Effectiveness of Traffic Law Enforcement and Severity of Penalties in Deterring Traffic Rule Violations among Commercial Drivers in Gusau Metropolis, Nigeria

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Abstract

The objective of this study was to examine the effectiveness of strict enforcement of traffic laws and weighty fines in deterring violation of traffic rules in Gusau metropolis, from the perspective of commercial drivers. The study adopted cross-sectional design, with questionnaire as the instrument of date collection. A total of 302 respondents participated in the study. The relationship between the study variables were tested using Chi-Square, while Binary Logistic Regression was used to test the likelihood that traffic violation would occur amidst zero tolerance policing and weighty fines. Findings show that strict enforcement of traffic laws would deter drivers from contravening traffic rules. It was also found that weighty fines had no deterrent effect on traffic rule violation. The study concludes that zero-tolerance policing and moderate sanction are effective ways of deterring drivers from breaching traffic rules. To deter drivers from violating traffic rules, therefore, traffic rule enforcers should adopt zero-tolerance policing and moderate fines.

Keywords: Strict enforcement; Traffic laws; Weighty fine; Traffic rule violation; Gusau; Nigeri

Introduction

Traffic rules and regulations are measures put in place to control the behaviour of road users in order to ensure that the road is safe for all users. The essence of making and enforcing traffic rules is to regulate the driving behaviour of road users in order to make the road safe for operators of motor vehicles, passengers, and pedestrians. Therefore, flouting these rules renders the road unsafe for users. For the road to be safe for users, therefore, compliance with these rules and regulations is a prerequisite. Despite the consequences of traffic violation, however, Factor (2018) found that traffic violators were ubiquitous, and commission of traffic offences was more widespread than other delinquent and criminal acts when juxtaposed. Across countries of the world, there are various actions and inactions that constitute traffic offences. For instance, driving under the influence of alcohol is a traffic offence which is dangerous to the driver, the passengers, and other road users. Regulation of the level of alcohol intake of drivers and motorcyclists is premised on the adverse effects it causes on drunk drivers in terms of attitude, impaired judgment, vigilance, perception, reaction, and control (Zhao, Zhang, and Rong, 2014).

Traffic violation, a contravention of traffic rules (Mmahi, Osisiogu, & Yusuf, 2021), is a widespread occurrence around countries of the world. Relying on census data and official information on traffic tickets issued to traffic offenders, in Israel, over a period of seven years, Factor, (2018) explored socio-demographic characteristics of traffic offenders. The study found that about 60% of the drivers studied violated traffic rules and regulations within the period under review. Men committed more violations than women. The older the driver, the fewer

the violations committed, the result showed, indicating that younger people committed more traffic offences than older age groups. Level of education also affected traffic offence commission, as drivers with less education received more tickets than drivers with higher level of education. Other factors associated with more traffic violations were lower social class. Furthermore, distance travelled by a driver and type of vehicle were associated with more violations. On vehicle types, truck drivers received more tickets than car drivers (Factor, 2018). In Qatar, the increasing incidences of traffic violation prompted the adoption of different rule enforcement measures, and new laws which prescribed harsh sanctions for offenders (Shaaban, 2017). In their study of knowledge, attitude and practice of drivers towards traffic rules and regulations in Multan, Raiz & Shahid (2018) found that drivers in Multan disregarded traffic rules and engaged in risky driving behaviour. On their part, Ranjan, Fahim & Kirte (2018) found that about half of a study population of 372 participants in Raichur city were traffic offenders. In Philipines, Aydinan (2020) found that despite having knowledge of traffic rules, drivers in Cabanatuan city constantly violated traffic rules. In Malaysia, Jusoh (2013) found that drivers' bid to reach their daily targets resulted in negligence of traffic rules. In Tripoli, Yahia, Musharfi & Ali (2017) found that majority of their study participants have repeatedly contravened the rule against over speeding. Anticipation of gains to be derived from violating traffic rules motivated drivers in Kuma, Ghana to disregard traffic rules (Akaateba & Gyimah, 2013) without being deterred by the consequences of breaking the law. In Nigeria, Emenike & Akpu (2017) found that contravention of traffic rules in Nigeria has remained widespread, despite government's efforts to prevent it. This implies that traffic rules and enforcement in Nigeria have failed to deter drivers from breaking traffic rules.

