

Full Length Research

Death, Pains and Sorrows: Empirics from the Periodicity of Road Traffic Accidents in Tarraba State, Nigeria

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The rising trend in accident rate all over the world today cannot be overemphasized. These series of accidents on our roads have left many families under perpetual disarray and mourning. The objectives of this study therefore were to examine the trend of road traffic accidents and the extent of casualties in Taraba state. Three hundred and forty eight copies of questionnaire were distributed to registered drivers in the sixteen local government areas of the state. The questionnaire contained information about their driving experience and the causes of accidents. Also, information on causes of road traffic accidents, number of injured and death persons and the type of vehicles involved in accidents were collected from FRSC, Jalingo. Analysis of variance was used to test for the variation in road traffic accident casualties in the area between 2001 and 2013. It has the form $EE(X_2) - X^2 = EE_n(x_1 - x)^2 + EE_i(X_2j) j = j = 1$. The result of the study indicated that there was significant variation in road traffic accidents casualties during the study period since the calculated value of 16.97 was greater than the table value of 2.53 which led to the acceptance of the alternate hypothesis. It was also discovered that during the study period, 1546 accident cases were recorded.

Keywords: Death, Pains, Sorrows, Road, Traffic, Accidents.

INTRODUCTION

The importance of transportation to human well-being and economic development cannot be over emphasized. The invention of automobile has increased the mobility of man all over the world. In Nigeria and elsewhere, the transportation industry is generally regarded as an engine room of development because of the crucial role it plays in linking all segments of the economy together. Transportation is very useful in the movement of people, goods and services. It not only provides time and place utility for factors of production in the economy, but it is a vital tool for socio-cultural engineering and development. Despite the importance and contributions of road transportation to economic development and social wellbeing of man and society, its unregulated and improper use has adverse effects on man, the environment and the society at large. The adverse impact of automobile on human health can be categorized in three ways, namely air pollution, noise

pollution and traffic accidents. The most crucial in this respect is traffic accident.

The majority of those involved in road accidents are mostly in the economically useful age group. Road traffic accident generally kills or maims skilled workers and unskilled workers alike, young and old, male and female, the rich and poor and so on. The cost of these losses is colossal to the economy of Nigeria (Aderamo, 2012). Road traffic accidents are a major cause of morbidity and mortality worldwide, especially in developing countries. The World Health Organization (WHO, 2004), estimated that more than three thousand people are killed every day in road traffic accidents globally with at least thirty thousand others injured or disabled. This adds up to over one million people killed and between 20-50 million injured or crippled in road traffic crashes each year (Krug, Sharma, Lozano, 2000). There is generally a rising trend in morbidity and mortality rates all over the world

due to road traffic “epidemic” (Atubi and Onokala, 2009).

The global costs of road injuries are enormous. One report estimates that the global cost of road crashes is about \$518 billion annually with gross national product (GNP) ranging from 0.3 percent in Vietnam to almost 5.0 percent in the USA, Malawi and Kwa Zulu Natal, South Africa (Jacobs, 1986). The true costs to society are probably much greater, since these estimates are based on direct costs only. As in other developing countries, a road traffic accident in Nigeria is one of the most serious problems that need pragmatic solutions. Yet, this problem has been difficult to address probably because of the country’s level of development. (Atubi and Onokala, 2009) According to Obinna (2007), the proportion of deaths from road traffic accidents in Nigeria increased from 38.2 percent to 60.2 percent in ten years from 1991-2001.

