



**CENTRE FOR HUMAN SETTLEMENTS AND URBAN DEVELOPMENT JOURNAL**  
**FEDERAL UNIVERSITY OF TECHNOLOGY MINNA**  
**CHSUDJ**

**VOL. 9, NO. 1**

**APRIL 2023**

**ISSN NO: 2141 - 7601**

**PUBLISHED BY:**

**CENTRE FOR HUMAN SETTLEMENTS AND URBAN DEVELOPMENT JOURNAL**  
**FEDERAL UNIVERSITY OF TECHNOLOGY, P.M.B. 65, MINNA, NIGER STATE, NIGERIA**  
[chsud.journal@futminna.edu.ng](mailto:chsud.journal@futminna.edu.ng), [chsud@futminna.edu.ng](mailto:chsud@futminna.edu.ng)

©Copyright2023

## **Editorial Committee**

### **Editor-in-Chief**

**Dr. Aliyu M. Kawu**

### **EDITORIAL BOARD MEMBERS**

#### **Prof. R. E Olagunju**

Dean, SET,  
Federal University of Technology, Minna

#### **Prof. Godwin N. Nsofor**

Department of Geography,  
Federal University of Technology, Minna

#### **Prof. Musa Galadima**

Dept. of Microbiology,  
Federal University of Technology, Minna

#### **Prof. J.I. Ighalo**

Dept. of Estate Management and Valuation  
Bells University, Ota, Ogun State

#### **Prof. A.E. Abalaka**

Dept. of Building,  
Federal University of Technology, Minna

#### **Prof. T. Gbenga Nubi**

Dept. of Estate Management  
University of Lagos

#### **Dr. I.C. Onuigbo**

Dept. of Surveying and Geo-Informatics  
Federal University of Technology, Minna

### **EDITORIAL ADVISERS**

#### **Dr. Shuan Sadre Ghazi**

Innovation for SDGs | Social Impact | Inclusive Business  
United Nations University - Maastricht University  
(UNU-MERIT) UNICEF Maastricht Area, Netherlands

#### **Prof. Abimbola Windapo**

Department of Construction  
Economics and Management,  
University of Cape Town, South Africa.

**Prof. O. Agbola**

Dept. of Urban and Regional Planning,  
University of Ibadan, Ibadan.

**Prof. T.C. Mogbo**

Formerly of Dept. of Quantity Surveying  
Federal University of Technology, Minna

**Dr. Kibe Muigai**

Snr. Human Settlement Adviser  
UN-Habitat Nairobi, Kenya

**Tpl. K.M. Yari**

Habitat Programme Manager  
Habitat Programme Support Office  
UN House, Abuja, Nigeria

**Dr. Abdul Husaini, NPOM.**

(Permanent Secretary, Ministry of Lands & Housing, Niger State)  
Town Planner/Geo-spatial Analyst  
Coordinator, Minna WCCD Initiative and RCE Minna  
Member BOT Nigerian Environmental Society.

**Editorial Assistant**

**Tpl. (Mrs.) F.J. Odegbenro**

Centre for Human Settlements and Urban Development,  
CHSUD, FUT Minna

## EDITORIAL REMARKS

Dear Reader,

This year the Centre for Human Settlements & Urban Development (CHSUD) will mark her 20<sup>th</sup> anniversary. This edition of her journal is intended as a prelude to launching of the Anniversary Edition tagged “Managing Human Settlements in the Urban Century”. This will highlight the requisites of having and keeping cities, towns and all forms of human settlements as humanity finally moved into the age where urbanization and urban activities, for the first time in history, dominates the planet. The special call for a focus on urbanization is further hinged on the fact that besides dominating human settlement types, urban related human activities have had the greatest impact on earth and its environment. This has resulted into a phenomenon now referred to as “The Anthropocene” – an interconnected, complex global systems in which humanity’s impact has become clear.

This volume nine and particular edition (number one) feature works that explored elements and scenarios that increasingly dominates African cities today. Many of them exhibiting lack lustre state of burgeoning cities and towns in sub-Saharan Africa. But shown here exhibiting the different efforts being made towards having sustainable living and livelihood. This is evident from widespread poverty and deprivations highlighted by “*Implications of Spatial Variation of Household Poverty Incidence in Neighbourhoods of Minna, Nigeria*”, to the explorations of the limitations of interventions shown by “*Climate Change Mitigation Paradox: Poverty and Greenhouse Gas Reduction in A Global South City*”. The different negative effects of increasing human activities on the natural and social environment enumerated by “*Spatio-Temporal Analysis of Land Use and Land Cover Change of Birnin Kebbi for Sustainable Development*”, and, “*Reduction in the Effects of Climate Change: Efforts Towards Safeguarding the Built Environment in Kaduna, Nigeria*”; have drawn attention to the dimensions and consequences, at local, national and regional levels, the increasing effects of human activities dominated earth and arguably the planetary system.

**Dr Aliyu M. Kawu** MNITP, RTP, MeRSA

Editor-in-Chief

*CHSUD Journal*

### **Papers for Journal**

The journal accepts well researched papers, including case studies, from all disciplines in Environmental Sciences and other disciplines or subject areas related to the built environment. However, papers to be considered for a specific volume of the journal should fall within the theme and sub-themes specified. The theme for each volume of the journal will be specified.

### **Submission of Papers**

All manuscripts should be submitted to the editor, CHSUD Journal. Three hard copies of papers should be forwarded to the editor with a letter of undertaking that the work is not under consideration elsewhere and it will not be sent to another journal until final decision has been made on it.

**Electronic Version:** In addition to three hard copies, an electronic version of the article should be forwarded to CHSUD e-mail.

### **Address for Correspondence**

The Editor,  
CHSUD Journal,  
Centre for Human Settlements and Urban Development,  
Federal University of Technology,  
P.M.B. 65, Minna,  
Niger State, Nigeria.

### **For detailed information on our programmes,**

#### **Please contact:**

Centre for Human Settlements and Urban Development,  
Federal University of Technology  
P.M.B. 65, Minna, Niger State, Nigeria  
**Email:** chsud.journal@futminna.edu.ng  
0802859797919; 08053131254

## TABLE OF CONTENTS

<b>Content</b>	<b>Page</b>
Reduction in the Effects of Climate Change: Efforts Towards Safeguarding the Built Environment in Kaduna, Nigeria <i>Ojobo Henry, Umaru Emmanuel, &amp; Chindo Martin</i>	1 - 11
Overview of Challenges of Quality Management Implementation in Construction Firms in Abuja, Nigeria <i>Aka, A. A. Musa, E. T. Ephraim &amp; I. Abdulrahaman</i>	12 - 20
Climate Change Mitigation Paradox: Poverty and Greenhouse Gas Reduction in A Global South City <i>Ashiru Bello, Bello-Yusuf, Sabiu &amp; Adamu Ahmed</i>	21 - 29
Appraisal of Households' Coping Strategies to Water Poverty in Bida, Niger State <i>Bankole Olasunkanmi Clement &amp; Aliyu M. Kawu</i>	30 - 38
Assessment of Compliance Level of Automobile Drivers to Traffic Rules and Regulations in Bida, Niger State. <i>Ajiboye, A.O., Owoeye, A. S., Zarumi, G. M., Oni, B. G. &amp; Abubakar, I.D.</i>	39 - 55
Effect of Urban Green Spaces on Residents' Well-Being in Abuja Municipal Area Council, Nigeria <i>Ugboh, Richard; Musa, Haruna D., &amp; Martins, Valda I.</i>	56 - 63
Evaluation of Urban Park Pathway Characteristics and Visitors Walking Behaviour in Minjibir Park, Kano, Nigeria <i>Abdulkareem, U. Muhammad, A.Y. and Mohammed, B.B.</i>	64 - 73
Implications of Spatial Variation of Household Poverty Incidence in Neighbourhoods of Minna, Nigeria <i>Mohammed Wondi Ishaku &amp; Aliyu M Kawu</i>	74 - 81
Urban and Regional Planning Law and Development Control in Nigeria: A Historical Perspective <i>Ebehikhalu N.O &amp; Umaru E.T</i>	82 - 86
Spatio-Temporal Analysis of Land Use and Land Cover Change of Birnin Kebbi for Sustainable Development <i>Sadiq, A &amp; Okhimamhe, A.A</i>	87 - 98
Factors Influencing Park Users Willingness to Pay to Enjoy Park Amenities in Amusement and Magic Land Park Abuja, Nigeria. <i>Adio F.O., Muhammad A.Y., Mohammed B.B., Chukwudi B.O. &amp; Abdulkareem U</i>	99 - 110

## ASSESSMENT OF COMPLIANCE LEVEL OF AUTOMOBILE DRIVERS TO TRAFFIC RULES AND REGULATIONS IN BIDA, NIGER STATE.

AJIBOYE, A.O., OWOEYE, A. S., ZARUMI, G. M., ONI, B. G. & ABUBAKAR, I.D.  
Department of Logistics and Transport Technology, School of Innovative Technology  
Federal University of Technology, Minna, Niger State.

