International Journal of New Technology and Research (IJNTR)
ISSN:2454-4116, Volume-3, Issue-4, April 2017 Pages 55-62

Assessment of Road Traffic Violations in Port Harcourt Metropolis, Nigeria

G.C. Emenike, D.N. Akpu

Abstract— The study examined the impact of traffic violations on road transportation in Port Harcourt Metropolis, Port Harcourt, Nigeria. The study made use of structured questionnaire which was administered to drivers in the six traffic zones created by the Rivers State Government. Also, crash data from Federal Road Safety Commission (FRSC) between 2005 and 2015 was made use of in the study. Inferential and descriptive statistical methods were utilized for data analysis. Findings showed that speed violation (33.0%) and dangerous driving (23.0%) were the most occurring traffic violations in Port Harcourt City. The study showed that all major junctions in Port Harcourt City were identified as areas prone to traffic violations. Majority (31.8%) agreed that drivers' attitude to reduce travel time or saving fuel was the cause of traffic violation while 48.12% and 31.38% agreed that commercial drivers and private drivers were the types of drivers largely prone to traffic violation. However, 86.2% understood round about signs, 82.43% understood T-Junction, 71.55% understood pedestrian crossing while 32.22% understood double bend and 33.1% understood narrow bridge. No stopping sign (47.7%) was the least understood in regulatory signs while the knowledge of the drivers on information signs was higher for filling station (92.05%) and telephone (phone booth) (80.8%). Similarly, No crossing sign (38.1%) was the least understood sign in road markings while more than 85% understood all the traffic lights. The study recommended among others that the traffic agencies in the city should enhance the enforcement of traffic rules and ensure that every vehicle plying the city's highway is fixed with speed limiting devices.

***Index Terms*—Crash Data, Information Signs, Traffic Violation, Traffic Rules**

I. INTRODUCTION

Rules and regulations exist to discourage and punish indiscipline and unsafe acts on the road, in Nigeria. There are traffic laws creating traffic offences as well as penalties at different levels of governance to discourage traffic violation (FRSC, 2007). A violation is an intentional departure from routines which are there to protect the person from danger; these routines include road traffic rules (Forward, 2013). In Nigeria, road safety laws violators violates mostly the use of seatbelts, exceeding expected speed limits, reckless driving, use of vehicles with unauthorized plate number, jettisoning the use of fire extinguisher, overtaking at ill points, overloading, phoning while on wheal and failure to comply with traffic lights and signs (FRSC, 2012; 2016; Anyanwu et al., 2016). Al-Eideh (2016) listed these violations as excessive speeding frequent and unsafe lane changes, failure to signal, lane blocking, tailgating, disregard for traffic control, driving against traffic, aggressive use of horns, use of provocative gestures, non-use of seat belt and verbal abuse, creation of multiple lanes that narrows into a junction and on off road space. The United Sates National Highway Traffic Safety Administration (NHTSA) identified symptoms of traffic law violations as excessive use of horns, flashing headlights excessively at oncoming traffic, use of cell phone while driving, aggressive driving and tailgating. Federal Road Safety Commission (2008), listed other offences as, assaulting marshal on duty, drivers' license violation, drunk and driving, driving, use of worn out tyres, excessive smoke emission and road marking violation among other.

Despite the existence and enforcement of traffic laws, traffic violations had continued to increase on our roads both globally and in Nigeria. Research conducted in the African continent, shows that about 60% of drivers do not use seat belt when driving, 50% in Nigeria and about 99% of drivers in Kenya preferred driving without the use of seat belt while the level of adoption of seat belt by rear passengers is very low in these countries and child restrains are highly over looked (Peltzer, 2008). There is very high level of relegation of traffic rules in Nigeria ranging from ignoring speed limits, traffic signs, therefore drivers engage in dangerous overtaking, over speeding, aggressive driving, non use of seatbelt among others. While some park their vehicles with less consideration to other road users (Onuka and Akinyemi, 2012). Furthermore, on average nationally, the percentage of persons driving under the influence of alcohol rose from 1.8% in 2002 to 2.1% in 2003. Driving against the traffic lights has been identified as the major factor resulting to crashes of vehicles in the urban centers of the United States It is one of the most frequently violated traffic law in the world today (Peltzer, 2008).

