt use is restricted to expressway and is not applicable inside the cities.

Discomfort was also identified as one of the factors militating against the use of seat belt along this Corridor. This may be due to the warm tropical climatic conditions. Non availability or Faulty seat belts was part of the reasons for non-seat belt use with 12.6% of the vehicles not fitted with seat belts while 5.8% and 48.5% the vehicles "Always" and "Sometimes" experience seat belt defects. It was also observed from the survey that some law enforcement agent show

serious laxity as they sometimes turn blind eyes to erring vehicle occupants. Hence, we make the following recommendations:

- That the current study recommends for enforcement officials to pay close attention to taxis, buses, luxury buses, pickup/vans, trucks and articulated vehicle occupants who tend to significantly show lower seat belt use since this can save more lives when these types of vehicles get involved in traffic crashes.
- There should be a comprehensive and sustained education and enforcement programme in the ENU-PHC/PHC-ENU traffic corridor and indeed, in the country, to increase compliance.
- That driver should encourage their passengers to use the seat belts through polite announcement or information at all times.
- There should be mandatory retrofitting of seat belts in vehicles that do not have seat belts.
- There should be a comprehensive and sustained education and enforcement programme in the metropolis and on the roads to increase compliance.
- Enhanced enforcement of existing seat belt laws by government so as to better support seat belt laws by either increasing the average number of citations each officer issues or by increasing the number of officers on patrol. These measures are supported by publicity campaigns, like the successful “Click It or Ticket” initiative. Research has shown that enhanced enforcement programs increase seat belt use by a median of 16 percentage points. Countries that follow this model and implement these programs will increase seat belt use.
- Increased fines for seat belt violations: Well-enforced seat belt laws work because most people would rather buckle up than possibly pay a fine. But in many states, fines for violating seat belt laws are so small that they don’t motivate people to wear their seat belts. Increasing a seat belt fine from N5 to N100 can increase seat belt use by more than 10 percentage points. Even a modest increase can make a difference— for instance; an increase from N2000 to N10000 can increase belt use by 3 to 4 percentage points. States should consider increasing fines to a level that will encourage seat belt use.
- Policies to encourage vehicle manufacturer to make seat belt more comfortable for especially pregnant women.
- Provision of road furniture such as electronic bill boards that always reminds people of the need to put on their seat belts. The presence of road furniture such as bill boards, flyers, posters and electronic boards that display seat belt use will constantly remind vehicle occupants on the need to fasten up their seat belt.

References

- [1] Bendak, S. (2005). Seat Belt Utilization in Saudi Arabia and Its Impact on Road Accident Injuries. *Accident Analysis and Prevention*. 37(2): 367- 71. Elsevier.
- [2] Blincoe, L.J., Delia Hendrie, M.A., Ted, R.M. and Rebecca, S.S. (2002a). Quality- Adjusted Life Years Lost to Road Crash Injury: Updating the Injury Impairment Index. *Association for the Advancement of Automotive Medicine* (55): 365- 377.
- [3] Blincoe, L.J., Seay, A.G., Zaloshnja, E., Miller, T.R., Romano, E.O., Luchter, S. and Spicer, R.S. (2002b). *The Economic Impact of Motor Vehicle Crashes 2000 NHTSA Technical Report*. U.S. Department of Transportation, National Highway Traffic Safety Administration Washington D.C. 20590

- [4] FIA foundation (2009). Seat-belts and child restraints: a road safety manual for decision-makers and practitioners. www.fiafoundation.org. Accessed September 12, 2015
- [5] Hobbs, R.J., and Harris, J.A. (2001). Restoration Ecology: Repairing the Earth's Ecosystems in the New Millenium. *The journal of the Society for Ecological Restoration* 9 (2): 239- 246
- [6] Mackay, H. (ed). (1997). *Consumption and Everyday Life*. Culture Media and Identity Series. (5). SAGE.
- [7] Murray, C.J.L. and Lopez, A.D. (1996). *The Global Burden of Disease*. The Harvard School of Public Health, the World Health Organization and the World Bank.
- [8] Nambisan, S.S and Vasudevan, V. (2007). Is seat belt usage by front seat passengers related to seat belt usage by their drivers? *Journal of Safety Research*, 38 (5): 545- 55.
- [9] Peden,M., Scurfield R., Sleet, D., Mohan, D., Hyder, A.A., Jarawan, E. and Matters, C. (eds). (2004). *World Report on Road Traffic Injury Prevention*. World Health Organization, Geneva.

*Corresponding author.

E-mail address: elibechibu@ yahoo.com