### Abstract

*The incident of traffic accidents involving automobile drivers currently flouting traffic rules typifies many urban roads in Nigeria and has turned to a key public concern in the country. This study focused on an attempt to assess the obedience level of automobile drivers with traffic rules and regulations in Bida, Niger State, Nigeria. Descriptive and observatory research approaches were used in data collection and analysis. Primary data was sourced through administration of well-structured questionnaires randomly to 400 motorists within designated traffic points and traffic counts were conducted in 7 major traffic corridors. Secondary data were obtained from traffic records at FRSC command unit and VIO offices in Bida. Specifically, five variables were used in the form of seat-belts usage, vehicle number plate, overloading, route violation and wrong parking as parameter to determine levels of motorist's compliance in Bida. The outcome of the observations was treated with descriptive analysis in the form of tables and charts. Commercial motorcyclists and tricycles violate traffic the most with 41.7% of motorists apprehended. It was observed that in all the five variables used to measure compliance level of automobile drivers, the proportion returns were very low with 1.3% and 0.7% for seat-belt compliance and wrong parking, while, 1.4%, 1% and 2.2% for number plate, route violation and overloading respectively. Automobile drivers' awareness to traffic rules and regulations accounted for 58%. Thus, the study recommends the need for a robust, wide-ranging and continual education and enforcement programme on traffic safety in Bida by FRSC and VIO officials. Automobile drivers must be compelled by agencies controlling and regulating traffic like FRSC and VIO within the ambit of the law to strictly observe the use of seat belts, number plate, overloading, parking standards and route violation.*

**Keywords:** Compliance-level, automobile drivers, Violation, Traffic-rules, Regulation

### Introduction

Obedience to traffic rules on the road by automobile drivers is an essential traffic management problem in the world in general. Rules associated with traffic are neither obeyed nor complied with when drivers consciously flout lawfully specified or socially recognised driving behaviour codes (Mawanga & Ntayi, 2010). The essence of the rules guiding road usage is to protect lives and avert injury on the roads. The rules are for all road users: drivers, pedestrians, motorcyclists, horse riders, cyclists and those in charge of animals. The rules require accountability from individuals for road usage, and in doing so become better, safer and more socially responsible road users.

Traffic violation as a consequence of non-compliance by automobile drivers with traffic rules and regulation, sometimes serves as a significance source of death and loss of

property in the country, diminishing the workforce of the nation and causing victims and their relatives to suffer severe psychological trauma with 70% of the accidents attributed to have been caused by human (Ojekunle, Oluwole & Ohida 2017). It has been noticed that, human factor have been traced to have resulted in about 80% of road traffic accidents documented in Nigeria; these include dangerous overtaking at bends and crest of hills, over speeding, driving under the influence of alcohol/drugs and the use of mobile phone while driving among others (Oyeyemi, 2003; Akpogomeh, 2012; Arosanyin, Olowosulu & Oyeyemi 2012 and Nwachukwu, 1998).

In spite of the efforts of the law enforcement agencies and the diverse strategies adopted by regulating agencies of the government for the enforcement of current traffic regulations, the roads in Nigeria are still a nightmare to road

users (Olagunju, 2009). Therefore, to bring order and control on the roads in Nigeria, there is need to appraise the level of enforcement and compliance with existing traffic rules and regulations. Properties worth huge sum of money in Naira including human beings, most of them belonging to the productive workforce were lost through traffic violation induced accidents. Different accident statistics and data have been tabled by a number of stakeholders to underscore the negative effects of non-compliance of motorists with road traffic rules and regulations (Gana & Emmanuel, 2014). Ever since the enforcement of road traffic laws commenced in Nigeria, huge number of efforts by the Federal Road Safety Commission and other stakeholders have been steered at ensuring that all motorists obey road traffic laws and regulations (Ajiboye, Kolawole & Adebajo, 2020; Oyetubo, Afolabi & Ohida 2018). In spite of these efforts, lives and properties were lost in Road Traffic Crashes (RTC) which have dealt a big blow to the economy of the nation and equally traumatised its victims or in some instances led to death thereby bringing trauma in various homes (Dike, et. al. 2018). Sumaila, (2001 & 2012) on traffic law enforcement in Nigeria, recognises management problems, the multiplicity of enforcement agencies, weak institutions, heavily-loaded and conflicting laws, numerous operators, unionisation and sharp practices as major obstacles facing traffic law enforcement in the Federal Capital. Hence, a regulatory system must be enforceable under specific circumstances in order for society to benefit from it. This is because poor enforcement of regulations plagues developing countries leading to poor driving standards, anti-social or dangerous on users' behaviour, and others invariably causing traffic accidents and injuries. This study seeks to examine the compliance level of automobile drivers to traffic rules and regulations in order to

unravel the level at which they comply with existing traffic rules and identifying the underlying factors inhibiting their compliance.

## **Literature Review**

### **Conceptual Framework**

The conceptual framework makes reference to previous researched ideas and theories that have been systematically put together to explain certain transport phenomenon which add relevance to this study. The concepts reviewed in this segment are the following:

#### **Strategic Prevention Framework (SPF)**

Strategic Prevention Framework (SPF), developed by the Substance Abuse and Mental Health Services Administration (SAMHSA) as postulated by Knezek, et. al. (2019), in their study of a multitiered holistic approach to traffic safety by educating children, novice teen drivers and parents, and crash investigators to reduce roadway crashes adopted an effective injury reduction model for reducing driver injury crashes on community roadways.

This model firstly, lay emphasis on the necessity to establish effective traffic safety program that must support training of current and future drivers on the significance of traffic safety injury prevention procedures as stressed below:

**i. Education Advisory Components:** These include rules of the road, seat belt usage, and personal safety have to be practised before children mature and become novice drivers, when enrolling in driver education course. Being a community-based model, children are involved in activities that promote traffic safety in the community. Therefore, parents and children are engaged in establishing a critical "safety" relationship, long before the child becomes a novice driver.



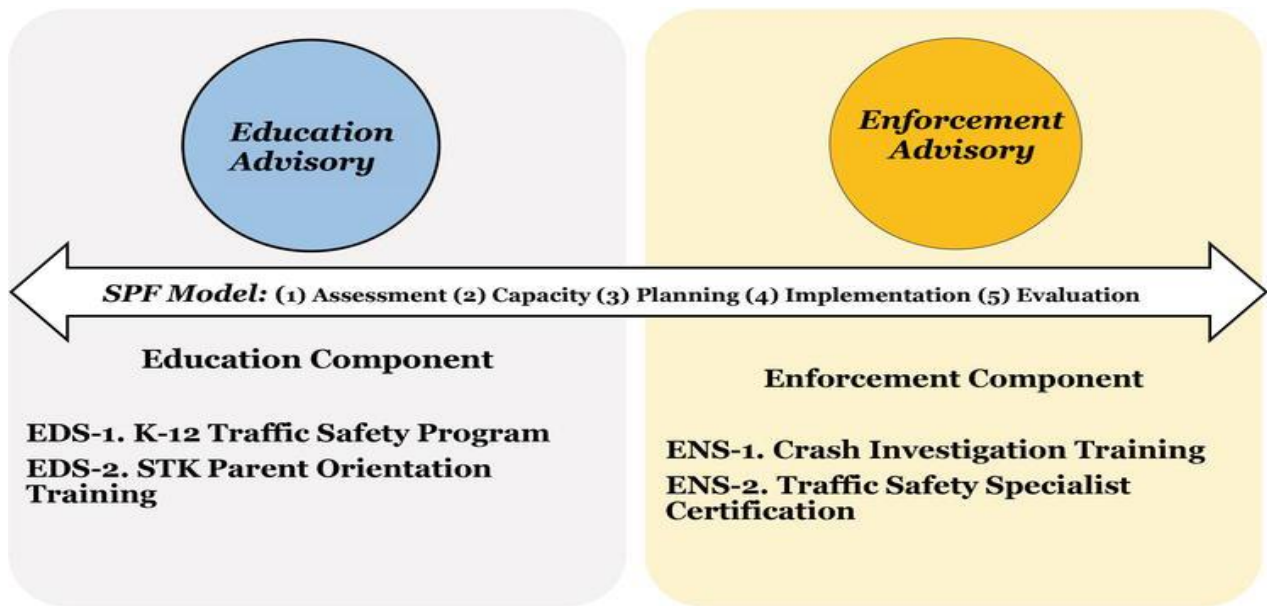


Figure 1: Traffic Safety Injury Prevention Strategic Planning Framework (SPF).

Source: Substance Abuse and Mental Health Services Administration (2019)

**ii. Enforcement Advisory Components:** The crash investigation component establishes baseline knowledge for the enforcement initiatives. Then crash investigation training must be incorporated, and a state-wide traffic safety specialist certification must be promoted within the law enforcement community. Also outreach initiative must be set-up to involve community representation, including law enforcement personnel and parents of novice drivers. Basic investigation involves the development of investigation skills to prevent crash risks and optimize traffic flow when a crash does occur. Recognition and preservation of evidence is accomplished by utilizing photographing techniques, sketching, and measuring vehicle damage. Speed calculations are performed, in order to determine time-distance factors of a crash.

#### **Traffic Safety Strategies:**

This strategy involves two main strategies which are the engineering and behaviour.

**i. The Engineering Component:** This involves safer vehicles as a result of enhanced vehicle design, better vehicle control, enhanced maintenance and anti-lock brakes. These components put together leads to better vehicle usage and safe ride by drivers along the road. Whereas the other part shows the safer roads strategies which include improved road design that will invariably assist road users to have a safe drive resulting in safety. This also reduces

the fatalities associated to road accidents resulting in reduce loss of lives relating to the crash protection devices and components of the vehicles.

#### **ii. The Behaviour Strategies:**

This strategy indicates an effective management people's mobility in terms of land use, mode shift (i.e., shifting from one transport mode to another as and when due by motorists), and how to lessen traffic speed through ensuring drivers stick with traffic rules and speed limit. These strategies show how drivers needs to be more cautious when driving as a result of better training, observing traffic rules, by not being distracted by any means when driving. This strategy talks about occupants' safety being of paramount concern to drivers and law enforcement agencies by ensuring they adhere strictly to use of seat belts and helmets. Drivers should also avoid the use of cellular phones or other electronic equipment when driving. Finally, if drivers go through routine medical and psychological test, their failure to obey could be link to their mental health issue. while, could be as a result of underage, not licensed to drive, etc.

