

CHAPTER ONE

1.0

INTRODUCTION

1.1 Background to the Study

Transportation is the world's basic service industry. By giving man the ability to move himself and his goods over substantial distances at reasonable cost, it provides the basis upon which the economic underpinning of modern civilization is built.

The five modes of transportation available to the modern world are water, rail, road, air and pipeline. The economic development of Nigeria is by the development of her transport systems. This is particularly true of the road transport system which is by far the most widely used mode of transportation in the country.

Of all the commodity movements to and from seaports, at least two thirds are handled by road transports while up to ninety percent of all other internal movements of goods and services takes place by roads (Onakomaiya, 1980). This explains why policies and priorities of the governments tend to favour increase resource allocation for the road transport sub-sector.

It has been calculated that Nigeria sunk a staggering sum of over fifteen billion Naira (N15 billion) in the development of road transport between 1960 and 1990. This investment represented roughly 20% of the nation's capital expenditure budget. This figure clearly shows the importance the government attaches to this subsector of the economy. It is important to note that transport development in Nigeria has brought about colossal waste of human lives and material losses.

Road Traffic Crashes have caused physical suffering and substantial economic losses to individuals and the nation (Omidiji and Oni, 2001).

Despite the high death toll on our roads, the average Nigerian driver is still impatient and discourteous on the highway. Vehicles are poorly maintained. Many do not know the minimum legal thread depth of a tyre, and ineffective brake systems are common sights on our highways.

The weather conditions under which driving takes place matters too. Driving is more hazardous and difficult when visibility is blurred such as happens during the rainy season, harmattan, dusts, fog and other related conditions.

During rainy season, some drivers do not drive within common sense speed limits. At such times, they forget that their vehicle is just gliding along the wet road.

Most Nigerians do not plan their journeys or trip well ahead of time, and as a result get into habit of over speeding even through misty or dusty environment. When a motorist speeds much faster than he can control, crashes are inevitable.

In the words of Agunboye (1989), vehicles taken to roadside mechanics for checks and servicing become traffic and snares when the mechanics forget to bolt up vital knots.

Our roads have suffered neglect from government over the years. In some cases, whole sectors can be cut off leading to route violations and other road traffic hazards. Overloaded axles of the vehicles shorten the effective lifespan of the roads/vehicles.

Fatalities on the roads reached a high proportion in the 80's which propelled the then Military President General Ibrahim Badamosi Banagida in 1988 to find a lasting solution to the menace. This resulted in the establishment of the Federal Road Safety Corps in 1988.

From the foregoing, the psychology of the driver, the vehicle and the condition of the road coupled with demotic conditions contribute to make Road Traffic crashes happen on our roads.

A survey carried out by the World Bank recently on developing countries indicates that less than one half of the network of roads is in good condition while more than one quarter is in a condition so bad that it is beyond normal maintenance and requires rehabilitation.

The reasons for the situation were attributed to:

- i. large increases in the road networks in the last 20 years leading to correspondingly large maintenance burdens today;

- ii. a reduction of design life from 20 years. The result is that many roads are now coming to the end of their design life at the same time;
- iii. shortage of funds, particularly of foreign exchange for maintenance because of much emphasis on investment;
- iv. irregular flow of funds making planning difficult;
- v. low efficiency of maintenance agencies; and
- vi. poor attitude of politicians, engineers and donors to maintenance.

1.2 **Background Information of the FRSC:**

The evolution of the Federal Road Safety Commission seems to be the most coherent and nationally conceived response to the problem of road traffic crash as there were series of intervention by various states and sectors of the economy, prior to the establishment of Federal Road Safety Commission (FRSC). Some of the interventions are;

- (i) Introduction of stringent drivers training, testing procedures and vehicle maintenance practice by operators of companies with large fleet of vehicles.
- (ii) Between 1960 and 1965, Shell Petroleum Development Company Nigeria Limited ran series of programmes designed to ensure safety on Nigerian Highways.
- (iii) In 1972, the Nigerian Army introduced the Army Safety Campaign which ran annually for one week duration. Initially, it was directed at educating Army drivers with emphasis on careful driving, general driver training and vehicle maintenance. The programme achieved good results in the Army and since 1974, it has been expanded to focus on the general public as an awareness programme.
- (iv) The Federal Government proclaimed 1974 as a National Road Safety Year, and a National Road Safety Commission in advisory capacity was established with the base at Federal Ministry of Works and Housing. Available statistics however, revealed that there was no significant reduction in crashes

between 1974 and 1975, suggesting that both steps did not improve the road safety situation in the country.

