International Journal of Civil Engineering and Technology (IJCIET)
Volume 10, Issue 02, February 2019, pp. 124-134, Article ID: IJCIET_10_02_015
Available online at http://www.iaeme.com/ijciet/issues.asp?JType=IJCIET&VType=10&IType=02
ISSN Print: 0976-6308 and ISSN Online: 0976-6316

VEHICLE-CAUSED ROAD ACCIDENTS OF FOUR MAJOR CITIES IN NORTH-CENTRAL REGION OF NIGERIA. (2010 – 2015)

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ABSTRACT

There has been an increase in the occurrence of road accidents over the years with the vehicle-accidents as one of the highest rated causes of accidents in Nigeria. In this regard, information on "vehicle-caused" accidents and its effects is required in order to proffer solutions and preventive measures in avoiding consequent deaths. This data article therefore presents the data on road accidents caused by vehicles within a 5-year period: 2010 – 2015. The degree of these accidents is categorized as minor, fatal and serious as the highest degree and the types of vehicles involved in these accidents are also presented and analyzed with the use of tables and graphs with a view to easily extract useful deductions needed to make informed decisions..

Keywords: Road Transportation data, Road Accident Statistics, Vehicles, Cities, Period.

Cite this Article: Adeniyi Abidemi Emmanuel, Olagunju Mukaila, Adebiyi Marion Olubunmi, Ogundokun O. Roseline , Lukman Adewale Folaranmi, Amusan Adedoyin Elizabeth, Ayegba Peace Ojochenemi and Ehiedu Precious Anyaiwe, Vehicle-Caused Road Accidents of Four Major Cities in North-Central Region of Nigeria. (2010 – 2015), *International Journal of Civil Engineering and Technology*, 10(2), 2019, pp. 124-134.

http://www.iaeme.com/IJCIET/issues.asp?JType=IJCIET&VType=10&IType=02

1. INTRODUCTION

Bad roads, attitudinal behaviours of drivers coupled with their lack of skills, inexperience, careless risk-taking and dozing are some of the major causes of road accidents (Jonathan, et al., 2018), (Juhani, et al., 2018). An analysis of road accident occurrence will go a long way in assisting Government and Policy makers about the extent of havoc been done initiating the need for measures to be put in place to prevent future occurrence. The data presented in this article illustrates the incidence of road transport accidents in major cities of Kwara state, Nigeria which include Ilorin, Bode-Saadu, Omu-Aran and Offa/Erin-Ile. The data was collected between 2010-2015. Degree of accidents, types and owners of vehicles involved were documented. The degree of road accidents reported are: fatal, serious and minors while vehicles considered include Bicycles, Motorcycles, Cars, SUV(Jeep), Vans, Mini-Buses, Luxury-Buses, Pick-ups, Trucks, Tankers and trailers. Based on ownership, the vehicles involved were classified into private, commercial, Government and Diplomat. This data presented can be used as a benchmark to compare the incidents of vehicle caused road accidents in comparison with other major causes of road accidents. Figure 1 provides a pictorial overview of the raw data used in this article.

2. MATERIALS AND METHODS

Various efforts were made by developing country to develop an accident database by using technologies available to assist in developing and implementing road safety programs to enable them to reduce the rate of vehicle accident to minimal level. Bar Charts and Description statistics are used to analyze the raw data collected from Federal Road Safety Corps, Kwara state, Nigeria. Descriptive statistics as well as frequency distributions of vehicle caused road accident incidence were inferred from the raw data. These are presented in this section. Figure 1 provides a pictorial overview of the raw data used in this article.

