

**STATISTICAL ANALYSIS OF REPORTED CASES OF DAILY ROAD ACCIDENTS  
(CASE STUDY OF UNIVERSITY OF ILORIN TEACHING HOSPITAL, ILORIN, KWARA STATE)**

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*Abstract*

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*This paper gives a proper evaluation of the various research works related to road traffic accidents and enforcement of road traffic rules and regulations. It also discusses the various methods of analysis used in those studies, their discoveries and findings on road traffic accidents. It also, examines a review of relevant literature and conceptual framework which forms bedrock of accident prevention mechanism in Nigeria and other countries through the adoption of road traffic accidents prevention.*

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**Keywords:** Analysis of variance, chi-square test, road traffic accident.

## **1.0 Introduction**

Transportation has been discovered to be a major prerequisite to the development of any economy. Like other activities that are intensive in utilization of infrastructure, the transport sector is an important component of the economy impacting on development and the welfare of the people [1]. Transport provides the arteries through which the economic life of people, information and raw materials as well as finished products can be moved from one place to another. Road transportation provides benefit both to nations and individuals by facilitating the movement of goods and people thereby enabling increased access to jobs, economic markets, education, recreation and healthcare, which in turn have direct and indirect positive impacts on the health of populations (WHO, 2009)[2].

According to National Bureau of Statistic(N B S), speed violation is the major cause of accidents in 2016, which accounted for 33.86 per cent of the total road accidents reported. Loss of control and dangerous driving followed closely as they both accounted for 15.43 per cent and 8.53 per cent of the total road accidents recorded. In Nigeria today, human error such dangerous over speeding ,lack of skills ,driving under the influence of alcohol, poor knowledge of traffic signs ,rules ,regulations ,overloading ,not using seatbelt ,negligence of pedestrians and technical issues such as drivers lack of maintaining their vehicles are all things that if road users are properly educated will curb road crashes.

### **Significance of the Study**

Road traffic accidents in Africa are expected to rapidly increase over the next four decades to become a major public health challenge across the continent [3]. However, forecasts show that if policy interventions on the continent effectively put the search light on road traffic accidents, then, cumulatively through 2050, 42 million road traffic deaths would be prevented, 144 million years of productive, healthy life would be saved and US \$ 234 billion would be added to the continent's GDP [3]Therefore, findings of the study will assist relevant agencies like the Federal Road Safety Corps,Federal Road Management Agency[FERMA] and the Federal Capital Territory [FCT] Council to focus their energy and attention on how best to minimise accidents in Kwara and Nigeria at large.

According to Federal Road Safety Commission [FRSC] , many communication strategies had been adopted to drive home its safety measures to promote road safety in Nigeria but observation has shown that year in year out the commission's plan is met with resistance and less result as drivers continue to violate traffic rules which leads to several serve crashes and loss of life. The Nigerian road traffic crash took an alarming dimension to the extent of attracting the attention of both the state and federal governments. This realities however aroused the attention of the former Military Governor of old Oyo State, Brigadier David M. Jemibewon to create Oyo State Road Safety Corps in 1977. Godwin [4] notes that the Oyo State Road Safety Corps was small but efficient and quick action corps members were properly equipped to combat the menace of road accidents in the then Oyo state reduce traffic accidents. But on return to democratic rule in 1979, the first Executive Governor of Oyo State, late Chief Bola Ige further returned the state-run road safety outfit to maturity. Available records show that states like Lagos, Ogun, Edo, Anambra and Kano followed suit in imitation of the success which the Oyo State Road Safety Corps had experienced.