- (v) By Edict No. 18 of 1977, the Government of the old Oyo State established the Oyo State Road Safety Commission and its mandate included “preventing and minimizing road crashes, educating drivers and prospective drivers in the proper use of highways, conducting research into causes of motor crashes and method of prevention. The Commission operated along Federal, State and Local Government roads in Oyo State with emphasis on the first two. An appraisal of the effectiveness of the Commission revealed that enforcement slightly reduced the rate of injuries resulting from road traffic crashes between 1978 and 1981. It however, did not make a significant impact in reducing crashes rate. The Oyo State Road Safety Commission died a natural death when the then Federal Government banned it from operating on Federal Roads in that State.
- (vi) The demise of Oyo State Road Safety Commission gave birth to the National Road Safety Commission with the base at the

Federal Ministry of Works and Housing and the State Ministry of Transport. The Commission worked with two important Committees namely, Research Committee and Implementation Committee. The Commission was successful in getting many people in the State as well as the Federal level to become more aware of the road safety problem. However, it experienced difficulty on funding research projects and implementing research results.

Establishment of Federal Road Safety Commission.

The Federal Road Safety Commission (FRSC) was established by Decree No. 45 of 1988 as amended by decree 35 of 1992 otherwise known as Cap. 141 Laws of the Federation, with effect from 18th February, 1988 now FRSC establishment act, 2007. The Commission was charged with the responsibility of policy making, organisation and administration of the Federal Road Safety activities so as to reduce to bearest minimum the rate of crashes in Nigeria.

Traffic Roads

The Commission was statutorily located under the Office of the Secretary to the Government of the Federation in the Presidency between 1988 – 1995, while between year 2000 – 2003 when the commission was merged with Nigeria Police Force (NPF), it was under the Inspector-General of Police (IGP). In 2003 the commission was demerged and returned to the Presidency. Its level of autonomy and independence has been restored with the right of self determination in the following establishment and service matters:

- (i) Policies;
- (ii) Operational methods and modes;
- (iii) Staff Training and Development;
- (iv) Research;
- (v) Administration;
- (vi) Salary Structure;
- (vii) Line of Communication;
- (viii) Self Accounting; and
- (ix) Bearing of Fire arms as a para-military organization.

Section 2, 2.1, 2.3, 6, and 7 of Decree 45 of 1988 states that “the Presidency is the supervisory authority of the Federal Road Safety Commission directly under the Office of the Secretary to the Federal Government of the Federation, who is accordingly vested with the policy control and supervision of the Commission. Under power, Authority, and Privileges, section 19A (of Decree 35 of 1992) confers powers, authorities and privileges as given by law to members of the Federal Road Safety Commission.

Statutory Functions of the Commission:

The statutory functions of the Federal Road Safety Commission as stated in the act are highlighted as follows:

- (a) To prevent or minimize road accident/crashes on the highways;
- (b) To clear obstructions on the highways;
- (c) To educate drivers, motorists, and other members of the public generally on the proper use of the highways;
- (d) To provide prompt attention and care to road crash victims;

- (e) To conduct researches into the causes of accident/crashes and methods of preventing them as well as putting into use the result of such researches;
- (f) To determine and enforce speed limits for all categories of roads and vehicles; and
- (g) To cooperate with bodies, agencies and groups engaged in road safety activities on prevention of crashes on the highways.

Organisational Structure of the Federal Road Safety Commission (FRSC):

The Commission runs a command structure that comprises the Road Safety Headquarters located in Abuja, under Commission Marshal and Chief Executive (COMACE) and supported by Eight Departments and twelve Commission offices in various positions/schedules namely, operation, Admin and Human Resources, Training Standard and certification, Safety Engineering Special Marshals and Partnership, Policy Research and Statistic, Motor Vehicles Administration and Finance and Account, as well as twelve (12) Corps Offices.

