Road Mirror 2010

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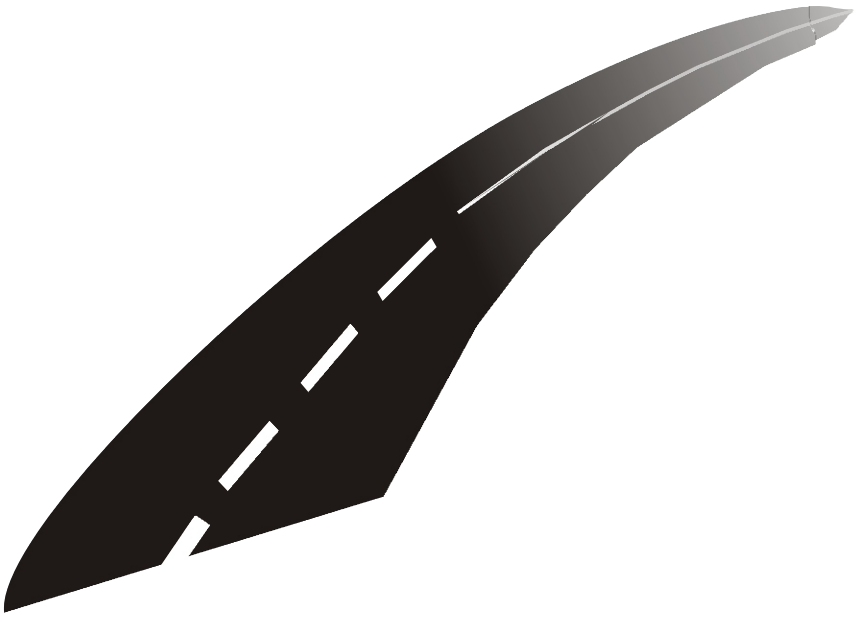
2010

FEDERAL ROAD SAFETY CORPS

Research Monograph No.2

ROAD MIRROR



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CONTENT Page

FOREWORD

The Federal Road Safety Corps (FRSC) is the Lead Agency in Road Traffic Administration and Road Safety management in Nigeria. Road transportation being a dominant mode of transportation in Nigeria is becoming interesting with enormous challenges in recent times. The FRSC in its design of countermeasure to address issues emanating from the challenges such as Road Traffic crashes and congestions had long keyed into the global approach. To this end, FRSC adopted Accra declaration of 8th February 2007 centered on reduction of road crash fatalities by 50% by 2015 and MOSCOW declaration (Decade of Action) of 20th November 2009 with key focus of stabilizing and then reducing the forecast level of global road deaths by 2020.To be on the right path to actualize the requirements of these declarations, we developed four (4) strategic considerations: Mission, Vision, Corps Values and Corporate road map. The Vision of FRSC is to reduce road traffic crashes and create safe motoring environment in Nigeria. Our Mission is to regulate, enforce and coordinate all road traffic and safety management activities while the Corps Values specified attitudinal requirements for efficient and effective service delivery. These values are transparency, fairness, timeliness and service orientation.

The corporate road map which ensures an alignment of the corps projects and programmes with Nigeria Vision 20:20 is specified under short term, medium, and long term. It made clear the policy trust, strategic plan, procedures and more importantly the use of ICT for effective surveillance, data capture and monitoring. Research remains a vital tool used by FRSC for needed actions towards making the road safe. It is therefore relevant that factors responsible for road traffic congestion are uncovered and addressed.

FOREWORD

In March 2010, the corps viewed the increasing road traffic congestion nationwide and its effect on road users and the economy as unacceptable. It became necessary therefore to look into the issue and proffer solutions. Road Mirror was conceived and a Research Team put in place for the study. This publication presents an entirely fresh perspective to Road Traffic Administration and Road Traffic Management in Nigeria. The work of the Team which was conducted nationwide involved empirical observations, administration of questionnaires designed to uncover causes and effects of road traffic congestion. This publication has provided a platform for better understanding of traffic congestion in Nigeria and a guide to ways of ensuring free flow of traffic.

This work is therefore being published considering that it will serve as resource material and a reference to academics, research workers and other road safety practitioners. This is the second Research monograph to be published by the Federal Road Safety Corps. This medium affords me an opportunity to acknowledge the detailed work of the Research Team and by extension an encouragement for further works.

Osita Chidoka
Corps Marshal and Chief Executive
Federal Road Safety Corps.

PREFACE

Road traffic congestion is a challenge in Road Traffic Administration and Road Safety Management in Nigeria. A great philosopher, Anthony Robbins in his view on how best to face challenges, said , I believe life is constantly testing us for our level of commitment, and life's greatest rewards are reserved for those who demonstrate a never-ending commitment to act until they achieve. This level of resolve can move mountains, but it must be constant and consistent. As simplistic as this may sound, it is still the common denominator separating those who live their dreams from those who live in regret." I hold this to be true, as a keen pulsating desire has been in me to look more closely to the features of road traffic congestion being a common and consistent experience on most of our roads providing entrance and exit to cities. This has made intra and intercity journeys a burden seeking intervention measures. As a road safety practitioner and a road user, I have followed the gradual vehicular growth in the country. Chaotic road traffic in recent time had left me with no option than to conceive the following questions: Are road users meeting their social and occupational appointments as scheduled? What are the consequences of man-hour loss to productivity and our economy? Why is road rage and competition for traffic lanes common in our traffic environment? Do excessive emission of CO_2, CO and other gases resulting from vehicle idling in traffic congestion have any impact on our environment? Does traffic congestion lead to road crashes? What is the effect of this traffic situation on our vehicles and income? With these questions, it is time a research on causes and effect of road traffic congestion was conducted.

Great things happen with turning point. If a clear, specific unequivocal decision is made to depart from the present chaotic traffic situation to a status of appropriate provision and actions that will ensure free flow of traffic, then safer roads and fuller lives are in focus. This study is intended to provide relevant information to government at all levels, road users, road traffic law enforcers and other stakeholders. The information is to act as a base for policy formulation and positive action towards ensuring free flow of traffic and by extension making the roads in Nigeria safe. Professor 'Wole Soyinka once said that preventive measures cost far less than the penalty of neglect.

This study was structured to cover all road traffic challenged corridors in Nigeria. To achieve this, a research team was put in place and dispatched to the six geopolitical zones in the country. Questionnaires were designed for the three categories of road users and accordingly administered to obtain qualitative responses. These responses were quantitatively analyzed and tested for the purposes of making deductions. The study provided for findings and recommendations to guide in decision making on matters relating to road traffic congestion.

The Corps Marshal and Chief Executive of Federal Road Safety Corps, Osita Chidoka has remained committed to actualizing the mandate of FRSC as a lead agency in Road Traffic Administration and Road Safety Management in Nigeria. The prompt approval for this study and his request to be kept in the know of the progress of the research is an attestation to this. I wish to express my profound gratitude to the Corps Marshal for the opportunity and enabling environment he gave me and the team I worked with, towards making this study possible, hence this publication, THE ROAD MIRROR

AA Omidiji
Deputy Corps Marshal

CHAPTER ONE

1.0 INTRODUCTION

The Road Mirror is an entirely fresh perspective to Road Traffic Administration and Road Safety Management. This publication is designed to uncover unsuspected problems in Road Traffic administration, provide clear information on road status and utilization profile and indicates needed platform for dynamic synergy between the Corps and the road users. The Federal Road Safety Corps is determined to meet Accra Declaration of 8th February 2007 centred on 50% reduction of road traffic crash fatalities by 2015 and work towards actualization of the six (6) pillars of the Decade of Action (Moscow Declaration) being the outcome of the first Global Ministerial conference on Road Safety (Time for Action) held in Moscow from 19th to 20th November 2009 and accented to by UN General Assembly in March 2010 with the key focus of "stabilizing and then reducing the forecast level of global road deaths by 2020". To this end, conscious efforts are being made to analyze our systems, recognize our flaws, challenge our assumptions, integrate relevant stakeholders through collaborations and partnership and in totality assume responsibility for creating needed change. The Corps holds that road traffic congestion affects our economy, quality of life and environment. The road mirror being research based, takes holistic look at the road network, infrastructural provision, traffic challenges and intervention measures from pre-colonial era to date. The target is to use evidence based facts to address road traffic congestions thereby enhancing;

- ability of road users to predict journey time.
- reduce environmental impact of the use of roads through reduction in vehicle emission e.g. Co_2.

- reduction in fuel consumption.
- robust economy by addressing productivity problems relating to man hour losses on our roads.
- orderliness relevant for avoidance of road traffic crashes.
- provision of adequate information on road usage.
- reduction in road rage resulting from frustrations in unfavourable traffic situation.

2.1 PRE-COLONIAL ERA

Road is a path established over land for the passage of vehicles, people and animals. The earliest roads in Nigeria evolved from animal paths and human consistent trips to farmlands, sources of water and firewood. Roads which emerged as footpaths developed into trade routes during trans-Atlantic slave trade. The construction, maintenance and provision of securities for these routes were responsibilities of local chiefs who for these services collected tolls. Road traffic during this era was at a nascent stage as trades along routes were periodic. Most movements were pedestrial in nature and limited to settlements. It is important to note that congestion was not an issue during this era.

2.2 COLONIAL ERA

Road traffic in Nigeria recorded significant improvement during colonial era. In 1901, when Nigeria became a British protectorate and part of British Empire, road construction was given tremendous attention. Trunk roads supported by secondary and feeder roads were constructed to facilitate evacuation of agricultural produce to the ports and link-up towns and other settlements for administrative purposes. The road linking Ibadan and Oyo constructed in 1906 is recorded as the first motorable road ever constructed in Nigeria. However,

Lord Lugard in 1904 attempted the construction of a mule road linking Zaria to Sokoto, Katsina and Maiduguri. By 1923, lighter, faster and cheaper America cars were imported into Nigeria with more delivery towards the end of 1920s. The central government of Nigeria in 1925 established a Road Board with a mandate to look into all issues relating to roads.. By 1926, trunk road system to link the major administrative centres in the country was proposed by H.E Walker.

After a decade of the Board services, the government had 9,453km length of roads maintained by her. Road construction and maintenance continued to receive needed attention from colonial administration. By 1951, the total length of roads in Nigeria stood at 44,414km, out of which 1,782km were tarred surface. It is important to add that the surfaced roads though single lanes were lacking in standard, design and characterized by sharp bends and poor drainage system. Before independence in 1960, the total network of roads constructed in Nigeria was 66,074km made up of 8,743km tarred and 57,331 gravel/untarred roads. Road traffic during this period started creating concern owing to:

- Nature of the roads (single lanes)
- Unprecedented rise in vehicle population
- National population growth
- Increase in movement for commerce and social engagement

2.3 POST-COLONIAL ERA

After independence in 1960, population and economic growths became more significant. Movements required for increased commercial activities and administrative duties mostly done by roads raised the challenges in road transportation system. These challenges manifest in the forms of road traffic crashes and traffic congestion. Intervention measures have been in

place from 1960 to date to address these challenges. The Shell Petroleum Development Company (SPDC), the Nigeria Army and various state Governments have attempted to address these challenges between 1960 and 1988. Federal Road Safety Commission (FRSC) was established in 1988 to tackle these challenges. Over time the Commission has faced an uphill task in tackling these observed challenges.