Motorists often commit a combination of these offences which endanger other person's life and properties because most of the drivers have no regard for other road users and use the vehicle to express their anger and frustration. WHO (2004) and Jafarpour and Rahimi-Movaghar (2014) have identified aggressive driving as a major factor contributing to the death of 1.2 million people annually. Uzondu and Ikeogu (2013) also assert that most traffic accident occurs in Nigeria because of failure of commuters to obey traffic rules and regulations. In most cities in Nigeria, an average driver has a habit of violating traffic rules and regulations in which the commercial motorcyclists are not exempted (FRSC, 2012; Sumaila, 2013). The agency furthermore asserts that despite the presence of traffic warden on the junctions of major roads and the installation of street lights most drivers still do not obey these apparatus put in place. Studies on traffic violations have been done in some places

G.C. Emenike, Department of Geography and Environmental Management, University of Port Harcourt, Port Harcourt, Nigeria.
C.A. Kanu Department of Geography and Environmental Management, Port Harcourt, Nigeria

but such study is rare in Port Harcourt City. Against this background, the present study examined the impact of road traffic violation on road transportation in Port Harcourt Metropolis.

II. MATERIALS AND METHODS

The study was carried out in Port Harcourt Metropolis, Rivers State, Nigeria. Port Harcourt is located in latitudes between 4o 44' 58.8''N and 4o 56' 4.6''N and longitudes between 6o 52' 7.2''E and 7o 7' 37.7''E. Port Harcourt experiences a tropical humid climate with lengthy and heavy rainy seasons and very short dry seasons. The city is endowed with abundant sunshine and the average temperatures are between 25°C-28°C in the city (Ogbonna et al., 2007). Port Harcourt is dominated by low lying coastal plains, which structurally belongs to the sedimentary formation of the recent Niger Delta, with an elevation less than 15.24m (Oyegun and Adeyemo, 1999; Chiadikobi et al., 2011). Drainage of the study area is poor because of the presence of many surface water and heavy rainfall between 2000mm and 2400mm (Mmom and Fred-Nwagwu, 2013). However, Bonny River, New Calabar River, creeks and streams drain Port Harcourt Metropolis and all enter into the Atlantic Ocean through estuaries (Chiadikobi et al., 2011). The study area is underlain by the Coastal Plain sands having its place from the Pleistocenic Formation (Nwakoala and Warmate, 2014). The area is occupied by rainforest, freshwater swamp and mangrove swamp in some cases, which has been drastically modified by human activities. Generally, the vegetation is consistently nourished with high rainfall and high temperature which provide favourable condition for the growth of varieties of tall and big trees like Swietenia macrophylla, Triplochiton scleroxylon, Terminalia superba, Elaeis guineensis and Raphia hookeri (Eludoyin et al., 2012). The soils of the area can be categorized as freshwater brown loams and sandy loams. Road transport is the most dominate transport mode in the region making buses cars, motorcycles serve as the prevailing means of movement by the urban residents. The city has the second largest seaport after Lagos and about 483 roads identified which can be sub divided within roads in the city (Kio-Lawson and Dekor, 2014). These roads include the three trunk A roads which are Port Harcourt-Aba Express Road, Ikwerre Road and the East-West Road. Feeder roads include Rumuola Road, Elekahia/Market Road, Woji/Old Aba Road, Olu-Obasanjo Road, Ogbunabali Road, Kaduna Street, Okporo Road, Igwuruta Road, Trans Amadi Road, Elelenwo Road, Choba NTA Road, Rumuomoi/Rumuigbo psychiatric Hospital Road and Aggrey/Churchill/Harold Wilson Drive, G.R.A. road.

Vehicular traffic counts carried out in the six traffic zones was estimated to be 27,510. Taro Yamane formula was applied to get the sampled population which was 394 (Yamane, 1967). Zone one had fifty (50) respondents which consist of Borokiri-Lagos bus stop-old G.R.A-Eastern bye passes- waterlines–Garrison-Ogbunabali-Eastern bypass roundabout-Old GRA axis Seventy one (71) respondents in zone two consisting of Abuloma-FGGC-LNG-Mother cat-Trans Amadi-Odilli Road-Bridge-Nwaja junction-YKC-slaughter-Woji-Elelenwo axis; Eighty four (84) respondents in zone three comprising UTC Junction-Mile1-Mile III-Elechi Beach-UST-Agip round-about– Agip Junction- Mgbuoshimini- Ada George-Elioparanwo- Iwofe- Wimpey- Ogbogoro axis. Eighty (80) respondents where sampled in zone four consisting of Rumukurushi-Shell-Elelenwo-Rumuomasi-Stadium road– Rumuola- Eleme junction-East/West road-Rumuodara-tank-Eneka–Eliozu-Rumuokoro axis. In zone five, fifty two (52) respondents where sampled, the zone consist of Ikoku junction-D/line-G.R.A-Presidential hotel-Rumuola-Orazi-Rumuokwuta-Mgbuoba–Rumuigbo/ Psychiatric hospital road. In zone six, fifty seven (57) respondents were taken, the routs on this zone are: Rumuokoro–Rumuoagholu-Rumuosi-Alakahia-Uniport–A luu-Choba Nkpolu/Rumuigbo-Rumuodomaya-Rukpokwu axis.

