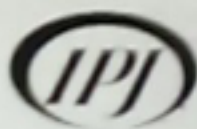
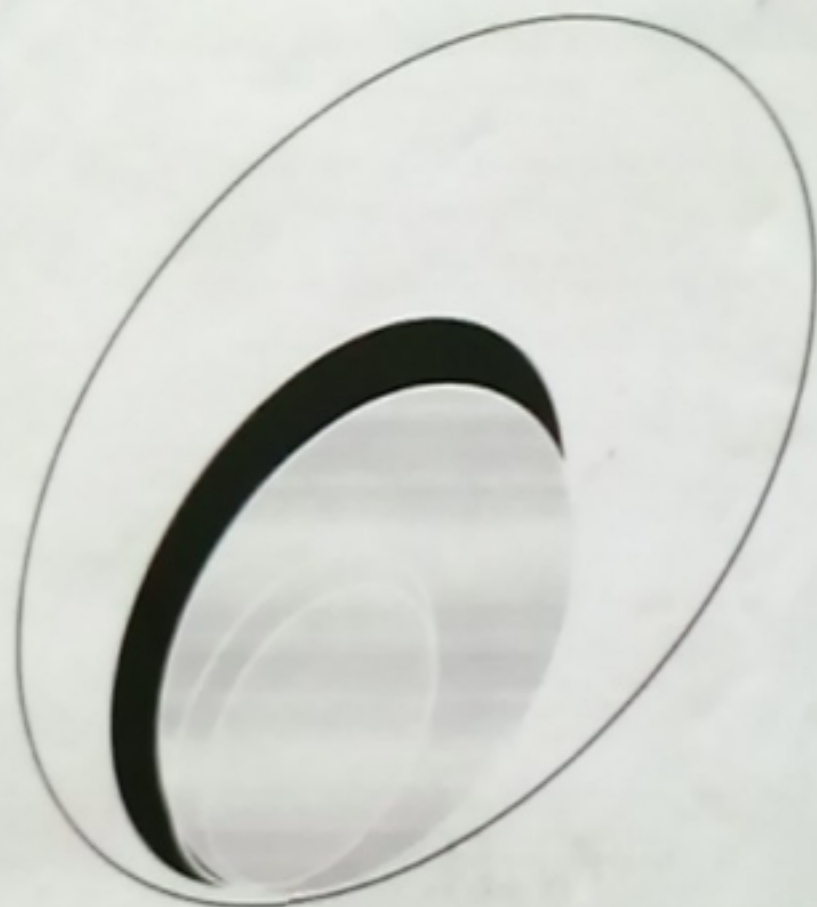
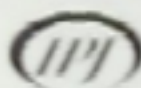


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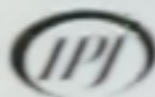
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WHY DO DRIVERS VIOLATE TRAFFIC RULES? A STUDY OF ATTITUDINAL BEHAVIOUR OF COMMERCIAL DRIVERS IN MINNA, NIGERIA

By

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ABSTRACT

The study examined the intensity of traffic rules violation in the city of Minna, explored the reasons for the violations and factors influencing the reasons advanced by the drivers. The study was within the city in a traffic light signal point along a busy thoroughfare where a 15-hour physical surveillance was mounted. This was followed by the administration of self-reporting questionnaire on 287 drivers selected from six major parks. Analysis revealed 5,877 vehicles violating Red light, Zebra Crossing, Stop Line and Branching-Off Direction rules. "Driver to have an interrupted trip", "Not to be seen as a fool", and "In a hurry to reach my destination" are the three main reasons on which the drivers agreed unanimously as the reasons for traffic rules violation. Profit motive, education level and drivers' age are the factors mostly accounting for the statistically significant differences in reasons for traffic rules violation. Installation of cameras complemented by adequate and accurate road users' database and comprehensive provisions to deter breaking of traffic rules are advocated.

Keywords: Attitude, Red Light Running, Traffic Light, Violation

1.0 INTRODUCTION

It has been observed that mere improvement in geometric design of roads do not solve crash problems especially in urban area road intersections (Sze *et al.* 2011) and that red light violations are a major cause of traffic crashes at signalized intersections. According to Retting *et al.* (1999), about 40% of motor vehicle crashes occur at intersections and a major cause of such crashes is drivers disregarding traffic signals culminating in Red Light Running (RLR) (Retting *et al.*, 2008).

