KAMPALA INTERNATIONAL UNIVERSITY

International Journal of Strategic Research in Public Administration and Organizational Process | **IJSRPAOP**
p-ISSN: 2636-6843 | *e-ISSN: 2636-6851*
Volume 5, Number 1 July, 2025

Factors Determining Increase in the Rate of Accidents Among Commercial Motorcyclists in Nasarawa State, Nigeria

[1]Aderinto, John Adegoke & [2]Daniel Leku Ishaya
[1]Department of Sociology,
Faculty of Social Sciences, Federal University, Lokoja, Kogi State, Nigeria.
[2]Department of Sociology, Faculty of Social Sciences,
Nasarawa State University, Keffi, Nasarawa State, Nigeria

Article DOI: 10.48028/iiprds/ijsrpaop.v5.i1.13

Abstract

This work focused on factors determining increase in the rate of accidents among commercial motorcyclists in Nasarawa State, Nigeria. The aim is to create awareness on how occurrence of accidents among commercial motorcyclists can be reduced to the barest minimum through dissemination of information. Four factors as spelt out in the study were as follows: to examine the influence of training on motorcycle accident rates, to determine the influence of alcohol and substance abuse on accident rates among motorcycle operators, to establish how road and weather conditions influence accident rates among motorcycle operators, and to assess how institutional constraints influences the accident rates among motorcycle operators in Nasarawa State. The total number of three hundred and eighty (380) questionnaires were sent out to the commercial motorcyclists for the study, but three hundred and fifty (350) were returned and found valid for analysis. The findings from this work showed that demographic information has significant impact on the causes of road accidents among commercial motorcyclists in Nigeria. Among factors that significantly contributing to increasing in the rate of accidents among commercial motorcyclists are over speeding, wrong overtaking, bad roads, sudden mechanical defects, drug/alcoholic intake, etc. It was observed that commercial motorcyclists do not comply with Road Safety Highway Codes. The work therefore provides valuable information on the causes of accidents most especially among commercial motorcyclists in Nasarawa State and Nigeria in general, and how those causal factors can be managed.

Keywords: *Motorcycle operators, Factors determining and Accidents risk*

Corresponding Author: **Aderinto, John Adegoke**

Background to the Study

Accident is an unintended and unforeseen event, usually resulting in personal injury or property damage and even death bringing agony and discomfort to many families all over the world. Accident can however happen through various ways but motorcycle accident is now becoming a common incident on our roads. Motorcycle accidents and the associated unpleasant consequences are on the rise and at such an alarming and disturbing rate.

According to the U.S National Highway Traffic Safety Administration (NHTSA) an estimated 148,000 motorcyclists have died in traffic crashes since enactment of the Highway and National Traffic and Motor Vehicle Safety Act of 1966. The rate for motorcycles is 72.34 per 100,000 registered motorcycles (NCSA, 2007). Motorcycles made up of nearly 3 % of all registered vehicles in the United States in 2008 and accounted for only 0.4 % of all vehicle's miles traveled. However, motorcycle fatalities in 2008 accounted for 14% of total traffic fatalities in the United States compared to 5.92% in 1997. The Number of motorcycle fatalities in the U. S. increased by 150% from 2,116 in 1997 to 5,290 in 2008. During the same period, passenger car and light truck fatality rates decreased by 26.74% and 13.54% respectively. Considering per vehicle miles traveled in 2008, motorcyclists were 37 % more likely than drivers of passenger cars to die in a motor vehicle crash and nine times more likely to be injured. This high accident rates are in part attributed to consumption of alcohol. Alcohol consumption reduces the perceived negative consequences of risk-taking which increases the willingness to take risks after drinking (Traffic Safety Facts: 2008, NHTSA).

In 2004, figures from the UK Department for Transport indicated that motorcycles have 16 times the rate of serious injuries per 100 million vehicle kilometres compared to cars, and double the rate of bicycles. Although motorcyclists make up less than 1% of vehicle traffic, their riders suffer 14% of total deaths and serious injuries on Britain's roads (Clarke, Ward, Bartle, & Truman, 2007). Edson & Tandoc (2007) further add that young motorcyclists below the age of 18 years make up a significant percentage of injuries and fatalities among road users in many countries due to lack of proper training, riding while they are under age and not complying with the traffic rules. Factors such as over speeding, lack of Personal Protective Clothing (PPC), risk-taking behaviour, and drunk-driving contribute to this rising trend.

In Tanzania 181 lives were claimed due to motorcycle accidents during the first quarter of 2010 (Nkwame, 2010). This is partly due to the rapidly increasing number of motorcycles from 6,700 in 2007 to 85,000 in 2009, a 13-fold increase in the period of 2 years (Nkwame, 2010). The reason behind the reported increase in number of commercial motorcycles is the fact that motorcycles are sold at relatively cheaper prices than other vehicles and good earnings from the motorcycle taxi business which encourages more people especially youths to join this business (Solagberu, Suraju & Kokomo, 2006). According to the then Acting Chairman for Road Safety Committee, Dares Salaam alone, in the period from January to June 2010, has witnessed 64 deaths and 615 casualties due to motorcycle related accidents, involving both drivers and passengers (Mustapha, 2010). Motorcycle accidents have drawn great attention from the Tanzanian government authorities. For example, 2010 Road Safety Week had a theme of "Discourage High Speed; Cyclists Wear Helmets; Accidents Kill,

Injure"". Motorcycle accidents have drawn great attention from the Tanzanian government authorities. For example, 2010 Road Safety Week had a theme of "Discourage High Speed; Cyclists Wear Helmets; Accidents Kill, Injure" (Mustapha, 2010).