These difficulties encountered are posed by the following;

- inadequate funding of the Corps
- poor road networks occasioned by inadequate budgetary provision and poor maintenance.
- absence of appropriate motoring culture i.e. poor use of the roads.
- absence of effective regulatory policies for road transportation systems.
- contributions of water and air transportation systems in Nigeria is less than 20%. Recently, the contribution of Rail transport system is also dwindling at an alarming rate. These, put overwhelming pressure on road transportation system.
- continuous increase in vehicle volume due to Government policy on importation of used vehicles (Tokunbo).
- limited operations coverage owing to shortage of manpower and operations offices, vehicle and materials.

CHAPTER TWO

2.0 NATIONAL STRATEGIC ROAD NETWORK

Road transportation as an engine of growth plays a vital role in social economic development of a nation particularly in facilitating movement of people, goods and services. The Nigerian economy depends strongly on the functionality of its transport system. From past researches, about 90% of the macroeconomic activities of Nigeria depend on the automobile as a means of mobility. This is evidenced from the sector's contribution to total GDP compared to other mode of transportation. For instance, in 1997, the transport sector contributed 3.08% to the National GDP. Out of which road transport contributed 2.84 %(about 92.2% of the transport sector contribution to the national GDP).

2.1 EMERGENCE OF ROAD NETWORK DEVELOPMENT IN NIGERIA

In the pre-colonial days, the dominant mode of road transportation was porters and draught animals over bush paths and tracks. But in 1904, a cart road for mules and ox carts was built to reduce the strain of securing porters for the British officials.

The first road (about 56km) for motorised vehicles in Nigeria was however built in 1906 from Ibadan to Oyo. By 1914, Nigeria has 3,200km of surfaced roads. Road construction in Nigeria received a major boost in the 1970 during the oil boom era. The national road network grew from 6500km in 1960 to 10,000km in 1970 and 29,000km in 1980.

In terms of road length, the federal government is responsible for 22% of roads in Nigeria while states and local authorities

are equally responsible for 27% and 51% of road network respectively.

2.2 FEDERAL ROADS

Nigeria has over the years made tremendous stride in road development which began with the bituminous road linking Lagos, Abeokuta and Ibadan in the first half of the 20th century.

The then Federal Military Government between 1975 and 1980 took over 17,000km of roads from the 12 states bringing the Federal road network to 28,000km. The takeover was for social integration, economic development and defence access.

According to Jacob Akindele, Special Adviser (Road Administration) to Ogun State Government in his report dated 28th March 2011, observed that Nigeria has the longest network of roads in Africa, though road statistics are not up to date but there are 34,000km of Federal roads; 30,000km of State roads; and 185,000km of local council roads, totaling 249,000km.

The national road network is about 200,000km out of which 36,285km are federal roads.

Road Mirror 2010

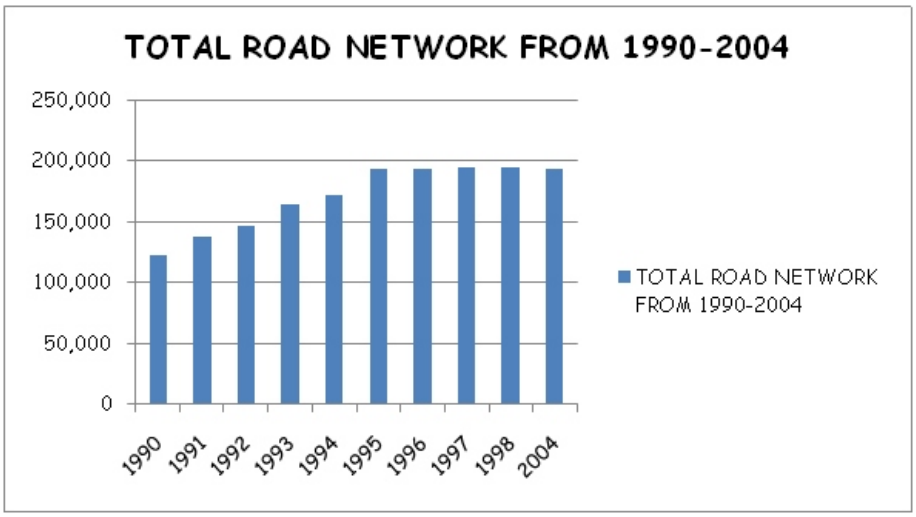


Fig.1.1

It will be of interest to note that there was no appreciable increase in total length of roads between 1995 and 2004. It was observed that paved roads lost their asphalt surfaces and were in very poor condition necessitating the attention the Government paid to road maintenance, which led to the establishment of Federal Road Maintenance Agency (FERMA) in Nov. 2002.

TABLE 2.1 ; ESTIMATED SIZE OF ROAD NETWORK IN TERMS OF OWNERSHIP AND CARTEGORIES IN 2004.

S/N	OWNERSHIP	PAVED	UNPAVED	TOTAL
1	FEDERAL	26,500	5,600	32,100
2	STATE	10,400	20,100	30,500
3	LOCAL	2,600	128,000	130,600
4	TOTAL	39,500	153,700	193,200

Source (15/03/2011): www.unilorin.edu.ng/index.php/abdulkareemya

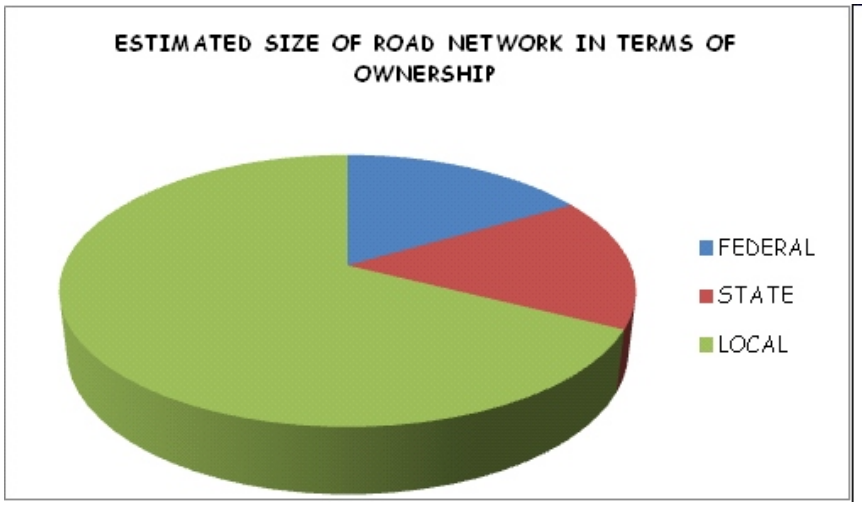


Fig. 1.2

In 2006, the total length of Federal Roads was 34,385km and this increased to 36,231km in 2008 (about 5% increase)

FERMA charged with the responsibilities of monitoring and maintaining all Federal roads in Nigeria in 15th March 2004 had first major road maintenance intervention campaign described as Operation 500 Roads. By this intervention measure, FERMA repaired a total length of 12,800km through direct labour operation and maintenance by rate contacts.

TABLE 2.2 : ANALYSIS OF GROWTH IN LENGTH OF FEDERAL ROADS BY STATES'CLASSIFICATIONS BETWEEN 2006 AND 2008

	STATE	2006 ROAD NETWORK(KM)	2008 ROAD NET WORK	VARIANCE	%VARIANCE
1	ABIA	607	638	31	5.1
2	ADAMAWA	1,316	1,364	48	3.6
3	AKWA-IBOM	601.9	607.9	6	1.0
4	ANAMBRA	554.4	745.5	191.1	34.5
5	BAUCHI	1,280	1334	54	4.2
6	BAYELSA	167.8	167.8	0	0.0
7	BENUE	1,611	1,632	21	1.3
8	BORNU	2,207	2,207	0	0.0
9	C/RIVER	1,075.19	1,244.90	169.71	15.8
10	DELTA	733	1,220.50	488.00	66.6
11	EBONYI	503	607	104	20.7
12	EDO	917	898	-19	-2.0
13	EKITI	367	375.8	9	2.3
14	ENUGU	858	972	114	13.3
15	GOMBE	499	434	-65	-13.0
16	IMO	599	679.5	81	13.4
17	JIGAWA	751	756.5	6	0.7
18	KADUNA	1,688	1,818	130	7.7
19	KANO	909	973.3	65	7.1
20	KATSINA	842	842	0	0.0
21	KEBBI	862	862.4	0	0.0

22	KOGI	1,133	1,173	40	3.5
23	KWARA	1,044	1,044	0	0.0
24	LAGOS	676	719	43	6.4
25	NASARAWA	887	900	13	1.5
26	NIGER	2,177.20	2,189.20	12	0.6
27	OGUN	1,071.80	1,185.80	114.00	10.6
28	ONDO	724	739.7	15	2.1
29	OSUN	629	671.5	43	6.8
30	OYO	1,105.50	1,156.50	51	4.6
31	PLATEAU	979.00	986.00	7	0.7
32	RIVERS	657.00	707.00	50	7.6
33	SOKOTO	582.00	584.00	2	0.3
34	TARABA	1,624	1,634	10	0.6
35	YOBE	877	877.40	0	0.0
36	ZAMFARA	1,035	1,040	5	0.5
37	FCT(ABUJA)	237	244.60	8	3.4
40	TOTAL	34385.45	36231.8	1,846	5.4

Source of data: www.nigerianstatistics.gov.ng. Assessed 15/03/2011

A cursory look at table three reveals that between 2006 and 2008, the nation experienced a growth of 1,846km on its network of roads. These roads constructed by the Federal Government were intended to make intra and inter state movements freer and beneficial to government and the people.

Road Mirror 2010

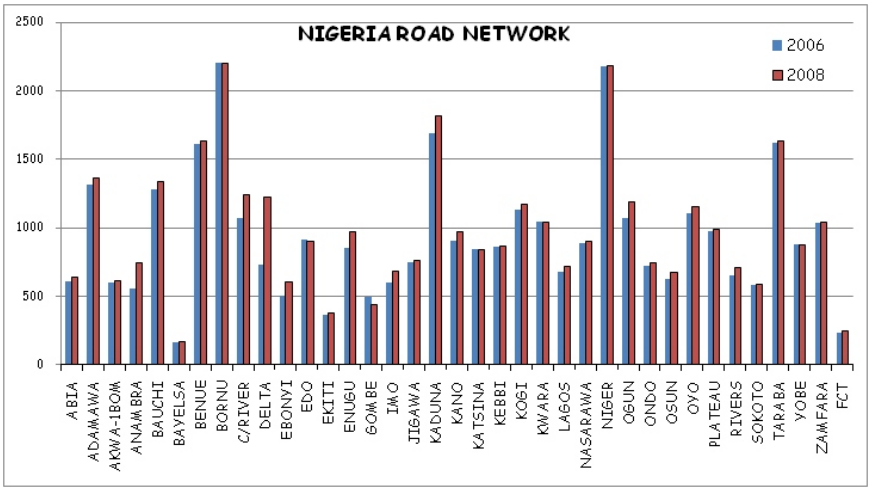


FIGURE 2:
Source: www.tradingeconomics.com. Assessed on 15/03/2011
World Bank Indicators.