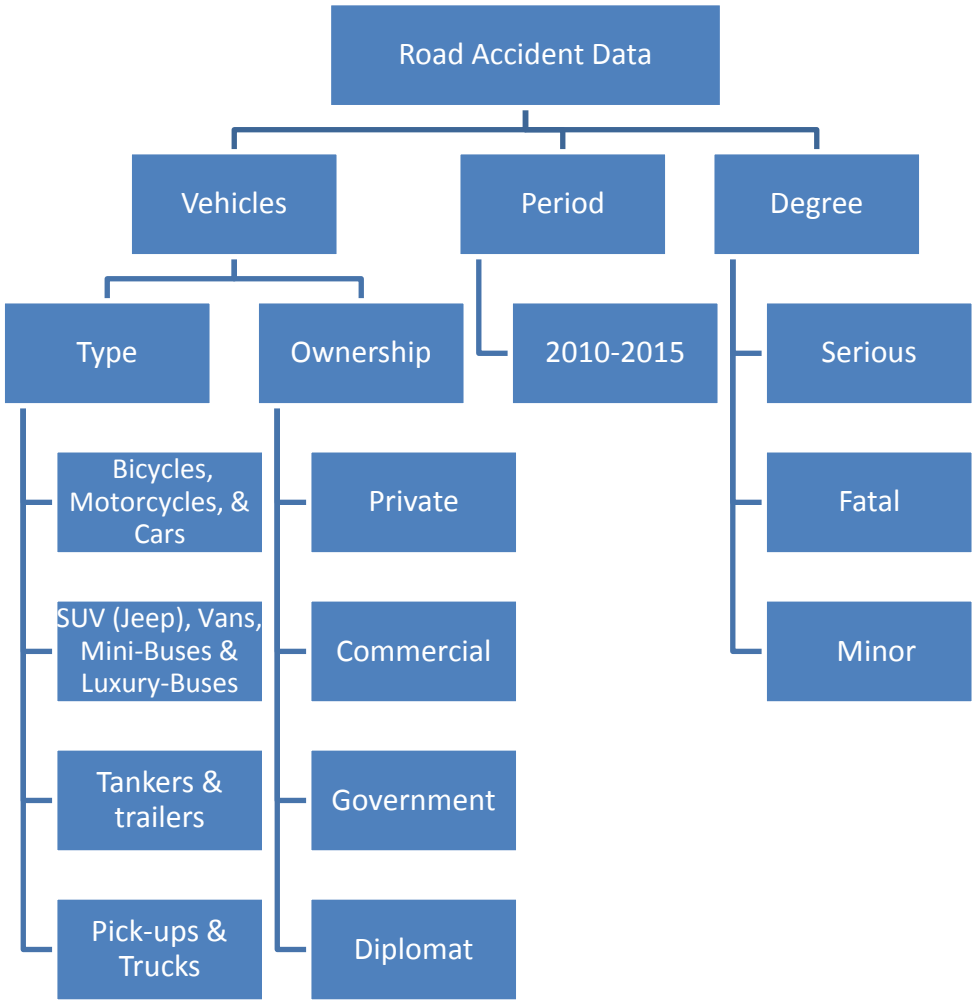

Figure 1 Vehicle Accident Data

The figure 1 displays vehicle accident data of three arms which is the method used to categorize the road accident data. The vehicle which consist the type and ownership follow by the period of the analyzed data and also the degree of the accident.

Table 1 Table of Vehicles involved in Road Accident in Ilorin and its Environs

	Categories of Vehicles Involved													
Year	B	M	T	Car	S	Van	MB	LB	P	T_k	T_r	Trailer	Others	Total
2010	0	18	0	32	1	1	14	0	1	0	0	2	0	69
2011	0	13	0	27	0	2	19	0	2	5	0	4	0	72
2012	0	11	0	38	1	2	15	0	4	8	1	0	0	80
2013	0	61	0	175	10	26	48	0	7	19	2	6	0	354
2014	0	27	0	69	2	4	21	0	0	2	2	11	5	143
2015	0	107	1	257	15	28	86	0	10	31	7	20	7	569
TOTAL	0	237	1	598	29	63	203	0	24	65	12	43	12	1287

B= Bicycle; M= Motorcycle; T=Tricycle; S= SUV (Jeep) MB= Mini Bus; LB=Luxury Bus; P=Pick Up; Tk = Truck; Tr =Tanker

Table 2 Table of Owners of Vehicles involved in Road Accident

Year	Owners of Vehicles Involved				Total
	Private	Commercial	Government	Diplomat	
2010	26	43	0	0	69
2011	33	38	1	0	72
2012	29	51	0	0	80
2013	129	218	1	0	348
2014	56	87	0	0	143
2015	226	334	3	0	563
TOTAL	499	771	5	0	1275

3. RESULT AND DISCUSSION

3.1. Ilorin and its Environs

The accident incident data collated in Ilorin and its Environs is presented in this section. Figure 2 presents the frequency distribution illustrating the degree of road accident in Ilorin and its environs. It will be clearly seen that serious degree of accident was recorded between 2010 and 2015 with the highest number recorded in 2013. The frequency distribution of the types of vehicles involved and their owners are presented in Figures 3 and 4 respectively. Cars are the most affected and the highest occurrence was recorded in 2013, as expected, commercial vehicles caused the most accident.