Over the years, there is a wide gap in knowledge and information available about road safety efforts and its practice in Nigeria. A lot of underlying principles of road safety are either not well understood or put into effective practice by various key stakeholders. This study "Factors determining increase rate of accidents among commercial motorcyclists in Nasarawa State" is aimed at addressing the gap, such that there would be a significant reduction in road accidents, dramatic improvement in the management and control of road accidents, the apprehension and prosecution of road traffic offenders among commercial (Okada) motorcycle riders in Nasarawa State of Nigeria.

With the rising motorcycle population and significant increase in the member of motorists and commuters in Nigeria, we may expect more road accidents, with the accompanying casualties and fatalities except perhaps, decisive steps are taken to clearly understand and squarely face the principal causes of road accidents, beyond these, road accidents need to be seen to be sufficiently controlled and well managed. The federal road safety commission was put in place about twenty-eight years ago (1988) in Nigeria in order to ensure safety of lives on Nigeria roads, the rate with which accident is occurring on daily basis on our roads does not justify the large amount of money being paid to various agencies in charge of road safety in Nigeria. As a result, this study wants to examine the root causes of these incessant occurrences of accidents especially among commercial motorcycle riders on Nigerian roads. It is believing that if the above stated problem is known, it will help a great deal to proffers measures that will reduce the increase rates of the occurrence of accidents among commercial motorcycle riders in Nasarawa State and Nigeria at large. In the course of the study, the following research questions will be look into:

1. What are factors that increase rate of commercial motorcycle accidents in the study area?
2. To what extent do commercial motorcycle riders comply with road safety highway codes in the study area?

Literature Review

In recent years, there has been a growing concern with the significant increase of accidents involving motorcycles in a number of countries (Naci, Chin & Huang, 2009). Despite the use of motorcycles as a major means of transport in some countries, they constitute a means of transport that is considered to be highly risky (Nunn, 2011). This is because they do not have safety devices to the entire body or protection structure for drivers and passengers (Albalate & Villadangos, 2010). According to the World Health Organization in 2004 around 1.2 million people were killed (2.2% of all deaths) and 50 million more were injured in motor vehicle accidents. This translates to 2 lost lives per minute. Developing countries are particularly at a disadvantage since 70% of these accidents are occurring in these states. By 1990, road accident was the 9th leading cause of death, this condition is projected to immensely rise by 2020, and it will be the 3rd leading cause of death. Road accident is also the leading cause of

injury, with road accident injuries higher than occupational injuries. This has attracted many studies being conducted to uncover the causes, and impacts of motorcycle transport accidents in different countries.

According to Taiwo (2007), most riders take for granted the ability of their automobile to handle minor road hazards such as bumps, pot holes or rail road tracks, these minor road hazards are major problems for motorcycles because these hazards may require sudden changes of lane position and direction. Accidents due to motorcycle riding especially in developing nation like Nigeria is on the increase yearly due to the fact that the motorcyclists do not follow the traffic rules and they in their mentality believe they are 'the king on the roads' (FRSC, 2007). FRSC (2007) further stated that motorcycle crashes are more likely to occur on certain times especially raining seasons in Nigeria. Raining season in Nigeria is a season for motorcycle accidents because of the filled pot holes with water and the slippery surfaces of the roads.

The state of roads is one of the causes of motorcycle accident in Nigeria, as a result of the various pot holes and wobbles motions on deformed roads, the motorcyclists" lose control of their motorcycles and collision with oncoming vehicles may occur. Often factors responsible as identified by FRSC (2007) include brake failure; control of the motorcycle is lost when the brake fails and thereby resulted in an accident. The same body has identified road defects as causal factor of motorcycle accidents in Nigeria, as a result of the various pot holes and wobbles motions on deformed roads, the motorcyclists lose control of their motorcycles and collision with on- coming vehicles or motorcycles may arise. Often, factors responsible as identified by FRSC (2007) include brake failure; control of the motorcycle is lost when the break fails and thereby resulted in an accident.

Paulozzi (2005) noted that the National Highway Traffic Safety Administration (MHTSA) has reported that accident rates leading to death from crashes among motorcycle riders in the United States increased from 21 per 100 million in 1997 to 38.4 per 100 million in 2003 motorcycle miles travelled.

Akinlade (2000) while looking at the same subject matter, from the public healthy perspective noted that road traffic accidents have been recognized as important health problems in both developed and developing nations. He observed that road traffic accident has been increasing in developing nations like Nigeria and Tanzania while there has been a reduction in developed nations like Australia (Ogbeide, Okojie, Isah & Waghatsoma, 1994). Motorcycles accident is believed to affect the quality of life and to have major social and economic effects. It is cause maybe by a combination of human errors and failures, poor road signs, bad road condition and motorcycle defects.

It was noted that the most important aspect of the human factors is age of the motorcyclists, medical fitness of the motorcyclists, drug/alcoholic consumption patterns, fatigues, mental status and educational levels (Oladepo & Brieger, 1986; Odero, Gamer & Zwi, 1997: Lin, Chang, Pai, & Keyl, 2003: Sexton, Banghan, Elliot, & Maycock, 2004: Elliot, Baughan & Sexton, 2007). Many studies have been carried out on the use of motorcycles as means of

public transportation in Nigeria. Ogunmodede, Oluwadiya & Otuya (2012) identified factors influencing high rate of commercial motorcycle accidents in Nigeria. They found that over-speeding, wrong overtaking, bad roads, sudden mechanical defects and alcohol intake as major factors. They also discovered that commercial motorcycle riders do not comply with Road Safety Highway Codes. Nigeria, attested to the fact that motorcycles have higher fatality rate per unit of distance travelled when compared with other automobiles, this is because motorcycle riders are otherwise referring to as exposed road user.