Despite the presence and functionality of the traffic signals at intersections, road accidents still occur. This could be

attributed largely to attitudinal behaviours of road users. Retting *et al.* (1998) stated that RLR is estimated to account for 900 intersection crash fatalities annually. Deliberate running of red lights is a common and serious violation that contributes substantially to the more than 1 million motor vehicle collisions that occur at traffic signals each year. High approach speeds coupled with aggressive driving as suggested by Datta *et al.* (2000) often leads to the running of red lights at intersections. When motorists see a yellow light as they approach an intersection, they are supposed to stop except if it is not safe.

It is against this background that this study tends to assess motorists' behaviour and

determine the rate, category of and reasons for violation of traffic rules in order to proffer control measures in Minna Niger state. The objectives of the study are to assess the intensity of road traffic light violation, the reasons for the violation and factors accounting for the violation in Minna, Nigeria.

2. STUDY AREA

The study area is Minna metropolis, the capital of Niger State in North Central Nigeria. It lies between Latitude $9^{\circ} 33'$ and $9^{\circ} 45'$ North of the Equator and Longitude $8^{\circ} 29'$ and $8^{\circ} 35'$ East of the Greenwich Meridian. With the creation of the Federal Capital Territory, Minna has become enhanced in all her developments as more people are attracted to the town.



Fig. 1: Map of Niger state in Nigeria

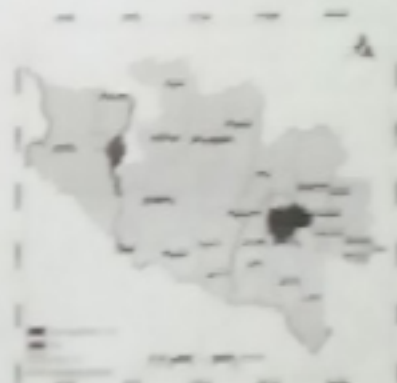


Fig. 2: Local Government Areas in Niger State

Source: Urban and Regional Planning Department, FUT Minna, 2015.



Fig. 3: Minna in Borgu/Chanchaga Local Government Areas

Source: Urban and Regional Planning Department, FUT Minna, 2015.

Minnis metropolitan as if the state of marver had its first installed and functioning automated traffic control lights. The physical survey of vehicles was done at the Top Medical/Pedals road manufacturing traffic light. Tanga auto, being the first to be encountered when entering Minna from the Nation's Capital City, Abuja. The road is a busy one because it consists of urban development land with commercial activities and leads to the city center.

3.0 LITERATURE REVIEW

Road Traffic Accidents (RTAs) which consume material resources and human capabilities, resulting in social and psychological difficulties as well as measurable material losses, is a threat to human life. Human element (80%) is compared to vehicles and road conditions (20%) has been reported by several studies as the primary cause of road crashes (Ahmed *et al.*, 2013) and a reasonable percentage of such accidents occur at signalized intersections with many of such crashes involving red light runners (Retting and Williams, 1996). Increasing support for the relationship between road traffic violations and accident liability has led to research focusing on the motivational factors that promote these behaviors especially Red Light Running (Lawton *et al.*, 2006).

Red light running is a frequent and highly dangerous driving act. Porter and England (2000) opined that ameliorating this lethal behavior is dependent on the understanding of its prevalence, as well as the drivers involved. According to the United States National Highway Traffic Safety Administration's (NHTSA, 2008), there were more than 2.3 million reported intersection-related crashes, resulting in more than 7,770 fatalities and

approximately 750,000 serious crashes in 2008. NHTSA's *Lawless Driving Reporting System* (LDARS) (2008) reports that red light running crashes alone caused 762 deaths in 2008 with an estimated 107,000 people injured annually by red light runners.

Red light runners as observed by Kluber and Association (1997) can be categorized into three distinct law violators who have no regard for drivers' right to the road other than their own, aggressive drivers who have their minds on other things and distracted drivers who take their eyes off the road to tend to something else, such as the kids or to reach for the car phone.