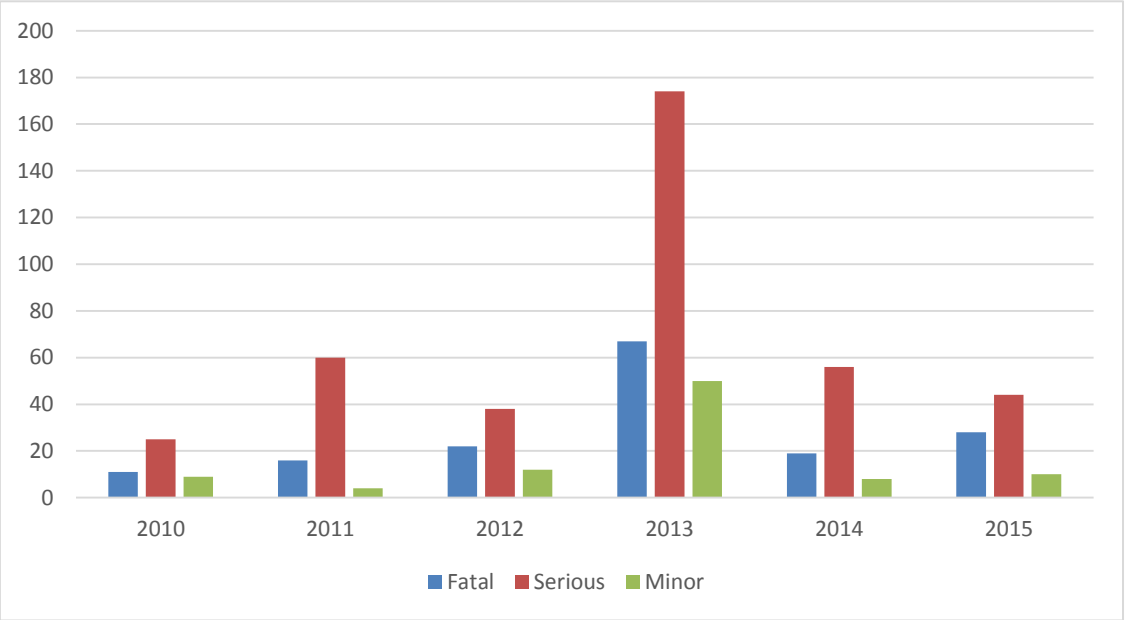

Figure 2 Frequency Distribution illustrating Degree of Road Accidents in Ilorin and its Environs

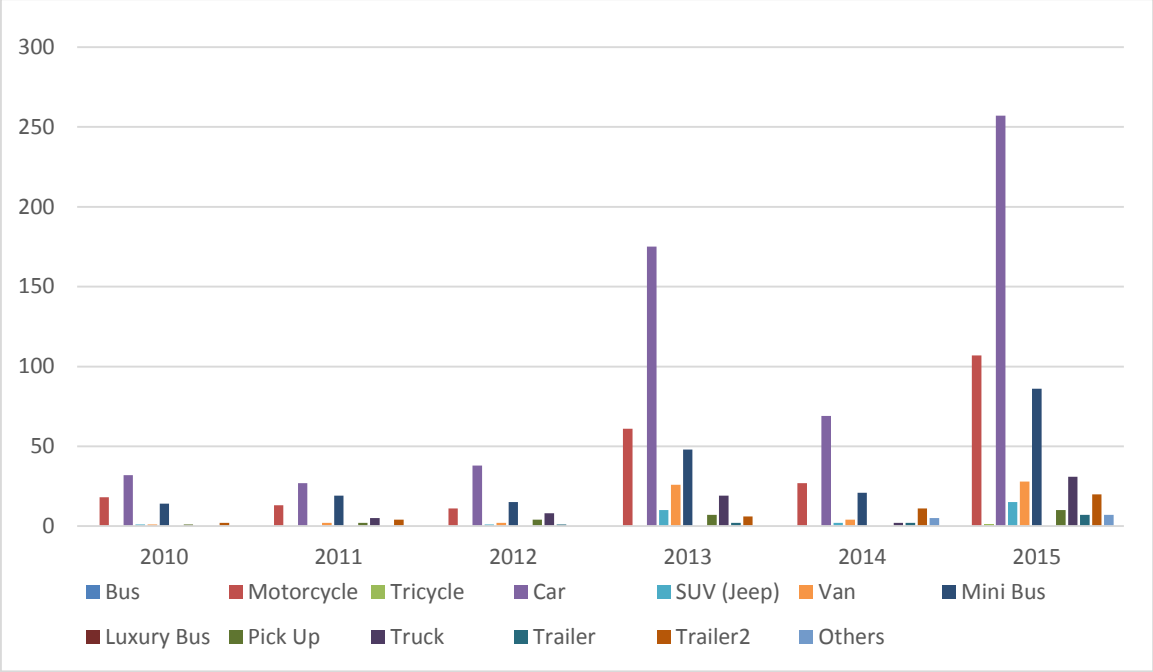

Figure 3 Frequency Distribution of Vehicles involved in Road Accident in Ilorin and its Environs

