



Comparative Analysis of Road Traffic Accidents Occurrence between FCT Abuja and Kogi State, Nigeria

S. Abbas, M. Isma'il and S. Abubakar

Department of Geography, Ahmadu Bello University, Zaria

Corresponding Author: abbasshehu55@gmail.com; +2348101573291

Received: August, 2016

Revised and Accepted: December, 2016

Abstract

In view of the fact that road traffic accident has become a major cause of deaths in Nigeria, this study was set out to analyse the spatial variation in the occurrence of the phenomena, using two contiguous geographical territories that are politically different in terms of roles. Data on reported cases of road traffic accidents was obtained from the Federal Road Safety Commission and was analysed using both descriptive and inferential statistics, particularly the student's t – test. The findings revealed that there was indeed a significant difference between Abuja (the Federal Capital Territory -FCT) and Kogi state in terms of the frequency of accidents, with the former having a higher rate of occurrence. Again, it has revealed that while the casualty rates (i.e. those either injured or killed) has remained fairly stable in Kogi state, the figures have been increasing around the FCT, over the period of study.

Key words: Road traffic; accident; casualties; FCT; Kogi State.

1.0 INTRODUCTION

It is said that transport has shrunked the world by contributing to the development of mega cities through trade, social linkages and cohesion. But despite the undisputed roles and impact of road transport in the efficient operation of modern societies, one of its avoidable negative consequences is accident occurrence (Waziri, 2004). In support of this, the President of World Bank and the Director General, World Health Organization (WHO), James and Jong-work (2005), respectively, spoke that road traffic accidents are likely to become the worlds' biggest cause of death and disability by 2020, if nothing is done to change the current trend.

Also, WHO and World Bank (2004), jointly came up with a report that road crashes kill 1.2

million people every year and injure between 20 and 50 million more, with the vast majority in developing countries. The economic loss from road traffic accidents is estimated at more than five hundred billion dollars (\$500) of the nearly 1.2 million traffic deaths every year. The rising trend in morbidity rate due to road traffic accidents in low and middle income countries have made some authors to declare road traffic accidents an 'epidemic' (Aderamo, 2012a; Atubi, 2012; Nantulya and Reich, 2002).

Heidi (2006) stated that developing countries bear a large share of the burden, accounting for 85% of annual death and 90% of disability adjusted life years (DALYs) lost because of road traffic injuries. And since road traffic injuries affect mainly males (75% of deaths) and those between 15 and 44 years old, this burden is

creating enormous economic hardship to families due to loss of their bread winners. In the same vein, it was also reported, that road traffic accident injuries cost 1 to 2% of the Gross National Product (GNP) of developing countries, or twice the total amount of development aid received worldwide by developing countries (WHO).

Nigeria was ranked second highest in the rate of road traffic crashes among 193 countries of the world (Ukoji, 2014). And in Africa, the country was ranked ahead of other African countries in terms of mortality rate on her highways, with the chances of a vehicle killing people 47 times higher than in Great Britain (Onokomaiya, 1990). This was further supported by Filani and Gbadamosi (2007) who reported that the country is considered a high risk region in terms of safety, with an average of 32 traffic deaths per 1000 people. This figure would be better appreciated when compared with other countries like the United States that had 1.6 traffic deaths per 1000 population and the United Kingdom had 1.4 deaths per 1000 population (Trinca, 1988)

The history of Nigeria's situation of road traffic accident is alarming because the federal road safety commission (FRSC) official statistics of road accidents show that in one year, 14,343 accidents cases, involving only road vehicles, occurred in 2003. Out of that, 18,116 persons were injured and 6,452 died. This statistics reflects only reported cases of road accident. In other words, there are many more cases of road and other types of accidents that were never recorded or reported (Waziri, 2004). And unfortunately, according to the FRSC Corps Marshall Oyeyemi (2014), victims of road traffic accidents consisted mostly young, productive and energetic segment of the national population. This study tries to make a comparative analysis of road traffic accidents between two important contiguous political territories in Nigeria – the FCT (Abuja) and Kogi state. It is therefore, hypothesized that “There is no significant difference in the rate of accident between the FCT (Abuja) and Kogi state”.