In terms of factors influencing Red Light Running Behaviors, Lawton *et al.* (2006) using focus groups, revealed 3 factors namely stress, Highway Code violations, and more interpersonally aggressive violations. Yang and Ngan (2007) in developing an effective driver assistance system that can prevent red light violations, suggested the importance of having an in-depth knowledge of the contributory factors and circumstances surrounding such violations. Their examination based on Sacramento's red light violation records revealed that younger drivers showed a higher tendency of running the red light and were more likely to commit such a violation at speeds above the posted speed limit and 0:00 peak time period between 5 p.m. to 5 a.m. Chen *et al.* (2017) in their own study confirmed that vehicles tend to run the red light when they are close to intersection during phase transition, and the vehicles following the leading vehicle with short headways also likely run the red light. In a similar study, Retting *et al.* (1998) compared RLR violators and non-red light violators involved and observed that drivers younger than 30 years of age, male, with invalid driver's license and intoxicated

are worst culprits. They also compared violation time to be mostly at night with the violators being young male with more frequent features and about 55% having high characteristics and concluded that geometric design, control system and location are important characteristics affecting frequency of violation. The study in predicting social behaviour as it influences road traffic violations and accidents, Lawton *et al.* (1987) studied social deviance in order to establish its relationship with accident rates using Deviant Behaviour Questionnaire (DBQ). They used Poisson regression to evaluate the relationship between mild social deviance and accident rates where it appears to be mediated by the propensity to violate with age parameter. In a later study, Lawton *et al.* (2006) looked at the affective domain of human psychology and opined that human conditions and anxiety presupposes fast driving that could violate traffic rules and eventually result in accidents.

As presented by Vartiainen and Yoniss (2013), driving behaviour theoretical models consider attitudes as an important determinant of driver behaviour. They identified and re-organised three clusters of drivers using cluster analysis and discovered that traffic violations (speeding, drink-driving, phone use), self-reported behaviour and attitudes to risky behaviour are related. The findings indicate that differences in attitudes and behaviour may be attributed to factors such as age, gender, and area of residence.

A religious inclination of road users' behaviour was given by Rosenbloom *et al.* (2004). Their study in Ramat-Gan (secular) and Bnei Brak (ultra-orthodox) focused on the effects of religiosity and faith on pedestrian behaviour on RLR, ultra

blood alcohol concentrations. In Tabuk city of Saudi Arabia, Al-Anazi (2014) examined RLR

revealed that number of approaches, speed, road width, speed on cross road, and width of cross road significantly affects red light violation.

crossing and walkway height, Furthermore to traffic police to crossing and not assuming children crossing. Their chi square test showed a negative correlation between age and violation frequency; males violate traffic rules than females; younger ones violate more than older. Most importantly, pedestrians in the orthodox environment violate more than those in a secular environment.

The probability sample via telephone conducted by Porter and Berry (2011) revealed that in spite of being knowledgeable about the consequences of RLR, one-fifth of drivers run red light. Age group predicted RLR among other demographic and attitude variables considered where younger ones were more likely to violate. Also being alone in the vehicle and hasty was found to be equally linked to RLR. Frustration according the study has least influence in RLR than speeding, tailgating and angry gestures at others. Driving simulation experiment results by Wu *et al.* (2016) indicated that non-professional drivers paid more attention to red-light running violations in comparison to taxi drivers who had a higher probability of red-light running violation. Also, it was found that taxi drivers were more inclined to steer away to avoid a potential collision while non-professional drivers had more abrupt deceleration behaviours when facing a potential crash. Moreover, the experiment results showed that taxi drivers had a

smaller crash rate compared to non-professional drivers and had a better performance in terms of crash avoidance at the intersection.

4.0 METHODOLOGY

located traffic light signal point. The second survey involved using a questionnaire for the collection of data on the opinions of the selected drivers on the causes for the contraventions while the third survey used key informant survey technique to derive detail information on traffic rules violation from residents at the vicinity of the field-work point.

The traffic count lasted for fifteen hours starting immediately from the time the control lights came on at 7:05am to 10:05pm when it went off. The observation and counting were conducted continuously for fifteen hours. The vehicles were categorized into six (6) to facilitate discerning the

The key informant interview session was equally conducted with those responsive persons within the vicinity of the observatory point which coincidentally revealed a victim of red light running.