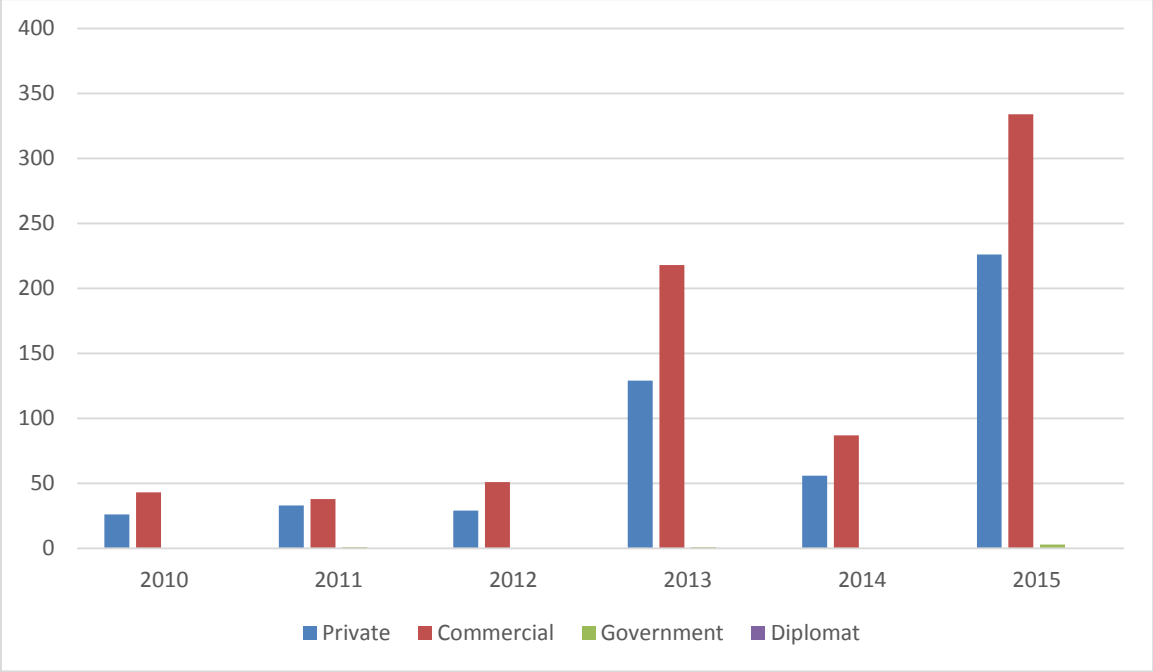

Figure 4 Frequency Distribution of Owners of Vehicles involved in Road Accident

3.2. Bode-Saadu and its Environs

The accident incident data presented in this section were collected from Bode-Saadu and its environs. The types of vehicles involved in road accident as well as their owners are presented in Figures 5 and 6. It was observed that commercial car and trailer were the cause of most accidents.