To foreclose violation of traffic rules, traffic law enforcement must have deterrent effect. However, studies have shown that enforcement of traffic laws in Nigeria is weak (Gana & Emmanuel, 2014; Okonkwo, Emmanuel, Ojugbana & Ikediashi, 2010; Osazuwa 2019). The purpose of this study, therefore, was to examine the effectiveness of strict enforcement of traffic laws and weighty sanction in deterring commercial drivers from violating traffic rules, from the perspective of the commercial drivers.

Problem Statement and Justification for the Study

Across the globe, concerns have arisen over rising cases of crashes that have characterized road transport. Studies have shown that, among other factors, human factor such as violation of traffic laws and negligence have been the major causes of road crashes worldwide, although in varying degrees (Nyitor, 2011; Ojo, 2015). According to Deepak, Vibha, and Naveen (2017), 70-95% of road traffic crashes occur as a result of violation of traffic laws. Road traffic deaths have continued to rise across countries of the world. Globally, 1.25 million people die yearly, while up to 50 million people sustain various degrees of injuries owing to road traffic crashes (WHO, 2015). As at 2015, RTC was the 9th leading cause of death globally, and it is predicted to rank 7th among global causes of death by 2030 (WHO, 2015). The figure of global fatalities increased to 1.35 million according WHO (2019) report. Comparing fatality rates in developed and developing countries, WHO (2015) reported that 90% of global road traffic fatalities occur in developing countries. Road traffic crashes lead to loss of lives and injury. World Health Organizations report (2018) shows that road traffic crashes have become the leading cause of death of children and young adults. According to the report, road traffic crashes rank 8th (eight) among leading causes of death across age groups, indicating it has surpassed

HIV/Aids, tuberculosis, and diarrhea diseases (WHO, 2018). Furthermore, the report showed disparities in road traffic deaths and injury among road users in low-income, middle-income, and high-income countries between 2013 and 2016. Within the period under review, while there was no reduction in the number of road traffic deaths and injuries, some reductions were recorded in middle- and high-income countries. In all, 104 countries experienced increase in the number of deaths caused by road traffic crashes during this period (WHO, 2018).

In their study of effects of violation of alcohol regulation on driving, Zhao et al (2014) found that driving under the influence of alcohol adversely affected drivers' psychological state, resulting in poor driving performance which causes RTC. Kalu (2018) studied the menace of road traffic accidents in Ghana to among other objectives identify the causes. The study found that traffic violation was the major cause of road accident in the study area. The study revealed that the violation mostly committed by drivers was violation of the rules against drunkenness, which resulted in RTC. Similarly, Brubacher, Chan, Martz, Schreiber, Asbridge, Eppler, Lund, Macdonald, Drummer, Purssel, Andol Fatto, Mann and Brent (2016) examined the prevalence of drug use in injured drivers. Findings of the study revealed that alcohol ranked first among the substances abused by drivers who were involved in RTC. In the same vein, Legrand, Howing Hagenzieker, and Verstraete (2012) studied the prevalence of alcohol and other illicit drugs in injured drivers in Belgium and Netherlands. The study analyzed blood samples of 535 injured drivers admitted at the emergency department of five hospitals in the study area. Drivers who sustained various degrees of injury were found to have violated the rule against drunk driving, and subsequently got involved in road traffic crashes. Consequent upon the effect of alcohol on driving, Nigeria Road Traffic Laws prescribed that the limit of alcohol permitted for drivers is 0.5grames in 100 milliliters of blood (National Road Traffic Regulation (NRTR), 2012). Contravention of this provision/regulation renders the offender liable, on conviction to a fine of N5000.00 or a prison term of 1 year or both (NRTR, 2012). Sisimwo, Mwaniki, and Bii (2014) conducted a cross sectioned study of crash characteristics and injury among motorcycle users in Kenya. The study found that the violators of traffic rule regarding the use of crash helmet sustained higher degrees of head injuries. Emenike and Akpu (2017) examined how traffic rules infringement impacted transportation in Port Harcourt metropolis. The study found that traffic rules and regulations were violated by drivers in all the major road junctions in the study area, while over speeding and dangerous driving were the mostly committed violation in the area. Traffic violation does not only endanger the lives of drivers/motorcyclists and their passengers; it also threatens the safety of pedestrians walking by the roadside. This is owing to the tendency for over-speeding vehicle to (for instance) lose control and kill or harm pedestrians. In a study that examined walking on urban road by Idowu (2016) which aimed at identifying the challenges at Ilorin metropolis it was found that 71.4% and 246 respondents attributed crashes experienced by pedestrians to recklessness of motorists and motorcyclists while 21.4% attributed pedestrian crashes to illegal parking. Using observation and interview methods, Muhammad, Mukhtar and Saleh (2015) studied traffic violations committed by motorists in Dutse metropolis. Findings of the study revealed that commission of traffic offences was massive in the study area, resulting in road traffic crashes. Red light running, wrongful overtaking, and driving without fastening seat belt were the mostly committed traffic offences in the area, according to the study. The study further reported that the causes of traffic violation in the study area were illiteracy, impatience, and lack of awareness of traffic rules, among others.