Nigeria’s annual 8,000 to 10,000 traffic deaths between 1980 to 2003 stemmed essentially from road traffic accidents. This scenario is seen to be a terrible waste of human resources for the country (Filani and Gbadamosi, 2007). In terms of the personal safety problem, Nigeria is a high risk country with an average of 32 traffic deaths per 1,000 people (Filani and Gbadamosi, 2007). This rate is very high compared with the United State’s 1.6 traffic death per 1,000 population and with the United Kingdom’s 1.4 death per 1,000 people (Trinca, Johnson and Campbell, 1988). In terms of traffic safety, there are on the average 23 accidents per 1,000 vehicles in Nigeria (i.e. 230 per 10,000 vehicles) far in excess of the accident rates in the USA (2.7 accidents per 10,000 vehicles) and the UK (3.2 accidents per 10,000 vehicles). According to data from the Nigerian Federal Road Safety Commission (FRSC, 2006), the country has the highest rate of deaths from road accidents in Africa, leading 43 other nations in the number of death per 10,000 vehicle crashes (FRSC, 2006; Obinna, 2007). Nigeria is followed by Ethiopia, Malawi and Ghana with 219, 183 and 178 deaths per 10,000 vehicles respectively (Daramola, 2004).

At the first African road safety congress in Nairobi 1989, Nigeria also ranked ahead of other African countries in the mortality rate in its highways with “the chances of a vehicle killing someone in Nigeria (being) 47 times higher than Britain” (Onakomaiya, 1998). Similarly, Kenya has one of the highest road fatality rates in relation to vehicle ownership in the world with an average of 7 deaths from the 35 daily road crashes or nearly 3,000 deaths from nearly 13,000 annual road crashes (Finch, Kompfner, Lockwood, and Maycock, 1994). This translates to approximately 68 deaths per 10,000 registered vehicles, a rate that is 30-40 times greater than many highly motorized countries of the world.

Yet, the Nigerian accident fatality rate is the highest in Africa. It is also evident that Nigeria is worse than most countries of the world in terms of traffic accidents, inspite of her relatively good road network.

But unlike in most countries where improved road development and vehicle ownership (as barometers of economic advancement) is accompanied by better traffic management, higher road safety awareness and a relative decrease in the number of motor accidents, the opposite is true of Nigeria. According to the Nigerian Federal Road Safety Commission (2008), between 1970 and 2001 Nigeria recorded a total of 726,383 road traffic accidents resulting in the death of 208,655 persons and 596,425 injuries. Also, between 1997 and 2002, Lagos State alone recorded a total of 39,141 road accidents resulting in the death of 10,132 persons and 18,972 injuries (Atubi, 2009). In that period, each succeeding year recorded more accidents, deaths and injuries. Indeed, the Nigeria accident pattern seems to suggest that the better the road, the higher the accident cases and fatality rates as well as severity and non-survival indices because of driver noncompliance with speed limits (Onakomaiya, 1998; Gbadamosi, 1994; Filani and Gbadamosi, 2007). It is on this background that this study examines spatial and temporal dimensions of road traffic accidents in Taraba State.

Statement of the Research Problem

The alarming increase in morbidity and mortality owing to road traffic accidents over the past few decades is a matter of great concern globally. Worldwide, the number of people killed in road traffic crashes each year is estimated at almost 1.2 million, while the number injured could be as high as 50 million (WHO, 2004). The increased road accident fatalities continue to attract the attention of policy makers and the populace all over the world. The incessant carnage on the roads, especially in developing countries, constitutes a major challenge to safety professionals. This is evident from available statistics on road accident crashes and the resultant deaths and injuries all over the world. However, as a result of safety measures adopted in developed countries, variations exist in the magnitude of this scourge between developed and developing countries. The Federal Road Safety Commission (FRSC, 2012) report shows that road traffic accident is a major cause of violent death in Nigeria, recording 25,419 deaths and 108,603 injuries in 40,767 cases between 2007 and 2011. These figures are not only very high and alarming, but frightening considering the number of people that are killed and injured or rendered useless as a result of road traffic accidents.

Inspite of the on-going safety measures adopted by the Federal Government through her agency in charge of road safety in Nigeria, the situation is still high. Road accidents have been identified as a major cause of death in Nigeria, recording 274,874 persons between 1980 and 1995, accounting for 52.3% over diseases, murder and manslaughter which accounted for 38.4%, 8.9% and 0.4% respectively (Arosanyi, 1991). A report also released by the Nigeria Watch

(2006-2011), revealed that within 2001-2009, a total of 77,765 deaths were recorded by the Nigeria Police. Also, the FRSC report shows that 292,703 people were killed in road traffic accidents between 1960 and 2006 (FRSC, 2008).