The population sample for this research comprised of selected drivers (motorists) in five major motor parks in Minna, Niger state. Preliminary survey in the study area in conjunction with the officials of the National Union of Road Transport Workers (NURTW) revealed that there are 1,012 inter-city drivers and 204 vehicles travelling per day.

The study adopted Slovic formula to determine the sample size of the population.

The study relied on primary data collected by physically recording the number and observing the types of contraventions committed by various categories of motorists at a strategically

category of violations. The six categories include: commercial motorcycles, private motorcycles, tricycles (KEKE NAPEP), commercial cars/buses, private cars/buses, trucks/pickups and Lorries/trailers. Total numbers of vehicles as well as number of violations per category of vehicles were counted during the 15-hour survey period. Using the validated researcher-designed instrument after a pilot survey, data was collected using Attitude towards Traffic Safety Test (ATST). Specifically, the ATST was administered to the road users (motorists) to identify attitudinal factors responsible for the traffic rules violation at traffic light signal point.

The equation is shown below:

$$N = \frac{n}{1 - (e)^2}$$

Where N = population size (1,050)

n = constant

e = margin of error is taken as 5% (0.05)

$$\text{Therefore } N = \frac{1050}{1 - (0.05)^2} = 287$$

Purposive sampling technique was adopted for this research to select the six commercial car parks for sample population as it was not possible to be stopping vehicles for the interview, recourse was made to motor parks where drivers are accessible. The population sample comprised of 287 drivers from commercial car parks that are located within Minna metropolis. The commercial car parks are located in Kpakungu, Central Mosque, Mobil, Tunga, Sabon Gari

and Shagari. All drivers in those parks pass through the selected traffic light signal point for this study.

5.0 DATA ANALYSIS AND RESULT PRESENTATION

5.1 The Basic Profile of Respondents

Table 1 shows that all the 287 drivers sampled are male. This is expected since the focus was on the commercial drivers. Among them 44.9% had no educational qualification while those with primary

school certificate and diploma were 30% and 4.9% respectively. Age is a very common risk factor for predicting drivers' behaviour and about 44.9% of drivers were in the age group of 26 - 35 years. Most of them (59.9%) earned an estimated average monthly income of ₦35,500.00. A little less than a half (46.3%) of the drivers travel between 16 to 20 times in a month to states outside Minna, Niger State. About 50.5% of them drive 18-seater buses (vehicle) to convey themselves and the occupants of the vehicle to various destinations.

Table 1: Summary of Respondents Basic Profile and Characteristics

	Variables	Frequency	Percent
Gender	Male	287	100.0
	Female	0	0
	Total	287	100.0
Educational Qualification	No Certificate	129	44.9
	Primary School Certificate	86	30.0
	Secondary School	42	14.6
	NCE	20	10.5
	Total	287	100.0
	Age	18 - 25	23
26 - 35		129	44.9
36 - 45		88	30.7
46 Above		47	16.4
Total		287	100.0
Income range	Below 25,000	29	10.1
	26,000 - 45,000	172	59.9
	46,000 - 65,000	52	18.1
	66,000 - 85,000	20	7.0
	86,000 Above	14	4.9
	Total	287	100.0
Trips per month	Below 5	11	3.8
	6 - 10	38	13.2
	11 - 15	105	36.6
	16 - 20	133	46.3
	Total	287	100.0
Vehicle type	18 Seater Bus	145	50.5

Motor	113	75.4
Motor Car	29	18.1
Total	287	100.0

Source: Authors' Field Analysis, 2015

5.2 Total Traffic and violations Count

A total of 42,382 vehicles passed through the enumeration point during the 15-hour survey period. It should be noted that some vehicles are bound to pass through this

point several times a day at roughly 50% of the vehicles - commercial motorcycles, tricycles, buses, taxi cabs provide intra-city transport services as can be inferred from Table 2.