Understanding the perception of commercial drivers towards traffic law enforcement and its effects on traffic violation and road safety is important because this can influence the extent of traffic violation committed by the motor vehicle operators on the one hand, and law enforcers' retention or discarding of existing approach to traffic law enforcement on the other hand. The nature of their occupation as commercial drivers entails that this set of road users would be on the road on a regular basis. Their behaviour on the road is worthy of attention as it affects the safety of members of the public and all road users. It is worthy to mention that perception influences behaviour. Therefore, the extent of traffic violation could be influenced by the perception that the motor vehicle operators have about traffic law enforcement. Unsafe roads render road users (the public) susceptible to death, injury, or property loss. Therefore, the importance of safety on the road should be taken seriously. To proffer effectual solutions requires addressing the views held by the people involved. This study uncovered the perception of motor vehicle operators and law enforcement agents towards enforcement of traffic rules and regulation, within the context of its effectiveness in forestalling traffic violation and ensuring road safety. Knowledge of this would be useful to the traffic law enforcement officials in discharging their responsibility of traffic policing. It would also be useful to the government in making policies aimed at tackling the menace of traffic violation, and making the road safer. The resultant effect of increased road safety would be reduction in road fatalities. The nature of law enforcement either deters offenders or encourages people to commit crime. Focusing on enforcement revealed the nature of traffic laws enforcement that would be effective in the study area. The findings of this study would be useful to traffic law enforcement officers in adopting traffic policing approach that would be more effective. The road users would also benefit from the implementation of these findings, in the sense that compliance with traffic rules occasioned by effective traffic policing would result in less RTCs which affect road users adversely.

Research Questions

This study was guided by the following research questions:

1. Does strict enforcement of traffic laws deter commercial drivers from contravening traffic rules?
2. Do weighty fines deter commercial drivers from contravening traffic rules?

Hypotheses

1. Ho: There is no significant relationship between strict enforcement and traffic violation in Gusau metropolis
   H_1: There is significant relationship between strict enforcement and traffic violation in Gusau metropolis
2. Ho: There is no significant relationship between weighty fine and traffic violation in Gusau metropolis
   H_1: There is significant relationship between weighty fine and traffic violation in Gusau metropolis

Theoretical framework

This study adopts the routine activity and rational choice theories. The rational choice theory (RAT) was developed by Marcus Felson and Lawrence E. Cohen in 1979 (Lantz & Hutchison, 2021). According to RAT, the contravention of laws is a product of the convergence of three

variables in space and time (Hollis & Wilson, 2021). These are the motivated offender, a suitable target, and a lack of a capable guardian. The motivated offender is the individual who has the intent, capability, and determination to violate the law. A suitable target is a person or thing that the motivated offender perceives to be vulnerable to victimization, accessible, and possessing what the motivated offender considers gratifying or profitable. The motivated offender perceived that victimizing the suitable target would provide him his desired satisfaction, benefits, or gratification. A lack of a capable guardian is the absence of an individual whose presence or nearness can prevent a motivated offender from committing the intended crime. With respect to traffic violations, commercial drivers constitute the motivated offenders. The suitable target is the opportunity to violate traffic laws for various desired gratifications, while a lack of capable guardians is the absence of the police, personnel of the road safety commission, and other traffic law enforcers whose presence can deter traffic violations or the failure of these law enforcers to apprehend and prosecute traffic offenders. From this perspective, the violation of traffic rules in the Gusau metropolis results from the presence of commercial drivers who intend to violate traffic laws, the opportunities available for doing so, and the lack of effective enforcement by traffic law enforcers.