#### **Empirical Review of Literature**

Submission of automobile drivers and other motorists to traffic rules and regulations studies has long attracted the attention of researchers in the field of transport management and safety (Kulanthayan, Radin Umar, Nasir & Haewant,

2000; Garba, 2009; Adetunji & Aloba, 2014; Ajiboye, Owoeye, Yakubu-Wokili & Ibraheem, 2021 and Ajiboye, Folagbade, Ohida & Kolawole, 2022. Dike, Akponye & Nze (2018) observed that the overall wearing rates of seat belt were consistently higher for drivers than for the front-seat passengers in most vehicle categories and routes but in this study, focus will be on the compliance level of automobile drivers in Bida, Nigeria. Moreover, their study discovered that private cars used seat belts more than taxis pick up/vans, buses, minibuses, trucks and articulated vehicles. The study goal of Ajiboye, et al. (2021) was to assess road traffic accidents (RTA) in Minna Metropolis, Nigeria. The human factor was observed as the major cause of RTA in Minna and brake failure was a significant vehicular cause of RTA.

Even though studies (Sumaila, 2012; Ajiboye, et al 2021 and 2022) has been affirmed that seat belts have been known to reduce road accident trauma in several ways, by preventing occupants from hitting their heads on steering wheel or windscreen in all but the most severe accidents, they prevent ejection from the vehicle in an accident situation and during accident severe forces are inevitably brought to bear on vehicle occupants and seat belts are effective in spreading these accident forces onto the strongest parts of the body while seat belts diminish the peak deceleration level endured by the occupant in an accident situation by allowing the stopping process to begin earlier in the accident sequence while 76.1% motorists did not comply with the use of seat belt while driving from the study of Ajiboye et al (2021).

Adetunji and Aloba (2014) studied the level of compliance of commercial motorcyclists with traffic rules on urban roads in South-western Nigeria with the focus on operations and safety awareness but in this study, emphasis was on the characteristics of vehicular traffic plying the designated major traffic corridors in Bida and the degree of violation of traffic regulation. Findings show that 84% of the operators were mostly young men under 40 years of age. The study affirmed that the irresponsible behaviours of commercial motorcyclists on urban roads area was a clear manifestation of inadequate training coupled with fraudulent issuance or possession of driving licenses as well as the failure of the regulatory agencies to enforce traffic rules and regulations among this category of motorists in urban centres in Nigeria.

Gana and Emmanuel (2014) in their study of road transportation and traffic law enforcement in Nigeria posited that challenges of road traffic law enforcement are not a lack of effective laws or deficient legislative framework, but inadequate compliance and sometimes weak enforcement. Ajiboye, Folagbade, Ohida & Kolawole, (2022) appraised the level of success of FRSC in reducing road accidents in Kaduna state; identify the level of compliance by the motorists, type and the commonest period of accidents; examines the type of equipment available to FRSC and appraise the methods adopted in bringing sanity on Nigeria's roads. The study revealed that though the FRSC is successful in reducing road accidents in Kaduna State the basic equipment, personnel and management strategies needed were not adequate. Consequently, their study was in Kaduna North-West Nigeria but this study is in Bida, North-Central, Nigeria indication a different geographical scope.

Sumaila, (2012) in his study of road crashes trends and safety management in Nigeria observed that traffic law enforcement is generally weak, while safety education and public awareness programmes are poorly designed and implemented resulting to poor driving culture among Nigerian automobile drivers. Ndoke (2006) opined that traffic policing encompasses the area of enforcement activity aimed at moderating road user behaviour by policing the laws and regulations that govern the use of road network. Onakomaiya, (1990) also opined the need to review the ownership of driving license and enforce compliance by commercial motorcyclists who are operating in the cities while Homel, (1988) affirmed that the fundamental principle of deterrence, as a means of social control as it relates to traffic law enforcement, and that the behaviour of human beings can be modified by making them fearful of the consequences of committing illegal acts.

Owoaje, et. al, 2005 and Olawale (2018) asserted that over the years, it has been observed that most drivers do not obey traffic rules and regulations in Nigeria due to their impatient and do not pay attention to the road signs. Dike, et al (2018), stated that despite the formulated rules which prescribed heavy penalties and deployed the enforcement of traffic personnel on most

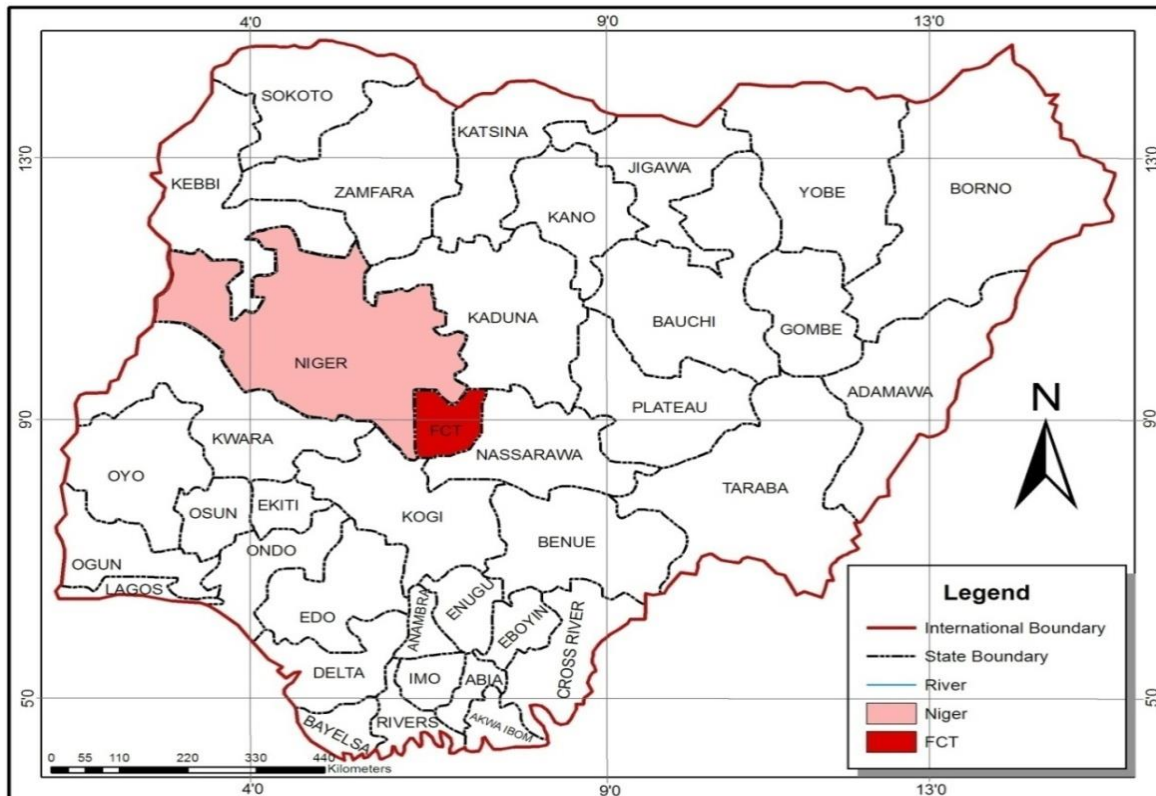
major highways or roads as a way of ensuring compliance with road traffic rules by drivers. However, despite these efforts, there has been continued and increasing non-compliance to basic traffic rules in Nigeria. It is on these premises that this study wants to examine the level of compliance of automobile drivers to traffic rules and regulations in Bida, which is one of the fastest growing urban areas in Niger State, North-central Nigeria and a very important transportation nucleus and commercial nerve centre of the state.

**Study Area**

Bida is the second largest town in the state and host the headquarter of Nupe people, Bida Local Government Area and Niger South Senatorial District (Zone A). It is the city where plenty of local indigenous cultures of Nupe Kingdom are living with a mix population of Hausa, Yoruba and Igbo. The town is located in the South West of Niger State, lies between latitude 9°6'N and longitude 6°1'E and it is in a dry arid region. Bida is a traditional, modern and heterogeneous society and houses Federal Polytechnic and a campus of the Niger State Polytechnic, Federal Government Girls' College, Federal Medical Centre, Army Barracks and Nigeria

Telecommunications Centre. Others are the Federal Aviation Authority of Nigeria (FAAN), Banks, State General Hospital and Nigeria Television Authority.

Bida has a population of 188, 181 (NPC,2006) with a land area of 51km<sup>2</sup> (20 sq mi). Bida is a dry town. The town for its production of traditional crafts, notably glass, bronze artifacts and brass wares. Bida is also known for its Durba festival and Nupe Day Festival. There are other places in Bida such as Bamisu estate, Ramatu dangana, ECWA poly road, Small Market, Main Market and the Federal Medical Centre (Bida). The districts under Bida includes Katcha, Enagi, Baddeggi, Agaie, Pategi, Lemu, Kutigi, and others. There are other places in Bida such as Bamisu estate, Ramatu dangana, ECWA, Polytechnic road, Small Market, Main Market and the Federal Medical Centre (Bida) among others. There are also different schools like Federal Government Girls College Bida, Federal Polytechnic Staff Secondary School, Government College, Bida and others.



**Figure 2: Niger State in the context of Nigeria**

**Source: Department of Logistics and Transport Technology, FUT, Minna**

Assessment of Compliance Level of Automobile Drivers to Traffic Rules and Regulations in Bida, Niger State.