Aganga, Umoh & Abechi (1983), using subjective methods such as smell of alcohol on the people interviewed, ascertained that as low as 0.01% of drivers in Zaria area of Nigeria were driving while intoxicated compared with 45% in Jamaica. Driver's negligence is another major contributing factor to accidents and these includes reckless driving, improper overtaking and disregard for traffic light. Such causes may have had alcoholic consumption as an underlying factor (Odero, Gamer & Zwi, 1997; Nakahara, Chadbunchachai, Ichnikawa, Tipsuntomsak & Wakai, 2005; Clarke, Ward, Bartle & Truman 2007).

In Thailand, it was reported that motorcycle related crashes accounted for the majority of injuries and deaths from road traffic accidents (RTAS), contributing factors includes alcoholic consumption, invalid driver's license, inexperience and age of the drivers, as they were found to be a common characteristics in motorcycle accidents than in accidents by other vehicles (Swaddiwudhipong, Nguntra, Mahasakp, Koonchote & Tantriratna 1994; Ichikawa, Chadbunchachai & Marui, 2003; Haque, Chin & Huang, 2009). Ogagaoghene (2011) speaking at the inauguration of members of association of motorcycle riders in Oyo State, Nigeria, attested to the fact that motorcycle have higher fatality rate per-unit of distance travelled when compared with automobiles, this is because motorcycle riders are otherwise referring to as exposed road users.

He further stated that motorcycle accidents in Oyo state, Nigeria are caused by the rider's disobedience to traffic rules and regulations. To overcome over speeding running mode on a curve due to excess speed or under cornering, riding under the influence of alcohol which affects the riders judgment, riding bikes with worn-out tyres, brake failures accounted for motorcycle accident due to loss of control, lack of accessories like rear mirror, functional horn and head lamp, route violation: facing on-coming vehicles that is riding against the traffic and riding motorcycle without crash helmet which accounts for 95% motorcycle accidents (Ogagaoghene, 2011).

The government of Nigeria formulated various laws which were enacted by Federal, State and Local Governments to curb the excesses of the riders, this includes The National Road Traffic Regulation of 2004 and FRSC Establishment Act 2007 to mention but few, with all these put in place, it is still disheartening that motorcycle crashes are still recorded daily in Oyo state, Nigeria (Ogagaoghene, 2011).

Methodology

The instrument used for this study was questionnaire, which was designed to solicit information on demographic characteristics of the respondents and on causes of road

accidents among commercial motorcycle riders in Nasarawa State, Nigeria. The total numbers of three hundred and fifty (350) commercial motorcycle riders working in Nasarawa State, Nigeria were sampled for the study, with one hundred and twenty (120) from west senatorial zone, one hundred and fifteen (115) each from the north and south senatorial zones respectively. The findings were presented in descriptive form using frequencies, percentages, tables, mean and standard deviations. The sequence of presentation was presented with the bio-data of the respondents and the research questions.

Analysis of Findings

This section clarified demographic features of the respondents such as age, gender, level of education, marital status, riding experience, training experience before riding, duration of training received and types of motorcycle they are riding respectively.

Table 1: Distribution of Respondent by Age

Age (years)	Frequency	Percentage (%)
14-20	23	6.5
21-26	122	34.9
27-31	174	49.7
32 and above	31	8.8
Total	350	100.0

Source: Field Survey, 2024

The above table reveals that 174 (49.7%) of the respondents fall within 27-31 years of age and are the highest, 122 (34.9%) of the respondents were between 21-26 years, 31 (8.8%) of the respondents were within the age bracket of 32years and above, while 23 (6.5%) were in the age bracket of 14-20 years. These represent the major working force in Nasarawa State.

Table 2: Distribution of Respondents by Sex

Sex	Frequency	Percentage (%)
Male	344	98.3
Female	06	1.7
Total	350	100.0

Source: Field Survey, 2024

Table 2 above indicates that majority of the respondents were male 344 (98.3%), while 06 (1.7%) of the respondents were female. The result shows that motorcycle riders are dominated by male when compared with female motorcyclist riders.

Table 3: Distribution of Respondents based on their levels of education

Level of Education	Frequency	Percentage (%)
None	135	38.6
Primary	111	31.7
Secondary	82	23.4
Tertiary	22	6.3
Total	350	100.0

Source: Field Survey, 2024

Table 3 above shows the levels of education of commercial motorcycle riders, and it was discovered that most Okada riders 135 (38.6%) have never attended schools nor experienced formal education, 111 (31.7%) of the respondents only attended primary school, 82 (23.4%) of the respondents had secondary education, while only 22 (6.3%) of the respondents had post-secondary education. This may likely account for why majority of these motorcycle riders are prone to accidents because it would be difficult for them to interprets road signs on the highways.

Table 4: Distribution of Respondents by Marital Status

Marital status	Frequency	Percentage (%)
Single	99	28.3
Married	203	58.0
Divorced	33	9.4
Separated	15	4.3
Total	350	100.0

Source: Field Survey, 2024

From table 4 above, the distribution of respondents based on their marital status indicated that married people dominated the Okada riders' business, for it accounts for 203 (58%) of the total respondents, 99 (28.3%) of the respondents were single, 33 (9.4%) are divorcee while 15 (4.3%) are separated from their wives. One can therefore conclude from the result that extra caution is needed to be maintained among the commercial motorcyclists since they are married and therefore ought to have been responsible.

Table 5: Distribution of Respondents based on their years of motorcycle riding.