Setting and Methods

This survey examined traffic policing and traffic violation in Gusau metropolis. Gusau metropolis was chosen among other towns in the state because it is the capital of the state. As the state capital, commercial, administrative, and other activities thrive in the area, necessitating the movement of people from one area to the other. Commercial vehicle operators from various towns transport persons and goods to and from the metropolis daily. The larger population in the town as the capital also attract commercial drivers and motorcyclists from across the state resulting in higher vehicular operation. Furthermore, commercial drivers involved in interstate transportation board their vehicles from the metropolis to other states. As a state capital, people from various parts of the country live and transact their businesses in Gusau. The population of this study comprised of commercial drivers in Gusau metropolis. This was not limited to commercial drivers operating within Gusau town. All commercial drivers commuting from Gusau to other parts of the state and from Gusau to other states of the federation constituted the study population. According to the record of National Union of Road Transport Workers Gusau (2020), there was a total of 1413 registered commercial drivers in the metropolis. This study adopted Israel (1992) sample size determination formula. It is assumed that the population of motor vehicle operators is large, but since variability in the proportion of the motor vehicle operators that have a particular perception about the effect of traffic policing on traffic violation was unknown, we assumed that p= 0.5. The study adopted 95% confidence level and + or – 5% precision. A sample size of 302 was therefore determined using this method. Based on the sample size determined above, Three Hundred and Two (302) copies of structured questionnaires were administered to commercial drivers in the study area

Findings

Socio-Demographic Characteristics of Respondents

In this section the socio-demographic characteristics of the study respondents are presented in frequencies and percentages

Table 1
Socio-demographic characteristics of commercial drivers

Age of Respondents	Frequency	Percent (%)
18-28	20	6.8
29-39	90	30.6
40 and above	184	62.6
Total	294	100.0
Educational Attainment of the Respondents	Frequency	Percent (%)
No formal education	67	22.8
Primary	68	23.1
Secondary	135	45.9
Tertiary	24	8.2
Total	294	100.0
Marital Status of Respondents	Frequency	Percent (%)
Never Married	51	17.3
Currently Married	211	71.8
Divorced	19	6.5
Separated	8	2.7
Widowed	5	1.7
Total	294	100.0

Source: Field Survey, 2021

Table 1 contains the demographic variables of the study respondents. As the table shows, the modal value for respondents' age was 40 and above, followed by drivers who were in their young adulthood age bracket, which is 32% less than the modal age mentioned above. Fewer respondents were in the early adulthood (18-28 years of age). The foregoing indicates that majority of the commercial drivers in Gusau metropolis were in their young and middle adulthood. With respect to educational attainment, four categories of respondents participated in the study. Among these categories, the least proportion of the respondents have attained tertiary education, while majority of the respondents have acquired Secondary education. The third category were those who have only acquired primary education without proceeding to higher levels of education. Findings indicate that the number of respondents with only primary education is virtually the same as those without any formal education. The proportion of the currently married commercial drivers was higher than the summation of the values for other marital statuses. Those who never married had the second highest value, albeit, the value for currently married was four times higher than those who never married. The least were the widowed, separated, and divorced, respectively.

Perception of Respondents on Effects of Enforcement of Traffic Rules on Traffic Violation

This study was aimed at examining the effectiveness of zero tolerance policing in detering drivers from violating traffic rules. Table 4.5 contains the views of the drivers in this regard.

Table 2
Respondents' perception on effect of strict enforcement on traffic violation

Do you agree traffic rules are disobeyed because of poor enforcement of traffic rules	Frequency	Percentage (%)
Strongly Disagree	25	8.5
Disagree	20	6.8
Strongly Agree	70	23.8
Agree	179	60.9
Total	294	100.0
Strict enforcement of traffic rules would make drivers to obey traffic rules	Frequency	Percentage
Disagree	105	35.7
Agree	189	64.3
Total	294	100.0

The table 3 shows that frequent traffic violation was traceable to poor enforcement of traffic rule, as drivers would commit traffic offences with the perception that they would not be sanctioned. A total of 179 drivers expressed the view that poor enforcement of traffic rules encourages drivers to commit traffic offences. Therefore, the degree to which traffic rules are enforced determines the extent to which traffic offences are committed. Findings show, as indicated in the table above that majority of the drivers who participated in the study were of the view that degree of enforcement has effect on traffic violation.