Thus, 394 copies of structured questionnaire were distributed across the six zones of traffic units using random sampling technique all motorists who ply the roads of Port Harcourt city. The questionnaire used was divided into four sections. Section A examines the driver's socio-economic characteristics such as age, sex, marital status educational background, driving as a job, driving experience etc.; Section B examines the respondents trip characteristics such as trip origin, trip destination, car ownership etc; Section C examines the awareness of respondents on traffic law. The section consists of mainly opinion questions seeking to understand respondent's awareness to traffic law; Section D examines the understanding of road traffic signs and markings by the drivers. This section is subdivided into three groups which comprises of traffic signs, traffic signals and road marking questions. Oral interview was also used to gather data from the officials of Federal Road Safety Commission (FRSC), Police Traffic Unit and Rivers State ministry of transport. Also interviewed were leaders of National Union of Road Transport Workers (NURTW) and drivers within the metropolis. Open-ended type of interview which allows respondents to express their opinion freely and in their own way and time was adopted. Both descriptive and inferential statistics were used in the data analysis. Descriptively, table and simple percentage were used to analyze the data. Inferential statistics including Spearman's rank correlation statistics and Chi Square were employed to test the hypotheses for acceptance or rejection.

III. RESULTS

A. Socio-Economic Characteristics of Respondents

Socio-economic characteristics of the respondents are presented in Table 1. The analysis shows that 84.9% were males and 15.1% were females. In terms of educational attainment, 23% had no formal education, 20.5% had primary education, 31.8% had secondary education, 8.8% had technical education while 15.9% had tertiary education. Of the total respondents, 39.7% were single, 47.3% were married, 5.9% were widow/widower while 7.1% were divorce. The age bracket of 44.8% of the respondents were between 18 and 39 years;, 43.1% were between 40 and 59 years while 12.1% were 60 years and above.

Table 1: Socio-Economic Characteristics of Respondents

Sex	**Frequency**	**Percentage (%)**
Male	203	84.9
Female	36	15.1
Total	**239**	**100.0**
Educational Status	**Frequency**	**Percentage (%)**
Non-formal Education	55	23.0
Primary	49	20.5
Secondary	76	31.8
Technical	21	8.8
Tertiary	38	15.9
Total	**239**	**100.0**
Marital Status	**Frequency**	**Percentage (%)**
Single	95	39.7
Married	113	47.3
Widow/ Widower	14	5.9
Divorce	17	7.1
Total	**239**	**100.0**
Age Bracket	**Frequency**	**Percentage (%)**
18-39	107	44.8
40-59	103	43.1
60-Above	29	12.1
Total	**239**	**100.0**

B. Types of Traffic Violation in the City

Types and number of occurrence of violations in Port Harcourt City between 2005 and 2015 from the Federal Road Safety Corps (FRSC) Traffic Crash Data Form is shown Table 2. These violations ranged from speed violation, dangerous driving, loss of control, dangerous overtaking, tyre burst (expired tyre), to road obstruction; and they were found to have caused lots of road accidents. Speed violation occurred in 259 times which constituted 33% of the total cause of crashes for the period. Other violations and their degree of occurrence includes: loss of control 68 times (9%), Dangerous driving 182(23%), Tyre burst/expired tyre 40 (5.1%), Brake failure 72 times (9.1%), wrongful overtaking 10(1.3%), Route violation 18(2.3), mechanically deficient vehicle 14(1.8%) etc. The results of these violations included crashes leading to death and injuries. Driving against traffic are mostly committed by commercial drivers in Port Harcourt City. The drivers are always in a rush to get to their destination in order to meet up with their daily returns to the owners of the bus or taxi and also satisfy their passengers who most times put pressure on the drivers to lessen their travel time, hence, the drivers frequently change from one lane to the other. The pattern of driving in the city shows that most commercial drivers tailgate (bumper to bumper) and overtake wrongly. There is no road in the metropolis devoid of traffic violation, although there are variation in the number of violators in the traffic zones, for example, making or receiving phone calls while driving without a hand-free set is common in the metropolis.