Years of riding	Frequency	Percentage (%)
1-3	109	31.1
4-6	199	56.9
7-10	22	6.3
11-16	12	3.4
17-20	5	1.4
21 and above	3	0.9
Total	350	100.0

Source: Field Survey, 2024

The above table shows the years of experience since the respondents have been riding commercial motorcycle. It can be concluded that 199 (56.9%) of the respondents had between four (4) to six (6) years of riding experience, 109 (31.1%) are those that recently learned how to ride, for they had between one (1) to three (3) years of riding experience, 22 (6.3%) of the respondents reportedly had between seven (7) to ten (10) years of experience in riding, 12 (3.4%) of the respondents affirmed they had between eleven (11) to sixteen (16) years riding experience, 5 (1.4%) of the respondents stated they had seventeen (17) to twenty (20) years of riding experience, while 3 (0.9%) of the respondents had twenty-one (21) and above years riding experience. It is therefore obvious from the table that majority of the riders are just been recent in the motorcycle riding business. This may be associated to economic hardship and the increase in the unemployment market which led to the recent influx into the business.

Table 6: Distribution of Respondents on whether they received formal training before riding

Formal training	Frequency	Percentage (%)
Yes	132	37.7
No	218	62.3
Total	350	100.0

Source: Field Survey, 2024

Table 6 above indicated that majority of the commercial motorcycle riders 218 (62.3%) did not undergo formal training rather undergo informal training before embarking on the riding business while 132 (37.7%) of the respondents received formal training.

Table 7: Distribution of Respondents showing the duration of training received

Duration of Training	Frequency	Percentage (%)
One week	248	70.9
Less than one month	54	15.4
One -six months	35	10.0
One year and above	13	3.7
Total	350	100.0

Source: Field Survey, 2024

Table 7 above reveals the level of training received by the commercial motorcycle riders before embarking on the business. 248 (70.9%) of the total respondents had training for one week, 54 (15.4%) of the respondents trained for less than one month, 35 (10%) of the respondents received training for between one and six months while 13 (3.7%) of the respondents account for one years and above period of training. It can be observed from the table above why there are constant increase of accidents among commercial motorcycle riders which was lack of adequate training of the riders, 302 (86.3%) of the total respondents received formal motorcycled riding training for between one and three weeks, meanwhile it is required that the duration of training should not be less than one and half year, if sanity will be kept on our highways.

Table 8: Distribution of Respondents based on the type of motorcycle they ride

Types of motorcycle	Frequency	Percentage (%)
Jinchen	40	11.4
Baja	158	45.2
Boxer	130	37.1
Honda	15	4.3
Kawazaki	7	2.0
Total	350	100.0

Source: Field Survey, 2024

The table 8 above indicates that Bajaj was the most commonly used type of motorcycle for commercial business in Nasarawa state, for it accounts for 158 (45.2%) of the sampled

population, 130 (37.1%) of the respondents rode boxers, 40 (11.4%) of the respondents make use of Jinchen, 15 (4.3%) of the respondents used Honda while 7 (2.0%) used Kawazaki respectively.

Research Question 1: What are factors that increase rate of commercial motorcycle accidents in the study area?

Table 9: Factors that Increase the rate of Commercial Motorcycle Accidents

S/N	Items	SD	D	U	A	SA
1	Over-speeding	27 7.7%	18 5.1%	8 2.3%	145 41.4%	152 43.4%
2	Wrong overtaking	31 8.9%	13 3.7%	6 1.7%	97 27.7%	203 58%
3	Bad roads	21 6%	12 3.4%	5 1.4%	78 22.3%	234 66.9%
4	Mechanical defects	60 17.1%	16 4.6%	3 0.9%	92 26.3%	179 51.1%
5	Drugs/alcoholic intake	17 4.9%	13 3.7%	11 3.1%	80 22.9%	229 65.4%
6	Tyre defect	21 6%	11 3.1%	15 4.3%	90 25.7%	213 60.9%
7	Trafficators failure, mis-information	18 5.1%	17 4.9%	13 3.7%	67 19.1%	235 67.1
8	Animal crossing	16 4.6%	8 2.3%	4 1.1%	93 26.6%	229 65.4%
9	Over – loading	24 6.9%	23 6.6%	3 0.9%	101 28.9%	199 56.9
10	Heavy rain	43 12.3%	19 5.4%	13 3.7%	141 40.3%	134 38.3%
11	Wrong maneuvering	13 3.7%	15 4.3%	11 3.1%	183 52.3%	128 36.6%
12	Dangerous checkpoint	40 11.4%	19 5.4%	14 4%	118 33.7%	159 45.4%
13	Poor knowledge of traffic code	17 4.9%	10 2.9%	9 2.6%	204 58.3%	110 31.4%
14	Smoke emission of other vehicle	45 12.9%	13 3.7%	17 4.9%	156 44.6%	119 34%
15	Income generation	21 6%	11 3.1%	7 2%	113 32.3%	198 56.6%

Source: Field Survey, 2024

The factors that cause increase in the rate of accidents among commercial motorcycle riders are shown in the above table. Over speeding was ranked highest by the respondents, 297 (84.8%) of the respondents agreed and strongly agreed that it was the major cause of accidents among commercial motorcycle riders, 45 (12.8%) disagreed and strongly disagreed. 300 (85.7%) of the respondents support wrong over taking as the major cause of increase in accidents among commercial motorcycle rides, while 44 (12.6%) of the respondents were not in support of this fact. 312 (89.2%) of the respondents pointed at bad roads as the principal