2.0 MATERIALS AND METHODS

This study largely relied on secondary data, mainly from reported cases of road traffic accidents, obtained from the federal road safety commission (FRSC) FCT, Command Headquarter, Abuja. The data collected was analyzed using both descriptive and inferential statistics, especially Student's t-test, considered the most powerful test for the comparison of sample means. The test was employed to determine whether there is a significant difference in the rate of road traffic accidents between the two areas. The formula for the test is thus:

$$t = \frac{x_1 - x_2}{\sqrt{\left(\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}\right)}}$$

Where x_1 and x_2 are the means of the two sets of data on accidents for Abuja and Kogi state, σ_1^2 and σ_2^2 are their standard deviation, and N_1 and N_2 are the number of years/observations. The degrees of freedom is $V = N_1 + N_2 - 2$ (Anyadike, 2009).

3.0 RESULTS AND DISCUSSION

3.1 Frequency of Accidents

Table 1 shows that the FCT had a higher total number of road traffic accidents recorded than Kogi state, with 2,638 accidents, while Kogi had 1,570. It also shows that the year 2005, with 22.90% occurrence rate, was the worst for Kogi state, while 2009 was not the best for the FCT. It implies that the FCT has witnessed about 41% more crashes (or 1,068) over and above Kogi state during the period. This is in agreement with the finding by Olajuyigbe *et al.*, (2014), who noted that Abuja is known for regular occurrence of accidents, but added that Wuse District was the worst of all.

In order to test the null hypothesis that “There is no significant difference in the rate of accident between the FCT (Abuja) and Kogi state”, the information in Table 1 was again utilized. Two columns containing the frequency of accidents for the areas were subjected to t-test statistics.

Table 1: Reported Cases of Road Traffic Accident in Abuja and Kogi State from 2004-2011.

Year	FCT, Abuja	Percentage	Kogi State	Percentage
2004	353	13.38	230	14.65
2005	276	10.46	360	22.90
2006	92	3.4	104	6.63
2007	459	17.59	258	16.44
2008	435	16.49	213	13.57
2009	496	18.80	139	8.86
2010	404	15.31	151	9.62
2011	123	4.66	115	7.33
Total	2,638	100	1,570	100

Source: Federal Road Safety Corps FCT Command Headquarters Abuja, 2012.

The results show that the calculated value was 2.3 at 0.05 confidence level while the tabulated value was 1.76, meaning that there is a significant difference in the rate at which accidents occurred between the two areas. Therefore, the FCT, which had a higher mean of 329.8 accidents, had a significantly higher frequency of accidents than Kogi state. This could be due to several factors, one of which could be that the FCT, being the seat of the Federal government attracted more traffic daily from all states of the federation, in addition to foreigners coming into the FCT for one reason or the other.

3.2 Casualty Rate

The actual effect of accidents on humans is understood best when we consider the casualty figures. That is, the number of persons injured or killed. Table 2 shows that the total number of

casualties recorded in Abuja (for the worst accidents year, 2009) was 10,532 people either injured or killed, with 1,611 people losing their lives within that year. The year which had the least number of people affected was 2005, with 33 people either injured or killed. This indicates that the rate of accidents around the FCT appears to be on the rise. The outcome is in line with the finding by Ukoji (2014) who reported that the FCT (Abuja) had the highest relative number of deaths (0.6 deaths per 100,000 population). And that this was partly accounted for by the number of registered vehicles in the area. A further look at Table 2 reveals an increasing casualty rate. This is because the higher percentages, for instance 65% and 9.26%, occurred in 2009 and 2011 respectively, while the least crashes were recorded in the earlier years, such as 0.2% in 2005.

Table 2: Casualty Rate of Road Accidents in the FCT, Abuja (2004-2011).

Year	No. of persons injured	No. of persons killed	Total	Percentage
2004	367	173	540	3.38
2005	28	5	33	0.20
2006	124	189	313	1.95
2007	1,073	369	1,442	9.02
2008	1,026	249	1,275	7.98
2009	10,296	236	10,532	65.94
2010	251	106	357	2.23
2011	1,195	284	1,479	9.26
Total	14,360	1,611	15,971	100

Source: Federal Road Safety Corps FCT Command Headquarters Abuja, 2012.