The Commission offices are; Commission Secretary, Commission Intelligent, Commission Legal Adviser, Commission Procurement, Commission Audit, Commission Budget, Commission Medical and Rescue Services, Commission Transport and Standardization Office, Commission Public Education, Commission Logistics, Commission Provost and Commission Planning.

However, the activities of the Commission are carried out nation-wide by dissemination of instructions and command through a hierarchy from RSHQ through the Zonal, Sector and Unit Commands. There is in place twelve (12 Zonal Commands, thirty-seven (37) Sector Commands and a galaxy of Unit Commands that increase in response to the exigencies of road traffic administration.

A Zonal Command comprises of two or more contiguous states each being headed by a Zonal Command which covers all states of the Federation, they are headed by a sector commander of a rank not lower than Deputy Commission Commander (DCC). Unit Commands are designed for local government areas. The aim is to have in each local government of the Federation unit command of the Commission.

At the moment, more than 170 unit commands have been established with more expectations to force-off in hire with the regulations.

1.3 Statement of Problem:

Despite various measures and counter measures that have been put in place at reducing the high rate of road traffic crashes, statistics show that not much has been achieved in this regard. The high rate of carnage on the Nigerian highways more especially in Jigawa State resulting in the loss of lives and property continues to be a source of grave concern.

There is also the need to critically consider the overriding hindrances which have curtailed the traffic control on most highways in Jigawa State.

In fact, the road is over burdened with a heavy volume of consistence vehicular traffic, emission of thick black smoke by heavy trucks.

Another grey area that informed the need for the study is executing Road Safety programmes in an environment with poor road

network, inadequate road markings less or no relevant road safety facilities, and negative attitudes of road users.

It is against this backdrop that the research paper intends to critically examines of road traffic crashes in Nigeria as it concern the Jigawa State sector of the FRSC, and suggests ways of reducing it.

1.4 Research Questions and Hypotheses/Assumptions:

1.4.1 Research Questions:

Under this objectives, it is essential to investigate those factors that are contributed to the road traffic crashes in Jigawa State. In this regard therefore, the objective of the study shall be as follows:

- i. do you agree that road traffic crashes are high in our highways;
- ii. would you agree that the high rate of road traffic crashes is caused by bad roads;
- iii. would you agree that bad driving habits is among the causative factors of road traffic crashes;
- iv. do you agree that poor road network causes road traffic crashes;

- v. do you think that inadequate serviceable towing vehicles cause road traffic crashes;
- vi. is it true that inadequate Safety Programmes lead to road traffic crashes;
- vii. do you believed that road traffic crash on the highways can be reduced or eradicated;
- viii. do you think that enough publicity has been given to road users on the causes of road traffic crashes;
- ix. would you ascribe major road crashes to carelessness of drivers on the highways; and
- x. would you ascribe most of the crash to improper control by the traffic officers of the commission.

1.4.2 Hypotheses/Assumptions:

- a. H_0 : there is no significant relationship between poor road network and road traffic crash on highways.
- b. H_0 : there is no significant relationship between inadequate serviceable towing vehicles and road traffic crash on the highways.

- c. H_0 : there is no significant relationship between inadequate safety programmes and road traffic crashes on the highways.

1.5 Objectives of the Study:

The objective of this study are:

- i. determine whether the human factor (the driver) is the cause of road traffic rashes along Dutse – Kiyawa, Dutse – Huguwa – Bauchi and Dutse – Gaya expressways.
- ii. to find out whether poor vehicle maintenance is the cause of road traffic crashes along Dutse - Kiyawa, Kiyawa – Hadejia, Gujungu – Gumel, Kiyawa - Hadejia, Gujungu – Ringim – Babura and Gumel and Maigatari expressways.
- iii. whether if the condition contributes to the road traffic crashes along the expressways mentioned II above.
- iv. make possible suggestions that will stem the trend of road traffic crashes.

1.6 Scope of the Study:

The study will examine critically the causes of road traffic crashes on our roads with a focus on the activities of the Jigawa State Sector Command of the Federal Road Safety Commission.