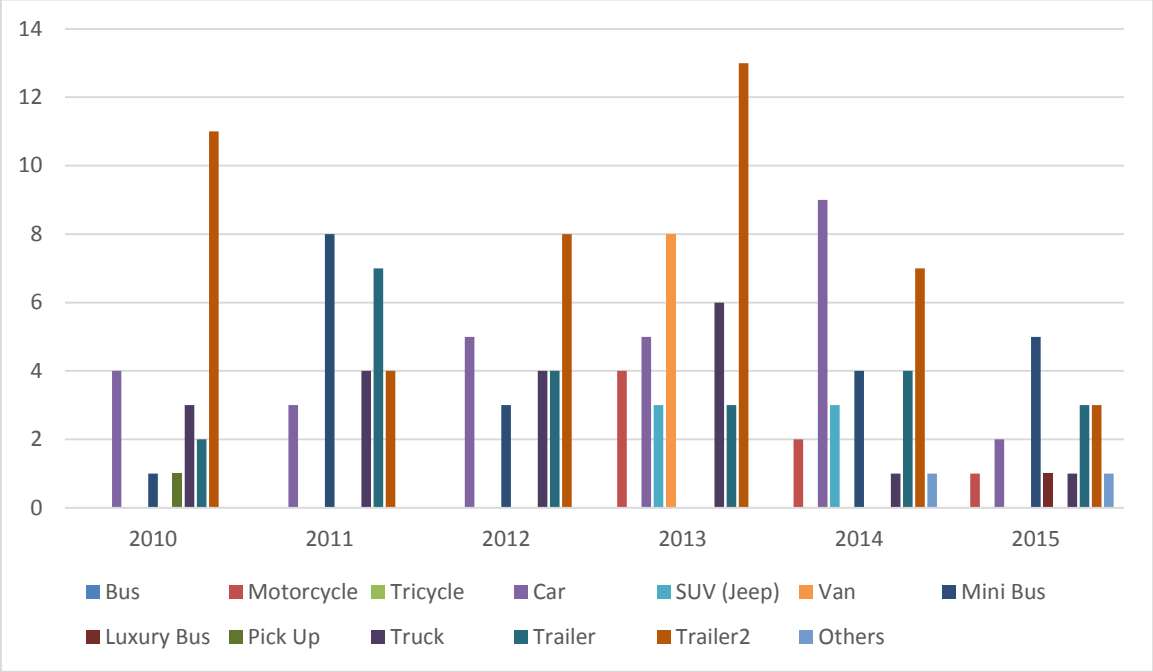

Figure 5 Frequency Distribution of types of Vehicles involved in Road Accident in Bode-Saádu and its Environs

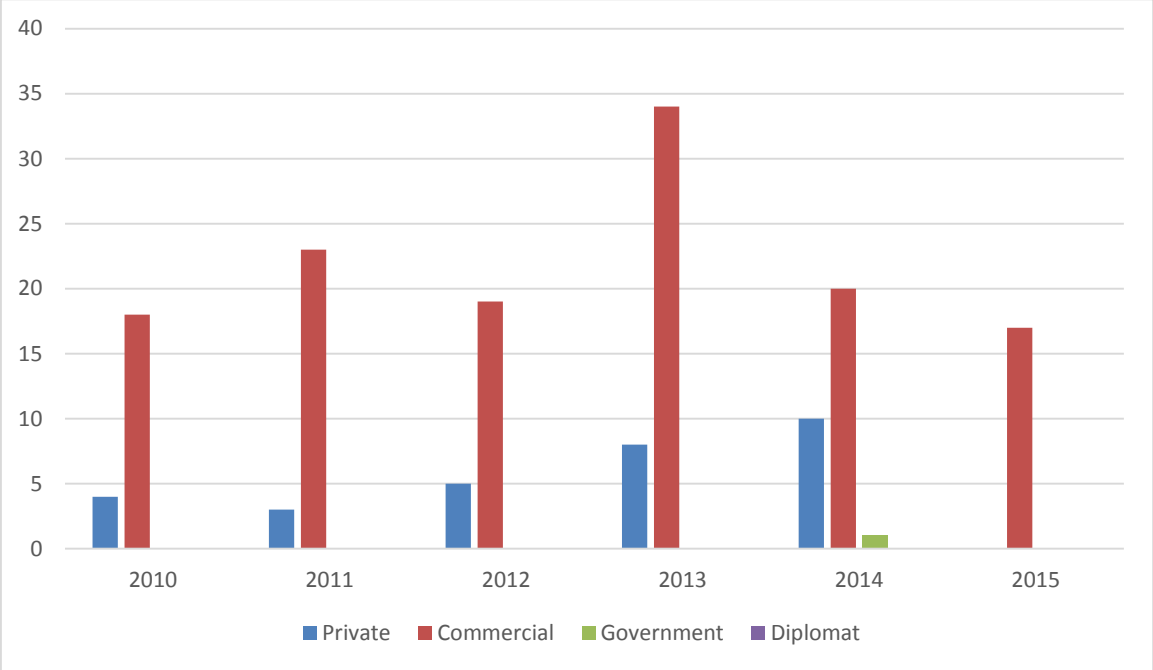

Figure 6 Frequency Distribution of Owners of Vehicles involved in Road Accident within Bode-Saadu and its Environs

3.3. Omu-Aran and its Environs

This section highlights accident incident data collated in Omu-Aran and its environs between years 2010 and 2015. The types of vehicles involved, and vehicle owners are also presented in Figures 7 and 8 respectively. Most of the accidents reported were caused by private and commercial cars.