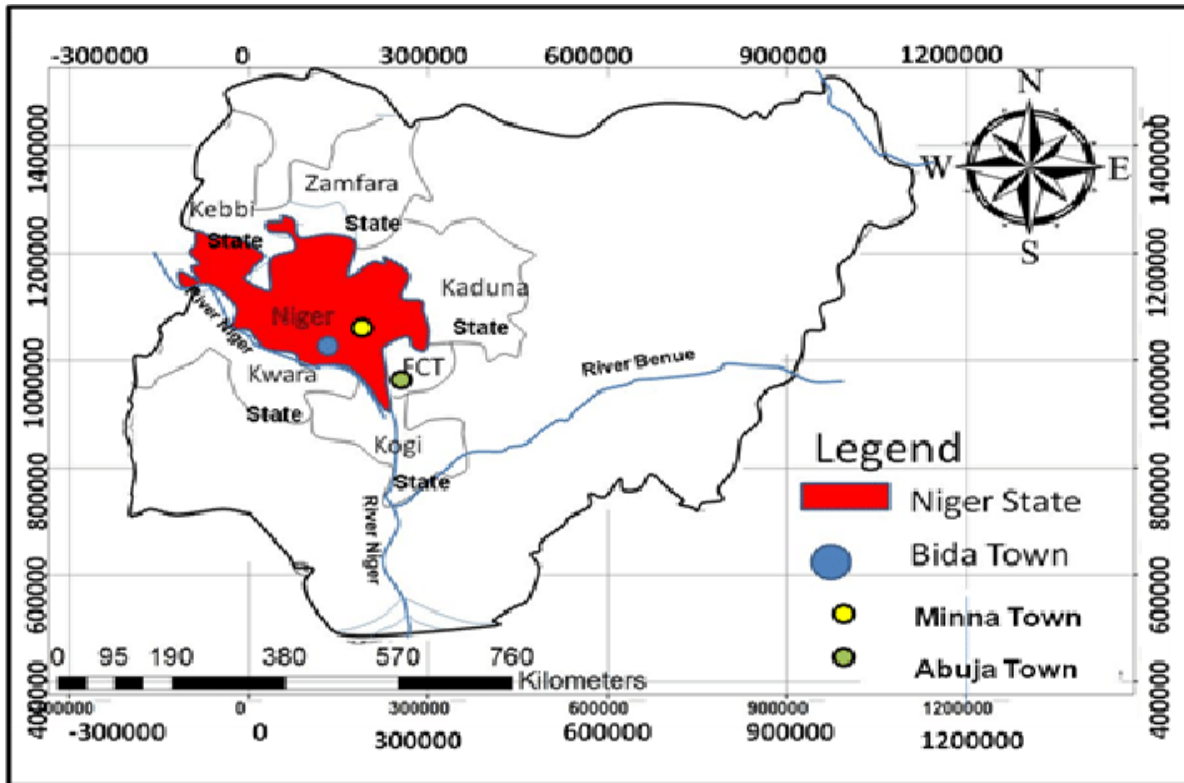


Figure 3: Map of Bida in the context of Niger State  
 Source: Department of Logistics and Transport Technology, FUT, Minna

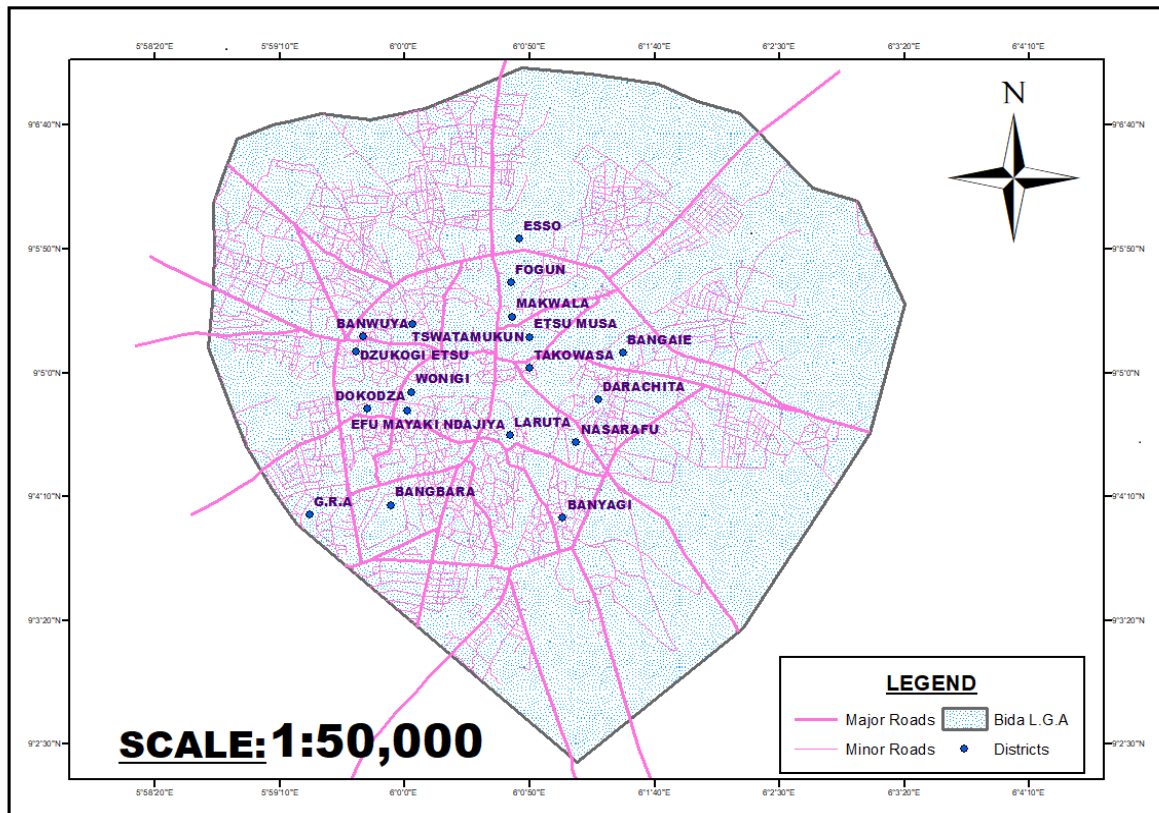


Figure 4: Map of Bida Township Road Network  
 Source: Authors' Field Survey (2019)

## Methodology

### Data Type

In order to achieve the aim of this study, primary and secondary data were used.

### Data Sources

In ascertaining the level of compliance of motorists with traffic rules, primary and second data were used. Primary data was obtained through the administration of questionnaires by field interviews in which automobile drivers were randomly stopped at regular interval at various designated traffic corridors on the roads. The secondary data were obtained from documented records at Vehicle Inspection Officer offices (VIO) and Federal Road Safety Corp (FRSC) command station in Bida. The records were on the various violations and offences for a period of five (5) years (i.e. 2014-2018) and Bida and other online journals and print outs.

### Sample Size

As a result of the traffic count observed at major designated traffic corridors in Bida a total of 12,438 automobile drivers were counted. Dillman (2007) sample size formula for the determination of sample size was adopted because of its low margin of acceptable level of sampling error to get the appropriate sample size. The formula is given as;

$$N_s = \frac{(Np)(p)(1-p)}{(Np-1)(B/C)^2 + (p)(1-p)} \quad . 3.5.1$$

Where;

**N<sub>s</sub>**= completed sample size needed (notation often used is n)

**N<sub>p</sub>**= Size of Population (notation often used is N)

**P**= Proportion expected to answer a certain way (50% or 0.5 is most conservative)

**B**= Acceptable level of sampling error (0.05) = (5%)

**C**= Z statistic associated with confidence interval (1.96) = 95% Confidence level

$$N_s = \frac{(12,438)(0.5)(1 - 0.5)}{(12,438 - 1)(0.05/1.96)^2 + (0.5)(1 - 0.5)}$$

$$N_s = \frac{(3,109.5)}{(12,437)(0.0006508) + (0.25)}$$

$$N_s = \frac{(3,109.5)}{(8.3436)}$$

$$N_s = 372.6$$

Therefore, the sample size for the study was rounded up to 400 approximately

### Sampling Method

A field interview in which automobile drivers were randomly stopped at regular interval at various designated traffic corridors on the roads was carried out. More so, in order to determine the compliance level with traffic rules and regulations a simple random sampling technique was used to administered questionnaires to 400 respondents which includes registered member of National Union of Road Transport Workers (NURTW), Road Transport Employers Association of Nigeria (RTEAN) and Amalgamated Union of motorcycles Operators and Riders Association of Nigeria (ACCOMORAN) who are drivers situated at designated organized garages in Bida and motorists.

The researchers also conducted traffic counts at seven (7) major traffic corridors in Bida at two peak periods of the day (i.e., 7am-10am and 3pm-6pm) for seven days and to observed automobile drivers' compliance to traffic rules. The criteria for selecting these seven traffic corridors were due to the volume of traffic they received and passes through them. They also serve as major traffic routes within the town. Automobile drivers were observed using five variables (i.e., seatbelt usage, number plate violation, overloading, route violation and wrong parking to ascertain their compliance level. The main traffic junctions in Bida which include BCC junction, Siriko junction, Dokodza U-turn junction, Esso junction, St. John junction, Magistrate Court junction and Ramatu Dangana were chosen.