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The then government of the Federal Republic of Nigeria banned activities of all such initiatives from state governments in tackling the rising problem of road carnage in their respective domains. By 1987, the National Road Safety Commission has been in existence for fourteen years. But its impact was not felt with respect to traffic administration and crash control. To say the least, the standing atrocity was worsened after the various states Road Safety Corps were banned in 1983. According to Soyinka, the situation was so bad in 1988 that Nigeria was labeled as the most dangerous country worldwide with fatality index of road accidents exceeding one hundred and twenty percent mark. Soyinka followed up this situation in his characteristic altruism with extensive research, by submission of multiple proposals to the Federal Government. It was against this background that the Federal Road Safety Commission (Corps) was created on 18th February, 1988 during the administration of General Ibrahim Badamasi Babangida (retired). However, Decree Number 45 of 1988 as amended by Decree 35 of 1992 referred in the Statute Books as the FRSC Act, Cap. 141, Laws of the Federation of Nigeria (LFN), 1990. These enabling laws were repealed and replaced with the Federal Road Safety Commission [FRSC ] (Establishment) Act, 2007 to perform the following statutory functions.

Preventing or minimizing road traffic accidents on the highway to the barest minimum, Educating drivers, motorists and other members of the public generally on the proper use of the highways, Giving prompt attention and care to victims of road traffic accidents, Determining and enforcing speed limits for all categories of roads.

The decree was repealed and re-acted as the FRSC (Establishment) Act, 2007. The essence of the 2007 enactment was to capture current issues and broaden the Commission's mandate to holistically address issues bordering road traffic administration and safety management in Nigeria (FRSC, 2009). Monitoring and evaluation is more difficult in developing countries such as Nigeria, which lack the basic information technology and data infrastructure as well as the electronic devices required to effectively, implement a road safety monitoring and evaluation mechanism. In its absence, there is a heavy reliance on human capital in the form of enforcement personnel (FRSC, 2009). The Federal Road Safety Commission (FRSC) was established as a child of necessity, to arrest the increase in road traffic crashes which existed in the country. Nigeria ranks among the worst in the world for road traffic accidents (at 191 of 192 countries), according to a WHO, 2009 survey. [2]. In Nigeria, road traffic accident situation over the last three decades has been particularly disturbing. In 1976, there were 53,897 road traffic accidents resulting in 7,717 deaths. Although in 1981, there was reduction in magnitude of accidents, but an increase in fatality. The trend in accidents increased between 1990 and 2005 and the fatality rate remained consistently high [5]. An analysis of the traffic crashes data recorded over a seven year period of 2000-2006 shows that 98,494 cases of traffic crashes were recorded out of which 8,366 were fatal and resulted into 47,092 deaths (FRSC, 2009). The number of reported cases of fatal road traffic accidents in Nigeria has shown an increasing trend of accidents from 1995 to 2004, indicating an increase in fatal road accidents from 1995 to 1996 (CBN, 1997). Fatal road accident figures across the federation of Nigeria rose sharply in 1992 (CBN, 1994).

At the first African Road safety congress held in Nairobi, Kenya in 1989, Nigeria was ranked ahead of other African countries in terms of mortality rate on her highways, with the chances of a vehicle killing someone 47 times higher than in Great Britain [6]. In terms of safety, Nigeria is a high risk region with an average of 32 traffic deaths per 1000 people, [7]. This is very high compared with the United States' 1.6 traffic deaths per 1000 population and the United Kingdom's 1.4 deaths per 1000 population (Trinca, 1988). In terms of traffic safety, there is an average of 230 accidents per 10,000 vehicles in Nigeria. This is far in excess of United State of America's accident rate of 2.7 per 10,000 vehicles and the United Kingdom's accident rate of 3.2 per 10,000 vehicles [8].

The Federal Road Safety Corps (FRSC), Vehicle Inspection Office (VIO) and the Nigerian Police (Motor Traffic Department) all have a common goal of prevention and reduction of accident occurrences in Nigeria. The functions of the FRSC generally relates to making the highway safe for motorists and other road users; recommending works and devices designed to eliminate or minimize accidents on the highways and advising the Federal and State Governments including the Federal Capital Territory Administration and relevant government agencies in the localities where such works and devices are required and educating motorists and members of the public on the importance of discipline on the usage of roads (FRSC, 2012).