The situation in Nigeria is, indeed worrisome and discouraging considering the WHO report and ranking. It is ranked 149th out of 178 member states in the world and the second in Africa in 2011, as a country with high road accidents potentials. There are thus indications and possibilities that increase in population over the years could translate to increase in the number of vehicles on the roads and the attendant problem of road safety could worsen. Indeed, the trend of road accident situation in Taraba state is not too different from other parts of the country. Report of the Federal Office of Statistics, (1991), shows that Taraba state has a steady accident rates since its creation in 1991. In the year 1996, 60 deaths were recorded, in 1997, 29 deaths, 1998 it rose to 135 deaths and in 2005, 2006 and 2007, the figures were 190,254 and 242 respectively. The state is also ranked 7th among the states in the country with high tendency of potential increase in road accidents (Adeleke, Salami and Oyewo, 2003). These accident figures are alarming, considering the fact that the actual figures may be far above what has been reported.

At this juncture, certain questions become very pertinent: What is the trend of road traffic accident in the study area? What is the extent of damage of road traffic accidents to individuals and families, what are the likely causes of road traffic accidents? What types of vehicles are involved in these accidents and of what periods are these accidents most occurring? Thus, in the final analysis when these questions are addressed in this study, it will provide an insight into the general accident situation and its effect on the people of Taraba state.

Objectives of the Study

The aim of this study is to examine the trend of road accidents in Taraba state, Nigeria. The specific objectives of the study include

- (i) To examine the trend of road traffic accidents over time in Taraba state
- (ii) The examination of the extent of casualties arising from road traffic accidents over time in the study area.
- (iii) To assess the types of vehicles involved in road accidents.
- (iv) To identify factors associated with road traffic accidents in Taraba state generally.

Research Hypothesis

- (i) There are significant variations in road traffic casualties in the area for the period, 2001-2013.

Study Area

Taraba state was created in August 27, 1991 as one of the 36 states in Nigeria. It has a vast land area of 54, 428 square kilometres, lying between latitudes 6°25'N and 9°30'N and longitudes 9°30'E and 11°45'E. It is bordered to the North by Bauchi and Gombe states; to the west by Plateau, Nassarawa and Benue states and on the south and south east by the Republic of Cameroon. It is the third largest state in the Nigeria after Borno and Niger states in terms of areal extent.

Taraba state has a population of 2,294,800 people and a population density of 24.6 persons/square kilometres (National Population Commission (NPC, 2006). The state is highly heterogeneous and multi ethnic in nature with different groups speaking different languages. They include Jukun, Chamba, Mumuye and Fulani. The major occupation of the people of Taraba state is agriculture. Other primary activities include fishing, pottery, weaving, dyeing; mat-making, wood carving, embroidery and blacksmithing are also carried out in various parts of the state. Some commercial activities are gradually springing up in the state like the fish market in Kurmin and Mayo-Renu, the cow market in Gembu, Iware, Kurmin, Yam Market in Wukari. These and other commercial activities in the state have encouraged movement within and out the state.

The most important means of transportation in Taraba state is the road transport. The system is largely run by private transporters providing intra-and inter taxi/bus transport services. Taraba state transport service (TSTC) also plays some vital role in the movement of goods and services. Taraba state is served by a fairly good network of roads which is however, very poorly maintained. There are a total of about 2,581 kilometers of both federal and state government roads in Taraba state, out of which only about 776km (30.06 percent) are bituminised (Taraba state social infrastructure, 2003). However, this has increased with subsequent government opening up new roads in the state. The Defunct directorate of food, roads and rural infrastructure (DFRRI) also constructed or rehabilitated a total of about 1,777km of feeder roads within the state to improve the connectivity and accessibility of towns and villages. These include the Abong-Nguroje and Serti-Maisamari roads on the Mambilla Plateau.