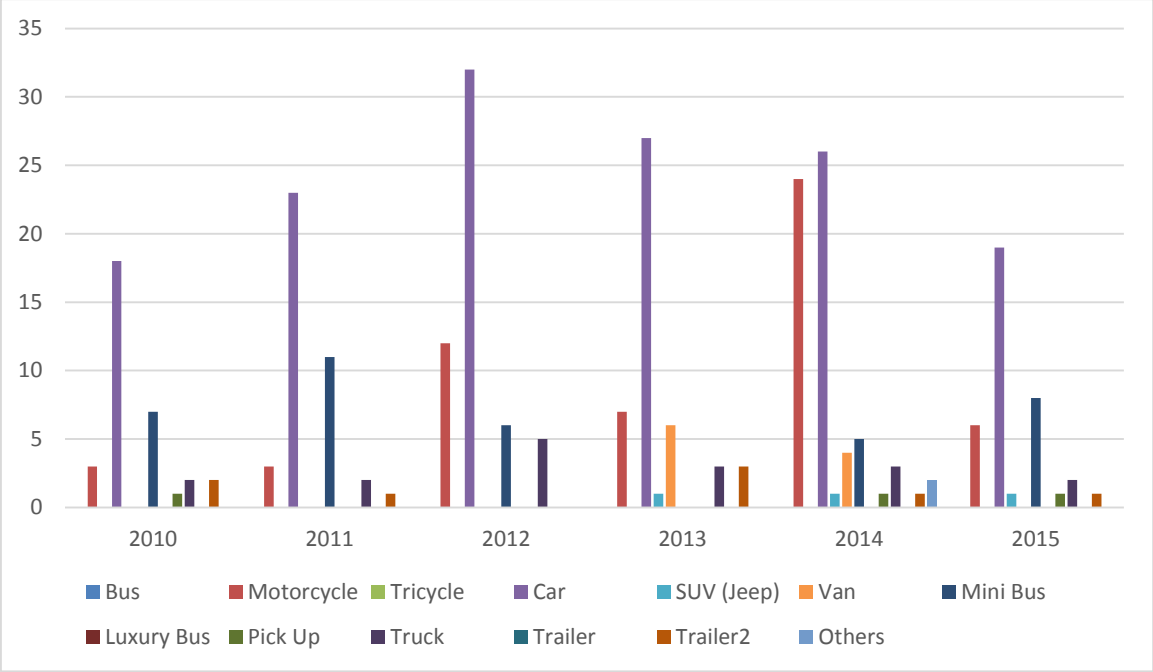

Figure 7 Statistical Analysis of Vehicles involved in Road Accident in Omu-Aran and its Environs

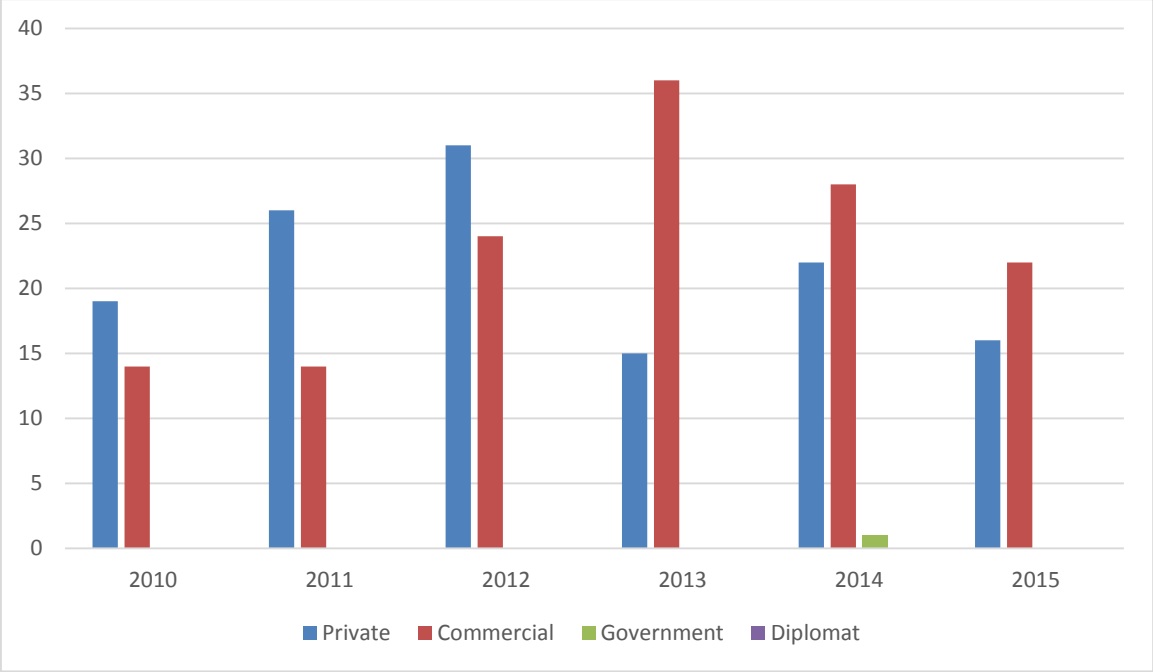

Figure 8 Statistical Analysis of Owners of Vehicles involved in Road Accident within Omu-Aran and its Environs