Prior to 1978, most of the highways were constructed as 2-lane single carriage ways. Due to heavy traffic carrying high volumes of goods, these carriageways became inadequate, hence the necessity to increase their capacity through the dualisation of some of them. Lagos-Ibadan expressway constructed in 1978 being the first dual carriage way in Nigeria. This action by government at that time addressed the encountered traffic challenges along the routes dualised.

TABLE 2.3 ; PASSENGER CAR (PER 1000 PEOPLE) IN NIGERIA FOR SELECTED YEARS

YEAR	MOTOR VEH (PER 1,000 PEOPLE)
2002	14.0
2003	16.0
2004	17.0
2007	30.8

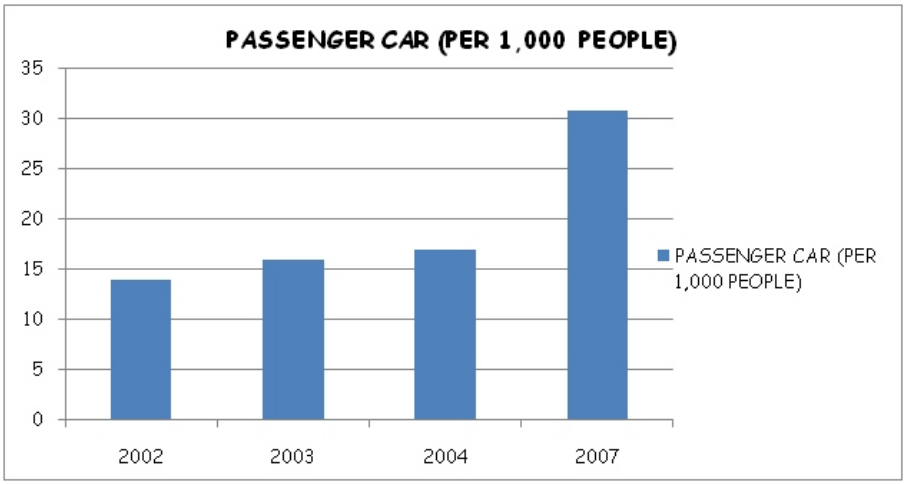


FIGURE 3:

In the 2007 estimate by the World Bank, number of motor vehicles per 1000 people in Nigeria is 30.81. Hence, a derivative estimate shows that over 6 millions Nigerians own motor vehicles at a projected estimate of over 200million people. This also translates to a conservative estimate of vehicular density on our road to be about 30 vehicles per a kilometre on the average. This has since appreciated as there is visible evidence that more vehicles are being injected into the system due to improvement in the purchasing power of an average Nigerian in the past four years and the recent opening of the Nation's Ports for 'tokunbo' cars that are more than ten years old and relatively cheap and affordable.

The resultant effect is the increase in congestions on the Nation's highways.

CHAPTER THREE

3.0 FUNDING

The Federal Government of Nigeria fund the constructions and maintenance of roads through allocation to the Federal Ministry of Works, (FMOW), and Federal Roads Maintenance Agency (FERMA) . The defunct Petroleum Trust Fund (PTF) was also funded for this purpose.

ANALYSIS OF BUDGETARY ALLOCATION TO MINISTRY OF WORKS FROM 2000-2010 (TABLE 3.1)

	NAT. BGT(RECURRENT/CAP. ONLY) =N=BIL.	MOW. APPR.(=N=BIL	ACTUAL RELEASES(=N=Billions)	% RELEASES
2000	560	40.705	32.127	78.9
2001	813	74.254	58.989	79.4
2002	835	77.621	41.634	53.6
2003	976	69.742	22.218	31.8
2004	889	47.131	45.285	96.1
2005	1,355	91.848	68.95	75.1
2006	2,852	77.128	67.98	88.1
2007	1,881	193.551	109.448	56.5
2008	2,748	115.206	68.833	59.8
2009	2,650	211.491	NA	NA
2010	3,701	269.198	NA	NA
TOTAL	19,259	1267.875	515.464	NA

ANALYSIS OF BUDGETARY ALLOCATION TO PTF/FERMA FROM 2000-2010 (TABLE 3.2)

YEAR	NAT. BDGT(CAPITAL & RECURRENT ONLY) =N=BILLION	PTF/FERMA APPR. (=N=BILLION)	% OF NATIONAL BUDGET
2000	559.95	19.044	3.4
2001	813.064	3.7	0.5
2002	835.086	0	0.0
2003	976.255	0	0.0
2004	889.155	15	1.7
2005	1,354.62	17.367	1.3
2006	2,851.59	13.947	0.5
2007	1,880.92	22.903	1.2
2008	2,748.00	26.134	1.0
2009	2,649.54	28.97	1.1
2010	3,701.23	62.616	1.7
TOTAL	19259.406	209.681	1.1

ANALYSIS OF BUDGETARY ALLOCATIONS TO MOW/PTF/FERMA FROM 2000-2010

(TABLE 3.3)

YEAR	NAT. BDGT(CAPITAL & RECURRENT ONLY) ₦BILLION	MOW/FERMA/PTF APPR. (₦BILLION)	PERCENTAGE OF NATIONAL BUDGET
2000	559.95	59.749	10.7
2001	813.064	77.954	9.6
2002	835.086	77.621	9.3
2003	976.255	69.742	7.1
2004	889.155	62.131	7.0
2005	1,354.62	109.215	8.1
2006	2,851.59	91.075	3.2
2007	1,880.92	216.454	11.5
2008	2,748.00	141.34	5.1
2009	2,649.54	240.46	9.1
2010	3,701.23	331.814	9.0
TOTAL	19259.406	1,477.55	7.7

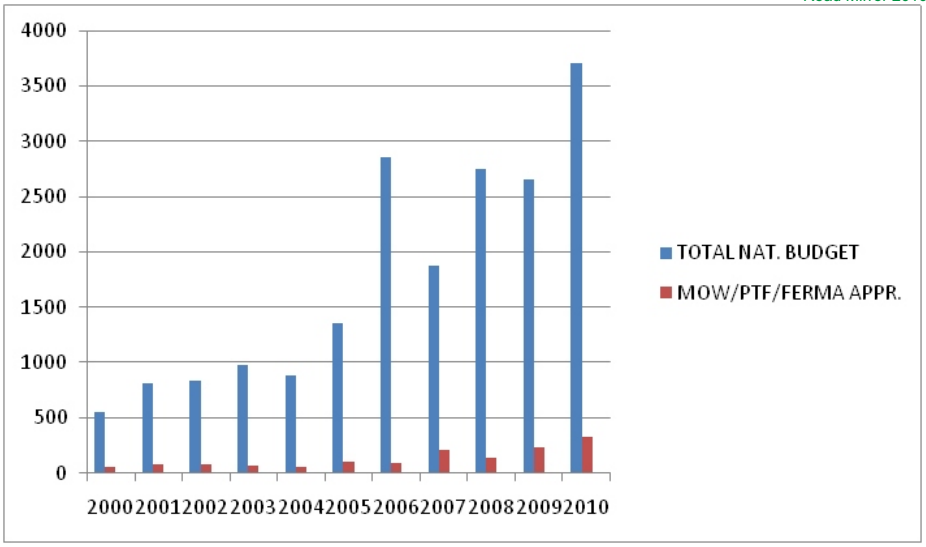


FIGURE 3:

The study reveals that roads in Nigeria are characterised by low capacity and deformed carriage ways, absence of essential infrastructure for free traffic flow and to accommodate vulnerable road users (e.g motorcyclists, cyclists, pedestrians etc). It became important, therefore, to look at the budgetary allocations to Federal Ministry of Works, defunct Petroleum Trust Fund (PTF) and Federal Roads Maintenance Agency (FERMA) as they relate directly or indirectly to construction and maintenance of roads and provision of infrastructures. The tables show that the budgetary allocations for the decade (2000-2010) were not totally released to the organisation and effective implementation.

The state of our roads and infrastructure point to the fact that more is still needed in areas of construction, maintenance and provision of road infrastructures such as pedestrian paths/bridges, interchanges, roundabout , motorcycle and bicycle routes etc. This, no doubt, shall require Government adequate funding.

CHAPTER FOUR

4.0 PRESENTATION OF ROAD TRAFFIC CRASH DATA

This chapter provides a comparison on road traffic crashes of 1999 and 2009. The study is designed to give a decade reflection of the crashes recorded on our roads backed with the casualty figures.

TABLE 4.1: ROAD TRAFFIC CRASHES IN NIGERIA COMPARISON OF 1999 & 2009

YEAR	CASES REPORTED	NO KILLED	NO INJURED	TOTAL CASUALTY
1999	12424	5370	17585	22955
2009	10854	5693	27270	32963
CHANGES	-1570	323	9685	10008
	-12.6%	6%	55.08%	43.6%

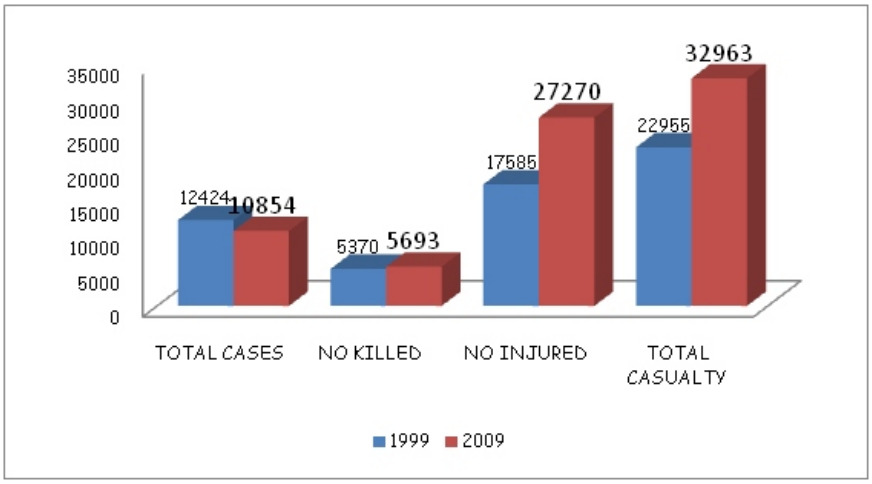
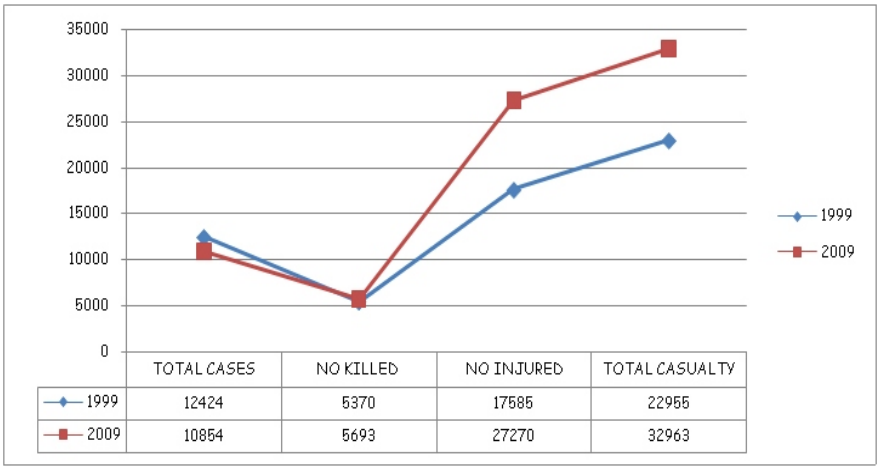


FIGURE 4.1:



	TOTAL CASES	NO KILLED	NO INJURED	TOTAL CASUALTY
1999	12424	5370	17585	22955
2009	10854	5693	27270	32963

FIGURE 4.2 :

The study as shown on the table reveals that the number of reported crash cases reduced by 12.6%. The fatality statistics shows an increase of 6% of number of persons killed in RTC. The number of injured cases was found to increase by 55%.