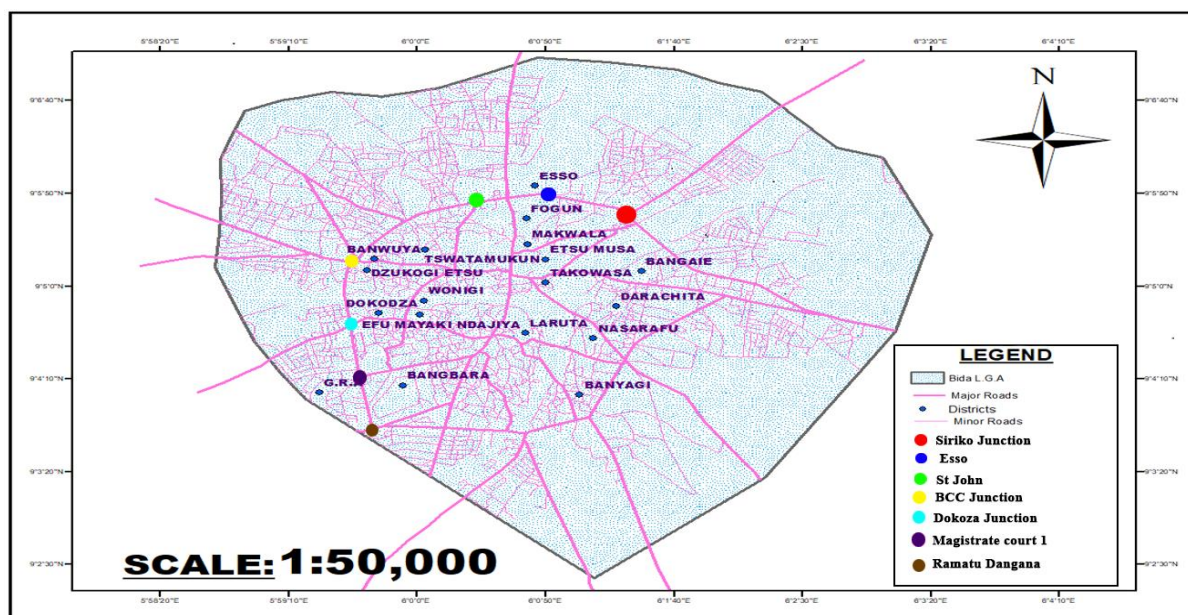


Figure 5: Map of Bida Showing Points of Distribution of Questionnaires and Traffic Counts  
Source: Authors' Field Work

## Results and Discussion

### Socioeconomic Characteristics of Automobile Drivers

Table 1 shows that 80% of automobile drivers captured were male while 20% were female. This structure as shown in Table 1, invariably implies that violation of traffic rules cut across both gender in the study area. Also, the age groups of automobile drivers shows that 49% of the respondents were within the age category of 31-40 years with 24% between 41-50 years. While, 23% of respondents sampled were <30 years of age. The implication of this result is that 73% of respondents captured were within the productive age group. This has implication on

the compliance and violation rate of motorist in Bida due to the fact that majority of traffic violators were within the productive age. This productive age group are the ones often behind the wheels on Nigerian roads who mostly disobey traffic rules thereby exposing other motorists and road users to danger. Findings also shows that 88% of sampled automobile drivers had formal education. The implication is that a significant proportion of the drivers sampled, despite being literate still failed to comply with traffic rules. While, 40% of automobile drivers had formal occupation, 19.5% unemployed with 24% working at the informal occupation.

Table 1: Socioeconomic Characteristics of Motorists

Variable	Attribute	Frequency	%
<b>Gender N = 400</b>	Male	400	80
	Female	0	20
<b>Age N = 400</b>	<30 years	92	23
	31-40 years	196	49
	41-50 years	96	24
	51-60 years	12	3
	> 60 years	4	1
<b>Marital Status</b>	Divorced	21	2
	Married	249	62
	Separated	3	1
	Single	115	29

<b>Education Status N = 400</b>	Widow/Widower	12	3
	No Formal Education	48	12
	Primary School	117	29
	Secondary School	98	25
	Tertiary Education	137	34
<b>Occupation N = 400</b>	Formal	160	40
	Informal	97	24
	Retired	30	7.5
	Student	34	9
	Unemployed	79	19.5

Source: Authors' Computation (2021)

**Table 2: Traffic Counts at Seven (7) Traffic Points in Bida**

S/No	Sampling Point	Number of Traffic Count
1	Esso Junction	34,900
2	Dokodza U-turn	34,098
3	Siriko Junction	65,567
4	Ramatu Dangana Junction	15,727
5	Magistrate Court 1	16,426
6	Saint John	19,679
7	BCC Junction	25,202
<b>Total</b>		<b>211,599</b>

Source: Authors' Field Work (2021)

Table 2 indicates the number of vehicular traffic counts observed at 7 traffic points in Bida. The Table reveals that 211,599 traffic counts were recorded across the 7 traffic points. At Esso junction, 34,900 motorists were counted; Dokoza U-turn recorded 34,098 vehicles, 65,567 motorists were counted at Siriko junction, at Ramatu Dangana junction, 15,727 motorists

were counted. 16,426 traffic counts were recorded at Magistrate court 1, 19,679 traffic were recorded at Saint John while at BCC junction, 25, 202 motorists were recorded. While the average daily count of motorists is 17,633.

### Characteristics of Vehicular Traffic in Bida

**Table 3: Characteristics of Vehicular Traffic at Seven (7) Traffic Points in Bida**

Traffic Corridor	Motorcycles		Trucks	Private vehicles	Tricycles	Commercial	
	Private	Commercial				Cars	Buses
Magistrate Court	3,965	8,170	32	3,446	60	480	273
BCC	5,431	5,754	4,258	3,643	167	2,948	3,001
Siriko	9,540	18,756	16,990	7,224	237	6,481	6,339
St. John	4,332	4,862	3,779	3,235	285	1,691	1,495
Esso	6,861	9,467	4,897	6,584	539	3,708	2,844
Dokodza	9,956	13,652	1,125	5,650	316	1,874	1,525
Ramatu Dangana	4,852	4,357	78	4,051	119	1,361	909
<b>Total</b>	<b>44,937</b>	<b>65,019</b>	<b>31,159</b>	<b>33,833</b>	<b>1,723</b>	<b>18,543</b>	<b>16,386</b>
<b>Grand Total</b>						<b>211,599</b>	

Source: Authors' Field Survey (2021)

Table 3 shows the summary of the characteristics of vehicular traffic flow at designated seven traffic points in the study area. From the total aggregate of 211,599 vehicular traffic captured on the field, result reveals that commercial motorcycles with a combined total of 65,019 were the highest characteristics of vehicles captured. Table 3 indicates the structure of the vehicular characteristics of the respondents in the sampled areas. This result shows that the usage of motorcycles in Bida as a mode of transportation is so central

either for commercial or private uses. It could be due to the flexibility in its usage that enables people to access difficult terrain and neighbourhoods due to poor planning and bad roads network. Moreso, due to the increase in unemployment rate and not being able to afford car. Findings also show that of the four wheels observed private cars had the highest summative figure with 33,833 followed by trucks (31,159), commercial cars (18,543) while the least is commercial buses with 16,386 respectively.

**Table 4: Vehicular Traffic Characteristics at 7 Traffic Points in Bida**

Motorcycles (%)		Trucks (%)	Private vehicles (%)	Tricycles (%)	Commercial (%)	
Private	Commercial				Cars	Buses
21.2	30.7	14.7	15.9	0.8	8.8	7.7

**Source: Authors' Computation (2021)**

Table 4 reveals that motorcycles both private and commercial forms a larger proportion of about 52% of all the total automobile drivers captured, followed by private vehicles with 15.9%, trucks (14.7%), commercial cars (8.8%), buses (7.7%) and tricycles with 0.8%.

#### **Road Traffic Offences Violation in Bida**

The summary of road traffic offences committed from 2016 to 2018 as revealed in Table 6 using 21 traffic offences as parameter to adjudge diverse traffic violations in Bida. Moreover, this table provides indication on the level of non-compliance to traffic rule by motorists in Bida Local Government Area. It shows that in 2016 of the total offences of 1,162 committed by automobile drivers, riding motorcycle without crash helmet ascribed with 521 offenders has the highest rate which indicates 45% of the aggregate offences committed in 2016, followed

by number plate violation with 319 offenders which is 25% of total offences committed. While the least offence committed was obstructing marshal on duty with 1 offender (0.08%).

Furthermore, in the year 2017 out of a total of 3,312 offences committed by automobile drivers. Riding motorcycle without crash helmet recorded 1,585 offenders as the highest offence committed by motorists in Bida showing 48% of the aggregate offenders for the year. This is followed by number plate violation with 759 with 23% of the total traffic offenders. This shows a sharp increase when compare with the previous year. The figures are probably higher given the operational constraints of the various traffic regulating agencies.

**Table 5: General Road Traffic Offences/Violation Summary 2016-2018**

OFFENCES	2016	2017	2018	TOTAL
				OFFENCES/ VIOLATION
Driving Without Tyre/Spear Tyre	11	50	631	692
Riding Motorcycle Without Crash Helmet	521	1585	845	2951
Route Violation	11	23	25	59
Driving Without Seat Belt	222	418	285	925
Speed Limit Violation	19	13	23	55
Vehicle Licence Violation	40	131	34	205
Number Plate Violation	319	759	435	1078
Driving Licence Violation	-	29	41	70
Over Loading	6	172	17	195



Driving Vehicle While Under Age 18	-	18	17	35
Use of Phone While Driving	4	21	12	37
Driving Without or With Shattered Wind Screen	-	5	3	8
Failure to Install Speed Limit Device	0	48	398	446
Caution Sign	2	5	11	18
Failure to Move Over	-	5	132	137
Driving Without Specified Fire Extinguisher	2	3	270	275
Light or Sign Violation	2	3	21	26
Obstructing Marshal on Duty	1	22	85	108
Assaulting Marshal	-	-	-	-
Failure to Fix Flag on Projected Load	-	2	8	10
Wrong Over Taking	2	-	-	2
<b>TOTAL</b>		<b>1,162</b>	<b>3,312</b>	<b>3,293</b>
<b>GRAND TOTAL</b>				<b>7,332</b>
<b>GRAND TOTAL</b>				<b>14,664</b>

Source: FRSC, Bida (2021)

In 2018, of the total offences of 3,293 committed by automobile drivers, there is a drastic drop in the number of offenders riding motorcycle without crash helmet with 845 arrested which is about 12% of the aggregate traffic offenders in 2018. More so, wrong overtaking with 2 offenders was the least offence committed by motorist. This could have been as a result of the sensitization of various stakeholders and other traffic enforcement agencies towards curbing traffic violations in Bida Local Government Area.