Table 2: Volume of Traffic and Traffic Rules Violation

Type	Vehicle	Total	Offender	%
Bike	Com bike	11738	2920	25
Bike	Private bike	6098	953	14
Bike	Tricycle	8944	124	1
Car	Commercial car/bus	3535	617	17
Car	Private car/bus	10536	1156	11
Heavy	Truck/pickup	765	51	7
Heavy	Lorry/trailer	166	6	4

Source: Authors' Field Survey, 2015

5.3 Intensity of Traffic Rules Violation at Traffic Light Signal Point

The traffic count was conducted for one day commencing from the onset of the traffic light at about 7:05 am till 10:05 pm when it went off implying that it was done all day. A total of 5827 violations were observed

and the category of violation is the Red Light Running (RLR). The results is collected in Table 3. Motorcycles are ubiquitous, adventurous and very flexible in terms of manoeuvrability and hence 25% of them were found violating traffic light rules compared to 1% for tricycles and 4% for lorries and trailers.

Table 3: Frequency and period of violation by vehicle category

Vehicle Category/ Time	Com Bike	Priv. Bike	Tricycle (Kekes)	Com. Cars, Buses	Priv. Cars, Buses	Trucks , Pick- Ups	Lorries, Trailers	Total
7:05am - 8:05am	266	80	6	46	53	7	0	458
8:05am - 9:05am	220	92	8	31	53	4	2	410
9:05am - 10:05am	175	74	4	43	49	2	0	347
10:05am - 11:05am	187	66	3	31	60	2	0	349
11:05am - 12:05pm	200	50	5	29	63	5	0	352

12.05pm - 1.05pm	289	36	6	34	54	0	0	369
1.05pm - 2.05pm	168	43	8	29	37	1	1	287
2.05pm - 3.05pm	171	66	7	15	48	1	1	347
3.05pm - 4.05pm	228	92	7	31	51	4	0	413
4.05pm - 5.05pm	192	72	3	35	72	5	0	379
5.05pm - 6.05pm	365	60	12	54	73	2	0	566
6.05pm - 7.05pm	400	128	11	84	87	3	0	713
7.05pm - 8.05pm	89	74	13	63	144	5	2	386
8.05pm - 9.05pm	0	15	15	25	159	9	0	223
9.05pm - 10.05pm	0	3	16	49	153	1	0	224
TOTAL	2920	953	124	617	1156	53	6	5827

Source: Authors' Field Survey, 2015

The table shows that most red light violations are committed generally in the evening specifically between 6.05pm - 7.05pm, commercial and private motor bikes with a record of 400 (56.1%) and 128 (17.95%) respectively summing up to 74.05% being the worst culprits. Generally, as shown in Fig. 4, of the 5827 violations recorded, commercial vehicles (bikes, tricycles, cars, buses) violates more than private vehicles as shown in their frequencies and this represents 62.8%. The least vehicle category that violates are the

lorries and trailers (0.1%) followed by trucks and pick-ups (0.8%) the reason being that they usually avoid this route by making use of ring roads (by-pass).

Figure 4 summarises that 1916 violations were observed in the morning (7.05 am - 12.05 pm), 1795 in the afternoon (12.05 pm - 5.05 pm) and 2116 in the evening (5.05 pm - 10.05 pm). Violations in the evening is highest because of the absence of the law enforcement agents who must have closed work for the day by that period.

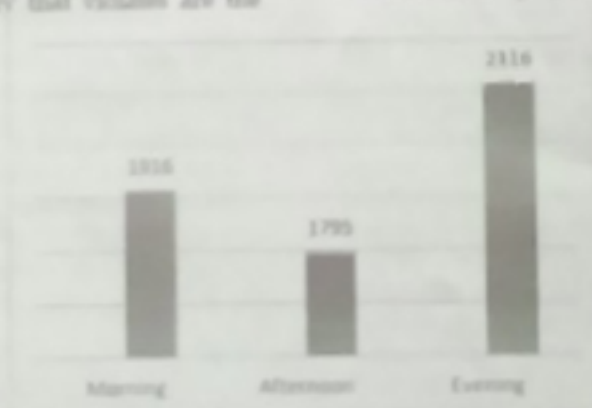


Figure 4. Periods and counts of violation

Source: Authors' analysis of data, 2015

5.4. Types of Violations Observed

The physical errors or driver behaviour at the study area revealed different kinds of violations. Such violations include Red Light Running which occurs when driver fail to stop when the red light is on at intersections; they also fail when vehicle cross a the red to advance the red light rule stop on the white stop bar (with or complete) breaking of Stopline which occurs when vehicle cross going straight ahead; pass flow breaking of Stopping bar then also have the right of way and follow/pedestrian crossing which happens when someone fail to give

priority to have the right of way or stopping on the crossing path or complete.