The state has a good network of well tarred roads connecting the southeast and Abuja through Benue state, the Northeast through Adamawa state and Plateau state through Ibi local government. All the sixteen local government areas of the state are connected by road network, although, Karim-Lamido, Lau, Yorro and Kurmi are not easily accessible during the raining seasons. Also postal and telecommunication services are provided almost exclusively by the NIPOST and NITEL, two agencies of the Federal Government. Also, the GSM services of various networks almost cover the entire state.

METHODS

The methods and procedure for data collection employed in this study was based on both qualitative and quantitative methodologies.

The data collected for this study were from two sources primary and secondary. In addition, copies of questionnaires were administered to drivers to glean information on the general causes of road traffic accidents in Taraba State. Other information contained in the questionnaire include: Stratified random sampling technique was employed to select standard Motor Parks in the headquarters of each of the sixteen local government area of the state. Records of the registered drivers by local government were obtained through secondary source from the office of the National Union of Road Transport Workers across the state to obtain the target population.

The socio-economic variables of the respondents (drivers), their driving experience, perceived causes of accidents in the area and perceived solutions to the problems of road accidents in the area.

Table 1: Sampled Drivers in Taraba State

L.G.A	No. Registered Drivers	Sample Population
Ardo-Kola	80	10
Bali	163	21
Donga	140	18
Gashaka	102	13
Gassol	188	24
Gembu	250	32
Ibi	100	13
Jalingo	456	59
Karin-Lamido	80	10
Kurmi	90	12
Lau	78	10
Takum	318	41
USSA	92	12
Wukari	350	45
Yorro	76	10
Zing	140	18
Total	2703	348

Source : Autours Field Work, 2014

The secondary data collection which formed the main data for this study was obtained from the Federal Road Safety Commission (FRSC) office in Jalingo, Taraba State. They include: Data on road traffic accidents over time in Taraba State (2001-2013), data on the number of persons killed over time (2001-2013), data on the number of injured persons over time (2001-2013), data on vehicular types and categories involved in accidents over time (2001-2013) and data on factors associated with road traffic accidents in Taraba State (Table 1).

348 copies of questionnaires were administered in the sixteen local government areas in the state using the formulae

$$\frac{P \times N}{P}$$

Where P= Proportionate population
P = overall population

N = calculated number (sample size)

Both descriptive and inferential statistics were employed to analyse data collected. The statistical tools used include tables and percentages.

The hypothesis, which states that "there is no significant variations in road traffic casualties over time (2001-2013) was tested using One Way Analysis of

Variance (ANOVA) using the formula; $EE(X_{2j} - X)^2 = EE \sum_{j=1}^k (X_j - X)^2 + EE \sum_{i=1}^n (X_{ij} - X_j)^2$

Where TSS = Total sum of squares, BSS = Between sum of squares, WSS = Within sum of squares, k = within sum of square, N = number of observations in the square, X_{ij} = value of the ith and jth matrix, X = sum of all items in the matrix, EE = sum of all items in the matrix.

The degree of freedom for the numerator of the F-ratio is:

$$SST = k - 1$$

$$DF \quad SSW = N - 1$$

DISCUSSION OF FINDINGS

This section analyses the findings of information obtained from the Federal Road Safety Commission and copies of questionnaire administered in Taraba state in the period 2001-2013. These findings represent the trend of road traffic accident casualties in Taraba state.

Table 2 indicated the trend of road traffic accidents in Taraba state from 2001-2013. It was observed that a total of 1,546 accident incidents occurred in the study area in the period under study. During the period, 2011

Table 2: Yearly Number of Accidents

Years	Number of accidents occurrence	Percentages
2001	96	6.2
2002	88	5.7
2003	5	0.3
2004	71	4.6
2005	40	2.6
2006	52	3.4
2007	78	5.0
2008	98	6.3
2009	143	9.2
2010	128	8.3
2011	314	20.3
2012	258	16.7
2013	175	11.3
Total	1546	100