In conclusion, it was observed that between 2016 and 2018 a total number of 7,332 offences

were recorded, while the least complied with traffic law by automobile drivers in Bida Local Government Area was riding motorcycle without helmet with 2,951 offenders resulting to about 40% of the total number of violations recorded. Also, followed by number plate violation with 1,078 which indicates about 15% of the total number of violations recorded. While the most complied with traffic law is assaulting marshal on duty with no violation within the years observed.

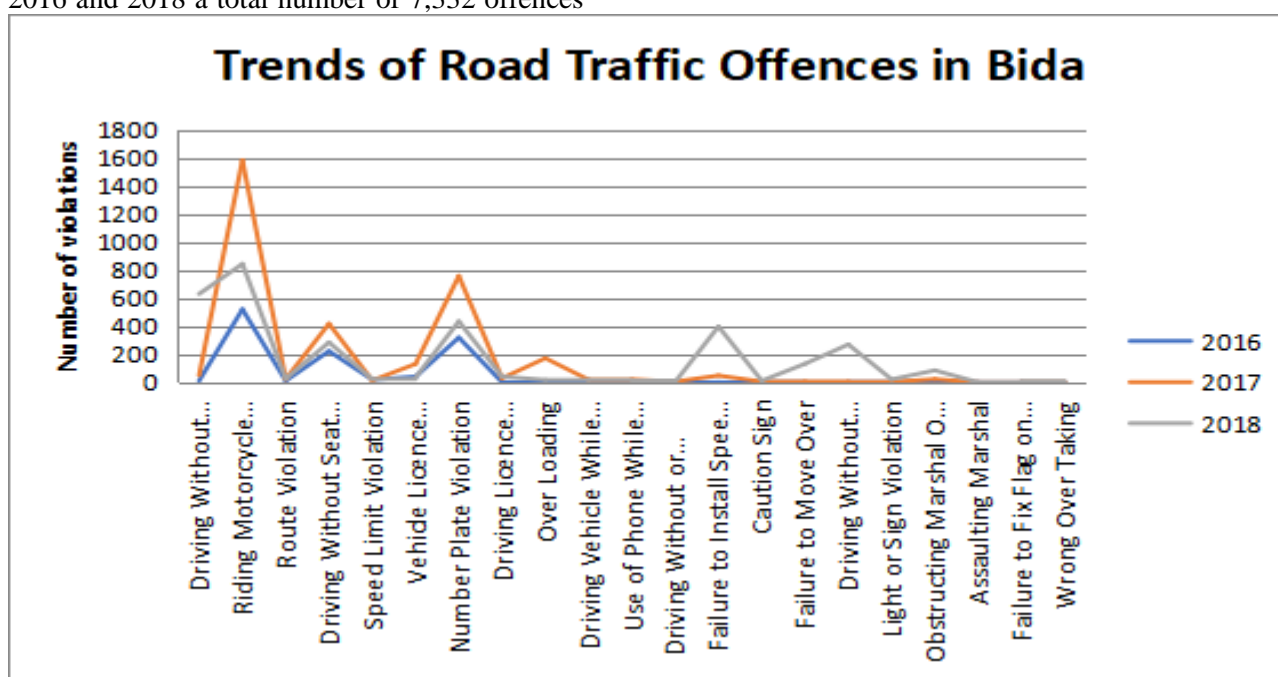


Figure 6: Trends of Road Traffic Offences in Bida (2016-2018)

Source: Authors' Computation (2021)

Figure 6 shows a line graph displaying the trends of road traffic violation from 2016 to 2018 in Bida. Findings reveals that out of the identified traffic offences committed by automobile drivers from the data gotten, the trends are that road traffic violations offence peaked highest in 2017, 2018 and 2016 respectively in the study area. This finding shows the dynamic changes in the violation rate among automobile drivers across the years reviewed.

Figure 6 shows various violations committed by motorcyclists between 2014 and 2018. It was observed that in 2014 to 2017 number plate violation (NPV) was the highest violation committed by motorcyclists with 477, 392, 422 and 493 violators correspondingly, followed by

disregarding traffic control personnel (DTC) with 355, 364, 422 and 493 violators respectively. Whereas in 2018, route violation (RV), was the highest offence committed most by motorcyclists with 501 followed by number plate violations with 441 offenders. Furthermore, of all the fourteen (14) offences captured above number plate (NPV) was recorded to be the highest offence committed by motorcyclists between 2014 to 2018 with 211,599 offenders apprehended while the least was seat belt violations with zero (0) recorded. It was also observed that between the years of observation 2014 recorded the highest violations by motorcyclists with 1,889 offenders while, 2016 recorded the least violation with 1,661 offenders apprehended.

**Table 6: Road Traffic Violation (2014-2018)**

OFFENCES	MC2014	MC2015	MC2016	MC2017	MC2018	TOTAL
NPV	477	392	407	442	441	<b>2159</b>
DLV	47	0	0	0	0	<b>47</b>
OL	259	240	220	144	141	<b>1004</b>
RV	299	347	297	407	501	<b>1851</b>
OS	52	42	35	19	57	<b>205</b>
MDV	43	68	53	71	51	<b>286</b>
DD	59	61	48	46	54	<b>268</b>
DNMV	39	24	24	9	23	<b>119</b>
DWWOT	9	18	7	22	14	<b>70</b>
UPWD	30	34	17	19	17	<b>117</b>
SBV	0	0	0	0	0	<b>0</b>
EWD	19	10	10	3	8	<b>50</b>
DTC	355	364	422	493	331	<b>1965</b>
CHV	201	110	121	106	87	<b>625</b>
<b>TOTAL</b>	<b>1,889</b>	<b>1,710</b>	<b>1,661</b>	<b>1,781</b>	<b>1,725</b>	<b>8,766</b>

Source: VIO (2021)

Note: Number Plate Violation (NPV), Drivers Licence Violation (DLV), Overloading (OL), Route Violation (RV), Over Speeding (OS), Mechanically Deficient Vehicle (MDV), Dangerous Driving (DD), Do Not Move Violation (DNMV), Driving with worn out-tyre (DWOT), Use of Phone while Driving (UPD), Seat Belt Violation (SBV), Eating while driving (ED), Disregarding Traffic Control/ Personal/Device (DTC/P/D), Crash Helmet Violation (CHV).

Figure 8 displays the trends of motorcyclist's violation in Bida between 2014 and 2018. Findings reveal the trends of violations in the form of Number plate violation (NPV), Driving license violation (DLV), Over loading (OL) and Route violation (RV) peaked in 2014, 2015, 2016, 2017 and 2018. These violations, consequently, dropped abruptly on Over

Speeding (OS), Mechanically Deficient Vehicle (MDV), Dangerous driving (DD), Do Not Move Violation (DNMV), Driving with worn out-tyre (DWOT), Use of Phone while Driving (UPWD), Seat Belt Violation (SBV) and eating while driving (EWD). There was also a noticeable sharp increase in the level of traffic violations among motorcyclists on Disregarding Traffic

Control/ Personal/Device (DTC) and Crash Helmet Violation (CHV) between the years captured by the data.

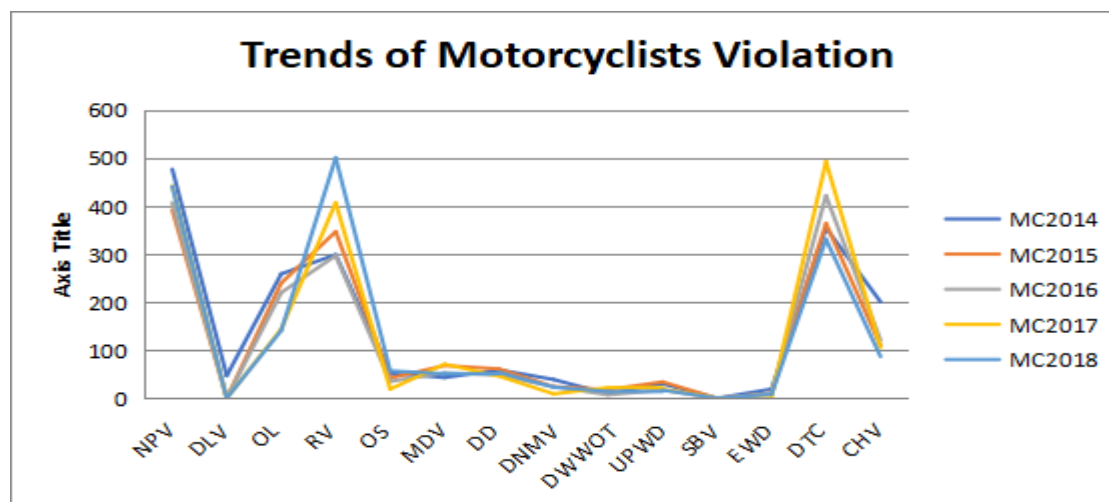


Figure 8: Trends of Motorcyclists Violation (2014-2018)

Source: Author’s Computation (2021)

Table 7: Road Traffic Violation by Motor Vehicle Drivers (2014-2018)

OFFENCES	MV2014	MV2015	MV2016	MV2017	MV2018	TOTAL
NPV	66	47	89	24	61	287
DLV	160	99	146	54	72	531
OL	103	67	59	10	33	272
RV	100	84	96	42	56	378
OS	11	19	16	7	7	60
MDV	164	60	72	17	42	355
DD	45	14	19	2	14	94
DNMV	0	9	20	2	8	39
DWWOT	0	34	44	5	24	107
UPWD	48	26	24	5	12	115
SBV	99	63	74	40	47	323
EWD	114	4	23	7	2	150
DTC	135	83	114	37	65	434
CHV	0	0	0	0	0	0
<b>TOTAL</b>	<b>1,045</b>	<b>609</b>	<b>796</b>	<b>252</b>	<b>443</b>	<b>3,145</b>