5.5. Reasons for Traffic Rule Violation

Table 4 shows the results of the analysis of driver's self-reported attitude toward traffic rule violations. From the analysis in Table 4, Driver to have interrupted by (Mean 1.75 SD 1.00), Not to be seen at a Red (Mean 1.94 SD 1.12) and to a fault (Mean 2.24 SD 1.46) are the most common given by the drivers for traffic law violation. The authors responsible on the cause of accident can not with driver characteristics.

Table 4. Reasons for Driver Violation of Traffic Law

Violation	N	Mean	SD	Remarks	Rank
Driver to have an interrupted by during travel	27	1.75	1.00	Agree	1
Not to be seen at a red or other law violation	27	1.94	1.12	Agree	2
To a fault to cross at an destination	27	1.9	1.07	Agree	3
Feeling more urgent than other drivers	27	2.11	1.40	Neutral	4
Feeling too much to be caught	27	2.17	1.39	Neutral	5
Just being adventurous	27	2.41	1.37	Neutral	6

Source: Author Field Analysis, 2022

5.6. Factors associated with Driver's reasons for traffic violation

The factors representing the characteristics of the drivers as presented in Table 5 were subjected to the Chi-Square analysis to test for significant differences in the responses of the drivers regarding reasons for traffic violations.

5.6.1. Driver's level of Education

None of the reasons advanced for driving behaviour at Traffic Light were found to be significantly associated with the driver's level of education. As can be seen in Table 6, there is no association between 'Being adventurous' ($\chi^2 = 0.05$, $p = 0.826$), 'to a fault' ($\chi^2 = 2.77$, $p = 0.29$) and driver for 'Interrupted by' ($\chi^2 = 2.41$, $p = 0.29$).

5.6.2 Age of the Drivers

Two reasons - "Being adventurous" ($\chi^2 = 19.28$, $p = 0.002$), and "Feeling more expert than others" ($\chi^2 = 11.41$, $p = 0.274$); were not significantly associated with age as three

were no statistically significant difference in the opinions of the drivers. There is no association between Age and the other two reasons.

Table 5: Result of Chi-Square Analysis of Factors by Reasons for Traffic Violation

Factors	Hurry	Adventure	Smart	Expert	Uninterrupted trip	Foolish
Education	29.71 0.02*	33.93 0.006*	15.39 0.371	11.45 0.564	29.41 0.021*	18.99 0.269
Age	25.34 0.02*	19.28 0.082	45.70 0.001*	11.41 0.494	34.17 0.001*	34.17 0.013*
Income	34.76 0.004*	70.07 0.001*	39.71 0.001*	16.13 0.444	48.88 0.001*	28.51 0.027*
Trip number	34.76 0.001*	39.15 0.001*	16.16 0.154	7.93 0.791	23.34 0.025*	17.23 0.141
Vehicle	8.07 0.368	36.42 0.001*	13.05 0.11	11.64 0.168	14.03 0.081	6.92 0.545

N.B. * χ^2 is statistically significant at $\alpha < 0.05$

5.6.3 Income of the Drivers

Income of the drivers was found to be significantly associated with all the reasons except "Feeling an expert more than others" ($\chi^2 = 16.13$, $p = 0.444$). This is not surprising because relationship between working hours per week (which affects income) and traffic offences by the commercial drivers is well established in the literature (Varmazyar et al., 2013).

5.6.4 Number of Trips

This factor shows a significant association with only two of the reasons namely "Being adventurous" ($\chi^2 = 39.15$, $p = 0.001$) and the

desire to have "Uninterrupted trip" ($\chi^2 = 23.34$, $p = 0.025$).