Deaths and injuries from road traffic crashes are major and growing public health epidemic in Nigeria as shown in the data presented above. Road traffic crashes and their attendant consequences have become serious threat to road transportation in Nigeria where over 90% of the nation's economic activities are dependent on the road. Concerned by this development, FRSC provided series of intervention measures to abate this worrisome increase. But because of poor state of Nigeria roads and lack of provision of safe infrastructure to minimize the risk and injury, the situation failed to improve.

This situation becomes even more compounded following dramatic increase in the nation's motorization level and accelerated socio-economic activities.

It is also partly due to the absence of a coordinated official policy to control the problem.

A good number of victims of road traffic crashes in Nigeria are vulnerable road users such as pedestrian, bicyclists, motorcyclists and those using informal public transport. This is because Highway Planning Standards do not include them as an integral part of traffic in the planning of new highways.

However, their existence is viewed as "illegal encroachment" on the designed road space.

CHAPTER FIVE

5.0 SURVEY ON ROAD CONGESTION (QUESTIONNAIRE SURVEY)

A survey on road congestion was carried out between 21st and 25th of September 2010 in the following selected cities from the six geopolitical zone of the country to ascertain the effect of congestion on Nigerian roads.

TABLE 5.1:

S/N	CITY/TOWN	ZONE	NO. OF QUESTIONNAIRE ADMINISTERED(DRIVERS ONLY)		
			MALE	FEMALE	TOTAL
1	KUBWA	NORTH CENTRAL	98	27	125
2	KADUNA	NORTH-WEST	105	17	122
3	KANO	NORTH-WEST	125	17	142
4	LAGOS	SOUTH-WEST	114	25	139
5	BENIN	SOUTH-SOUTH	97	24	121
6	ENUGU	SOUTH EAST	130	24	154
7	MAIDUGURI	NORTH-EAST	106	18	124
8	SOKOTO	NORTH-WEST	113	11	124
9	ABEOKUTA	SOUTH-WEST	84	28	112
10	IBADAN	SOUTH-WEST	75	21	96
11	PORT-HARCOURT	SOUTH-SOUTH	113	22	135
12	JOS	NORTH-CENTRAL	116	21	137
13	GBOKO	NORTH-CENTRAL	94	37	131
14	AKURE	SOUTH-WEST	123	12	135
15	MARKURDI	NORTH-CENTRAL	122	21	143

16	BAUCHI	NORTH-EAST	119	21	140
17	LOKOJA	NORTH-CENTRAL	100	14	114
18	KATSINA	NORTH-WEST	124	14	138
19	LAFIA	NORTH-CENTRAL	130	12	142
20	ASABA	SOUTH-SOUTH	114	32	138
21	9TH MILE	SOUTH EAST	66	24	90
22	ONITSHA	SOUTH-EAST	111	21	132
23	AWKA	SOUTH-EAST	25	11	36
24	GOMBE	NORTH-EAST	127	17	144
25	YOLA	NORTH-EAST	54	15	69
26	UYO	SOUTH-SOUTH	125	23	148
27	UMUAHIA	SOUTH-EAST	134	12	146
28	OWERRI	SOUTH-EAST	115	23	138
29	IJEBU-ODE	SOUTH-WEST	59	15	74
30	ABA	SOUTH-EAST	127	12	139
31	NYANYAN	NORTH-CENTRAL	77	12	89
32	LUGBE	NORTH-CENTRAL	75	38	113
	TOTAL		3297	642	3939

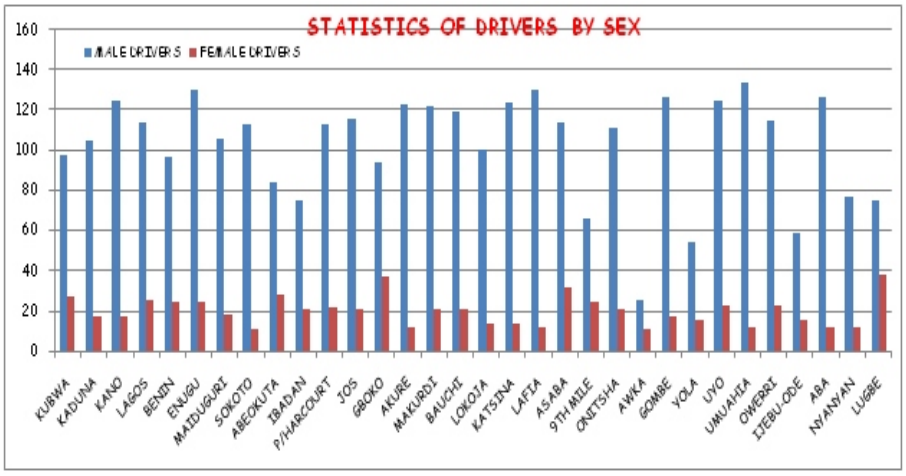


Fig. 5.1

Questionnaires were administered to a cross section of Nigeria. Drivers/motorcycle operators, passengers and pedestrians respectively.

Questionnaires were administered to a cross section of Nigeria. Drivers/motorcycle operators, passengers and pedestrians respectively.

Table 5.2

AGE BRACKET(YRS)	TOTAL	PERCENTAGE (%)
LESS THAN 18	149	3.9
18-35	2,116	55.2
36-50	1,250	32.6
MORE THAN 50	318	8.3
TOTAL	3,833	100

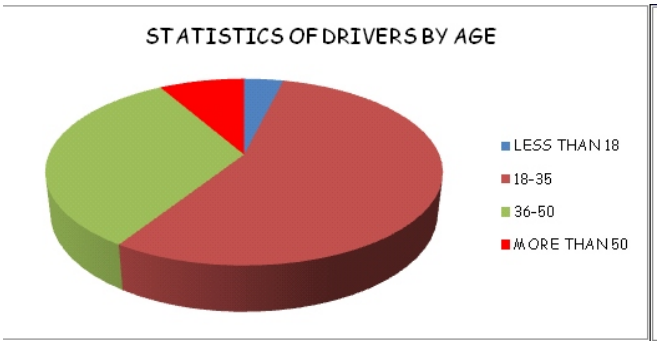


FIGURE 5.2:
At a glance, majority of the drivers who responded are in the age bracket of 18-35 years (representing 55.2% of the total respondent).

2. STATISTICS OF DRIVERS BY EDUCATION STATUS

3,918 drivers responded to this question. The breakdown is as follows

Table 5.3

CATEGORY	NO	PERCENTAGE (%)
POLYTECHNIC/UNIVERSITY	1,863	47.5
SECONDARY/TECHNICAL SCH.	1,410	36
PRIMARY SCHOOL	498	12.7
NO SCHOOL	147	3.8
TOTAL	3,918	100

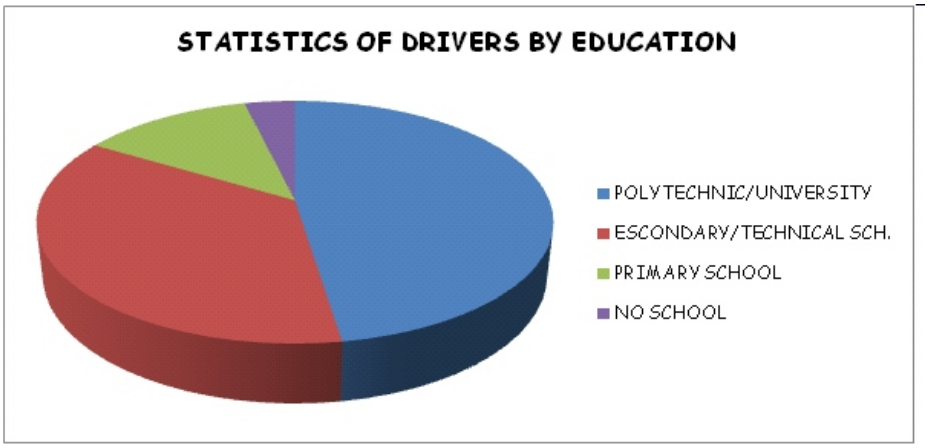


FIGURE 5.3:

47.5% of the drivers attended polytechnic or university. 36% attended secondary school. In general, a large segment of the drivers that responded are literate or educated. Only 3.8% of the respondents did not go to school.

3. STATISTICS OF DRIVERS BY SEX

3,940 responses were recorded as follows;

Table 5.4

83.7% of the respondents are males.