cause of accidents among commercial motorcycle riders, 33 (9.4%) disagreed with this stand. 271 (77.4%) of the respondents remarked mechanical defects on the motorcycles such as unexpected cut of wheel chain, loosening of bolts and nuts, brake failure, among others as the main cause for the increase rate of accidents among commercial motorcycle riders while 76 (21.7%) of the respondents objected this stand. 309 (88.3%) of the respondents believed that drug/alcoholic intake by these operators is a major factor responsible for the increase rate of accidents among okada riders in Nasarawa state and Nigeria in general, while 30 (8.6%) of the respondents rejected this claim. 303 (86.6%) of the respondents remarked tyre defect as the main factor responsible for the incessant accidents among okada riders, while 32 (9.1%) did not agreed. 302 (86.2%) noted trafficators failure, mis-information as the principal factor that made accidents among okada riders to be on the increase. 322 (92%) of the respondents affirmed animal crossing as a factor that aid the increase rate of accidents among motorcycle riders. 300 (85.8%) of the respondents agreed that over-loading was a significant factor responsible for the danger. Other factors observed by the respondents as causing increase rate of commercial motorcycle accidents are enumerated based on their level of agreement, such as heavy rain 275 (78.6%), wrong maneuvering 311 (88.9%). Dangerous check point by the police, military, Road safety corps officers, revenue collectors, accounted for 277 (79.1%), poor knowledge of traffic codes 314 (89.7%), smoke emission of other vehicles 275 (78.6%) and lastly the desire to gain more revenue and increases profit accounted for 311 (88.9%) of the respondents respectively. This finding collaborated the earlier finding of Odero et al (1997), Nigerian highway code, (2008); Salawu, (2008); Adisa, (2010) and Ngim and Udosen (2007) that over speeding, bad road, dangerous overtaken, use of alcohol, poor knowledge of traffic codes and income generation are factors that are responsible for accidents among commercial motorcyclists.

Table 10: Types of drugs/alcohol taken by the commercial motorcycle riders

Types of drug/alcohol	Frequency	Percentage (%)
Tramor	196	56.0
Marijuana	86	24.6
Beer	46	13.1
Hot drinks mix with pap (akamu)	22	6.3
Total	350	100.0

Source: Field Survey, 2024

Table 10 above was used to identify the identity of the true picture of the drug/alcoholic in take pattern of the respondents, it was identified that 196 (56%) of the respondents take tramor drug, 86 (24.6%) of the respondents smoke marijuana (Indian hemp), 46 (13.1%) of the respondents said they drink beer of different brands while only 22 (6.3%) of the respondents drink hot drinks which include local dry gin (Ogogoro), Regal gin, Baron, Calorosy, e.t.c. The finding indicates that commercial motorcycle riders' drinks alcohol and take drugs which may be responsible for the increase rate of accident among them.

Research Question 2: To what extent do commercial motorcycle riders comply with road safety highway codes in the study area?

Table 11: Extent of commercial motorcycle rider's compliance with road safety high way code

S/N	ITEMS	NT	OT	T	VT
1	I carry more than one passenger at times	36 10.2%	21 6%	52 14.9%	241 68.9%
2	I check my motorcycle every day before riding	49 14%	27 7.7%	95 27.1%	179 51.1%
3	Every time I want to carry passenger, I put on my trafficator's light before parking to carry passenger	29 8.3%	21 6%	189 54%	111 31.7%
4	I have my trafficators, mirrors, horn, rear light functioning well	47 13.4%	102 29.1%	53 15.1%	148 42.3%
5	I maintain road safety speed	58 16.6%	19 5.4%	160 45.7%	113 32.3%
6	I keep a long distance between myself and the vehicle, motorcycle ahead of me	31 8.8%	133 38%	86 24.6%	100 28.6%
7	I use safety equipment like helmet while riding	329 94%	9 2.6%	8 2.3%	4 1.1%
8	I drink alcohol / drugs only in the night	10 2.9%	26 7.4%	102 29.1%	212 60.6%
9	I drink alcohol during the day	8 2.3%	10 2.9%	92 26.2%	240 68.6%
10	I always ride with my driver's license	256 73.1%	63 18%	10 2.9%	21 6%

Source: Field Survey, 2024

Table 11 above reveals the extent with which commercial motorcycle riders comply with the rules and regulations stated in the Nigerian highway codes. 293 (83.8%) revealed that it was true they carry more than one passenger while riding, 21 (6%) said they carry more than one passenger occasionally, while 36 (10.2%) noted they do not carry more than a passenger. 274 (78.2%) agreed they check their motorcycle daily before riding, 27 (7.7%) of the respondents only check their motorcycle before riding occasionally while 49 (14%) do not bother to check their motorcycle daily before riding it. 300 (85.7%) of the respondents stated that it is true they put on their trafficators light before parking to carry passenger while 50 (14.3%) do not care to put on trafficators light when parking to carry passengers. 201 (57.1%) said they have functioning trafficator's light, mirrors, horn and rear light while 149 (42.5%) does not possess them. 273 (78%) reported that they maintain road safety speed limit as contained in the Nigerian Highway codes, 19 (5.4%) remarked that they observe road safety speed limit as contained inside the Nigerian highway codes occasionally while 58 (16.6%) stated that they do not observes road safety speed limit. 186 (53.2%) said it is true they keep long distance between themselves and the on-going vehicles/motorcycles in order to avoid accident occurrence, 133 (38%) said they observe this behaviour occasionally while 31 (8.8%) stressed they do not keep the require distance that is expected of them between vehicles/motorcycles

on the road. It was noticed that it was insignificant numbers that uses safety equipment such as helmet while riding. 12 (3.4%) only uses helmet while riding motorcycle, 9 (2.6%) put on helmet occasionally while 329 (94%) of the respondents do not use helmet while riding at all.