Table 2: Types of Violation in Port Harcourt

S/N	Violations (Causes of Road Traffic Crash)	Code	Number of Time(S) Occurred	Percentage (%)
1	Speed violation	SPV	259	33.0
2	Loss of control	LOC	68	9.0
3	Dangerous driving	DGD	182	23.0
4	Tyre burst	TBT	40	5.1
5	Brake failure	BFL	72	9.1
6	Wrongful overtaking	WOT	10	1.3
7	Route violation	RTV	18	2.3
8	Mechanically deficient vehicle	MDV	14	1.8
9	Bad road	BRD	15	1.9
10	Road obstruction	OBS	18	2.3
11	Dangerous overtaking	DOT	59	7.4
12	Overloading	OVL	4	0.5
13	Sleeping on steering	SOS	3	0.4
14	Driving under alcohol or drug	DAD	3	0.4
15	Use of phone while driving	UPWD	-	0.0
16	Fatigue	FTQ	3	0.4
17	Poor weather	PWR	5	0.6
18	Sign light violation	SLV	18	2.3
19	Others	OTH	1	0.1

Source: FRSC Crash Data (2005-2015)

C. Distribution of traffic violations among the traffic zones

Road traffic violation in Port Harcourt cannot be traced to any particular route; however, the reconnaissance survey and personal interview conducted on road traffic agencies in the various traffic zones revealed zone 3, zone 4, zone 5 as well as major junctions in the city as areas with high prevalence of traffic violation. In zone 3, Mile1 flyover, Mile 3 junction, Elechi Beach- UST axis, Agip round-about-Agip Junction, Elioparanwo /Ada George, Iwofe/Ogbogoro road axis are areas prone to violation. In zone 4, Eliozu junction, Rumuodara Artillery Axis, Rumuokoro - Nkpolu Axis along the East-West Road, Oil Mill/Eleme junction and Tank Axis are identified as traffic violation hotspots in the city. Regular traffic congestion occasioned by high rate of traffic violation is always noticed in Zone 5, the Ikoku Junction, G.R.A-Presidential hotel axis, Rumuola, Rumuokwuta, and Rumuigbo/Psychiatric Hospital junctions records a high number of violators in the city. However, Lagos bus-stop, Slaughter-Woji-Elelenwo axis, Rumuokoro, Rumuosi, Choba/uniport, Nkpolu-Rumuigbo, Rumuodomaya,and Rukpokwu junctions records occasional violation especially in the morning and evening rush hours of the day.

D. Reasons for Traffic Violation

Reasons for traffic violation are shown in Table 3 whereby 24.7% of respondents agreed on pressure from the passengers while 31.8% agreed that reduction of travel time in order to save fuel is the cause of traffic violation. However, 22.2% agreed on copying bad habits of other drivers and 21.3% attributed traffic violation by the motorists with poor knowledge of traffic signs.

Table 3: Reasons for Traffic violation

Reasons for Traffic violation	**Frequency**	**Percentage (%)**
Pressure from passengers	59	24.7
Reduction of travel time/Saving of fuel	76	31.8
Copying Bad Habits of Others	53	22.2
Poor knowledge of traffic signs	51	21.3
Total	**239**	**100.0**

E. Type of Drivers Largely Prone To Traffic Violation

Road traffic rules and regulation ensures orderliness among road users. Table 8 presents the response of drivers on the type or class of drivers prone to traffic violation in the city. The analysis shows that 31.38% said that private drivers violate traffic rule more in the city while 48.12% respondents chose commercial bus and taxi drivers as the reason, 12.97% of respondents attested to bullion van and escort vehicle drivers and 7.97% attributed the traffic violation to trailer/tanker/ truck drivers. This result indicate that that no class of drivers in the city is exempted from traffic violation whether private or commercial vehicle but traffic rules are mainly violated by drivers of commercial cars(taxis) and buses. These classes of vehicle drivers most times engage in reckless driving, over-speeding, frequent unsafe lane changing, driving against traffic, verbal abuse on other road users, tailgating etc. Drivers of bullion van as well as escort also constitute another class that violates traffic rules in the city, drivers of these categories of vehicles regularly violate traffic rules with the aid of the police or soldiers attached to them. They drive against traffic, blast siren while the uniform men attached to them force other motorists to pull away from the road. In the city, it is a known fact that these classes of drivers don't obey traffic rules and regulations especially when there is traffic gridlock. Apart from drivers of bullion van, escort as well as commercial taxis and buses, tanker drivers are another group that violate traffic rules commonly in the city, for example, regardless of the Rivers state law banning tankers and trailers from plying the road in the city between the hours of 7am and 6pm, the drivers still operates within these hours hence disobeying the traffic law. Furthermore, tanker drivers most times engage in indiscriminate parking especially along Iwofe/Rumuolumeni road and other roads in the city were petroleum tank farms are located. They park the trucks within the highway corridor thereby obstructing the flow of traffic on these routes.