Source: Federal Road Safety Commission, Taraba State, 2001-2013

Table 3: Yearly Fatality of Road Traffic Accidents

Year	Fatality	%	Major	%	Minor	%	Death	%
2001	12	13.5	81	12.7	249	5.9	20	5.6
2002	07	7.9	70	11.0	203	4.8	10	2.8
2003	08	8.9	76	11.9	219	5.2	15	4.2
2004	08	8.9	63	9.9	172	4.1	15	4.2
2005	04	4.5	36	5.7	102	2.4	04	1.1
2006	11	12.4	38	5.9	160	3.8	15	4.2
2007	15	16.9	58	9.1	220	5.2	34	9.6
2008	16	17.9	80	12.6	203	4.8	30	8.4
2009	08	8.9	134	22.1	393	9.4	23	6.5
2010	-	-	-	-	587	13.9	18	5.1
2011	-	-	-	-	943	22.4	46	12.9
2012	-	-	-	-	428	10.2	91	25.6
2013	-	-	-	-	322	7.7	35	9.8
Total	89	100	636	100	4201	100	356	100

Source: Federal Road Safety Commission, Taraba State, 2001-2013

had the highest number of accidents having 314 cases (20.3 percent). This was followed by the year 2012 with 258 incidents (representing 16.7 percent). Furthermore, the year 2013 which recorded 175 accidents had a reasonable value of 11.3 percent. The downward trend of accidents in the years 2012 and 2013, as shown in table 2, from the peak in 2011, is due to the ban on the use of motorcycles in Jalingo, the state capital in 2012.

However, the trend also shows some fluctuations in road accidents from the onset especially during the early days of the state's creation (2001-2007). This could be due to low number of motorization and urbanization in Taraba state then. Between 2008 to 2013, the trend of road traffic accident has been on the rise and this is due to rapid motorization and urbanization especially in some major local government areas of Taraba state. Consequently, the year 2003 had the lowest accident cases of 5 constituting 0.3 percent. This could be due to neglect in recording or reporting of accident cases in the state.

The trend in yearly fatality of accidents in Taraba state for the period 2001-2013 show fluctuations as

can be seen in (Table 3). The year 2001 recorded 12 accidents representing 13.5 per cent and a decline in the trend 2005 where it recorded 4 cases with a value of 4.5 percent. The trend again shows a gradual rise in 2006, 2007 and 2008 with cases of 11, 15, 16 and percentage values of 12.4%, 16.9%, and 18.0% respectively. The year 2009 had a drop in the figure to 8 fatalities with a value of 8.9 percent. On the other hand, the years 2010, 2011, 2012 and 2013 recorded no fatality within the study area.

In terms of major injuries from road traffic accidents in the study area from 2001-2013, it was observed that there was a total of 636 major injury cases. Major injury in the period under study shows irregular patterns with the highest case of 134 representing 22.1 percent in 2009. In the same vein, the years 2001 and 2008 had relatively high injuries of 81 (12.7%) and 80 (12.6%) respectively.

The trend of minor injuries in Taraba state for the period 2001-2013 is also shown in table 3. The trend indicated a downward trend between 2001-2002. In 2003, there was an increase of minor accident to 219 (5.2%) as compared to 2002 with 203 cases. There

Table 4: Yearly Numbers of Persons Involved in Road Traffic Accidents (2001-2013)

Year	Number of people involved	Percentages
2001	269	5.9
2002	213	4.7
2003	234	5.1
2004	187	4.1
2005	106	2.3
2006	175	3.8
2007	254	5.6
2008	233	5.1
2009	416	9.1
2010	605	13.3
2011	989	21.7
2012	519	11.4
2013	357	7.8
Total	4557	100

Source: Federal Road Safety Commission, Taraba State, (2001-2013)

was a further downward trend in minor accidents between 2004 and 2005 with 172 (4.1%) and 102 (2.1%) cases respectively. Eventually, there was upward trend from 2006 and reaching its peak in 2011 and a decline again in 2012 and 2013. Specifically, minor injuries begin to rise again with 160 cases in 2006, 220 cases in 2007 and fluctuates to 203 cases in 2008 and then a sharp increase again with 393 cases in 2009, 587 cases in 2010 and 943 cases in 2011. The trend again dropped in 2012 and 2013 with records of 428 and 322 representing 10.2 and 7.7 per cents respectively.