Table 3
Respondents' perception on effect of weighty fine on traffic violation

Do you agree that heavy fines would discourage drivers from traffic violation	Frequency	Percentage
Strongly Disagree	51	17.3
Disagree	139	47.3
Strongly Agree	41	13.9
Agree	63	21.4
Total	294	100.0
Do you agree that long prison term would deter drivers from violating traffic rules	Frequency	Percentage (%)
Strongly Disagree	12	4.1
Disagree	35	11.9
Strongly Agree	99	33.7
Agree	148	50.3
Total	294	100.0

Weighty sanction influences traffic violation	Frequency	Percentage
Disagree	183	62.2
Agree	111	37.8
Total	294	100.0
Mild sanctions encourage traffic violation	Frequency	Percent
Strongly Disagree	12	4.1
Disagree	42	14.3
Strongly Agree	90	30.6
Agree	150	51.0
Total	294	100.0

Source: Field Survey, 2021

On the weightiness of fines, it was found that heavy or weighty fines would not deter drivers from violating traffic rules. However, the drivers expressed the view that long prison terms would deter commission of traffic offences. Majority of drivers stated that gravity of sanction would not have effect on traffic violation. Nevertheless, considerable number of participants expressed a contrary view, indicating that gravity of fine (mild or grave sanctions) influences commission of traffic offences.

Hypotheses Testing

Table 4

Chi Square result on the relationship between zero tolerance policing and traffic violation

	Strict enforcement			X^2	Degree of	P-	Remark
Responses	Disagree	Agree	Total	Values	freedom	Value	
Traffic violation							
Strongly Agree	83(44)	69(66)	152				
Strongly disagree	106(56)	36(34)	142	12.845	1	.000	Significant
Total	189 (100)	105(100)	294				

Source: Chi Square output

Table 4 shows a Chi Square test that was carried out to ascertain the relationship between strict traffic rule enforcement and traffic violation. The test result indicates that the relationship between these variables was significant, $X^2(1, N= 294) = 12.845$, P= .000. Since the P-value is less than .05 level of significance, it is therefore concluded that there is significant relationship between the two variables. Strict enforcement has effect on traffic violation.

Table 5
Chi Square result on the relationship between weighty fine and traffic violation

	Weighty Fine			X^2 Values	Degree of Freedom	P-Value	Remark
Responses	Disagree	Agree	Total				
Traffic violation							
Strongly Agree	90(49)	62(56)	152				
Strongly disagree	93(51)	49(44)	142	1.233	1	.267	Not Significant
Total	183(100)	111(100)	294				

Source: Chi Square output

Table 5 contains a Chi Square test that was performed to assess the relationship between weighty fine and traffic violation. The test result indicates that the relationship between these variables was not significant, $X^2(1, N= 294) = 1.233$, P= .267. Since the P-value is greater than .05 level of significance, it is therefore concluded that there is no significant relationship between the two variables. Weighty sanction has no effect on traffic violation.

Binary Logistic Regression Test

Binary Logistic Regression was employed to understand whether traffic violation can be predicted based on strict enforcement and weighty sanction. It was used to generate a model to predict the likelihood of occurrence of the dependent variable (traffic violation), using the independent variables (strict enforcement and weighty fine). The model predicts the probability that traffic violation would occur, using the values of the independent variables mentioned above. It was also used to assess the relationship between the dichotomous (binary) dependent variable and the two independent variables in this study.

Table 6
Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp. (B)	95% C. I. for EXP(B)	
							Lower	Upper
Strict enforcement	-.890	.253	12.372	1	.000	.411	.250	.674
Weighty Fine Fine	-.249	.247	1.018	1	.313	.779	.480	1.265
Constant	.336	.173	3.776	1	.052	1.400		

a. Variable(s) entered on step 1: Strict Enforcement, Weighty sanction.