Table 4: Type of Drivers Largely Prone to Traffic Violation

Type/class of Drivers	Frequency	Percentage (%)
Private	75	31.38
Commercial (Buses and Taxi)	115	48.12
Bullion vans/ Escorts	31	12.97
Trailer/tanker/Truck	18	7.97
Total	**239**	**100.0**

F. Influence of Time of Day on Traffic Violation

Extent of the influence of time within a day is shown in Table 5 whereby 34.31% agreed that time influences traffic violation to a very large extent, 43.51% said that time affects to a large extent; 16.32% attested that the influence of time on traffic violation was average while 5.86% said the influence was low. Personal interview conducted reveals that traffic violation in the city occur mostly between the hours of 7-9am and 4-6pm in the morning and evening hours respectively.

Table 5: Extent of the Influence of Time on Traffic Violation

Extent	Frequency	Percentage (%)
Very large extent	82	34.31
Large extent	104	43.51
Average extent	39	16.32
Low extent	14	5.86
Total	**239**	**100**

G. Effects of Traffic Violation

On the issue of impacts or consequences of traffic violation, data derived from the Federal Road Safety Corps (FRSC) Traffic Crash Data Form 2005-2015 containing violations (causes of crash), number of persons killed and number of persons injured was used (Table 6). On the other hand, driver's perception was also analysed (Table 7).

The analysis from FRSC data revealed that 338 persons consisting of 15.89% died, while 1,789 persons accounting for 84.11% were injured. Hence, the impacts of traffic violation between 2005 and 2015 in Port Harcourt resulted to a total of 2,127 casualties both the dead and injured. These deaths and injuries resulting from violations are huge and would have been averted.

Table 6 shows that 38.08%) said that crashes leading to deaths and injuries are impacts of traffic violation, while 49 respondents accounting for 20.50% choose arrest of offenders by law enforcement agents or payment of fine, 85 respondents which consist of 35.56% choose traffic congestion as impacts of violation in the city. Furthermore, 14 drivers consisting of 5.86% asserts that loss of man hour is the major impact of violation in Port Harcourt. According to the respondents traffic violators in Port Harcourt face a number of consequences like road traffic crash leading to injuries and deaths, arrest by road traffic law enforcement agencies and daily increase in road traffic congestion leading to loss of man hour in the city.

Table 6: Effects of traffic violation (crash) in Port Harcourt between 2005 and 2015

Impacts of violation	Number of persons involved	Percentage (%)
Death	338	15.89
Injury	1,789	84.11
Total	2,127	100

Source: FRSC, RTC Data Form, 2005-2015

Table 7: Drivers perception on the effects of traffic violation

Impacts	Number of responses	Percentage (%)
Crashes leading to death or injury	91	38.08
Arrest/payment of fine	49	20.50
Traffic congestion	85	35.56
Loss of man hour	14	5.86
Total	239	100

H. Knowledge of Traffic Signs among the Respondents in Port Harcourt City

Knowledge on Warning Signs

The results of drivers' understanding of warning signs is presented in Table 8 whereby the frequency of respondents that passed answers of these signs was 61.1% which suggest that the drivers understanding was good. The signs that were well understood by drivers were "Roundabout" 86.2%, 'T-Junction" 82.43% and "pedestrian crossing" 71.55%. These high percentages could be attributed to the self-explanatory graphics in the signs. The least understood signs were narrow bridge 33.1% and double bend 32.22%. Warning signs provide the motorists with information on condition of the road that could pose a risk to road users, the implication of these signs is that the drivers are expected to minimize their speed and be on alert as they approach the risk identified.

Table 8: Respondents Knowledge (score) on Warning signs

Sign	Meaning	P	F	Percentage (%) of pass
	Round about	206	33	86.2
	Double bend	77	162	32.22
	T-Junction	197	42	82.43
	Pedestrian crossing	171	68	71.55
	Narrow bridge	79	160	33.1

P = No of respondents that passed (i.e. identified the sign correctly)

F= No of respondents that failed (did not identify the sign correctly)

Knowledge on Regulatory (prohibitory) Signs

Five regulatory signs were examined and presented in Table 9. The analysis shows that the average percentage of passed answer is 61.4%, meaning that the drivers' knowledge level was poor. No right turn is 76.6%, and No parking 77.41%, signs were understood, while "No overtaking is 51.5%, No u-turn 53.6 and "No stopping" 47.7% were the least understood signs. The poor performance can be attributed to the inability of the drivers to comprehend the meaning of these regulatory (prohibitory) signs as some of the graphics are not self-explanatory and simple for the less educated motorists to understand. The implication of regulatory signs is that these signs provide the drivers with information concerning the actions he or she needs to take (mandatory) or not to take (prohibitory) on the road. It is an offence to disobey these regulatory signs.