1.6.1 Delimitation of the Study:

One of the inhibiting factors in this study is the inability to gather relevant information from the FRSC Headquarters. Some of these information tagged as “restricted”. In addition, the study limited its research to State Capital (Dutse) and nearby Local Governments such as Kiyawa, Ringim, Gumel, Birnin Kudu, Gumel and Babura. Despite these constraints, the research was able to gather enough information and resources that ensured that the research was worthwhile and enriching.

However available data/information obtained have been found to be very reliable and useful in arriving at certain decisions in this research.

1.7. **Significance of the Study:**

The significance of the study on critical examination of the causes of road traffic crashes on our highways are:

- i. to enable the FRSC have a wiser understanding of various factors or obstacles affecting successful road traffic operations in Nigeria and possible ways of tackling them;
- ii. it will contribute to the understanding of the stakeholders on the impact of culture, tradition, illiteracy, mechanical human and environmental or ecological factors on the economy of the nation;
- iii. to open the study or problem robust research investigations; and
- iv. to help the Budget and Planning Department of FRSC and other stakeholders to refocus and re-order their priorities.

1.8 **Definition of Terms:**

Crash: An unexpected event that causes damage, death and injury. This may occur at home, place of work, on the road, air, water even on the field at play (spots) but the concern here is on Road.

Road Traffic Crash – This is a mishap or unpleasant occurrence affecting an individual in time and space. It is a complex event involving the interplay of the vehicle, driver, the road condition and the weather (which can be avoided).

Road Safety – This is the totality of all preventive measures put in place and administered by its practitioners to ensure sanity and remove danger from our roads.

Crash Prevention – This is a function of road safety viewed from the perspective of Road Traffic Crash.

Vehicle – A medium for conveying goods and persons like carriages, wagons, carts, bicycles, trucks etc.

Motor Vehicle – A mechanically propelled vehicle intended or adapted to be used on roads.

Highway Code – A code of right use of the road. It represents a standard of reasonable behavior within which the road user – driver, pedestrian, motorcyclist, are expected to comply with when using the road. The highway code teaches good road use culture.

Traffic Signs – It includes all signs – warning signs, direction of persons using the highway.

Pedestrian – Refers to people on the road, either walking on or across the road.

Driver – This is the person in control of a vehicle driven on the road. A driver plays an important role in road traffic crash to some factors, the driver may cause or stop a crash from occurring.

Black Spot – This refers to a place on our roads and highways where accidents often occur. It is also the terms of reference to spots of danger and hazards to vehicle traffic on the road.

Expressway – Any specially assigned and restricted highway divided with untraversable barrier, with traffic in opposite directions, completely separate from each other. Traffic in one direction may be in two or more lanes. In Nigeria, outright maximum speed posted is 100km/hour.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview of Road Safety in Nigeria

Road Traffic Crashes was given scant attention in Nigeria like other developing countries until researches showed that deaths and fatalities from road crashes in Nigeria ranked among the highest in the world and second behind those by hunger and gastro-enteritis (Adebisi, 1988). The contribution of death resulting from Road Traffic Crash to total death rise from 38.9% in 1967 to 60.2% in 1974 (Adebisi, 1988) and this trend increased until 1982 when it became irregular.

Available crash data from independence to June, 1988 showed Nigeria had an average of 66 casualties a day, with a minimum of 44,809 Nigerians killed, maimed or injured yearly. In (Oyeyemi, 2003), the statistics of road traffic crashes showed that Nigeria then maintained first position in the world crash chart (UN Record).

2.1 **Evaluation of Road Traffic in Nigeria:**

Attempts at curbing the menace of Road Traffic Crashes began with the Motor Traffic Ordinance of 1913 operated in Southern Protectorate only. The National Motor Ordinance of 1916, reviewed in 1940 and 1945 was based on English Road Traffic Crashes.

After independence in 1960, the Traffic Police Unit was established. In 1972, the Nigerian Army Annual one week Safety Programme was also established.

Agwu (1999) credits the Nigerian Army with the first road safety directed programmes. They initiated road safety training among their ranks and files and in response to the rising trend of road carnage, starting from 1972, organized annual road safety week every December.