Directorate of Road Traffic Service, (DRTS), popularly known as Vehicle Inspection Office (VIO), is a government agency saddled with the task of transport management on Nigerian roads within the Federal Capital Territory (FCT) and the 36 states of the federation. DRTS was established by law to specifically issue driver's license, vehicle papers registration, production and issuance of plate numbers and inspection of vehicle. [9]

### **Causes of Road Accidents in Nigeria**

Godwin [4] among others scholars have categorised major causes of road accidents in Nigeria as follows :

#### **Human Factor**

Over-speeding, recklessness, over-confidence, dangerous driving, nonchalant attitude etc. often result in road traffic accidents, Psychological factors such as stress, fatigue, tiredness, Road Accident Immunity Delusion Syndrome (RAIDS) are often causes of road traffic accidents, Drunk driving, drug abuse – long distance drivers especially are known to undertake journeys without having adequate rest, enjoy driving at night and are in the habit of consuming stimulants to beef up alertness. Quite often than not, they suffer various degree of hallucinations, lack of sense of judgement and attempt daring manoeuvres and suicidal overtaking on the highways, Poor eyesight or visual impairment of varying degree often results in accidents, Illiteracy and poor driving skill inhibits proper knowledge and application of road furniture, highway code, road signs, etc. to the detriment of other road users, Under-age drivers – the last decade witnessed new trends in road traffic with the

well-to-do parents buying vehicles for their under-aged children, creating new tension for road traffic in cities. Often times, young children steal their parent's car keys to cause dangers to other users.

Human factor takes a lion's share of about 80 percent of the causative index of road accidents in Nigeria, vehicle conditions nevertheless, constitute part of it that cannot be disregarded in this kind of considerations. For purpose of clarity, the concept of mechanical factors covers the problems that emanate from the vehicle itself. The abundance of mechanically defective vehicles are common sights on our roads which are in reality death traps for motorists.

### **Mechanical Factor**

In their separate but similar researches on the causes, effects and methods of reducing road accidents, Ananenu, Nkwonta and Uchegbu mentioned the following as constituting mechanical factors of road accidents.

Brake failure, Burst tires, Propeller and wheel pull-out, Ball joint/shaft breakdown, Engine failure, Use of fake spare parts, Poorly maintained vehicle

### **Environmental Factors**

The topography of the Nigerian terrain constitutes a remarkable obstruction in road construction. Mountains, valleys and rivers constitute sharp bends, steep hills, sides and sharp slopes which are dangerous features against road users, all these are major causes of road traffic accidents. The tropical climate is another challenge to road use. Heavy torrential rainfall causes gully erosion while extreme sunshine also affects the road network negatively causing potholes and deadly black-spots which constitute major causes of road traffic accidents. The weather condition militating against road usage in terms of foggy, hazy, misty and heavy rainfall causes poor visibility and consequently accidents.

### **Road Traffic Accident Prevention**

The world report promoted a comprehensive approach to road safety which involves identifying the interactions between the road user, the vehicle and the road environment- i. e. the potential areas for intervention. To adopt a systems approach necessitates the involvement society and special interest groups [2]. The collaboration of these special interest groups involves the following key components: Safe roads and roadsides that is predictable and forgiving of mistakes, Safe speeds that suit the function and level of safety of the road, Safe vehicles that help prevent crashes and protect road users from crash forces that cause death and serious injury.