Table 9: Respondents Knowledge (score) on Regulatory signs

Sign	Meaning	P	F	Percentage (%) that passed (P)
	No right turn	183	56	76.6
	No overtaking	123	116	51.5
	No parking	185	54	77.41
	No U-Turn	128	111	53.6
	No stopping	144	125	47.7

I. Respondents' Knowledge on Information Signs

Table 10 showed the respondents' knowledge on information signs. The average understanding level of these signs was 76.8% indicating relatively good knowledge. The signs well understood were "Filling station" 92.5%, Phone booth 80.8% and "Hospital" 79.1% .while parking Area 55.30% was the least understood sign. Information signs are intended to provide the motorists with information concerning the routes like names of town and the location of certain facilities such as filling station, hospitals, parking lots etc. the idea is to let the driver be aware of these facilities in order to take informed decision when the need for any of the facilities arises.

Table 10: Respondents Knowledge (score) on information signs

Sign	Meaning	P	F	Percentage (%)
	Filling station	220	19	92.05
	Hospital	189	50	79.1
	Parking Area	132	107	55.30
	Telephone(phone booth)	193	46	80.8

J. Respondents Knowledge on Road Marking

Table 11 shows the result of drivers' understanding on road markings Five road markings were examined and the average percentage of correct answer was 57.9% meaning that the driver's knowledge was very poor. The road markings well understood are centre line 79.9, followed by warning line 59.83% and zebra crossing 53.6%. while "No crossing" 38.1% was least understood sign. These high percentages of failure could be attributed to the fact that these road markings are not common and visible on roads in the city. Road markings are information provided on the paved road surface, they guide the drivers on the use of the road. The implication

of road markings is that the drivers will not violate the traffic rule if they make effective use of the markings, as the markings like center line, warning line etc clearly separates the each vehicle from another as well as gives you information concerning adequate places to overtake, park etc.

Table 11: Respondents Knowledge (score) on road markings

Sign	Meaning	P	F	Percentage (%)
	No crossing	91	148	38.1
	Zebra crossing	128	111	53.6
	Center line	191	48	79.9
	Warning line	143	96	59.83

Respondents' Knowledge on Traffic Lights

The meaning of three traffic lights (signal): yellow, green and red were examined and the understanding level for the three traffic lights is presented in Table 12. The average percentage of passed answers of these three traffic lights (signals) was 89.5% which indicates that the understanding was very good. All the three colours of the traffic signals were well understood as follows: red light 93.31%, Green light 89.12% and Yellow light 86%. this very high percentage of passed answers could be traced to the existence of traffic lights at most junctions as well as the accumulated knowledge gained by the drivers concerning traffic lights in the city as some of the traffic lights are currently not functional.

Table 12: Respondents Knowledge (score) on traffic lights

Sign	Meaning	P	F	Percentage (%)
Red light	Stop	223	16	93.31
Yellow light	Ready to move or stop	206	33	86
Green light	Move(if safe)	213	26	89.12

K. Knowledge of traffic signs across social economic characteristics

Five traffic signs were randomly selected, one each from warning, regulatory and information signs as well as traffic lights and road markings. The signs were cross-examined with the drivers' knowledge on traffic signs and their social economic characteristics.

L. Respondents' Knowledge on Traffic Signs based on Gender

The knowledge on traffic signs according to gender is presented in Table 13 in order to understand the knowledge of the male drivers and the female drivers on traffic signs. The result did not reveal any difference in the knowledge level of the male and the female drivers on traffic signs as both the male and female respondents displayed good knowledge on some traffic signs and poor knowledge on other traffic signs. The implication of this result therefore is that the knowledge on traffic sign is not dependent on gender**.**

IV. DISCUSSIONS

Finding reveals that in the city, there exists large disrespect for traffic rules among motorists. The common types of traffic violation in the city include speed violation (i.e. driving above speed limit), confrontational driving, driving against traffic, wrongful overtaking, tailgating emergency vehicle, unauthorized parking by private drivers, forming multiple lanes, illegal parking and loading of passengers, reckless driving, dangerous overtaking, lack of fire extinguisher, making phone calls while driving, failure to obey traffic light and signs, overloading amongst others. Generally, roads in the city experiences traffic violations, however, there are roads with high rate of traffic violation. The study found that Zone 3, Regular traffic congestion occasioned by high rate of traffic violation is always noticed, the zone consists of Ikoku Junction, D/Line, G.R.A, Presidential, Rumuola-Orazi, Rumuokwuta- Mgbuoba-Rumuigbo, Psychiatric Hospital. Furthermore, the Eliozu - Rumuodara Road, Rumuodara - Artillery Axis, Rumuokoro - Nkpolu Axis along the East-West Road, Oil Mill Junction - Eleme junction and Tank Axis as traffic violation hotspots in the city. The research identified these roads which as observed are also major trip generation areas in the city and as such most prone to traffic violations as a result of non-conformist attitude of most drivers in the city. On the reasons for traffic violations in Port