During the period from 2001-2013 the total number of road accidents involving deaths in Taraba state were about 356 (table 3). The trend shows that road transport is a major contributory factor in the death of people in Taraba state. The distribution over the study period shows that more people lost their lives to road accidents in 2012 with about 91 cases constituting 25.6 per cent. This was followed by 2011 and 2013 with about 46 and 35 cases representing 12.9 and 9.8 per cents respectively. The period between 2001-2006 recorded a decline in death cases resulting from road accidents in the study area. The lowest occurrence was in 2002 and 2005 with about 10 and 4 cases with values of 2.8 and 1.1 per cents. This high deaths resulting from accidents is a manifestation of unemployment that has forced many into the business of driving, the illiteracy level of the people to read road signs and the influx of people from crisis prone areas as observed in the field.

Number of Persons involved in Road Accidents in the Study Area

Within the period under study 2001-2013 as shown in table 4, it was seen that a total of 4,557 persons were involved in road accidents in the study area. Out of this number, it was observed that 2011 had the highest casualty of 989 persons representing 21.7% of the total people involved in roads accidents in the area. In 2010, 605 persons were involved with a

percentage value of 13.3%, while 519 persons with a value of 11.4% were involved in auto crash in 2012. It was also noticed that in 2009, 416 persons with a value of 9.1% were involved in road auto crash in the area. In the same vein, in 2013, a total of 357 persons which showed a value of 7.8% were also observed. Invariably, the years 2005 and 2006 had road accident casualties of 106 and 175 persons respectively. These two years had percentage accidental persons of values of 2.3% and 3.8% accordingly. Hence, this indicated that, these were the years with the lowest numbers of persons involved in road accidents in the area.

Vehicular Involvements in Road Accidents

Table 5 indicated the categories of vehicles involved in accident. Based on this, it was observed that commercial vehicles were those who were mainly involved in auto crash incidences in the area. This had 1485 occurrences (73.2%). On the other hand, the private/commercial operations were the next category of vehicles that were involved in car accidents in the area with a value of 288 (14.2%). However, privately owned vehicles were also seen to be involved in accidents as they had values of 243 (11.9%). The government category formed a negligible value of 12 (0.6%).

In terms of specific vehicles, Table 6 shows that 971 motorcycles were involved in auto crash incidences in the study area for the period 2001-2013. The year 2011 witnessed the highest number of 252 cases constituting 25.9 percent. This was followed by 2009 with 93 incidences (96). The lowest case was in 2013 with 16 (1.64%). This was the year immediately preceding the ban on the use of motorcycles in Jalingo. From here, it can be assumed that the majority of the motorcycle accident in Taraba state occurs in Jalingo the state headquarters.

Also, the number of heavy duty vehicles that were involved in road traffic accidents in the area is shown in table 6, it was noticed that the highest level of heavy

Table 5: Category of Vehicles involved in Accidents (2001-2013)

Category	Frequency	Percentages
Private	243	11.9
Commercial	1485	73.2
Private/commercial	288	14.2
Government	12	0.6
Total	1737	100

Source: Federal Road Safety Commission, Taraba State, (2001-2013)

Table 6: Types of Vehicles involved in Accidents

Year	Motorcycle	%	Heavy duty	%	Bus	%	Car	%	Others	%	Total
2001	84	8.65	4	3.80	13	10.6	22	4.70	3	4.3	126
2002	88	9.06	6	5.71	14	11.4	20	4.27	1	1.42	129
2003	86	8.86	01	0.95	16	13.0	12	2.56	01	1.42	116
2004	54	5.6	20	19.04	10	8.13	28	5.98	02	2.9	114
2005	32	3.3	4	3.80	5	4.1	6	1.3	3	4.3	50
2006	25	2.6	6	5.71	12	9.8	23	4.91	3	4.3	69
2007	62	6.4	4	3.80	13	10.6	33	7.05	7	10	119
2008	70	7.20	6	5.71	6	4.9	43	9.2	2	2.9	127
2009	93	9.6	22	20.9	13	10.6	61	13.03	1	1.42	190
2010	61	6.3	2	1.90	4	3.3	38	8.11	7	10	112
2011	252	25.9	14	13.3	9	7.31	79	16.9	8	11.4	362
2012	48	4.9	9	8.57	3	2.43	59	12.6	15	21.4	134
2013	16	1.64	7	6.7	5	4.1	44	9.40	17	24.3	89
Total	971	100	105	100	123	100	468	100	70	100	1737