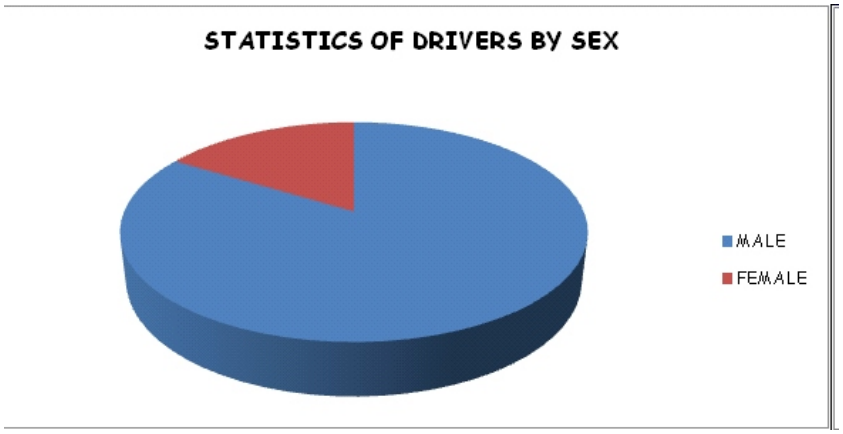


FIGURE 5.4

4. DRIVING SCHOOL EXPERIENCE

A total of 3,775 drivers responded as follows;

Table 5.5

CATEGORY	NO	PERCENTAGE (%)
ATTENDED DRIVING SCH	1,832	47.5
DID NOT ATTEND DRIVING SCH.	2,024	52.5
TOTAL	3,856	100

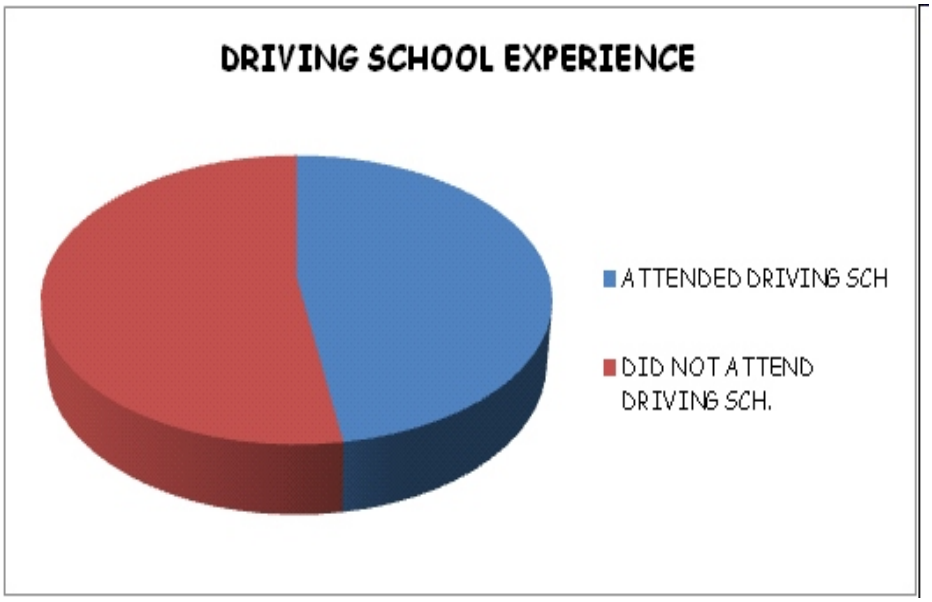


FIGURE 5.5
Majority (53.6%) of the drivers did not attend driving school.

5. STATISTICS OF DRIVERS WITH OWNERSHIP OF VEHIVLE/MOTORCYCLE

3,929 responses were recorded throughout the country as follows;

Table 5.6

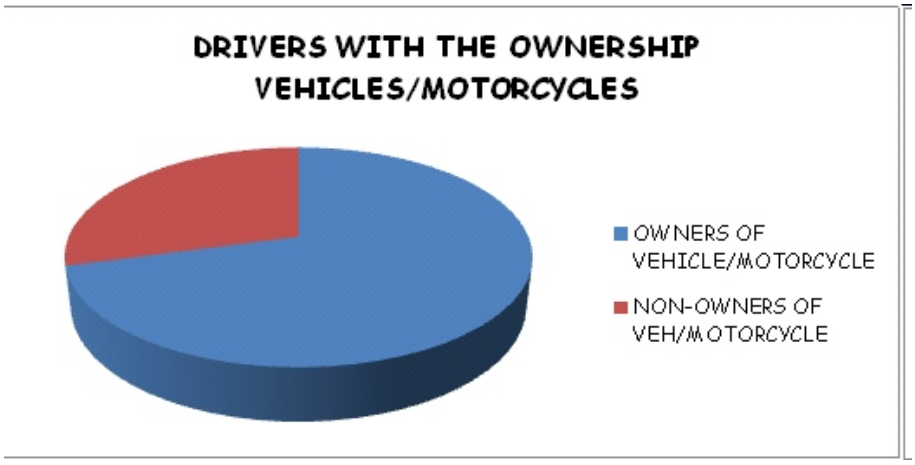


FIGURE 5.6

70.8% of drivers that responded nationwide own either a motorcycle or a vehicle or both.

6. STATISTICS OF ROAD USERS CATEGORY

A total of 3,814 responded to this question.

Table 5.7

CATEGORY	NO	PERCENTAGE (%)
COMMERCIAL DRIVER	1,637	42.9
PRIVATE DRIVER	1,658	43.5
GOVT. DRIVER	323	8.5
COMMERCIAL MOTORCYCLE RIDER	74	1.9
PRIVATE MOTORCYCLE RIDER	122	3.2
TOTAL	3,814	100

Majority of the respondents are private drivers (43.5%) followed by commercial drivers (42.9%). Only few commercial motorcycle riders responded (1.9%)

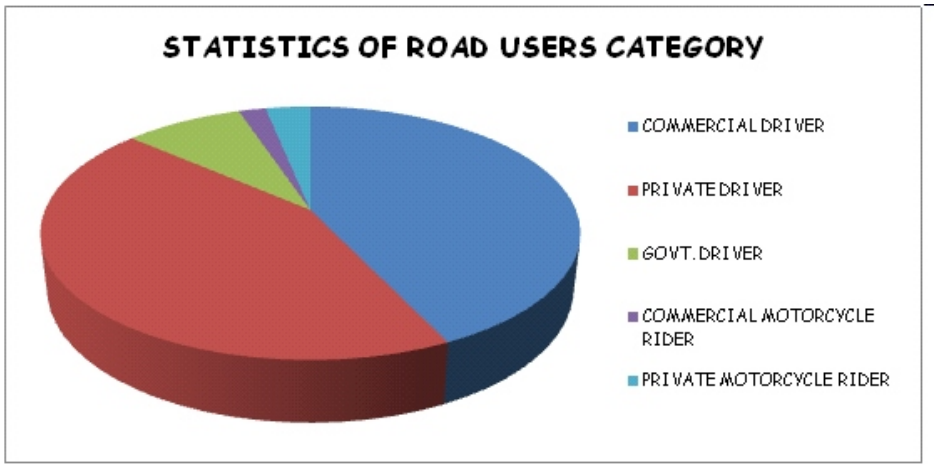


FIGURE 5.7

7. STATISTICS ON EFFECT OF ROAD TRAFFIC CONGESTION ON ROAD USERS.

3,773 respondents were recorded on this as follows;

Table 5.8

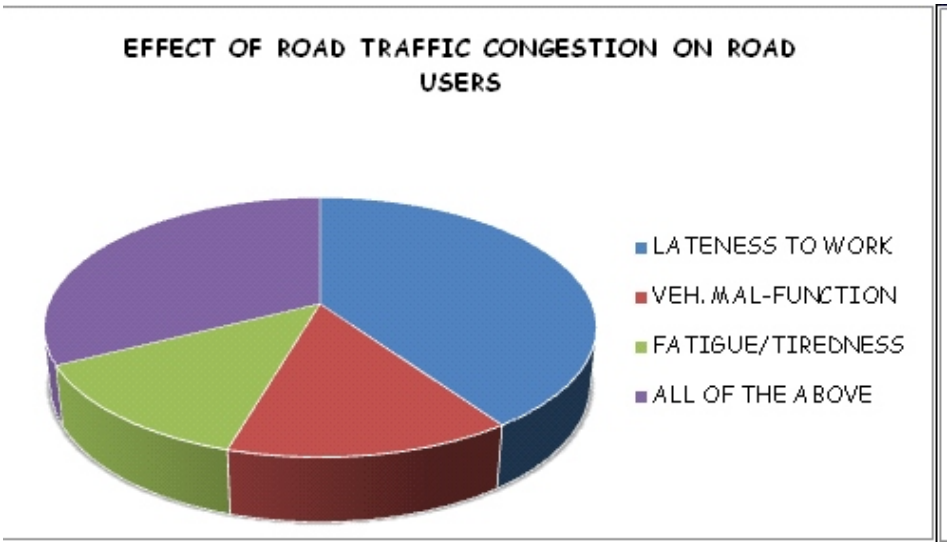


FIGURE 5.8

Majority (40.9%) of the respondents attributed 'lateness to work' to road traffic congestions.

8. EXTRA FUEL CONSUMED DUE TO CONGESTION

The total number of drivers that responded to this question nationwide was 3,597. The breakdown is as follows;

Table 5.9

CATEGORY	NO	PERCENTAGE (%)
<1LITRE	910	25.3
1-2LITRES	1,379	38.3
2-4LITRES	675	18.8
>4LITRES	633	17.6
TOTAL	3,597	100

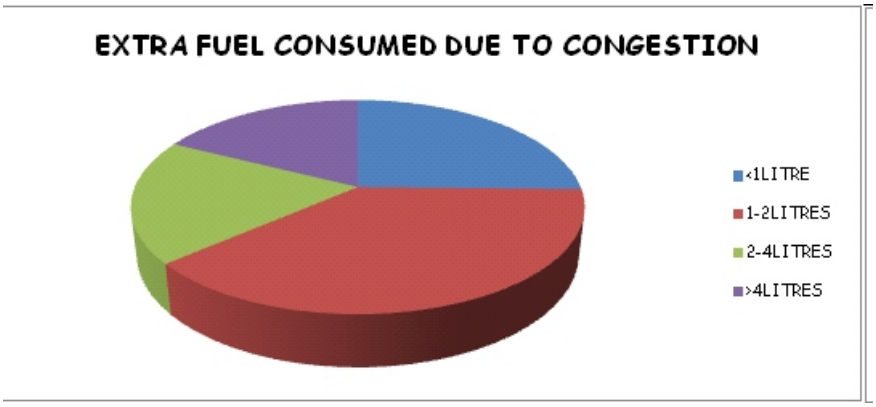


FIGURE 5.9

All respondents agree to extra fuel consumption occasioned by congestion

9. DRIVERS' FEELING DURING CONGESTION

3,790 drivers responded as follows;

Table 5.10

CATEGORY	NO	PERCENTAGE (%)
HAPPY	222	5.9
ANGRY	1,875	49.5
IMPATIENT	464	12.2
FRUSTRATED	1,229	32.4
TOTAL	3,790	100

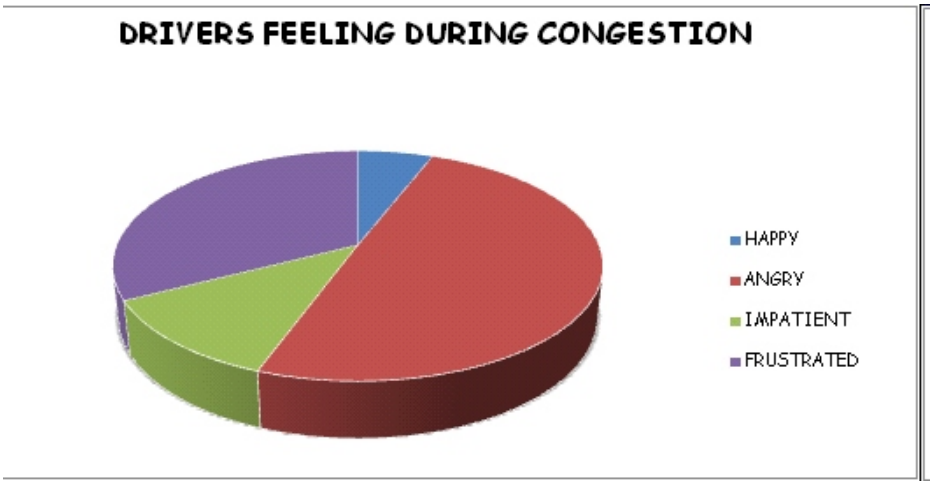


FIGURE 5.10

A lot (49.7%) of the drivers responded that congestion make them angry. This is closely followed by those that are frustrated (32.6%) during congestion periods. Interestingly, 5.9% of the respondents say they are happy during congestion.