This finding was in line with the earlier findings of (Akinlade, 2000, Ichikawa et al, 2003 and Mayrose, 2008) that average motorcycle riders do not use safety helmet while riding. 314 (89.7%) of the respondents affirmed they take drugs/alcohol while working at night, 26 (7.4%) take drugs/alcohol at night occasionally while only 10 (2.9%) indicated they do not take drugs nor drink alcohol in the night. 342 (97.7%) do take drugs/alcohol during the day while 8 (2.3%) indicated they do not take drugs/alcohol during the day time. The result concurs with the finding of Hermans et al (2008) that drugs taking and alcoholic consumption are one of the strong determinants of most motorcycle accidents in twenty-one (21) European countries sampled by the author.

It was discovered that 256 (73.1%) of the respondents does not ride their motorcycle with driving license, while 31 (8.9%) of the respondents ride their motorcycle with their driver's license in their custody. The consequence of this is that those that are riding motorcycle are not permitted by the law of the Federal Republic of Nigeria to ride motorcycle on the Nigerian highways, hence the increase rate of accidents among these commercial motorcyclists on the Nigerian roads.

Table 12: Distribution of Respondents possession of crash helmet

Possession of helmet	Frequency	Percentage (%)
Yes	17	4.9
No	333	95.1
Total	350	100.0

Source: Field Survey, 2024

From table 12 above, 333 (95.1%) of the respondents do not possess crash helmet, while 17 (4.9%) of the respondents noted that they possess. This finding revealed that most motorcycle riders do not possess crash helmet. My observation at some strategic location under the covering areas of study affirmed what I observed especially at Isa Mustapha Agwai Polytechnic gate, Federal University gate, Main Market, State Secretariat of Lafia town, and College of Education gate, Main Garage, Neighbourhood Market, Akwanga/Lafia bye pass of Akwanga town as well as Nasarawa State University gate, Sambisa Forest, Main Garage, Emir Palace Junction of Keffi town, all in Nasarawa State, where almost all the Okada riders observed during the period of administration of questionnaires do not wear crash helmets while riding their motorcycles.

Table 13: Reasons for not possessing safety helmet by commercial motorcycle riders**.**

Reasons	Frequency	Percentage (%)
It is too costly	23	6.6
I do not have money	18	5.1
It is not convenient	198	56.6
Majority of Okada riders do not use it	63	18.0
I know I will not have accident	12	3.4
There is no penalty for it	36	10.3
Total	350	100.0

Source: Field Survey, 2024

Table 13 above indicates reasons why most commercial motorcycle riders don not possess safety helmet. 198 (56.6%) of the respondents indicated that the reason why they refuse to possess crash helmets despite menace/threat to life by its non- usage when accident occurred was that it is not convenient for them, 63 (18%) of the respondents are negatively influenced by other riders who does not use it, 36 (10.3%) of the respondents stated that there was no penalty for not using it, 23 (6.6%) of the respondents noted it was too expensive, 18 (5.1%) of the respondents said it was financial difficulties that made them not to possess one, while 12 (3.4%) of the respondents attach their non-possession to the believe that they will not have accident.

Discussion of Findings

This study focus on factors determining increase rate of commercial motorcycle accidents in Nasarawa State, as observed from the analysis of findings, the study discovered that most motorcycle riders in the study area are within 21 and 31years of age, these categories of people are in their late adolescence and early adulthood years and are characterized by high driving dangerous behaviours, always in a haste and aggressive, this finding was in agreement with earlier findings of (Ngim & Udosen, 2007; Chang & Yeh, 2007; Yannise, Golias & Papadimitriou, 2005; and Horswill & Helman, 2003) that age of motorcycle riders was a determinant factor responsible for the causes of accidents among the commercial motorcyclists.

The findings of this study support the existing findings of Adisa (2010) and Nakahara, Chadbunchachai, Ichnikawa, Tipsuntomsak & Wakai (2005) that commercial motorcyclist is more dominated by male than their female counterparts. The level of formal education of the respondents shows that commercial motorcyclists does not possess formal education or that they are dropped out of school at the early stage, this may account for high level of ignorance among them as most of the motorcyclists cannot interpret road traffic signs and regulations. It was in support of finding of Ngim & Udozen (2007). The study indicates that though the respondents understudied claimed to have undergone formal training before commences the motorcyclist business, the duration of the training received reveals that 70.9% of the respondents only trained for one week, while 15.4% received training for between two and three weeks.

This was in line with the existing studies of Akinlade (2000) and Adisa (2010). This way accounts for reasons why the rate of accidents among commercial motorcyclists was on the increase because there was no adequate training giving to the commercial motorcycle riders before embarking on riding adventure. Factors determining the rate of commercial motorcycle accidents have been discovered to involve over speeding, wrong overtaking, bad roads, mechanical defects, and drug/alcoholic intake. This assertion agreed with the previous studies of Meuleners, Lee, & Harworth 2007; Nahakara et al, 2005; Njim & Udozen, 2007; Horsewill & Helman, 2003; Nigerian Highway Codes, 2008; Adisa, 2010; and Ogagaogene, 2011 respectively. Other factors as observed in the study responsible for the increase rate of accidents among commercial motorcyclists are tyre defects, trafficators failure/misinformation, animal crossing, overloading, wrong maneuvering and dangerous checkpoints by the law enforcement agencies- Nigerian police, Federal Road Safety Corps (FRSC), revenue collectors, etc. The finding was in support of the view of Odero, Gamer, & Zwi 1997; Akinlade, 2000; and Nigeria Highway codes, 2008. Poor knowledge of traffic codes and the ambition to generate more income was also discovered to be a determining factor responsible for increase rates of accidents among commercial motorcycle riders. Consistent with previous studies, Akinlade, 2000; Akinlade & Brieger, 2004; Pai & Saleh, 2007; Chang & Yeh, 2007; Ogagaogene, 2011; and Rosembloom, Perlman, & Pereg, 2011, commercial motorcyclists carry more than one passenger. The commercial motorcycle riders do not ride with their drivers' license and they do not put on their safety crash helmets for protection in case of accident. This could account for the severity of crash when commercial motorcyclists are involved in an accident (Mayrose, 2008).