Table 6 shows that for strict enforcement, P = .000, which is less than .05. This indicates that there is significant statistical relationship between strict enforcement of traffic rules and traffic violation. On the relationship between weighty fines and traffic violation, P = .313. With P-value greater than .05, therefore, there is no significant relationship between weighty fine and

traffic violation. The Odd Ratio for the association between strict enforcement and traffic violation is 0.411, which indicates that there is negative association between the variables. With the Odd Ratio of 0.779, the association between weighty sanction and traffic violation was also found to be negative. Therefore, the model predicts that there is the likelihood that traffic violation would not occur if there is strict enforcement of traffic rules, while weighty sanction was not associated with likelihood of deterring traffic violation.

Discussion of Findings

It is worthy to stress that the perception that offenders have about law enforcement would largely influence their decision on whether to continue to offend or comply with the law. On this note, perceiving law enforcement as weak would convince offenders that the likelihood of detecting their offences and enforcing sanctions on them is slim. This kind of perception would also encourage would-be offenders to violate the law. On the other hand, perceiving law enforcement as strict could deter offenders from breaking the law, since strict enforcement is typified by high chances of detecting and sanctioning contraventions.

In Gusau metropolis, it was found that strict enforcement of traffic laws would deter drivers from committing traffic violations. Regrettably, drivers who participated in this study adjudged enforcement of traffic rules as weak/poor. This indicates that the nature of enforcement in the metropolis is such that would encourage traffic offenders to continue to offend. This is owing to the unlikelihood that traffic offenders would be detected and sanctioned. The prevalent traffic rule violation found by Mmahi, Osisiogu, & Yusuf (2021) is therefore traceable to weak enforcement of traffic rules. The implication of this is that the metropolis is prone to more road traffic crashes, as findings has shown that majority of road traffic crashes are caused by traffic rule violation (Deepak, Vibha, Chadra & Navee, 2017). It is therefore tantamount to endangering lives and property on the road if traffic rules are not poorly enforced, as poor enforcement encourages drivers to commit more violations.

Contrary to the belief that weighty sanctions would deter traffic offenders from breaking traffic laws, it was found that weighty fines would not result in compliance. In the same vein, the drivers reported that mild fines encourage them to offend. This implies that the amount of fine with deterrent effect in the metropolis is moderate one. It equally suggests that there are other factors that are more effective in deterring traffic offenders than payment of fines. It is, therefore, pertinent for policy makers to introduce other sanctions for traffic offences other than fine. One of such sanctions could be imprisonment, without option of fine. Another could be a demerit point system, which has not yet been introduced in Nigeria.

Conclusion

The study examined the effectiveness of zero-tolerance policing and weighty fines in deterring drivers from violating traffic rules. Traffic policing in the metropolis was weak, resulting in drivers breaking traffic rules without fear of detection and sanction. The study, therefore, conclude that with the current weak enforcement of traffic rules, traffic violation would remain widespread, and roads in the metropolis would remain prone to road traffic crashes.

Recommendations

To deter drivers from violating traffic rules, traffic rule enforcers should adopt zero-tolerance policing. Other forms of sanction, other than payment of fines, such as imprisonment without option of fine, and demerit point system could also be introduced.

References

Akaateba, M.A., & Gyimah, R.A. (2013). Driver attitude towards traffic safety violations and risk taking behaviour in kumasi: the gender and age dimension. *International Journal for Traffic and Transport Engineering*, 3(4): 479 – 494

Brubacher, J.R., Chan, H., Martz, W., William Schreiber, W., Asbridge, M., Eppler, J., Lund, A., Macdonald, S., Drummer, O., Purssell, R., Andolfatto, G., Mann, R., Bran, R. (2016). Prevalence of alcohol and drug use in injured British Columbia drivers. *BMJ Open 6*, e009278

City Population (2021). Zamfara State Nigeria. Retrieved from https://www.citypopulation.de/php/nigeria-admin.php?adm1id=NGA037 on 25th December, 2021

Deepak J.K., Vibha, S., Chadra, T., & Naveen, G. (2017). Traffic rule violation: A weak link in prevention of road traffic accidents. *Clinical Surgery, 2*, 1-6

Emenike, G.C., Akpu, D.N. (2017). Assessment of road traffic violations in Port-Harcourt metropolis, Nigeria. *International Journal of New Technology and Research, 3*(4), 55-62

Gana, A. J.1. & 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 and Academic Research*, II(I), 134-151

Hollis, M. E., & Wilson, B. (2021). Routine activity theory: A review of analytic and applied developments. *Annual Review of Criminology*, 4, 89-108.