Source: VIO (2021)

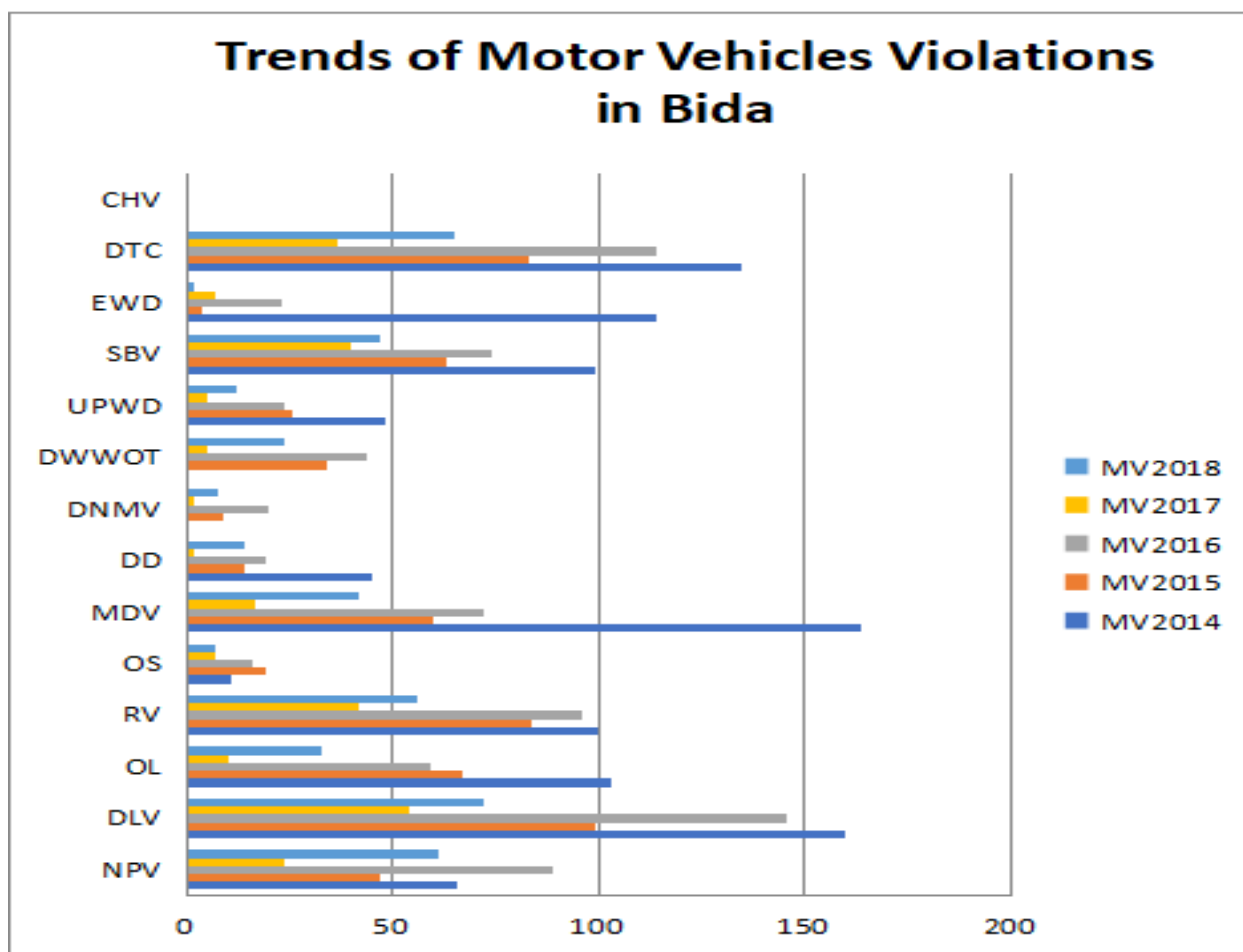
Note: Number Plate Violation (NPV), Drivers Licence Violation (DLV), Overloading (OL), Route Violation (RV), Over Speeding (OS), Mechanically Deficient Vehicle (MDV), Dangerous Driving (DD), Do Not Move Violation (DNMV), Driving with worn out-tyre (DWOT), Use of Phone while Driving (UPD), Seat Belt Violation (SBV), Eating while driving (ED), Disregarding Traffic Control/ Personal/Device (DTC/P/D), Crash Helmet Violation (CHV).

Finally, it was observed among the two modes of transportation (i.e., motorcyclists and motor vehicles). Motorcyclists violated traffic rules

significantly between 2014 and 2018 with a total violation of 8,766 compare to motor vehicles with 3,145 violations. More so, trends and

magnitude of road traffic violations in the study area among motor vehicles drivers between 2014 and 2018 were depicted by bar chart in figure 9 below. This outcome could be as a results of the care free attitude of most

motorcyclists sampled in the study area with the mindset that they could easily evade arrest and navigate their way out during difficult situations.



**Figure 9: Motor Vehicles Violation in Bida**  
Source: Authors' Computation (2021)

Figure 9 depicts a bar chart showing the trends and magnitude of motor vehicles violation between 2014 and 2018 in Bida. It was observed that within the years in review automobile drivers' violation of traffic rules and regulations

was at its peaked in 2014. This was followed by the magnitude of automobile drivers' traffic violations in 2016 and 2015 respectively. Motor vehicles violation was at its lowest ebb in 2017 in the study area.

### Level of Compliance of Automobile Drivers in Bida

**Table 8: Aggregate Compliance Level with Traffic Rules by Automobile Drivers in Bida**

Sampling point	Seat belt	Number plate	Over loading	Route violation	Wrong parking	Total
ESSO JUNCTION	573(0.3%)	834 (0.1%)	648 (0.3%)	213(0.1%)	204(0.09%)	2,472
DOKODZA U-TURN	188(0.1%)	131 (0.9%)	138 (0.06%)	163 (0.07%)	185(0.08%)	805

SIRIKO JUNCTION	425(0.2%)	417 (0.1%)	381 (0.1%)	485(0.2%)	218(0.1%)	1,926
RAMATU DANGANA JUNCTION	70 (0.03%)	448 (0.2%)	213(0.1%)	380 (0.1%)	132 (0.06%)	1,243
MAGISTRATE COURT I	195 (1.4%)	318 (0.2%)	1058(0.5%)	623 (0.2%)	268(0.1%)	2,462
SAINT JOHN	357(0.1%)	506(0.2%)	1356(0.6%)	0 (0%)	0(0%)	2,219
BCC JUNCTION	1021(0.5%)	209 (0.09%)	883(0.4%)	294(0.1%)	435(0.2%)	2,842
<b>TOTAL</b>	<b>2,829(1.3%)</b>	<b>2,863(1.4%)</b>	<b>4,677(2.2%)</b>	<b>2,158(1%)</b>	<b>1,442(0.7%)</b>	<b>13,969(6.6%)</b>

Source: Authors' Field work (2021)

Table 8 shows the aggregate distributions of automobile drivers that complied with traffic rules and regulations in Bida across the 7 sampling points to be 13,969 out of the total number of traffic counts conducted, during the two peak periods of the day (i.e., 7-10am and 3-6pm) which was 211,599. It was discovered that at Esso junction 573 (0.3%) automobile drivers used seat belt, 648 (0.3%) and 204 (0.09%) automobile drivers did not violate route and parking rules respectively. Furthermore, at Dokodza U-turn seat belt usage was about 0.1%. At Siriko junction route compliance is 0.2% which is the highest whereas at Ramatu Dangana junction, number plate has the highest compliance rate with 0.2%.

At magistrate court 1 junction and Saint John, automobile drivers that avoided overloading was the most complied rule with 0.5% and 0.6% respectively. Finally, at BCC Junction the use of seat belt was observed to be the most prominent complied rules followed by overloading with 0.5% and 0.4%. The implication of this is that this table portray low level of compliance of automobile drivers with traffic rules across the 7 identified traffic corridors in the study area. This could be as a result of their negligence and care free attitude owing to the fact to the connections they have or whom their relatives are in the society, poor knowledge of existing traffic laws and driver's state of mind and others.

**Table 9: Relative Level of Compliance to Selected Traffic Rules by Automobile Drivers in Bida.**

S/No	Variable	Frequency	Percentage	Remark
1	Seatbelt	2,828	1.3%	
2	Number Plate	2,863	1.4%	Very Low compliance
3	Overloading	4,677	2.2%	
4	Route Violation	2,158	1%	
5	Wrong Parking	1,442	0.7%	
	<b>Total</b>	<b>13,969</b>	<b>6.6%</b>	

Source: Computer Compilation

Table 9 shows the level and percentage of compliance of automobile drivers with traffic rules with respects to seatbelt usage, vehicle number plate, overloading, route violation and Wrong Parking in Bida, the survey revealed that

a total of 211,599 automobile drivers were surveyed to have plied the roads in Bida during field work observation and traffic counts out of which 13,969 motorists were observed to comply with various traffic rules out of 211,599

automobile drivers surveyed. The results demonstrate that 2,828 automobile drivers were found belted-up which represent 1.3% of the survey, 2,863 automobile drivers were compliant with number plate law representing 1.4%, 4,677 automobile drivers did not overload their vehicles indicating 2.2% of total compliance, 2,158 automobile drivers did not engage in route violation offence indicating 1%, while 1,442 automobile drivers were observed not involved in wrong parking amounting 0.7% of aggregate compliance. This finding shows that the level of compliance of 0.6% is very low among automobile drivers in Bida. Consequently, this finding is alarming and disturbing and if care is not taking it could snowball to unimaginable consequences and loss of life.