## **2.0 Literature Review**

Pioneered the study of "trends and patterns of fatal road accidents in Nigeria (2006-2014)" by *Nigeria Watch*. The Nigeria Watch data focus on reported accident cases involving at least one death between June 2006 and May 2014 in ten Nigerian daily newspapers. The severity index was calculated by comparing the number of people killed with the number of fatal crashes. Search results were generated from Nigeria Watch database and exported to Excel for classification. Results are presented in bar charts and frequency distribution tables. From the highest order, Lagos State recorded 1,579 deaths from 620 crashes, Edo 1,129 deaths from 177 crashes, and FCT (Abuja) 1,046 deaths from 348 crashes. While the highest fatal car accidents occurred in Lagos, Abuja has the highest relative number of deaths per 100,000 population. However, Falohun (2001) made use of chi-square to analyze his data. From his findings he conclude that there will be decreased in the rate of accident on the road that will be cause by environment hazard if the government and the federal road safety commission should maintain and enforce law on the traffic offenders. Elsewhere, Berstrom and Bjortig (1991) made use of time series to analyze their data and conclude that the road accident can be reduces if government and federal road safety corps should maintain the following recommendation. The FRSC should ensure strict enforcement law on any traffic offenders. Government should improves other form of transportation particularly rail transport in order to reduce the traffic volume on the roads.

They should orientate or educate the drivers and other road users on the important of the safety on the highways. The Middle East, presented a profile of recent growth trends of motorization and the pattern of related road traffic accidents in Oman. The study is likely to establish the baseline facts about the transportation system and RTA problems in Oman. Data for the study come from Royal Oman Police (ROP) record and world health organization (WHO) report for international comparison. On the average there are 230 vehicles per 1, 000 populations in Oman, and between 2000 and 2009, it has increased by 26%. Private car and shared taxi services are the major modes of personal transport In Oman. In 2009, there were 2.67 accidents per 1, 000 population or 9.59 accidents per 1, 000 registered vehicles in Oman. RTA shows declining trends during the study period.

Kahled (2004) presented a conceptualization of indicators. The paper moves on to develop a number of statistical models that can be used in the prediction of the expected number of accidents, injuries, fatalities and causalities on the rural roads in Egypt. Time series data of traffic and accidents, over a 10 years period for the considered roads, is utilized in the calibration of these predictive models. Several functional forms are explored and tested in the calibration process. Before proceeding to the development of these model three ANOVA statistical tests are conducted to establish whether there are any significant differences in the data used for models' calibration as a result of differences among the considered five roads.

### **a. Objectives of the Study**

The trend of road traffic accident rate reported in University of Ilorin Teaching Hospital from 2014-2017.

To find whether the accidents are uniformly distributed over the year or not i.e. whether all the accidents occur with equal frequency The monthly distribution of accidents.

To find whether all the causes are equally responsible for causing accident.

### 3. MATERIALS AND METHODOLOGY

This research will make a statistical report on the trend of road traffic accident cases reported in UIITH Ilorin Kwara State from January 2014- December 2017. In Kwara State, accident cases are mostly taken to UIITH and deaths from accidents are reportable, and bodies of victims are deposited in the UIUTH morgue which is the main designated centre for coroner's autopsies. This study is based on secondary source of data i.e from the hospital diary of the accident cases in UIITH. The official records were available between 2014 and 2017. Therefore, the records made available to the researcher were used.

#### Research Design/Methodology

This study adopts the time series research design. A time series is a collection of observations of well-defined data items obtained through repeated measurements over time. An observed time series can be decomposed into three components: the trend (long term direction), the seasonal (systematic, calendar related movements) and the irregular (unsystematic, short term fluctuations). In analyzing time series we may take the observed composite series as a whole for study or study one by one respectively the components in their own right. The components are: Secular trends, Seasonal trends, Cyclical variations, Random or irregular variations. For this study, the trends in road traffic accident within a particular time series were investigated. According to National Population Commission the projected 2014 Ilorin population figure based on 2006 National Census at the rate of 2.6% growth is 1,139,789. There are people of high income, middle income and low income earners within Ilorin metropolis. Kwara is an old state that have roads that experience heavy traffic and at the same time in poor conditions. The roads that usually experience heavy traffic accidents are Makwa-Jebba-Ilorin roads, Ilorin-Ogbomosho roads, Ilorin-Ekiti roads, Ilorin-Kabba roads, Challenge-Post-Office road, Taiwo-Gary Alimi roads etc.