Idowu, O.F. (2016). Walking on urban roads: a case study of ilorin metropolis, Nigeria. *Indian Journal of Transport Management*, 234-249

Kalu, A.A. (2018). The menace of road traffic accidents and motor traffic management in Ghana, West Africa. DOI: 10.13140/RG.2.2.26249.54888. https://www.researchgate.net/publication/326679489_The_Menace_Of_Road_Traffic_Accidents_And_Motor_Traffic_Management_In_Ghana_West_Africa on 29/11/2020

Lantz, B., & Hutchison, R. (2021). COVID-19 and crime: An analysis using routine activity theory and the crime triangle. *American Journal of Criminal Justice*, 46, 608-614

Legrand, S., Houwing, S., Hagenzieker, M.P., Verstraete, A. (2012). Prevalence of alcohol and other psychoactive substances in injured drivers: Comparison between Belgium and The Netherlands. *Forensic Science International* 220 (1-3), 224-31

Mmahi, O.P., Osisiogu, U.C. & Yusuf, A. U. (2021) Prevalence of traffic violation and challenges of traffic policing in Gusau metropolis, Zamfara State. *YUOYE Journal of Criminology and Security Studies*, 1(1), 107-119

Muhammad, M. H., Mukhtar, J.I., & Saleh, M. (2015). An observation of traffic laws violations by motorists in dutse metropolis, jigawa state, Nigeria. *The International Journal of Humanities & Social Studies, 3*(7), 438-444

Nyitor, A. S. 2011. Psychosocial correlates of road crashes in Ibadan, Nigeria. *Journal of Human Ecology, 31* (3): 165-169

Ojo, A.L. (2051). Assessment of human factors as determinants of road traffic accidents among Commercial Vehicle Drivers in Gbonyin Local Government Area of Ekiti State, Nigeria. *Journal of Research & Method in Education, 5*(1), 69-74.

Okonkwo, B., Emmanuel, O., Ojugbana, C.C. & Ikediashi, I. (2010). Addressing corrupt enforcement by road safety officers on Nigerian highways for fatality reduction. *Injury Prevention*, 16(1), 240-A241

Osazuwa, J. (2019). Weak enforcement of traffic laws brings Lagos residents pain. *The Sun*, 20th May, 2019. Retrieved from https://www.sunnewsonline.com/weak-enforcement-of-traffic-laws-brings-lagos-residents-pain/

Ranjan, D.P., Fahim, M.A., & Kirte, R. C. (2018). A cross sectional study to assess the knowledge, attitude and practice towards road traffic safety among adolescent students of a selected Pre-University college in Raichur city. *International Journal of Community Medicine and Public Health*, 5(6):2446-2452

Shaaban, K. (2017). Assessment of drivers' perceptions of various police enforcement strategies and associated penalties and rewards. *Journal of Advanced Transportation*. DOI: 10.1155/2017/5169176

Sisimwo, P.K., Mwaniki, P.K. and Bii, C. (2014). Crash characteristics and injury patterns among commercial motorcycle users attending Kitale level IV district hospital, Kenya. *Pan African Medical Journal*, *19*, 296

World Health Organization (2015). Global status report on road safety 2015. Geneva: World Health Organization Press. Retrieved from https://www.who.int/violence_injury_prevention/road_safety_status/2015/en/on 9/12/2020

World Health Organization (2018). Global status report on road safety 2018. Geneva: World Health Organization Press

World Health Organization (2019). Global status report on road safety. Retrieved from https://www.who.int/violence_injury_prevention/road_safety_status/2018/GSRRS2018_Summary_EN.pdf on 9/12/2020

Yahia, H.A.M., Safinia, S., Musharfi, N.K. & Ali, S.S.I.A (2017). Car driver attitude towards road safety measures. *Jurnal Kejuruteraan* 29(1), 57-61

Zhao, X., Zhang, X., and Rong, J. (2014). Study of the Effects of Alcohol on Drivers and Driving Performance on Straight Road. *Mathematical Problems in Engineering, 2014*, 1-9. DOI: 10.1155/2014/607652