5.6.5 Vehicle type

Vehicle type was found to be associated with only one reason - "Just being adventurous" ($\chi^2 = 39.15$, $p = 0.001$). This implies that drivers' propensity to risk-taking has relationship with the size and performance of vehicles they drive. This finding is in accord with that of Henswell and Coster (2002) who observed significant relationship between vehicle performance and drivers' risk-taking behaviour.

3.6.6. Key Informants Interactive Session

The key informants' interactions revealed that an average of three accidents occur every week as a result of red light running. It was gathered that motor bikes are the worst culprits. It was also revealed that the accident rate was higher when the lights were newly installed. At a time, in addition to the presence of Policemen and Traffic Wardens, ropes pulled at both ends across the road was being used to force motorists to obey the red light. During the discussion session, a victim of traffic red light running violation who lamented as follows:

"My house is adjacent to the study point. In the evenings, I usually go across to the other street to relax and go back for evening prayers. As usual, on the 11th May 2015 at about 6:15pm, obedient vehicle users had already stopped at the traffic red light was on giving me the right of way as a pedestrian. I started using the pedestrian crossing confidently when a violating private motorcyclist came from nowhere and knocked me down. When apprehended, he admitted he was wrong but claimed he was trying to beat the 7 pm bus on motorcycles."

4.0. SUMMARY OF FINDINGS

Violation of traffic rules at the Traffic Light Signal Point in the study area is staggering. As many as 5,827 vehicles were found to have been involved in one violation or the other with the commercial motorcyclists alone accounting for 50% of the offenders. Consensus opinions of all the 287 drivers. The study strongly suggests the installation of red light cameras and imposition of penalties on any erring vehicle user. The penalties should be displayed in billboards or on the posts of the traffic lights.

indicated an agreement that the "Desire to have uninterrupted trip", "Not to be seen as a fool" and being "In a hurry" are the main reasons for violation of traffic rules. Profit motives measured in terms of Income, Education and Age of the drivers are the strongest statistically significant factors accounting for the differences in the drivers' opinions for the reasons why they committed traffic offences (Table 6).

The "Desire to have uninterrupted trip" and "Being too adventurous" are influenced by all the factors considered except "Vehicle type" and "Age" respectively implying that being adventurous cut across all age groups and the desire to have uninterrupted trip is not influenced by vehicle type.

4.0. RECOMMENDATIONS

The study recommends education/enlightenment programmes involving Federal Road Safety Corps (FRSC), Police, Traffic agents, Schools, Law enforcement agents be mounted on a larger scale for the various road users association namely Road Transport Employers Association of Nigeria (RTEAN), Amalgamated Commercial Motorcycle Riders Association of Nigeria (ACCOMORAN) and National Union of Road Transport Workers (NURTW) on the implications of non-compliance to road furniture.

For the camera to be effective in tracking the offenders, it must be complimented by adequate and accurate database of road users and hence the need for the Federal Road Safety Corps (FRSC) and the Police to

not only build a strategy but also have their. Further researches are suggested along gender line, on intra urban drivers and on comparative analysis of the private and

REFERENCES

Ahmed Al-Hindi, W., Alshillahi Albuwary, F., & Talha, M. (2013). Drivers' attitudes towards red light violations monitoring system. *Life Science Journal*, 10(SPLISSUE10), 180-187.

Al-Atawi, A. M. (2014). Characteristics of red light running violations in urban areas in Tabuk, Kingdom of Saudi Arabia. *IATSS Research*, 3(2), 119-123. <https://doi.org/10.1016/j.iatssr.2013.08.001>

Chen, P., Yu, G., Wu, X., Ren, Y., & Li, Y. (2017). Estimation of red-light running frequency using high-resolution traffic and signal data. *Accident Analysis and Prevention*, 102, 235-247. <https://doi.org/10.1016/j.aap.2017.03.010>

Deeta, T., Schattler, K., & Deeta, S. (2000). Red Light Violations and Crashes at Urban Intersections. *Transportation Research Record*, 1736(1), 52-58. <https://doi.org/10.3141/1734-05>

Horswill, M. S., & Connor, M. E. (2002). The effect of vehicle characteristics on drivers' risk-taking behaviour. *Ergonomics*, 45(2), 85-104. <https://doi.org/10.1080/00140130110115345>

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operations fully computerised commercial vehicle drivers' propensity to break traffic rules.