**Table 1: Monthly Reported Road Traffic Accidents between 2012 and 2015**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2014	11	12	18	12	19	18	11	20	8	5	14	24	172
2015	15	11	8	15	8	4	9	5	5	8	5	19	127
2016	10	7	9	5	7	7	4	8	11	6	9	18	101
2017	18	8	8	9	6	15	7	9	5	11	9	14	119
Total	54	38	43	41	40	44	31	52	29	30	37	74	519

Source: FRSC Kwara State/ UIITH

#### Statistical Analysis

Data were analyzed using Statistical Package for Social Sciences (SPSS) version 21.0 to run regression and Chi-Square for the comparison. P-value below 0.05 is considered as statistically significant.

#### Data Interpretation

The following methods will be applied to analyses the data:

**Chi-Square test of goodness of Fit:** It was formulated by Karl Pearson use for testing significance of the discrepancy between theory and experiment. It helps in finding out whether the deviation of the experiment from theory is just a chance or is really due to the inadequacy of the theory to fit the observed data.

If  $O_i$  ( $i=1, 2, \dots, n$ ) is a set of observed (experimental) frequencies and  $E_i$  ( $i=1, 2, \dots, n$ ) is the corresponding set of expected (theoretical or hypothetical) frequencies, then Karl Pearson's Chi-square statistic given by

The formula for chi square is  $\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$

Where:

N = Total number of frequencies Observed data

E = Expected data

$\sum$  = Summation

Follows Chi-square distribution with (n-1) d.f.

Degree of Freedom (d.f) which is the number of independent pieces of information that went into calculating the estimate. It's not quite the same as the number of items in the sample. In order to get the *df* for the estimate, you have to subtract 1 from the number of items.

The number of independent variants which make up the statistic (e.g.  $\chi^2$ ) is known as the degree of freedom (d.f.) and is usually denotes by  $\nu$  (the letter 'Nu' of the Greek alphabet).

The number of degree of freedom, in general, is the total number of observational less the number of independent constraints imposed on the observations. For example, if  $k$  is the number of independent constraint in a set of data of  $n$  observations then  $\nu = (n - k)$ . Thus in a set of  $n$  observations usually, the degree of freedom for  $\chi^2$  are (n-1), one d.f. being lost because of the linear constraint  $= \sum O_i = \sum E_i = N$ , on the frequencies.

If 'r' independent linear constraint one imposed on the cell frequencies, then the d.f. reduced by 'r'. Furthermore, if any of the population parameter(s) is calculated from the given data and used for computing the expected frequencies then in applying  $\chi^2$  test of goodness of fit, we have to subtract one d.f. for each parameter calculated. Thus if 's' is the number of population parameters estimated from the sample observation (n in number), then the required number of degree of Freedom for  $\chi^2$  test is (n-s-1).

**Analysis of Variance (ANOVA):**

Poindexter & McCombs (2000) state that “unlike the t-test, which compares two means, analysis of variance, commonly called ANOVA, permits the research expert to determine if means from three or more groups or samples are significantly different.” ANOVA which is analysis of variance permits the researcher to determine if means from three or more groups or samples are significantly different. The advantage of ANOVA is that it can be used to simultaneously investigate several independent variables (also called factors) . An ANOVA is named according to the number of factors involved in the study: A one-way ANOVA investigates one independent variable, a two-way ANOVA investigates two independent variables, and so on.

The ANOVA model:  $y_{ij} = \mu + T_i + \sum j$ .....(i)

$Y_{ij}$  is the individual’s outcome

$\mu$  the average outcome over all individuals

$T_i$  the average outcome over all groups

$\sum j$  the summation of all the individual average outcome.