The next milestone in road traffic administration in Nigeria was taken by the then Federal Military Government in 1974 with the creation of the National Road Safety Commission (NRSC). Gboyega (1992) Adeleye, (1994), Okorie, (1996) Amadi (1997) in their studies, however appreciated the role of the former Military Governor of old

Oyo State Brigadier David M. Jemibewon in creating the Oyo State Safety Commission. It was a small but efficient and quick action corps of men and women who were properly equipped to combat the menace of road crashes in the then Oyo State. The effectiveness of the corps continued after the return to civilian rule in 1979. The success was so significant that other states of the Federation like Ogun, Lagos, Bendel (now Edo and Delta), Anambra (now Enugu and Anambra) and Kano began to copy the approach.

According to Oyeyemi, (2003), the then government of the Federal Republic of Nigeria banned the activities of Road Safety Corps in the above states for reasons more political than expedient. Immediately after the ban in 1983, the problem of road crashes worsened and according to Soyinka (1988), the situation was so bad in 1988 that Nigeria was labeled as the most dangerous country worldwide with fatality index of road crashes exceeding 120 percent mark.

It must be noted that the National Road Safety Commission was still in existence while these crashes were going on, but Agunloye

(1988) said NRSC had power to recommend only. It cannot implement or enforce.

Wole Soyinka followed up the situation with extensive research, submission of multiple proposals to the various tiers of government, consultation and assemblage of the best brains provided the operational framework for the activities of the unborn Federal Road Safety Commission. The National Road Safety Commission was scrapped in 1988 to pave way for the Federal Road Safety Corps the same year on February 18th 1988 during the administration of General Ibrahim Badamosi Babangida (rtd). Within a couple of years of the formation of the corps, its instant success was unprecedented. This is a result of its operational approach which is both multi-disciplinary and multi-dimensional. It has also established a network of formations across the country.

Accordingly to Agwu (1999), the Federal Road Safety Commission adopts an integrated approach that comprises the following:

- a. Enforcement;

- b. Public Education and Research;
- c. Involvement of volunteers and youths;
- d. Injection of order and control into licensing of drivers and vehicles;
- e. Provision of culturally related highway code and traffic rules;
- f. Streamlining and standardization of traffic related matters; and
- g. Creation and promotion of safe road culture.

The statutory functions of the Federal Road Safety Commission are to prevent or minimize road crashes on Nigerian roads by doing the followings:

- (i) to clear obstructions on the highways;
- (ii) to educate drivers, motorists and other members of the public generally on the proper use of the highways;
- (iii) to provide prompt attention and care to road crash victims;
- (iv) to conduct researches into the causes of road crashes and methods of preventing them as well as putting into use the result of such researches;

- (v) to determine and enforce speed limits for all categories of roads and vehicles.
- (vi) to cooperate with bodies, agencies and groups engaged in road safety activities on prevention of crashes on the highways.

2.2 Theories on Road Safety:

Several scholars have propounded theories on Road Traffic Crashes and severity reduction. For example Robinson (1999) wrote on types of collision.

Makay (1974) classified Road Traffic Crashes into three parts namely Pre crash, Crash and Post Crash. Scholars like Chapman dealt with the notion of exposure in Road Traffic Crashes.

Chapman (1973) defined the process of crash occurrences as;

Acc= Pro: Exp where,

Acc= The expected number of crashes of a certain type over a specific time/period.

Exp= Exposure (The number of opportunity for crashes of a certain type to occur).

Pro= The propensity (conditional probability of an crash to occur given the opportunity).

- ✚ Chapman spoke of site exposure and intersection exposure.
Sattlerwaite (1981) added the dimension of link exposure and
Hodge (1983) added driver exposure dimension.
- i. **Site Exposure** – this is the number of opportunities for a crash to occur at a particular site.
- ii. **Intersection Exposure** – this is the product of the flows associated with each conflict points, added overtime
- iii. **Link Exposure** – this is the number of crash opportunity that a particular driver experiences as he drives around the road network.

The theory which must substantially provide the frame of reference for this study is the Haddon Matrix theory. The Haddon Matrix is a classical crash matrix created by Haddon in the early sixties. William Haddon Jr., described road transport as an ill designed man machine system needing comprehensive systematic

treatment. Haddon Matrix illustrated the interaction of three phases of a crash event pre-crash, crash and post crash. The nine cells Haddon matrix models allow opportunities for intervention to rescue crash injury. The Hadden matrix has also provided further insights into the understanding of the behavioral, road and vehicle related factors that affect the number and severity of casualty in Road Traffic Crash/Injuries (WHO and World Bank, 2004).