3.4. Offa/Erin-Ile and its Environs

This section highlights accident incident data collated in Offa/Erin-Ile and its environs between years 2010 and 2015.The types of vehicles involved, and vehicle ownership are presented in Figures 9 and 10 respectively. Private and commercial cars and luxury buses are the major cause of accidents in this region.

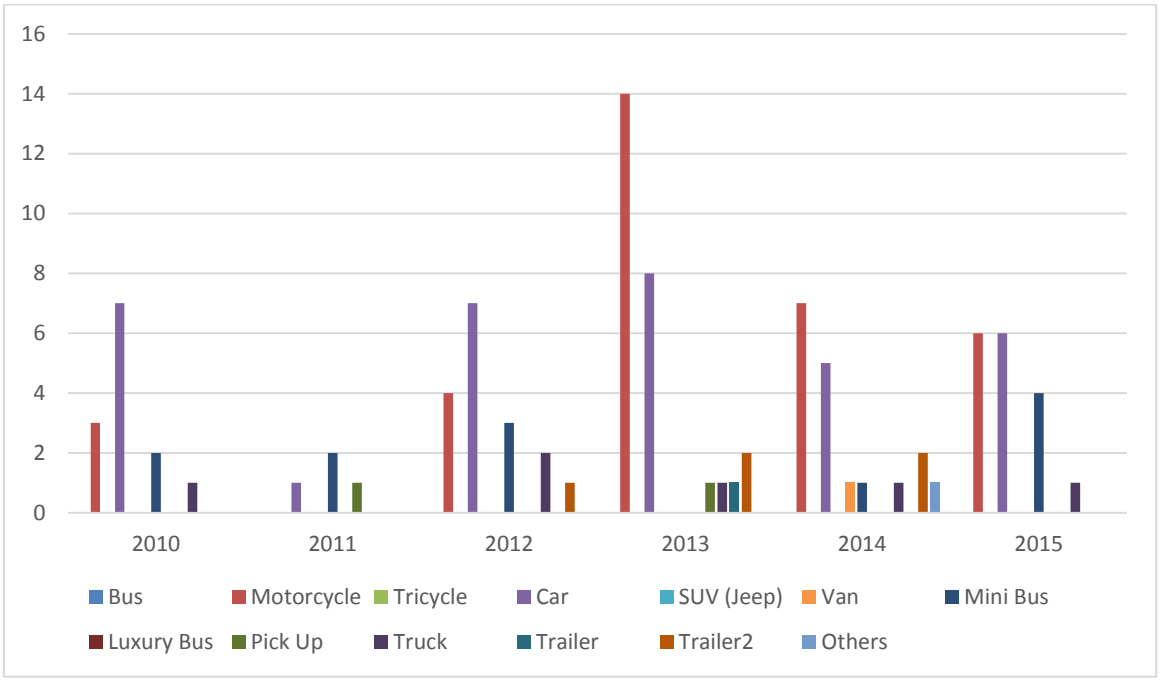

Figure 9 Frequency Distribution of Vehicles involved in Road Accident in Omu-Aran and its Environs