Therefore, for the ANOVA model, the researcher will run a Time Series Analysis of the trends of accidents cases. There are two types of model in time series which are generally accepted as good approximations to the time relationship among the components of the observed data.

They are the additive and multiplicative models, and are the most commonly assumed relationship between time series and its elements.

a. Additive model: this assumes that the value of composite series is the sum of the four components, that is

b.  $Y = T + S + C + I$  .....(ii)

T - values of secular trend, S - value of seasonal component, C - value of irregular component, I - value of irregular component

b. Multiplicative model assumes that the value of composite series is the product of four component values, that is Generally, the multiplicative model has been considered the standard conventional model for analysis of time series

$Y = T \times S \times C \times I$ ..... (iii)

**Data Presentation and Interpretation**

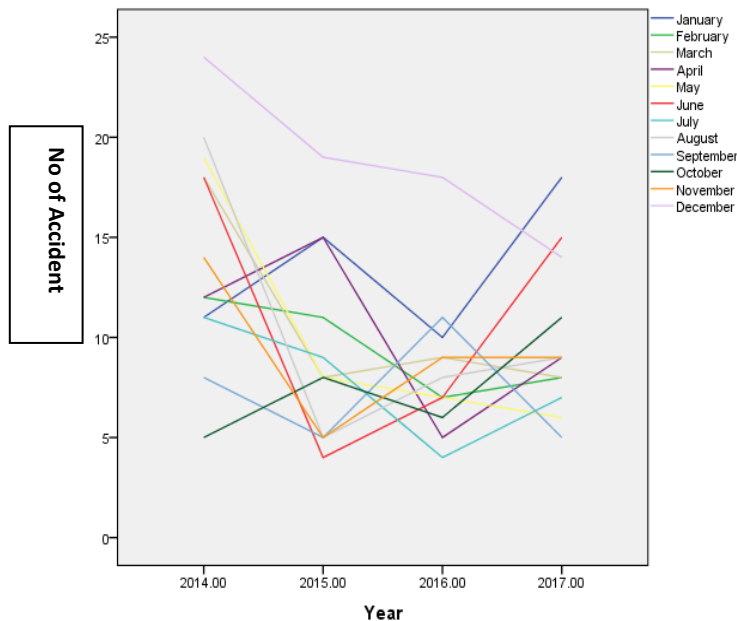
Trend Analysis of road traffic accident rate reported in University of Ilorin Teaching Hospital from 2014-2017. To measure the trend of road accident cases the Time Series Analysis was adopted. One of the main objectives of statistics is to forecast the future levels of social activities by studying the behavior of the data in the past. The most important techniques of making references about the future on the basis of what has happened in the past is the analysis of time series which may be define as a set of observations taking at specified times, usually at equal intervals. Figure 1: Trend Analysis of Road Accident cases

The model is:

$Y = T + S + C + I$  .....(ii)

T - values of secular trend, S - value of seasonal component, C - value of irregular component, I - value of irregular component

Linear Trend Model =  $Y_t = 39.70 + 0.0599 * t$



**Figure 1**

This result shows that fatal accidents happened more in December/ January during festive and seasonal period. Time series analysis were used to determine the trend line and also used to fit the linear trend model, the model was used to predict for future occurrence on accident.

**Table 2 Forecasting for the 2019**

2. Period	3. Forecast
4. January	5. 13.50
6. February	7. 5.67
8. March	9. 10.75
10. April	11. 10.25
12. May	13. .49
14. June	15. 11.00
16. July	17. 7.75
18. August	19. 10.50
20. September	21. 6.75
22. October	23. 11.11
24. November	25. 9.25
26. December	27. 11.07

Time series analysis were used to determine the trend line and also used to fit the linear trend model, the model was used to predict for future occurrence on accident and it was discovered that there will be a decrease in the number of accident occurring in the future.