Harcourt, the research identified a number of reasons responsible for the increase traffic violations. These among others include attempt to reduce travel time, attraction to imitate other drivers who violate traffic rules without being punish, pressure from passengers who are in a hurry, poor knowledge of traffic rules, acceptance of bribe by police and other corrupt traffic wardens, sales of alcoholic drinks within the motor parks, absence of the State road traffic management Authority etc. In attempt to meet their financial daily returns, they try to take full advantage of travel time and sometimes in doing this, they violate traffic rule by engaging in over speeding, driving against traffic, over take wrongly, driving from one lane to another by crossing the kerb, tailgate emergency vehicle and forming multiple lane in other to reduce travel time. Mostly commercial drivers are in the habit of doing this; however, private drivers are also involved. Drivers also cited the attraction to follow other drivers who violates traffic without being arrested and punished. They assert that prominent persons in the city violate traffic rules at will and these persons are not arrested, hence they are attracted to imitate these prominent persons in other to reach their destination quickly. However, the absence of the Rivers state road traffic management Authority is another important reason why drivers violates traffic rules in the metropolis, according to the drivers, before the disbandment of the agency, drivers do not engage in illegal parking and loading of passengers with impunity as it is currently experienced in the city. The research further revealed that no type or class of vehicle in the city is exempted from traffic violation whether private or commercial vehicles like cars, buses, articulated trucks etc. However, drivers of commercial cars (taxis) and buses where identified to be the class most prone to violation. Furthermore, Drivers of bullion van as well as escort also constitute a class that violates traffic rules in the city, these drivers often violate traffic rules with the aid of police attached to them. The findings of this research also indicates that time of day influences traffic violation in the city, it revealed that violations in the city occur mostly between the

hours of 7-9am and 4-6pm in the morning and evening rush hours respectively when the number of vehicle on the road is very high leading to traffic congestion. Desperate drivers trying to avoid gridlock brake traffic rules. While traffic wardens most times seem helpless as they watch buses, taxis and some private drivers drive against traffic amongst other violations. On the issue of Level of traffic education among motorist in the city, the finding of the research reveals that drivers in the city have poor understanding of road traffic signs like warning and regulatory signs as well as, road markings; but have relatively good understanding or knowledge of information signs. However, the drivers in the city displayed a very high level understanding of the meaning of traffic lights. Furthermore, the study found that the driver's level of knowledge on traffic signs does not depend on the drivers gender and age bracket, rather, the drivers level of education was found to be a strong factor determining the driver's ability to understand the meaning of traffic signs quickly. It was found that traffic violators in the city face a number of consequences like road traffic crash leading to injuries and deaths, arrest or impoundment of vehicle by road traffic law enforcement agencies, physical assault by police and other road users, lost of man hour resulting from traffic congestion in the city

V. CONCLUSION

It can be concluded that drivers in the city frequently engage in risky driving behaviours as they ply the road hence violating the traffic rules and regulation. Commercial drivers are most involved in traffic violation as they are constantly in a hurry to pick and drop their passengers, hence park indiscriminately on the roads. The knowledge of drivers in the metropolis on traffic signs and rules was found to be inadequate. Most drivers' especially commercial drivers only knows how to move vehicles but lack the knowledge on traffic signs. The study recommended that the traffic agencies in the city should enhance the enforcement of traffic rules and ensure that every vehicle plying the city's highway is fixed with Speed limiting devices. The road traffic management agencies should ensure the enforcement of the traffic laws by banning illegal parking in the city especially on the Eliozu - Rumuodara Road, Rumuodara - Artillery Axis, Rumuokoro - Nkpolu Axis along the East-West Road, Oil Mill Junction - Eleme junction, Tank Axis as well as in Zone 3, the Ikoku Junction, Rumuola junction, Rumuokwuta junction, Mgbuoba by location junction, Rumuigbo junction. Also, banks, eateries and businesses located near the highways in the city should make adequate parking lots available for their customers to avoid unauthorized parking on the city's highways. Road traffic should carry out more campaign on dangers inherent in non-compliance to traffic rules, enhance arrest of offenders and psychiatric test carried out on regular traffic violators.