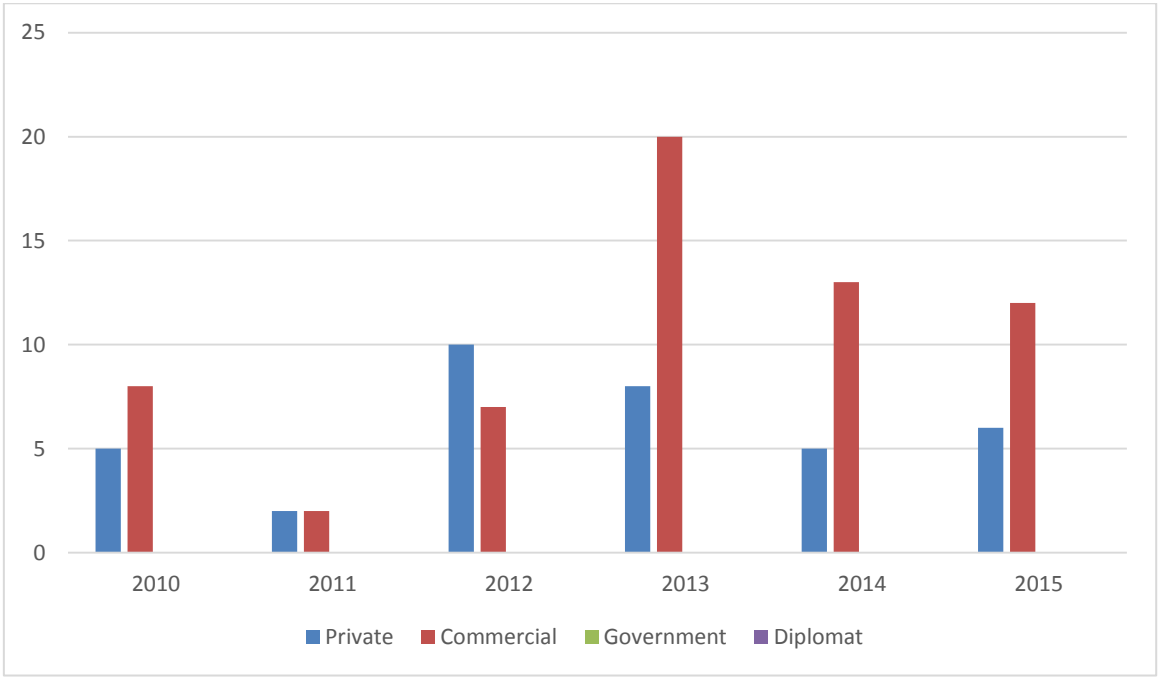

Figure 10 Frequency Distribution of Owners of Vehicles involved in Road Accident in Omu-Aran and its Environs

4. STATISTICAL ANALYSIS

Statistical Package for Social Sciences (SPSS) was used to find the significance differences between the vehicle accidents in different locations.

Table 3 Statistical Analysis of Commercial vehicle

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	55148.167	3	18382.722	4.954	.010
Within Groups	74215.667	20	3710.783		
Total	129363.833	23			

H0: There is no significance difference in the average number of commercial vehicle owners' accident in the different location.

H1: There is significance difference in the average number of commercial vehicle owners' accident in the different location.

Table 4 The result shows that there is significance difference in the average number of commercial vehicle owners' accident in the different location. The post Hoc test below shows that there are more accidents recorded in Ilorin and environ as compared to other location. This is traceable to the facts that Ilorin is the capital city of Kwara state.

Dependent				
	location	N	Subset for alpha = 0.05	
			1	2
Duncan[a]	Offa/Erinle	6	10.3333	
	Bode-Saadu	6	21.8333	
	Omu-Aran and environ	6	23.0000	
	Ilorin and environ	6		128.5000
	Sig.		.738	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

Table 5 Statistical Analysis of Private vehicle owners' accident

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	24571.500	3	8190.500	5.079	.009
Within Groups	32250.333	20	1612.517		
Total	56821.833	23			

H0: There is no significance difference in the average number of private vehicle owners' accident in the different location.

H1: There is significance difference in the average number of private vehicle owners' accident in the different location.

Table 6 The result shows that there is significance difference in the average number of private vehicle owners' accident in the different location. The post Hoc test below shows that there are more accidents recorded in Ilorin and environ as compared to other location. This is traceable to the facts that Ilorin is the capital city of Kwara state.

Dependent				
	Location	N	Subset for alpha = 0.05	
			1	2
Duncan[a]	Bode-Saadu	6	5.0000	
	Offa/Erinle	6	6.0000	
	Omu-Aran and environ	6	21.5000	
	Ilorin and environ	6		83.1667
	Sig.		.510	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

5. CONCLUSION

From the various figures display generated from the collected data, it was observed that highest level of accident was recorded in the year 2013 from the north-central region of Nigeria and cars are the major causes of the accident. It was observed from the analysis that more accidents are recorded in Ilorin and its environs being the capital city of the state. We hereby emphasis the prevention of vehicle road accident to be a multifactorial, the governments agencies responsible must be enact, enforce laws and prosecute where such laws are broken. The law enforcement agent must be conscious of the fact the money he or she may collect as bribe is not worth endangering human lives. Also, the design of vehicles must also improve protection after collision, both for vehicle occupants and for those outside of the vehicle. A well designed and well maintained vehicle, with good brakes, tires and well-adjusted suspension will be more controllable in an emergency and thus be better equipped to avoid collisions.

ACKNOWLEDGMENTS

This research is fully sponsored by the Landmark University Centre for Research and Development, Landmark University, Omu-aran, Nigeria.

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