Conversely, Table 3 shows that in Kogi state (same year, 2005) recorded the highest number of victims, with 279 (or about 36%) of the total number of accidents for the years under study, out of which 1,745 lost their lives. This figure

was slightly higher than the fatality for FCT. However, the year 2011 recorded the lowest number of victims in Kogi state, with 531 people affected. On a general note, the casualty pattern in Kogi state was a bit more uniform compared

to the FCT; as most of the percentages hovered around 10%, except for the peak year.

Table 3: Casualty Rate of Road Accidents in Kogi State (2004-2011).

Year	No. of persons injured	No. of persons killed	Total	Percentage
2004	340	212	552	7.30
2005	2,561	229	2,790	36.91
2006	678	247	925	12.24
2007	391	243	634	8.38
2008	495	216	711	9.40
2009	367	264	631	8.34
2010	562	221	783	10.36
2011	418	113	531	7.02
Total	5,812	1,745	7,557	100

Source: Federal Road Safety Corps FCT Command Headquarters Abuja, 2012.

4.0 CONCLUSION

This paper has attempted a comparative analysis of reported cases of road traffic accidents between the FCT-Abuja and Kogi, one of the neighboring states to the federal capital. The findings revealed that there was indeed a significant difference between the FCT and Kogi state in terms of the frequency of road traffic accidents, with the former witnessing about 41% more occurrences. It has also revealed that while the casualty rates (i.e. those either injured or killed) has remained fairly stable in Kogi state, the figures have been increasing around the FCT, over the period of study.

In view of the forgoing, the study suggests the need to try to identify major causes and black spots of road traffic accidents, especially around the FCT, with a view to ameliorating the situation. This is particularly because the flow of traffic into the area is bound to continually increase, being the capital of Africa's most populous nation.

5.0 REFERENCES

Aderamo, J.A. (2012a). Assessing the Trends in Road Traffic Accident Casualties on Nigerian Roads, *Journal of Social Sciences*. Vol.3, pp 19-25.

Anyadike, R.N.C. (2009). *Statistical Methods for the Social and Environmental Sciences*. Spectrum Books, Ibadan

Atubi, A.O. (2012). Determinants of Road Traffic Accident Occurrences in Lagos State: Some Lessons for Nigeria. *International*

Journal of Humanities and Social Sciences. Vol. 2, No.6, Pp 252-259

Filani, M.O. and Gbadamosi, K.T. (2007). Spatial and Temporal Pattern of Road Traffic Accident occurrences in Nigeria: 1970-1995. *Nigerian Geographical Journal*, Vol. 5, No.1, Pp 125-158

Heidi, W. (2006). Population Reference Bureau for Road Traffic Accidents. Access online <http://www.prb.org/article2006/roadtraffic> increase.

Nantuliya, V. and Rerch, M. (2002). Equity Dimensions of Road Traffic Injuries in Low and Middle-income countries. *A medical journal on Injury control and Safety prevention*. 10 (1-2): Pp 13-20

Olajuyigba, A.E., Ogan, V., Adegboyega, S.A, and Fabiyi, O. (2014). Spatio-Temporal Analysis of Road Accidents in Abuja, FCT, Nigeria Using GIS Techniques. *Journal of Scientific Research and Reports* 3(12)

Onokomaiya, S.O.(1990). Trends in Nigeria Road safety and Accident Situations. A paper presented at a conference on accident control, University of Lagos, Nigeria.

Oyeyemi, Boboye (2014). Accident rate still high in Nigeria, says FRSC boss. Daily Trust Newspaper. Nov. 9th 2014

Trinca, G.W. (1988). Reducing Traffic Injury: a Global Challenge. A.H. Massina and Co., University of Melbourne.

Ukoji, V.N. (2014). Trends and Patterns of Fatal Road Accidents in Nigeria. IFRA- Nigeria working papers series, No. 35

World Bank (2004). Report on Road Traffic Injury Prevention. Access online at www.who.int/ernetonAugust 2011

Waziri, A.S. (2004). *Essentials of Road safety and Accident Prevention*. 1st edition, Ibadan University Press, Nigeria

James, W. and Long-work, L. (2005). Road Traffic Injuries are major and Growing Public Health Development Concern.

<http://econworldbank.org/website/external/extract>