10. CAUSES OF CRASHES IN A ROAD TRAFFIC CONGESTION

3,597 drivers responded as follows;

Table 5.11

CATEGORY	NO	PERCENTAGE (%)
IMPATIENCE	2,004	55.7
WRONG DRIVING	1,134	31.5
TIREDNESS	153	4.3
FRUSTRATION	306	8.5
TOTAL	3,597	100

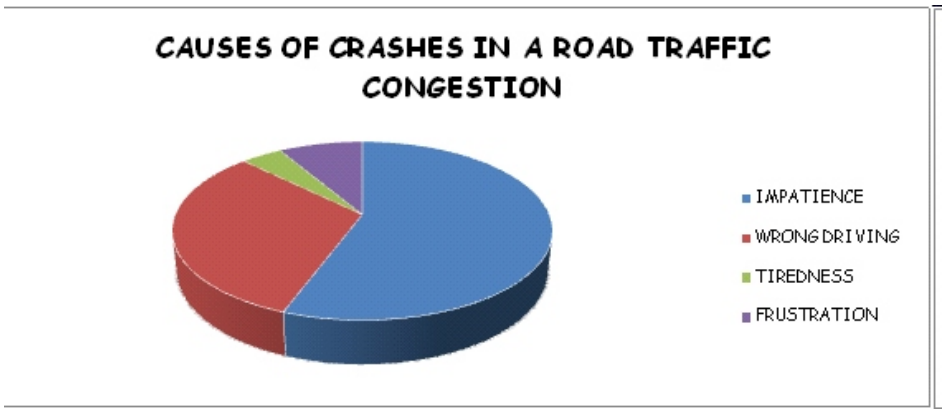


FIGURE 5.11

Impatience (55.7%) is viewed by respondents as the highest cause of crashes in traffic congestion. Next is wrong driving.

11. CAUSES OF VEHICLE BREAKDOWN DURING CONGESTION

3,522 drivers responded as follows;

Table 5.12

CATEGORY	NO	PERCENTAGE (%)
OVERLOADING	780	22.2
ELECTRICAL FAULT	1,027	29.2
ENGINE FAULT	1,492	42.3
OTHER	223	6.3
TOTAL	3,522	100

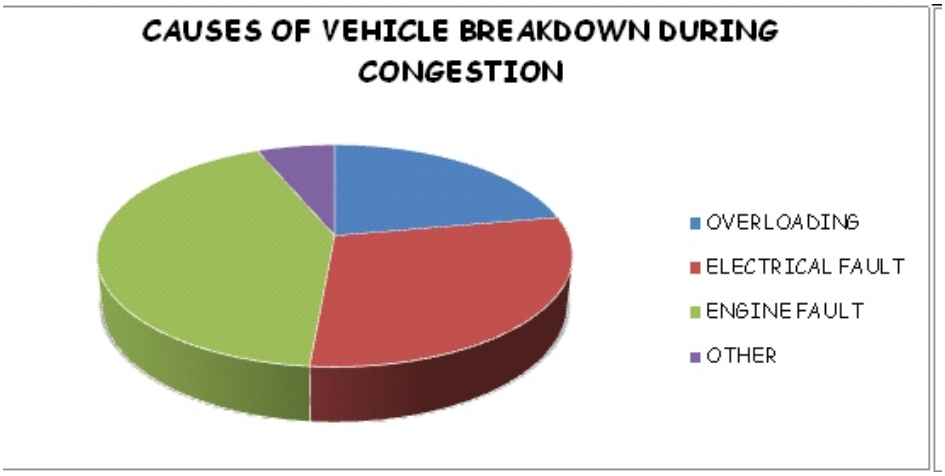


FIGURE 5.12

Engine fault (42.3%) is identified by the respondents as the most cause of vehicle breakdown during congestion. This is followed by electrical fault.

12. DRIVERS' OPINION THAT ROAD TRAFFIC CONGESTION CAN SERIOUSLY AFFECT THE ECONOMY

3,852 drivers responded as follows;

Table 5.13

CATEGORY	NO	PERCENTAGE (%)
STRONGLY AGREE	1,765	45.8
AGREE	1,471	38.1
FAIRLY AGREE	337	8.8
DO NOT AGREE	219	5.7
DO NOT KNOW	60	1.6
TOTAL	3,852	100

45.8% of the respondents strongly agree that congestion can seriously affect the economy. 38.1% agreed, while 8.8% fairly agreed. 5.7% of the respondents do not agree while 1.6% do not know.

This can be subjected to further statistical testing using Chi-square (X^2) to test the following hypothesis;

Null Hypothesis
Ho; Road Traffic Congestion cannot seriously affect the Economy.

Alternative Hypothesis
H1; Road Traffic Congestion can seriously Affect the Economy.

Test statistic. $$x^2 = \sum \frac{(O-E)^2}{E}$$

O =Observed frequency, E =Expected frequency. At α =0.05 level of significant.
Expected frequency (E)
Strongly agree = 3852/5 = 770.4

Agree = 3852/5 = 770.4
Fairly agree = 3852/5 = 770.4
Do not agree = 3852/5 = 770.4
Do not know = 3852/5 = 770.4

CONTIGENCY TABLE

O	E	O-E	(O-E)2	(O-E)2/E
1765	770.4	994.6	989,229.16	1,284.04
1471	770.4	700.6	490,840.36	637.12
337	770.4	-433.4	187,835.56	243.82
219	770.4	-551.4	304,041.96	394.65
60	770.4	-710.4	504,668.16	655.07
TOTAL				3,214.70

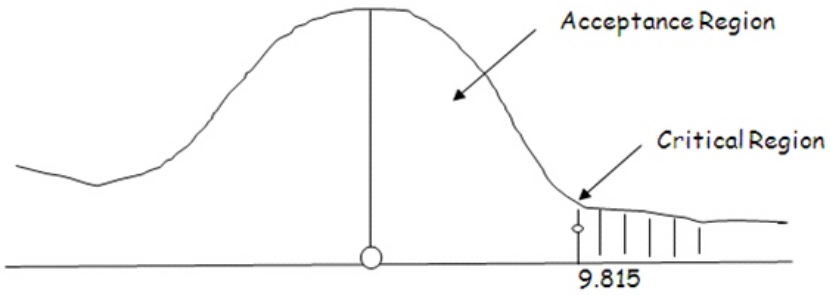
Therefore,

x^2= 3,214.70

Degree of freedom, df = n-1=5-1=4

Therefore,

$x^2_{0.05,4}$ = 9.488(from statistical table)



Clearly, the calculated x^2 is greater than from statistical table. It falls within the rejection region. Hence the Null Hypothesis (H_0) is rejected and the Alternate Hypothesis is accepted that "the traffic congestion situation can seriously affect the Economy".

ANALYSIS OF QUESTIONNAIRES BY PASSENGERS/PEDESTRIANS

Questionnaires were also administered to passengers and pedestrians nationwide in the aforementioned locations.

TABLE: 5.14

S/N	CITY/TOWN	ZONE	NO. OF QUESTIONNAIRE ADMINISTERED(PASSENGERS/PEDESTRIANS ONLY)		
			MALE	FEMALE	TOTAL
1	KUBWA	NORTH CENTRAL	92	52	144
2	KADUNA	NORTH-WEST	83	19	102
3	KANO	NORTH-WEST	111	5	116
4	LAGOS	SOUTH-WEST	110	31	141
5	BENIN	SOUTH-SOUTH	63	40	103
6	ENUGUN	SOUTH EAST	92	46	138
7	MAIDUGURI	NORTH-EAST	130	6	136
8	SOKOTO	NORTH-WEST	115	13	128
9	ABEOKUTA	SOUTH-WEST	104	34	138
10	IBADAN	SOUTH-WEST	61	24	85
11	PORT-HARCOURT	SOUTH-SOUTH	105	45	150
12	JOS	NORTH-CENTRAL	104	38	142
13	GBOKO	NORTH-CENTRAL	108	39	147
14	AKURE	SOUTH-WEST	87	26	113
15	MARKURDI	NORTH-CENTRAL	97	32	129
16	BAUCHI	NORTH-EAST	89	53	142
17	LOKOJA	NORTH-CENTRAL	118	28	146
18	KATSINA	NORTH-WEST	111	7	118
19	LAFIA	NORTH-CENTRAL	123	18	141
20	ASABA	SOUTH-SOUTH	102	43	145
21	9TH MILE	SOUTH EAST	100	29	129
22	ONITSHA	SOUTH-EAST	82	38	120
23	AWKA	SOUTH-EAST	62	60	122
24	GOMBE	NORTH-EAST	109	34	143
25	YOLA	NORTH-EAST	67	52	119
26	UYO	SOUTH-SOUTH	100	46	146
27	UMUAHIA	SOUTH-EAST	96	52	148
28	OWERRI	SOUTH-EAST	91	54	145
29	IJEBU-ODE	SOUTH-WEST	93	25	118
30	ABA	SOUTH-EAST	99	38	137
31	NYANYAN	NORTH-CENTRAL	73	67	140
32	LUGBE	NORTH-CENTRAL	86	29	115
	TOTAL		3063	1123	4186

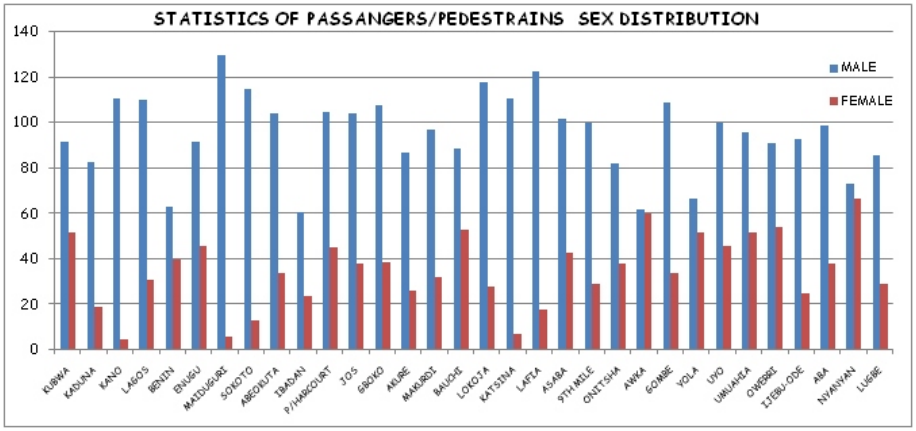


FIGURE 5.13

1. STATISTICS OF PASSENGERS/PEDESTRIANS BY SEX

A total of 4,186 passengers/pedestrians responded as follows;