This result implies that the average compliance level of automobile drivers with traffic rules and regulations in Bida is very low which calls to question why automobile drivers deliberately violate traffic rules and regulations after much awareness and enlightenment programs by respective traffic regulating agencies. Therefore, various traffic regulating agencies need to double their efforts at looking at the behavioural aspect and mental health status of automobile drivers in Bida. Consequently, this study differs from previous study due to the fact that surveyed were carried out at seven major traffic corridors in and new data were gathered the study area and findings revealing a significant alarming low level of compliance among automobile drivers. At the mental health of motorists were among the suggested recommendations. This will invariably help in shaping traffic enforcement policies and strategies in the study area.

### **Conclusion and Recommendations**

In conclusion, this study has shown the current level of automobile drivers' compliance with traffic rules and regulations in Bida, Niger State is significantly very low at 6.6%. this is disturbing and urgent steps need to be taken by respective traffic regulations agencies to arrest these abysmal trends in motorists' behaviour. Therefore, the following recommendations were suggested;

- i. as a pre-condition for issuance of driver license, mental health status of the would-be drivers should be ascertained before issuance.
- ii. there should be a comprehensive and sustained education and enlightenment program in local dialects on traffic safety in Bida by FRSC and VIO officials.
- iii. Traffic corridors where significant violations take place must monitored and patrol often by VIO and FRSC
- iii. at designated organized garages, awareness program on traffic safety and traffic rules need must be brought to their notice.
- v. a robust data base and records of traffic offenders must be kept and hand device giving to FRSC/VIO officers on the road, for real time access on data base of offenders.

### **References**

- Adetunji, M. A., & Aloba, O. (2014). The level of compliance of commercial motorcyclists to traffic rules on urban roads in South Western Nigeria. *Journal of Educational and Social Research*, 4(3):345-351.
- Ajiboye, A.O., Owoeye, A.S., Yakubu-Wokili, H. & Ibraheem, A. (2021). Assessment of road traffic accident in Minna Metropolis, Nigeria. *Port Harcourt Journal of Disaster Risk Management & Development Studies*, 3(1):92-106.
- Ajiboye, A.O., Kolawole, O. J. & Adebajo, A. A. (2020). Assessment of the statutory duties of the Federal Road Safety Corps aimed at reducing crashes and carnages in Ibadan, Southwest, Nigeria. *Journal of Art, Architecture and Built Environment*,3(2):1-17.
- Ajiboye, A.O., Folagbade, A.M. Ohida, M. E. & Kolawole, O. J. (2022). Appraisal of the success of the Federal Road Safety Corps (FRSC) in road accidents reduction in Kaduna State, Nigeria. *Port Harcourt Journal of Disaster Risk Management & Development Studies*, 4(3&4): (In Press).
- Akpoghomeh, O.S. (2012). The terror of transport and the transportation of terror. The 84th Inaugural Lecture Series delivered on September 27, 2012 at the University of Port Harcourt, Port Harcourt, Nigeria.
- Arosanyin, G.T., Olowosulu, A.T. & Oyeyemi, G.M. (2012). Compliance with road safety regulations among commercial

- motorcyclists in Nigeria. *Canadian Social Science* 8(1), 92-95.
- Dike, D. N., Akponye, M. C. & Nze, I. C. (2018). An 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.
- Folagbade, A. M. (2015). An assessment of the effectiveness of the Federal Road Safety Corps (FRSC) in reducing road traffic accidents in Kaduna State, Nigeria. A Thesis submitted to the Post Graduate School, Ahmadu Bello University Zaria as a requirement for the award of the degree of Master of Science in Transport Management.
- Gana, A.J. & Emmanuel, J.A. (2014). Road transportation and traffic law enforcement in Nigeria: A case study of the Federal Road Safety Corps (FRSC). *West African Journal of Industrial & Academic Research*, 11(1), 134-135.
- Graba, D.A. (2009). Transportation and safety awareness in Nigeria: a case study of commercial drivers and motorcyclists in Plateau State. Unpublished Thesis, National Institute, Kuru.
- Homel, R. (1988). Policing and punishing the drinking driver. A study of general and specific deterrence: Ross Homel. Springer-Verlag, New York, NY. ISBN 0-387-96715-X
- Kulanthayan, S., Radin Umar, R. S., Nasir, M.T. & Haewant, S. (2000). Compliance of proper safety helmet usage in motorcyclists. *Medical Journal of Malaysia*, 55(1):40-44.
- Mawanga F.F. & Ntayi, J.M (2010). Social norms and compliance with road traffic rules in urban areas: Initial impressions of drivers in Kampala, Uganda. *Journal of Transport and Supply Chain Management*, 4(1):138-150.
- NHTSA (1996). The Crash Outcome Data Evaluation System (CODES). *Technical Report. DOT HS 808338* Washington D C: NHTSA.
- NHTSA (2004). *Motorcycle helmet use laws* April 2004 <http://www.nhtsa.gov/people/injury/new-fact-sheet03/motocyclehelmet.pdf>. Accessed on 27th July, 2011.
- Ndoke, P. N. (2006). Traffic control by traffic wardens in Minna, Niger State, Nigeria. *Leonardo Journal of Sciences*, 1(8):53-60.
- Nwachukwu, C. (1998). Road safety laws and regulations - problems of enforcement in Osagie, E. & Omidiji, A. A. Accident reduction in Nigeria: a blue print for the year 2010, Kuru, National Institute press.
- Ojekunle, J. A., Oluwole, M. S., & Ohida, M. E (2017). Analysis of road users' perception of road traffic safety in Minna, Niger State, Nigeria. *Confluence Journal of Environmental Studies*, 11(1):55-68. <http://www.journalhome.com/cjes>. ISSN: 1597-5827.
- Olagunju, Y.K. (2009). Safety challenges of commercial motorcycle operators in Nigeria: Case studies of Lagos, Adamawa and Enugu States. Unpublished PhD Geography Thesis, University of Lagos, Lagos.
- Olawale, S. (2018). Mental health in Nigeria. <https://naijaquest.com/mental-health-in-nigeria/>
- Onakomaiya, S.O. (1990). Trends in Nigeria road safety and accident situations. A paper presented at a conference on accident control, University of Lagos, 1989.
- Owoaje, E. T., Amoran, O.E., Osemeikhain, O. & Ohnoferi, O.E. (2005). Incidence of road traffic accidents and pattern of injury among commercial motorcyclists in a rural community in South Western Nigeria. *J. Community Med. Prim Health Care*, 17, 7-12.
- Oyetubo, A.O., Afolabi, O. J. & Ohida, M. E. (2018). Analysis of road traffic safety in Minna Niger State, Nigeria. *Logistics and Sustainable Transport*, 9(1):23-38.
- Oyeyemi, B.O. (2003). Strands in road traffic administration in Nigeria. Ibadan: Clemeve Media Konsult.
- Substance Abuse and Mental Health Services Administration (2019). 2019 National survey of drug use and health (NSDUH). New York: SAMHSA.
- Sumaila, A.F. (2001). Strategies for minimizing road traffic accidents in Nigeria. NITT Position Paper submitted to Federal Ministry of Transport, Abuja, September, 2001.
- Sumaila, A.F. (2012). The challenge of traffic law enforcement in the Federal Capital Territory (FCT), Nigeria. *Online Journal of Social Sciences Research*, 2(1):27-34.

## Guide For Contributors and Authors

Centre for Human Settlements and Urban Development Journal (CHSUDJ) accepts well researched papers, including case studies from all disciplines in Environmental Sciences and other disciplines or subject areas related to the built environment. The Editorial Board hereby invites contributors to forward their papers/articles for publication in the following format:

1. Manuscripts not more than 15 pages of A4 size (including abstract, tables, figures, references and appendices), typed in double spacing and font size 12.
2. Each paper must be compiled in one column; all texts should be left and right margins of an A4 paper. Decimal numbering of all sections of the articles is recommended (with exception of the reference and acknowledgment section).
3. To ensure anonymity in the pair reviewing process, articles must be structured in such a way that the title of the paper, authors names, address and affiliation are written on the first page, followed by the abstract and body of the paper in that order.
4. Each article should contain an abstracts of not more than 200 words.
5. Each article should contain between 5 to 8 keywords (avoid the use phrases).
6. The introduction should cover: the need for the study or problem statement, aim, objectives, scope and limitations and related works, while the main body should include: brief explanations on methods, algorithms, data collected, instrumentation, fieldwork, laboratory works with computed or analyzed data, results and discussions, inferences and conclusion, recommendation and implementation strategies, Language shall be in English. Grammar/Syntax and Spellings should be properly checked. Use the SI (systeme instructionale) units and symbols. Unusual characters and symbols should be explained in a list of nomenclature.
7. The editorial Board of the journal adopts the Harvard or APA format of referencing.
8. Figures, tables and graphs are to be placed at the appropriate place in the paper and not at the end of the paper.
9. Acknowledgement is optional, but researches being funded through established research grant letter.
10. Three (3) clean copies (hard copy) of the manuscript accompanied with processing fee are to be sent to the editor-in-chief for pair assessment and review. Successful paper for publication shall be communicated on the assessment status of their articles.
11. The corrected or revised electronic version of the article by authors should be sent back to the editor-in-chief using the e-mail address: [chsud@futminna.edu.ng](mailto:chsud@futminna.edu.ng) or in CD-ROM, while one hard copy of the electronic version is sent by post mail as soon as possible, and to be accompanied with publication fee.
12. Payments are to be sent in cash to the Editor-in-Chief, Centre for Human Settlements and Urban Development Journal (CHSUDJ). Federal University of Technology, Minna, Niger State. Payments can also be made to CHSUDJ Journal Account (Access Bank Account No: 0021187573). Receipts will be issued to payees.
13. The Editorial Board will not accept any responsibility for information provided or views expressed by the author(s).
14. Article not in CHSUDJ specified format will be rejected.