**Table 3 Chi-square Test of Goodness of Fit: to test whether the accidents are uniformly distributed over the year**

Months	Observed Frequency	Expected frequency	d.f	Critical $\chi^2$	Calculated $\chi^2$
January	8	6.416	11	19.675	9.762
February	5	6.416			
March	4	6.416			
April	8	6.416			
May	5	6.416			
June	5	6.416			
July	7	6.416			
August	8	6.416			
September	6	6.416			
October	4	6.416			
November	3	6.416			
December	13	6.416			
Total	77	77			

Table (3) shows a calculated  $\chi^2$  – value of 9.762 for 11d.f. and a critical  $\chi^2$  – value of 19.675 at 0.05 alpha level. Since thecalculated $\chi^2$ -value is less than the critical  $\chi^2$  –value. Therefore, it indicates that accidents are uniformly distributed over a year.

**Table 4: Chi-Square Test of Independent of the occurrence of accident on seasonal basis and Association between the Occurrence of Accidents and the Season**

Number of accident Time or Month		= 0	>= 1	Total
January-March 1 <sup>st</sup> Quarter		77(74.18)	13(15.81)	90
April-June 2 <sup>nd</sup> Quarter		73(74.79)	18(16.51)	91
July – September 3 <sup>rd</sup> Quarter		71(75.62)	21(16.51)	92
October-December 4 <sup>th</sup> Quarter		79(75.86)	25(16.17)	104
Total		300	77	377
d.f		3		
Critical $\chi^2$		3.0387		
Calculated $\chi^2$		7.815		

\*Expected frequency in parentheses

\*Expected frequency in parentheses

Table 4.4 indicates a calculated  $\chi^2$ -value of 3.0387 and a critical  $\chi^2$  value of 7.815 at 0.05 alpha level. Since the calculated  $\chi^2$ -value is less than the critical  $\chi^2$ -value. Hence, occurrence of accidents is uniform throughout the seasons.

Therefore, the number of accidents depends on the seasons. Moreover, there is enough evidence to indicate such a seasonal pattern as during festive period as accident tends to increase during the period.

**Table 5 :**

**Quarter wise distribution of causes of accidents to test whether the causes are equally responsible for causing accident**

Quarter	Human factor (%)	Environmental Factor	Mechanical Factor
1 <sup>st</sup> Quarter	17 (27.4%)	1	2
2 <sup>nd</sup> Quarter	12(19.4%)	1	1
3 <sup>rd</sup> Quarter	12 (19.4%)	0	0
4 <sup>th</sup> Quarter	21 (33.9%)	1	1
<b>Total</b>	<b>62 (100%)</b>	<b>3</b>	<b>4</b>

**Table 6: Statistical Test of Causes of Accident**

	X	Y	Z	Total
<b>N</b>	4	4	4	<b>12</b>
<b>Mean</b>	15.5	0.25	0.5	<b>5.416</b>
<b>Variance</b>	19	0.25	0.333	<b>60.81</b>
<b>Median</b>	14.5	0	0.5	<b>1</b>
<b>Rank Sum</b>	42	16	20	<b>78</b>
<b>Rank Mean</b>	10.5	4	5	<b>6.5</b>
$\chi^2$	8.26			
<b>d.f</b>	2			
<b>P value</b>	0.016			

Table 6 indicates a calculated  $\chi^2$  - value of 8.26 and the p1value of 0.016 at 0.05 alpha level. Since the p1value is less than 0.05. We can conclude that all the causes are equally responsible for causing accidents is rejected.

The result shows that there is a difference in occurrence of accidents due to different causes.

**4. Discussion of Findings**

Analysis of quantities of data gathered during the present study summarizes three principle factors viz. human, mechanical and environment as joint significant contributor to the occurrence of road traffic accidents in Ilorin. Human characteristics (rush and negligence) make the highest contribution 95.38%; (table 6) to the road traffic accidents in the study area.