Source: Federal Road Safety Commission, Taraba State, 2001-2013

duty accident cases was in 2009, with a value of 22 (20.9%). Similarly, in 2004, 20 (19.4%) of accident involvement were also witnessed in the study area.

With regards to the rate at which buses were involved in road accidents, it was observed that it was in 2003 that the buses really got involved in road accidents. Here, 16 buses (13%) were critically involved in accident. On the other hand, the year 2002 witnessed a high level of buses involvement in road accidents as indicated by 14 (11.4%). Nevertheless, it was also seen that in 2001, 2007 and 2009, a reasonable number of buses also got involved in accidents with each year having 13 cases.

Taking into consideration the number of cars involved in accident during this study period, it was observed that in 2011, 79 (16.9%) cars were involved in accidents making it the year with the highest record of accidents. Furthermore, in 2009 and 2012, reasonable number of cars were involved in accidents with a value of 61 (13.3%) and 59 (12.6%) respectively. In spite of the aforementioned, the years 2013 and 2008 showed considerable number of accidents in the area with total number of 44 (9.4%) and 43 (9.2%) respectively.

In analysing other types of vehicles identified with accident, it was noticed that in 2013, several other vehicles got involved in road accident as the year significantly showed 17 (24.3%) being the highest

value. In the same vein, 2012 also recorded a high level of accident in their category with a value of 15 (21.4%) of the total number of accidents.

However, in 2011, there were 8 cases of other types of vehicles involved in accidents (11.4%) and 2010 there were 7 cases (10%).

Causes of Road Accidents by the FRSC Perspective

The records from the Federal Road Safety Commission (FRSC) as presented in table 7, listed eighteen different causes of accidents. The table is indicative of the fact that out of the total figures of 1,314 occurrences of accidents by different causes, dangerous driving ranked highest with 621 constituting 47.3 percent. Furthermore, this was followed by speed violation with a figure of 363 representing 27.6 percent and loss of control with score of 162 constituting 12.3 percent. However, other causative factors responsible for road accidents in the study area put together accounted for only 12.8 percent. This is an indication that other causative factors responsible for road accidents are negligible in Taraba state.

In all the causative factors outlined by the FRSC as causes of road accidents, over 60 percent are human related causes while 40% are vehicular and environmental (road way conditions).

Table 7: Causes of Road Accidents in Sampled Cases by FRSC

Option	Accident cases	Percentages
Dangerous driving (dgd)	621	47.3
Speed violation (Spv)	363	27.6
Loss of control (LOC)	162	12.3
Tyre burst (TBT)	35	2.6
Mechanically deficient vehicle (MDV)	31	2.4
Obstruction (OBS)	20	1.5
Road traffic violation (RTV)	17	1.3
Dangerous overtaking (DOT)	11	0.8
Bad road (BRD)	09	0.7
Driving under alcohol/drug influence (DAD)	09	0.7
Over loading (OVT)	08	0.6
Dangerous driving/speed violation (DGD/SPV)	08	0.6
Light sign violation (LSV)	04	0.3
Dangerous driving/overloading (DOV)	04	0.3
Traffic light violation (TLV)	04	0.3
Road traffic crash (RTC)	03	0.2
Dangerous driving/violation (DDV)	03	0.2
Break failure (BFL)	02	0.2

Source: Federal Road Safety Commission, Taraba State, (2001-2013)