Table 15: Knowledge on traffic signs according to age bracket

Sex	**Traffic Signs**									
	T-Junction		No stopping		Filling station		Zebra crossing		Red light	
	P	F	P	F	P	F	P	F	P	F
Male	**171** (84.24%)	**32** (15.76%)	**98** 48.28	**105** 51.72	**186** 91.63	**17** 8.37	**107** 52.72	**96** 47.29	**188** 92.61	**15** 7.39

Female	**26** (72.22%)	**10** (27.78%)	**16** (44.44%)	**20** (55.56%)	**34** (94.44%)	**2** (5.56%)	**21** (58.33%)	**15** (41.67%)	**35** (97.22%)	**1** (2.78%)
Total	**197**	**42**	**114**	**125**	**220**	**19**	**128**	**111**	**223**	**16**

REFERENCES

[1] -Eideh B.M. 2016. Statistical Analytical Study of Traffic Accidents and Violations in the State of Kuwait and Its Social and Economic Impact on the Kuwaiti Society. American Journal of Applied Mathematics and Statistics, 4(2), 24-36.

[2] Anyanwu, J.O., Okoroji, L.I. and Dike D.N. 2016. Assessment of the Impact of Section 9 of the Nigerian Road Traffic Act 2004 on the Rate of Accidents/Road Crashes in Nigeria. Global Journal of Social Sciences Studies, 2(1):39-50.

[3] Chiadikobi, K.C, Omoboriowo, A.O., Chiaghanam, O.I., Opatola A.O. and Oyebanji, O. 2011. Flood Risk Assessment of Port Harcourt, Rivers State, Nigeria, Advances in Applied Science Research, 2 (6): 287-298.

[4] Eludoyin O.S., Oderinde F.A. and Azubuike, O.J. 2013. Heavy metals concentration under rubber plantation (Hevea brasiliensis) in Hydromophic Soil of South-south Region of Nigeria. Ife Research Publications in Geography (IRPG), Obafemi Awolowo University, Ile Ife, Vol 12 No1 and 2.

[5] Federal Road Safety Commission 2007. Federal Road Safety Commission (Establishment) Act, 2007 Federal Republic of Nigeria Official Gazettee No 89, Vol.94, Lagos, Nigeria.

[6] Federal Road Safety Corps 2012. Nigeria Road Safety Strategy (NRSS) 2012-2016.

[7] Federal Road Safety Corps 2012. Operational Guidelines.

[8] Federal Road Safety Corps 2016. Nigeria Highway Code, Abuja Detail Works.

[9] Federal Road Safety Crops 2008. Annual Report. 84P. Available at http://www.frsc.gov.ng/2008annualrep.pdf Accessed on 10/3/2017

[10] Forward, S.E. 2013. What motivates drivers to disobey traffic regulations and How can we change this behaviour?

[11] Jafarpour S, and Rahimi-Movaghar V. 2014. Determinants of risky driving behaviour: a narrative review. Med J Islam Repub Iran, 28:142.

[12] Mmom, P.C. and Fred-Nwagwu, F.W. 2013. Analysis of Landuse and Landcover Change around the City of Port Harcourt, Nigeria. Global Advanced Research Journal of Geography and Regional Planning (ISSN: 2315-5018) Vol. 2(5), pp. 076-086.

[13] Nwankwoala, H.O. and Warmate T. 2014. Subsurface Soil Characterization of a Site for Infrastructural Development Purposes in D/Line, Port Harcourt, Nigeria. American International Journal of Contemporary Research Vol. 4, No. 6; pp 139-148.

[14] Ogbonna, D.N., Amangabara, G.T. and Ekere, T.O. 2007. "Urban solid waste generation in Port Harcourt Metropolis and its implications for waste management", Management of Environmental Quality: An International Journal, Volume: 18 Issue: 1; 2007

[15] Onuka, A.O.U and Akinyemi, T.F 2012. The Effectiveness of FRSC Public Education Programme on Drivers' Road Traffic habit in Lagos and Oyo States of Nigeria, British Journal of Arts and Social Sciences, 6(1):129-139.

[16] Oyegun, C.U and Adeyemo, A. 1999. Port Harcourt Region. Department of Geography and Environmental Management. University of Port Harcourt, pp 33-66.

[17] Peltzer K. 2008. The road 'kill' factor. HSRC Review, 6(4): 31–32.

[18] Sumaila, A. F. 2013. Road crashes trends and safety management in Nigeria. Journal of Geography and Regional Planning, 6(3): 53-62.

[19] Uzondu C. and Ikeogu C. 2013. Urban Transportation Problems In Owerri, Imo, State Asian Journal of Science and Technology, 4(5):016-021.

[20] WHO 2004. World report on road traffic injury prevention. Geneva: World Health Organization; 2004.