Although, this study discovered that the motorcyclists check their motorcycle before ridings, some of them do not have functional trafficator's lights, side mirrors, horns, and brake lights which in turn, have a negative effect on the occurrence of accidents among commercial motorcycle riders. The Highway codes maintained that drugs/alcoholic intake be avoided when driving/riding, it was also discovered that some of these commercial motorcycle riders still rode under the influence of drugs or alcohol. Non-possession of driver's license and over speeding also characterized the behavior of the commercial motorcycle riders studied. This agrees with the findings of Elliot, Banghan & Sexton (2007) and Adisa, (2010). The study discovered that the commercial motorcycle riders do not know the actual speed limit they are expected to maintain while riding.

Conclusion

Based on the findings of the study, the following conclusions are drawn. The study shows that over-speeding, wrong overtaking and bad roads accounted for the greater percentage of factors that increase the rate of accidents among commercial motorcycle riders. The study further shows that the commercial motorcycle riders do not obey road safety highway codes. This is because they carry two or more passengers with luggage at a time, do not use safety equipment like helmets, and does not ride with their driver's license, all of which is forbidden in the safety highway codes, many of them take drugs/alcohol before driving/riding, while some cannot decode the rules and regulations guiding driving/riding on our roads.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Adult literacy classes should be organized by the government for those who are illiterate so that Okada riders in Nasarawa State and Nigeria in general can be part of the benefactors of such exercise and thereby know how to read and write.
2. Money should be provided by the governments for the creation of road safety awareness using different media of communication and languages as a form of national orientation.
3. Road situation in Nasarawa State and Nigerian in particular should be improved as bad roads need to be repaired. Though kudos to FERMA and SURE-P projects but more need to be done.
4. There should be strict punishments against anybody caught riding motorcycle under the influence of drugs/alcoholic drinks, riding in a wrong or opposite direction of the roads, and drugs/alcoholic joints should be closed by the governments.
5. Helmets wearing and proper functioning and inspection of all machine spare-parts (such as trfficators, head lamps, tyres, horns, to mention just but few) must be made compulsory for commercial motorcycle riders to prevent head injuries and accident as a whole, if it occurs.
6. Finally, the Nigerian government should provide employment opportunities or skill acquisition centres for our teeming unemployed youths as this will go a long way in the reduction of number of youths who as a result of unemployment took to commercial motorcycle riding businesses in order to make a living.

References

Adisa, R. S. (2010). A Study of the use of intioxicants among rural commercial motorcyclists in Kwara State, Nigeria, *Journal of Social Sciences 22 (*2), 85 – 91.

Aganga, A. O., Umoh, J. U. & Abedii, S. A. (1983). Epidemiology of Motor vehicle accidents in Zaria, Nigeria, *Journal of the Royal Society of Health.* 103:123-126

Akinlade, C. O. (2000). *Knowledge, attitudes, and practices of road safety and first aid among commercial motorcyclists in the Ibarapa District of Oyo State*. An unpublished dissertation for the award of master of Public Health/Health Education submitted to the Sub-Department of Health Promotion and Education, Department of Preventive and Social Medicine, University of Ibadan. 187 P.

Akinlade, C. O. & Brieger, W. R. (2004). Mortorcycle, taxis and road safety in Southwestern Nigeria. *International Quarterly of Community Health Education.* 22 (1), 17-31

Albalate, D, Fernandez & Villadangos, L. (2010). Motorcycle injury severity in Bercelona: The role of vehicle type and congestion, *Traffic Injury Prevention*. (Bercelona) Spain.

Chang, H. & Yeh, T. (2007). *Motorcycle accident involvement by age, gender, and risky behaviours in Taipei, Taiwan*., Transportation Research Part F 10:109-122, Available online at www.sciencedirect.com.

Clarke, D.D., Ward, P., Bartle, C. & Truman, W. et al. (2007). The role of motorcyclists and other drivers' behaviour in two types of serious accident in UK. *Accident Analysis and Prevention. 39*, 974-981.

Edson, C. & Tandoc, Jn. (2007). *Motorcycle epidemics' deaths, injuries*, Manila Philippines. De La Salle University.

Elliot, M. A., Banghan, C. J. & Sexton, B. F. (2007). *Errors and violations in relation to motorcyclists crash risk. Accident Analysis and Prevention. 39:491-499*, Retrieved from www.hinari.com on 15th March, 2011.

Federal Road Safety Commission (FRSC), (2004). *Driver's license report,* FRSC, Abuja.

Federal Road Safety Commission, (FRSC), (2007). *An article on FRSC establishment act.* www.Frsc.gov.ng. Dec. 15, 2007.

Haque, M. M., Chin, H. C., & Huang, H. (2009). Modeling fault among motorcyclists involved in crashes. *Accident analysis and prevention. 4*1, 327-335. Retrieved at www.hinar.com 15thMarch. 2011.