Table 8: Perceived causes of Accident by Respondents

Causes	Frequency	Percentage
Bad road/pot holes	68	19.65
Tyre burst	8	2.31
Engine failure	5	1.45
Mechanical failure	5	1.45
Carelessness	21	6.07
Wrong parking	6	1.73
Drunkenness	6	1.73
Increase in vehicle volume	9	2.60
All of the above	220	63.01
Total	348	100

Source: Authors field research, 2014

Causes of Accident as Perceived by Road Users (Driver)

In order to understand the causes of road accidents in the study area as well as make useful inference for this study, the perception of road users (drivers) were measured through their opinions on the possible causes of road accidents. Table 8 shows that out of the 348 sampled population, 220 respondents' constituting 63.01 percent opined that all the factors identified as causes of road accidents are dominant in causing road accidents in the study area. This was followed by bad road/pot holes and carelessness, with 68 and 21 respondents (19.65) and (6.07 percent) respectively. Other causative factors in the study area in the period (2001-2013) were insignificant as they represent only 9.54 percent.

When subjected to further analysis, it was found that road way condition (bad road/pot holes) factors ranked highest with 19.6 percent. The human factors (carelessness wrong packing, drunkenness, increase

in vehicle volume) ranked second with 12.13 percent and, vehicular factor with the list value of 5.21 percent.

Therefore, a conclusion can be drawn from this study that the perception of FRSC; that human factor constitute the highest causatives factor is at variance with the perception of the road-users (drivers) in the study area in the period (2001-2013).

Periodicity of Accidents in the Area

Table 9 shows the frequencies of accident occurrence in the study area in the period (2001-2013). Out of the total number of 348 respondents sampled, 147 respondents constituting 41.91 percent are of the opinion that accidents occur daily in the study area. The weekly perception of respondents ranked second with 91 scores and a value of 26.30 percent. Other occurrences include monthly 36, quarterly 14, and yearly 17 with values of 10.40, 4.05 and 4.91 percentages respectively. However, 12.43

Table 9: Periodicity of Road Traffic Accidents

Occurrence	Frequency	Percentage
Daily	147	41.91
Weekly	91	26.30
Monthly	36	10.40
Quarterly	14	4.05
Yearly	17	4.91
All of the above	43	12.91
Total	348	100

Source: Authors Fieldwork, 2013

Table 10: Analysis of Variance

Casualty	Sum of squares	Df	Mean square	F	Sig.
Between groups	1511246.985	4	377811.746	16.973	.020
Within groups	1335586.769	60	22259.779		
Total	2846833.754	64			

Source: Authors Field Computation, 2015

percent of the total respondents were of the opinion that accidents occur on a daily, weekly, monthly, quarterly and yearly basis in the study area.

Test of Hypothesis

The Hypothesis was stated as:

H_0 :There is no significant variation in road traffic accident casualties in the area for the period 2001-2013.

H_1 :There is a significant variation in road traffic accident casualties in the area for the period 2001-2013.

The analysis was carried out using the one way Analysis of Variance (ANOVA). The results are as presented in table 10.

From the analysis the calculated F-value of 16.97 is greater than the table value of 2.53, therefore the null hypothesis H_0 is rejected and the alternative hypothesis H_1 is accepted that there is a significant variation in road traffic accidents casualties in the area (Table 10). The result showed that the actual difference in the mean scores between group was quite small with the effect size calculated using eta squared giving a value of 0.06 which is moderate effect as classified by Cohen (1988).

CONCLUSIONS

Road traffic accidents tend to be the leading cause of deaths in most parts of the world including Nigeria. Road accidents generally have claimed many lives both young and old. It was realized in the study that the rate of accidents in Taraba state has been on the increase in relation to increase in demand for mobility of humans; foods and services. The multiplicity of road accident in the area is seen to be caused by drunkenness, tyre burst, pot holes, excessive speed

and break failure. This incessant road accidents in the area, which have left many families in a perpetual mourning state ultimately calls for strategic action to ameliorate this situation. Hence, this study recommends that roads should be built to specifications, routine checks on drivers' behaviour, constant road maintenance and enlightenment campaign by government agencies.

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