Kluber, L., & ASSOCIATION, C. S. A. (1997). RED-LIGHT RUNNING - A PUBLIC MENACE. *VIA*, 118(3), 15-15. Retrieved from <https://trid.ub.org/view/474669>

Lawton, R., Parker, D., Stradling, S. G. & Manshead, A. S. R. (1997). Predicting road traffic accidents: The role of social deviance and violations. Volume 88, Issue 2, May 1997 Pages 249-262. DOI: 10.1111/j.2044-8295.1997.tb02633.x

Lawton, R., Parker, D., Manshead, A. S. R., & Stradling, S. G. (2006). The Role of Affect in Predicting Social Behaviors: The Case of Road Traffic Violations. Version of Record online: 31 JUL 2006. DOI:10.1111/j.1559-1816.1997.tb01805

NHTSA. (2008). United States National Highway Traffic Safety Administration's *Traffic Safety Facts 2008 Report*

Porter, B. E., & Berry, T. D. (2001). A nationwide survey of self-reported red light running: Measuring prevalence, predictors, and perceived consequences. *Accident Analysis and Prevention*, 33(6), 735-741. [https://doi.org/10.1016/S0001-4575\(00\)00087-7](https://doi.org/10.1016/S0001-4575(00)00087-7)

Porter, B. E., & England, K. I. (2000). Predicting Red Light Running Behavior. *Journal of Safety Research*,

- Rotting, E. A., & Williams, A. F. (1996). Characteristics of red light violators: Results of a field investigation. *Journal of Safety Research*, 27(1), 9-15. [https://doi.org/10.1016/0022-4375\(95\)00026-7](https://doi.org/10.1016/0022-4375(95)00026-7)
- Rotting, E. A., Ulmer, R. G., & Williams, A. F. (1999). Prevalence and characteristics of red light running crashes in the United States. *Accident Analysis and Prevention*, 32(6), 617-624. [https://doi.org/10.1016/S0001-4375\(99\)00029-2](https://doi.org/10.1016/S0001-4375(99)00029-2)
- Rotting, E. A., Ferguson, S. A., & Farnon, C. M. (2008). Reducing red light running through longer yellow signal timing and red light camera enforcement: Results of a field investigation. *Accident Analysis and Prevention*, 40(1), 327-333. <https://doi.org/10.1016/j.aap.2007.06.011>
- Rosenthal, T., Nemecek, D. & Becken, H. (2004). For heaven's sake follow the rules: Pedestrian behaviour in an ultra-orthodox and a non-orthodox city. *Transportation Research Part F: Traffic Psychology and Behaviour*, vol. 7, issue 6 (2004) pp. 395-404
- Sin, S. S., Wong, S. C., Pui, N., Cheu, P. W., & Lo, Y. K. (2011). Is a combined enforcement and penalty strategy effective in combating red light violations? An aggregate model of violation behavior in Hong Kong. *Accident Analysis and Prevention*, 43(1), 265-271. <https://doi.org/10.1016/j.aap.2010.06.020>
- Vanniasari S, Murtazavi S B, Hattarolah E, Arghavari S. (2013). The Relationship Between Driving Abrupt Behavior and Self-Reported Accidents Involvement Amongst Professional Bus Drivers in the Public Transportation Company. *Health Scope*, 3(2):110-115. doi: 10.17795/healthscope-11352.
- Vardaki, S., & Yannis, G. (2013). Investigating the self-reported behaviour of drivers and their attitudes to traffic violations. *Journal of Safety Research*, 46, 1-11. <https://doi.org/10.1016/j.jsr.2013.01.001>
- Wu, L., Yan, S., & Radwan, E. (2016). Discrepancy analysis of driving performance of taxi drivers and non-professional drivers for red light running violation and crash avoidance at intersections. *Accident Analysis and Prevention*, 91, 1-8. <https://doi.org/10.1016/j.aap.2016.01.028>
- Yang, C. Y. D., & Nappi, W. G. (2007). Examining driver behavior using data gathered from red light photo enforcement cameras. *Journal of Safety Research*, 38(3), 311-321. <https://doi.org/10.1016/j.jsr.2007.01.008>