Using binomial distribution the 95 percent Confidence Interval (CI) = 89% to 100%. The environmental factors are related to bad weather and poor road condition, while the mechanical factors are related with vehicle failure. In the present study, the highest number of accidents (32.30%; table 4.4) were observed in the peak festival season during the months of December and January and the maximum number of victims were also highest compared to other seasons of the year. Data on road traffic accidents in Ilorin are very poor. Hospital records and FRSC are the only source of information but, many accident cases are never reported while others are settled privately. The fewer data on accident reports at police stations are an indicative of lack of awareness of accidents reporting. Based on police data it is not possible to make routine analysis and therefore it is impossible to implement safety measures. Road traffic accidents are preventable and in order to combat the problem there needs to be close coordination and collaboration, using a holistic and integrated approach, across many sectors and many disciplines.

**5. SUMMARY, CONCLUSION AND RECOMMENDATIONS**

From the summary, results were observed that Christians celebrate Christmas in December and Easter in March or April. Also, there is Eid-el-kabir and Eid-el-tri June-September, within these periods, people travel to celebrate with their loved ones. Accidents and deaths are higher during the festive periods and these EMBER months because of the various festivities lined up during this period, which involve much more traveling than usual. It is a period when commercial drivers make more money through overloading and excessive speeding, among other factors. The government should improve data collection details at the scene of accident, improve the storage and accessibility of all data relevant to an accident such as vehicles involved, road, environment and drivers detail, etc. The Federal Government should make more funds available to FRSC to enable the corps procure more equipment for operational activities. The Federal, State and Local Governments should endeavour to rehabilitate roads, ensure road signs, and black spots are adequately addressed. More personnel should be recruited to assist in road traffic control. Staff training and development should be highly considered. Commands at various levels should intensify public enlightenments to enhance the attitude and behaviour of motorists towards safety culture.

**References**

- [1] Rodrigue J. (2009). *The Geography of Transport Systems*, 2nd Edition. New York: Routledge.
- [2] WHO (2009) Global status report on road safety : time for action Geneva Accessed from [www.who.int/violence-injury-prevention/road safety status 2009](http://www.who.int/violence-injury-prevention/road-safety-status-2009), November 2017
- [3] Eshbaugh, M. Maly, G.Moyer, J. and Torkelson.E. (2012). Putting the brakes on road traffic fatalities in Africa. *African Futures Brief Journal*.Vol. 2, No 3, Pp 1- 6.
- [4] Godwin, F.O (2014). Appraisal of the Federal Road Safety Corps efforts towards reduction of accidents in Badagry Local Government Area. Unpublished project Administrative Staff College of Nigeria (ASCON) Topo – Badagry
- [5] Atubi, A. O, (2012). A Monthly Analysis of road Traffic Accident in Selected Local Government Areas of Lagos state, Nigeria. *Mediterranean Journal of Social Sciences*, 3 (11): 47-62
- [6] Onakomaiya, S. O. (1990) Trends in Nigeria Road Safety and Accident Situation: A Paper Presented at a Conference on Accident Control.
- [7] Filani, M. O. andGbadamosi, K. T. (2007) Spatial and Temporal Pattern of Road Traffic Accident Occurrences in Nigeria: 1970-1995. *Nigerian Geographical Journal*, Vol. 5, No. 1, Pp. 55-70.
- [8] Obinna, C. (2007). Road Traffic Crashes Kill 0.4m Youths every year. An article on road traffic crashes in Nigeria. April, 24. The Vanguard newspaper, P. 35.
- [9] Mbachu, G. (2012). VIO: Between vehicle inspection and revenue generation. An article on VIO- DVLA. FCT,Abuja, July, 2012.
- [10] Federal Road Safety Corp (2010). Report on Road Traffic Crashes (RTC) Involving Buses on Nigerian Roads (2007-2010).
- [11] Federal Road Safety Commission (2013). Accident data accessed from Federal Bureau of Statistics, May, 2015.