TABLE 5.15

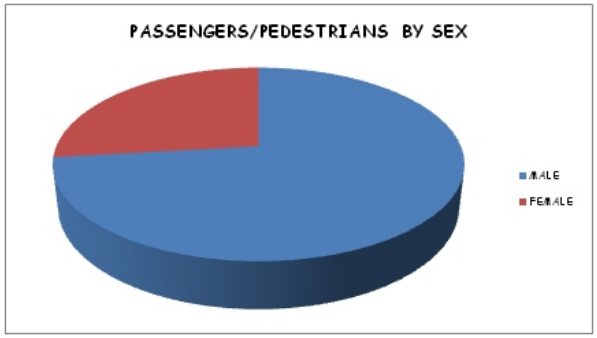


FIGURE 5.14

Most (73.2%) of the respondents (Passengers/Pedestrians) are males

2. PASSENGERS/PEDESTRIANS BY EDUCATION STATUS

TABLE 5.16

CATEGORY	NO	PERCENTAGE (%)
POLYTECHNIC/UNIVERSITY	2,399	57.6
SEC./TECH. SCHOOL	1,452	34.9
PRIMARY SCH	232	5.6
NO SCHOOL	83	2.0
TOTAL	4,166	100

Majority of the respondents are literate or educated.

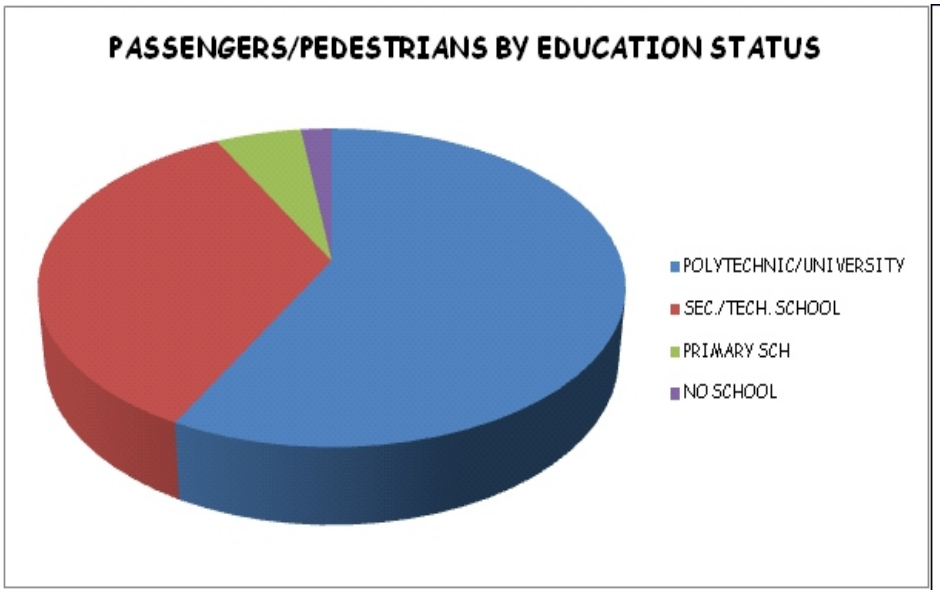


FIGURE 5.15

3. PASSENGERS/PEDESTRIANS RELATIONSHIP WITH DRIVERS/CONDUCTOR DURING CONGESTION

A total of 3,052 pedestrians/ passengers responded as follows:

TABLE 5.17

CATEGORY	NO	PERCENTAGE (%)
AGGRESSIVE	520	17.0
QUARRELSOME	443	14.5
UNCOMFORTABLE	1,534	50.3
NOT BOTHERED	555	18.2
TOTAL	3,052	100

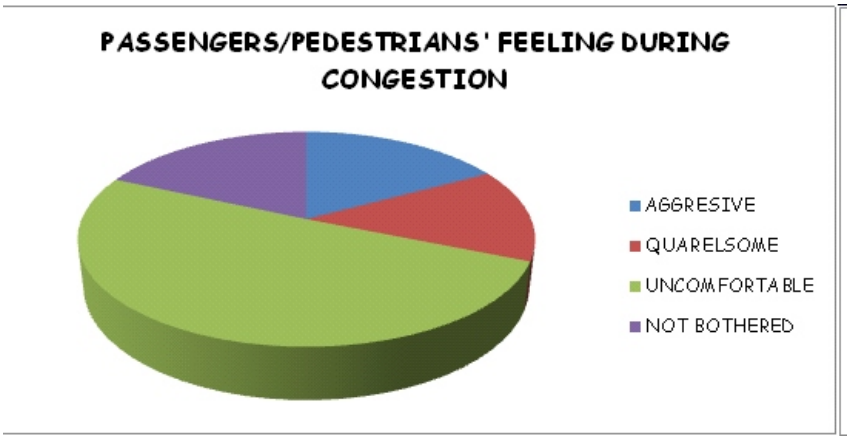


FIGURE 5.16
Majority (50.3%) of the passengers/pedestrians responded that congestions make them uncomfortable.

4. STATISTICS OF PASSENGERS THAT HAVE EXPERIENCED TRAFFIC HOLD-UP

4061 responses were recorded on this as follows;

TABLE 5.18

RESPONSE	NO	PERCENTAGE (%)
YES	3813	93.9
NO	248	6.1
TOTAL	4061	100

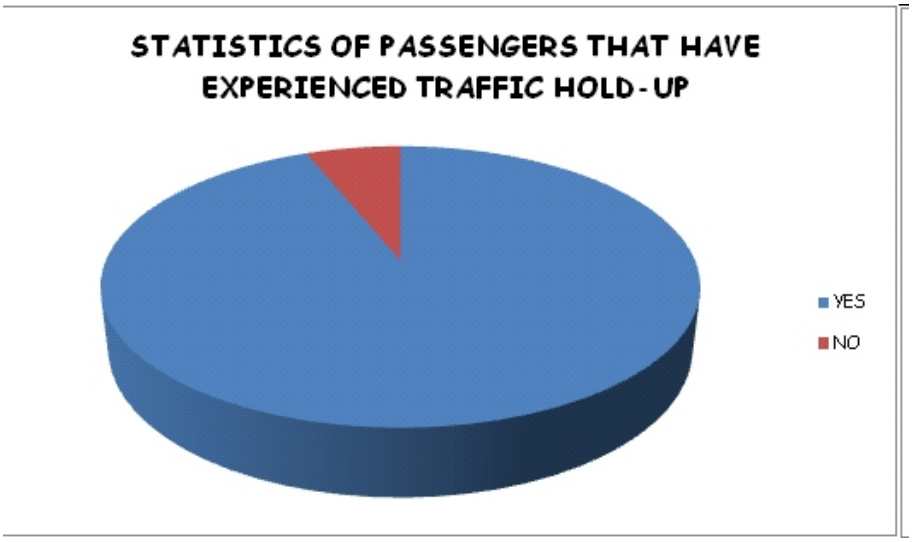


FIGURE 5.17

93.9% of the respondents have experienced traffic hold up. 6.1% of the respondents have never experienced traffic hold-up.

5. STATISTICS OF PEDESTRIANS THAT HAVE WITNESSED TRAFFIC HOLD-UP

A total of 4,034 respondents were recorded as follows;

TABLE 5.19

CATEGORY	NO	PERCENTAGE (%)
'YES'	3572	88.5
'NO'	462	11.5
TOTAL	4034	100

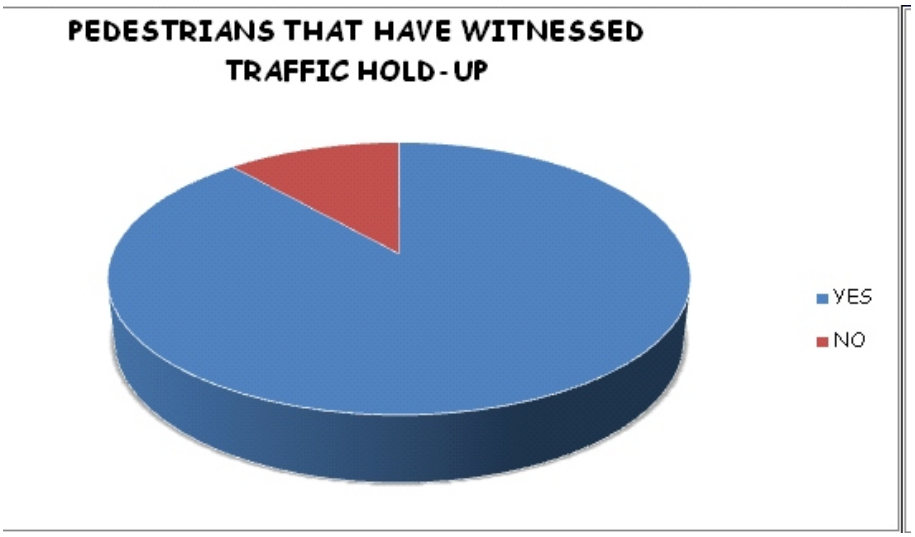


FIGURE 5.18

88.5% of the pedestrians have witnessed traffic hold-up. 11.5% have never witnessed traffic hold up.

6. EFFECT OF TRAFFIC HOLD-UP ON PASSENGERS/PEDESTRIANS

3,763 pedestrians/passengers responded as follows;

Table 5.20

CATEGORY	NO	PERCENTAGE (%)
DIFFICULT TO CROSS THE ROAD	1,608	42.7
DIFFICULT TO WALK ALONG THE ROAD	523	13.9
WASTED MY TIME	1287	34.2
DID NOT AFFECT ME	345	9.2
TOTAL	3,763	100

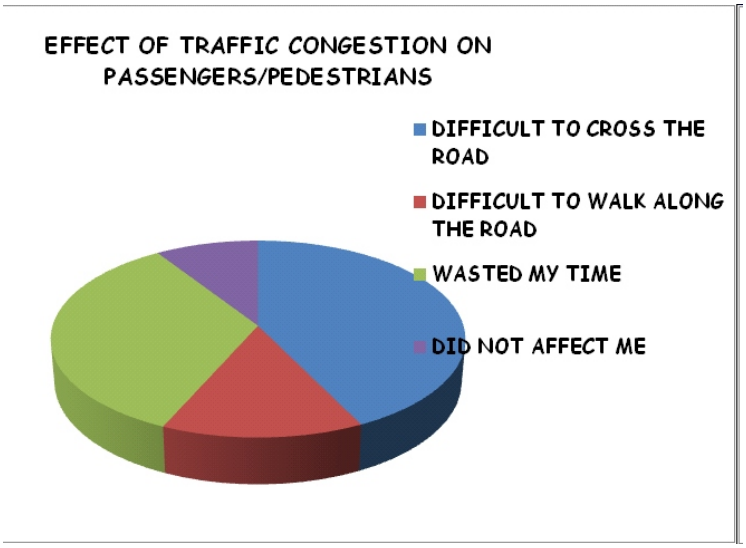


FIGURE 5.19

42.7% of the respondents indicated that it is difficult to cross the road during hold up. 34.2% says hold-up always waste their time, while13.9% says it is difficult to walk along the road. Interestingly, 9.2% indicated that hold up does not affect them.