Hermans, B., Bossche, F. V., & Wets, G. (2008). Combining road safety information in performance Index. *Accident Analysis and Prevention. 40*, 1337-1344. Retrieved at www.hinar.com

Horswill, M. S. & Helman, S. (2003). A behavioural comparison between motorcyclists and a marched group of non-motorcycling car drivers: factors influencing accident risk, *Accident Analysis and Prevention 35:589-597*. Retrieved 15th March, 2011 from www.hinar.com

Ichikawa, M., Chadbunchachai, W. & Marui, E. (2003). Effect of the helmet act for motorcyclist in Thailand, *Accident Analysis and Prevention 35*:183-189. Retrieve 15th March, 2011 from www.hinar.com

Lin, M. R., Chang, S. I., Pai, C. W., & Keyl, P. M. (2003). A longitudinal study of risk factors for motorcycle crashes among motorcycle riders among junior college students in Taiwan, *Accident Analysis and Prevention, 35,* 243-252.

Mayrose, J. (2008). The effects of mandatory motorcycle helmet law on helmet use and injury patterns among motorcyclist fatalities, *Journal of Safety Research 39*, 429-432. Retrieve 15th March, 2011. From www.hinari.com.

Meuleners, L. S., Lee, A. H. & Harworth, C. (2007). *Road environment, crash type and hospitalization of bicyclists and motorcyclists presented to emergency departments in Western Australia. Accident Analysis and prevention 39: 1222-1225*. Retrieved 18th March, 2011 from www.hinari.com

Mustapha, S. (2010). 64 killed in motorcycle accidents by June. *The Daily News*. Retrieved October, 17th, 2010 from www.dailynews.co.tz

Naci, P., Chin, H. C. & Huang, H. (2009). Modelling fault among motorcyclists involved in crashes. *Accident Analysis and Prevention. 41*, 327-335. retrieved at www.hinar.com 15th March.

Nakahara, S., Chadbunchachai, W., Ichnikawa, M., Tipsuntornsak, N. & Wakai, S. (2005). Temporal distribution of motorcyclist injuries and risk of fatalities in relation to age, and riding while intoxicated in Khon Kaen, Thailand. *Accident Analysis and Prevention 37*, 833-842. Retrieved 15th march, 2011. From www.hinar.com

Ngim, N. E. & Udosen, A. M., (2007). Commercial motorcyclists: Do they care about road safety? *Nigerian Medical Practitioner 15* (6), 111-113.

Nigeria Highway Code (2008). *The Nigeria highway Code 2nd edition*: *A publication of Federal Road Safety Corps*, Abuja: Detail works. 102p.

Nkwane, M. (2010). Motorcycle accidents claim 81 Lives in four months, *The Daily News*. Retrieved July 23rd, 2010 from www.dailynews.co.tz

Nunn, S. (2011). Death by motorcycle: Background behavioural, and situational correlates of fatal motorcycle collisions, *Journal of Forensic Sciences*, 56 (2), 429-437

Odero, W., Garner, P. & Zwi, A. (1997). Road traffic injuries in developing countries: A comprehensive review of epidemiological studies, *Tropical Medicine and International Health 2* (5), 445-460.

Ogagaoghene, C. C. (2011). An address delivered by the sector commander, Federal Road Safety Corps Oyo State at the Inauguration of members of Association of Motorcycle Riders in Oyo State on 19th March, 2011.

Ogbeide, O., Okojie, O., Isah, E. & Wagbatsoma, V. (1994). Road traffic accidents seen in Benin City, Nigeria, *Nigerian Medical Journal. 26* (2), 45-47.

Ogunmodede, T. A., Oluwadiya, K. S. & Otuya, W. I. (2012). Factors influencing high rate of commercial motorcycle accidents in Nigeria. *American International Journal of Contemporary Research, 2(11): 130-140.*

Pai, C.W., & Saleh, W. (2007). *An analysis of motorcyclist injury severity under various traffic control measures at three-legged junctions in the UK. safety*, 45.832-849. Available online at www.sciencedirect.com Retrieved 15th March, 2011. From www.hinari.com.

Paulozzi, U. F. (2005). *The accident risk of motorcyclist (TRL report 607*). Transport Research Laboratory, Crowthorne, England.

Rosembloom, T., Perlman, A. & Pereg, A. (2011). Hazard Perception of motorcyclists and car drivers. *Accident Analysis and Prevention. 43*, 601-604. Available at www.sciencedirect.com retrieved 15th March, 2011.

Salawu, R. O. A. (2008). *Fundamental Principles of road safety,* Ibadan: Oke Ade Publisher. 173 P.

Sexton, B., Banghan, C., Elliott, M. & Maycock, G. (2004*). The accident risk of motorcyclist (TRL report 607*). Transport Research Laboratory, Crowthorne, England.

Simoncic, M. (2001). Road accidents in Slovenia involving a Pedestrain, cyclist or motorcyclist and a Car, *Accident Analysis and Prevention, 33,* 147-156. Retrieved on 15th March, 2011 from www.elsevier.com/locate/aap.

Solagberu, O. I., Suraju, A. & Kokomo, J. A. (2006). Motorcycle injuries in developing countries and the vulnerability of riders, Passengers and Pedestrians. *Injury Prevention, 12, 266-268.*

Swaddiwudhipong, W., Nguntra, P., Mahasakp, P., Koonchote, S. & Trantriratna, G. (1994). Epidemiology characteristics of drivers, vehicles, Pedestrains and road environments involved in road traffic injuries in rural Thailand*, South east Journal of Tropical Medicine and Public Health 25* (1), 37-44.

Taiwo, S. K. (2007). *Motorcycle accidents in Nigeria*, Abeokuta: Bolatito and Son Ltd.

Traffic Safety Administration (NHTSA) (2008). *Retrieved May 9, 2012 from* http://www-nrd.nhtsa.dot.gov/CATS/index.aspx

Yannis, G., Golias, J. & Papadimitriou, E. (2005). Driver age and engine size effects on fault and severity in young motorcyclists accidents. *Accident Analysis and Prevention 37*, 327-333. Retrieved 15th March, 2011. From www.hinari.com