FINDINGS

A cursory look at the analysis of the administered questionnaires in selected locations in the country shows the following:

More males (passengers/pedestrians/drivers inclusive) responded to the questionnaire than the females.

The most populous age bracket among the drivers that participated in the survey is between the ages of 18 and 35 years. This coincided with the most productive segment of Nigerian population.

Majority agreed that Road Traffic Congestions can seriously affect the economy of the country-Nigeria.

Engine and electrical fault are the major causes of vehicle breakdown during congestion.

Impatience and wrong driving are the major causes of crashes in a road traffic congestion.

Congestions mostly make drivers to be angry and frustrated.
Most vehicles consume extra two (2) litres of fuel, on the average, due to congestions.

Lateness to work was identified as the greatest effect of road congestions on the road users.

Hold up makes it difficult for passengers and pedestrians to cross the road. It also wastes their time.

CHAPTER SIX

6.0 OBSERVATIONS AND RECOMMENDATIONS

6.1 OBSERVATIONS

The empirical observations of the research team and the study of the responses of the three categories of road users (drivers, passengers and pedestrians) made possible the following observations.

Road failure: Most of the roads in the cities visited had pavement failures. The carriage ways are deformed characterized by pot holes which limited the road capacity. This accounts for witnessed congestions on those roads.

Low capacity roads: It was observed that the traffic on most of the roads is higher than the capacity. The scrabbling of motorist on these low capacity roads precipitates into chaotic situation hindering free flow of traffic.

Inadequate road infrastructure: Most of the roads in the cities lack the appropriate road features such as interchanges, roundabout, motorcycle path, pedestrian path etc. it is important to highlight that the absence of these infrastructures had left the traffic environment in a state of disorder. Effort made towards reducing road traffic crashes on these roads led to the introduction of traffic calming devices (traffic hump, bump, table etc) which on the other hand slow movement of vehicles leading to traffic congestion.

Collapse of rail transportation: Our studies reveal that 80% fall in the number of passengers using rail transport was witnessed between 1960 and 1995 and remains to date. This resulted from the serious reduction in the stock of Nigeria Railway Corporation (NRC).

Records had it that locomotives reduced from 277 to 70, carriages from 399 to 150 and freight wagons from 3885 to 1500. This obviously brought increased pressure to road transport.

Increased in vehicle and human population were observed as serious issue in the discuss of road traffic congestion: Traffic congestion was found to be prominent in cities where job opportunities, commerce and governance were noted. This migration to urban centre without support infrastructure and appropriate road capacity had left the cities with the observed road traffic congestion.

Insignificant contribution of air transport and water transport to the transport service in this country. Our study revealed that facilities for water transport were under developed and limited to very few geographical area in the country. The air transportation sector in the country is patronized by very few Nigerians owing to high cost and poverty.

Ineffective intra/inter cities bus service: The government at all levels has shown indifference to operations of bus services. The failure in this encouraged private vehicle ownership and usage hence, traffic challenges.

Exhibition of social status amongst Nigerians remains a significant factor in road transport in Nigeria: People procure private vehicles and have them on road daily as a mark of status symbol. This act increases vehicular volume and poses great challenges to traffic environment.

Proximity of motor parks, market, worship centres, recreation centres to the road causes indiscriminate parking on the pavement: This reduces the road capacity and subsequently affects traffic flow.

Absence of legislation on parking in cities was observed in the course of this study to encourage indiscriminate parking and private vehicle usage. This situation further compound traffic challenges.

Consistent breakdowns of vehicle on our roads is becoming a situation of interest as in most cases traffic flow is impeded. Poor vehicle maintenance accounts for most of the breakdowns observed.

6.1.1 EFFECTS

Congestion, as evidenced from the research, has the following negative effects. It;

- wastes motorists' and passengers' time.
- affects commuters by making them go late to work and other social and business engagements. This may have further implication in the areas of loss of business, disciplinary action or other personal loss.
- affects travel time management.
- causes fuel wastage, increase in air pollution due to carbon dioxide emission owing to increase idling, acceleration braking and increased travel time.
- causes wear and tear on vehicles as a result of idling in traffic and frequent acceleration and braking, leading to more frequent repair and replacements.
- stresses and frustrates motorists and other road users thereby encourage road rage.
- hinders emergency vehicle services.

6.2 RECOMMENDED COUNTER MEASURES

The following counter measures are hereby recommended:

a. Junction/Road Improvement

Most of the towns visited need improvement in the existing road infrastructure. To this end, Road Safety Audit should be carried out and required road features identified and appropriately integrated into the road network to ensure safety and free flow traffic. Interchanges, pedestrian bridges, high capacity roads, roundabout, subways, bye-pass, etc if constructed shall help solve traffic congestion on our roads.

b. Relocation of Public Institutions Away from the Road

Relocation of public institutions like schools, markets and hospitals within the centre of cities farther from the road is a 'sine-qua-non' if the problem of congestion is going to be addressed. Kanti-kwari market in Kano for instance may be relocated to outskirt of the town.

c. Prompt Removal of Accident Vehicles/Broken Down Road Infrastructural Facilities

It has been observed that incidences such as crashes, broken down road infrastructure or falling trees may cause ripple effects or a cascading failure which then spread out and create a sustained jam.

A mechanism should be put in place for the prompt removal of obstruction in Urban (City) roads and highways. Effective tow truck services will assist in this directive.

d. Use of Active Traffic Management

The present traffic hold-ups in Abuja especially at the Kubwa, Lugbe and Nyanya axes in the Federal Capital Territory, where road constructions are taking place, can be managed temporarily through Active Traffic Management. The less busy lanes may be demarcated and monitored by Law enforcement agents for the passage of some vehicles from the more busy lanes (at a given time) up to a safe and uncongested driving point where they can join their normal lane. This will go a long way in easing congestion at peak periods. The Dutse junction in Kubwa-Abuja expressway is a good example where Active Traffic Management can be applied. Hard Shoulder can be used as an extra traffic lane during peak period in traffic congestion. This has an advantage of increasing the road capacity.

e. The Use of School/Staff Buses

The use of school buses instead of individual parents going to drop their wards in schools should be encouraged. MDAs (Ministries, Departments and Agencies) should consider the use of Staff buses for all categories of their Staff. This will help in reducing traffic volume.

f. The Bus Rapid Transit (BRT)

Government at all levels should take the issue of interstate and intra state bus services seriously. The idea of BRT is to discourage private vehicle ownership and usage. All conditions for execution of BRT should be adopted. This has helped in solving traffic congestion problems in developed countries. If practice will address traffic challenges presently faced.

However, it should be noted that these recommendations are not exhausted.

CHAPTER SEVEN

7.0 FRSC PRODUCTS AND SERVICES

The Federal Road Safety Corps (FRSC) has embarked on various projects necessary to ensure safety on Nigeria roads. Some of these projects relate to drivers and vehicles. Prior to 1990, the drivers/vehicle licenses were booklet types issued at the different motor licensing authorities of the federation with yearly renewals or as maybe determined by the states.

In March 1989, the then FRSC Management took the first step to look at the existing licensing scheme and procedures in order to lay a very sound foundation for ensuring a healthy and safe road culture in Nigeria.

In order to maintain orderliness, good road culture, security and uniformity, the Federal Government accepted the concept of standardising the various schemes as they relate to drivers and vehicles. Some of the schemes are National Drivers' license(NDL), National Vehicle License(NVL), Road Traffic Safety Standardisation Scheme(RTSSS), Drivers School Standardisation Programme(DSSP) and the Emergency Call Centre.

7.1 National Drivers' License Scheme (NDL)

This Scheme commenced on the 5th of February 1990. It was enhanced in the fourth quarter of 1997. The enhancement was in the area of security features. By the second quarter of 1999, a total of 2,777,120 drivers' licenses were produced for all the states of the Federation and FCT.

The Enhanced National Drivers' License (ENDL) scheme makes

it easy to retrieve information on drivers from the Central Data Bank(CBD) on request; this also gives room for statistical analysis and consolidation of data for research purposes.

Efforts are currently being mobilized to ensure that drivers are appropriately licensed. With the use of high-tech ICT equipment, the ENDL was further enhanced to the Customized National Drivers' License (CNDL). The CNDL has been further enhanced to Nigeria Drivers' License that commenced on 1st March 2011.

7.2 National Vehicle Identification Scheme (NVIS)

The NVIS which is also part of the National Uniform Licensing Scheme (NULS) is an identification scheme for all vehicles.
It is designed to identify a particular vehicle and to enable law enforcement agencies trace such vehicles in the event of crash, traffic and criminal offences.

7.3 Road Transport Safety Standardisation Scheme (RTSSS)

The scheme was flagged off on the 11th of September, 2007. The scheme compels organisations, companies and Road Transport Operators with five (5) vehicles and above in their fleet to attain a specified safety level for its operations. This is in accordance with FRSC statutory mandate as a lead agency in Road Traffic Administration and Road Safety management in Nigeria. The RTSSS as contained in the policy document is subdivided into three broad areas; operator's safety standard, Drivers safety standard and vehicle standard.

A total of 2721 fleet operators were registered nationwide in 2009 and 2010. 927 of these registered fleet operators have been certified, 307 safety managers and 457 Drivers were also trained. This is to entrench a culture of safety consciousness in fleet operators.

7.4 Driving School Standardisation Programme (DSSP)

The DSSP commenced in 2008. The programme is designed to regulate the establishment and operation of driving schools in Nigeria through a systematic and programmed inspection, certification, close monitoring and evaluation. The entire process is for entrenching a good road safety culture.

The Corps has successfully registered 326 Driving schools, 294 have been inspected and 209 have been certified. A total of 162 Driving school proprietors and 384 Driver instructors have been trained so far.
It is expected that with the DSSP, drivers will
Imbibe road safety consciousness
Be knowledgeable on road signs and regulations
Ensure better road safety culture.

7.5 FRSC Call Centre

The call centre was established in December 2008 in pursuant to the Accra Declaration of 2007 which states that there should strengthened pre-hospital and emergency services in order to provide timely and appropriate care to road traffic injured victims to minimize their effect and long term disability.
The facility put in place by FRSC has capacity for calls made to the call centre to be subsequently and promptly relayed to any FRSC formation and ambulance services for quick response.

LIST OF TABLES

LIST OF FIGURES

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