Pre-Crash Phase:- These are elements that cause people and property to move into the crash phase. This phase is concerned with the actions or measures that are preventive and it affects the three factors of human, vehicle and equipment and environment measures such as public enlightenment or education, behavioural attitude, Law enforcement among others. Vehicle road worthiness, speed regulators, braking among others come under the vehicle and equipment factors. The design of the road and conditions of the road and infrastructure are factors under the environment factor that could be improved upon to prevent crash.

- a. **Crash Phase:-** The crash phase involves the actual crashing of vehicles and the focus is injury prevention.
- b. **Post-Crash Phase** – This phase is concerned with the life sustenance after the occurrence of the crash.

HADDON MATRIX

PHASE	C	FACTORS		
		HUMAN	VEHICLE AND EQUIPMENT	ENVIRONMENT
Pre-Crash	Crash Prevention	Information, Attitude, Improvement, Police Enforcement	Road Worthiness, Lightning, Braking Handling, Speed Management	Road design and road layout speed limit, pedestrian facilities
Crash	Injury prevention during the crash	Use of restraints, impairments	Occupant restraint, other safety devices Crash Protective design	Crash protective roadside objects
Post-Crash	Life sustaining	First aid skill Access to medics	Ease of access fire risk	Rescue facilities congestion

Source: World Report on Road Traffic Injury Prevention Geneva (2004), Geneva.

From the overleaf conceptualization of road traffic crash explained, the cause of RTC and its effects can be ascertained to reduce its occurrence.

2.3 Causes of Road Traffic Crashes in Nigeria

As crash is an unexpected event that causes damage, death and injury. Crashes can be categorized into fatal, serious and minor.

- i. **Fatal:** When human life is lost
- ii. **Serious:** When someone is seriously injured and hospitalized.
- iii. **Minor:** When injury does not occur or when the victim was treated for minor injuries and discharged from the hospital.

A crash can be lone (involving only a vehicle) or multiple involving two or more vehicles.

According to the past research works of Ovumorie (1992), Adebisi (1996), Wakawa (2000), Balogun (2001), Oyeyemi (2002) and Abayomi (2005) the causes of RTC can be categorized into three major factors.

- i. Human factors
- ii. Mechanical factor

- iii. Environmental factor

2.3.1 **Human Factors:**

Oyeyemi (2002) posit that human factors constituted 80% of the cause of RTC and stated these factors as follows:

- i. Drunk driving/drug abuses
- ii. Illiteracy/poor skill
- iii. Psychological factors
- iv. Reliance on metaphysical powers
- v. Poor Eyesight
- vi. Temperaments
- vii. Over-confidence
- viii. Poor driving culture
- ix. Economic factors
- x. Underage drivers

Adebisi (2001) maintains that it is the drivers' reaction or response to those factors that may eventually lead to road crashes.

The above translate to mean that almost all road crashes, directly or indirectly occurs due to improper driving habits, poor

mental and physical condition of the driver, ignorance and disregard of road traffic regulation, wrong responses to varying road and traffic conditions and most of all, lack of consideration and tolerance towards other road users.

2.3.2 Mechanical Factors:

Mechanical factors involve the use of motorized vehicles including cars, trucks, buses and motorbikes without adequately maintaining them. Ananeny (2001), Nkwonta (2001) and Uchegbu (2001) agrees that even though the driver (human factor) takes a lion share of about 80 percent of the causative index of road crashes in Nigeria, vehicle conditions constitute part of it that cannot be disregarded in this kind of consideration.

Mechanically defective vehicles are vehicles that lack minimum vehicle safety standards due to lack of constant servicing of the vehicles which may lead to brake failure, propeller and wheel pull out, ball joint shaft breakdown, burst tyres etc. In Nigeria, the economic recession has made people to resort to the usage of sub-standard spares parts and tyres. These tyres are tagged tokunbo tyres.

Since most vehicles are fitted with these tokunbo spare parts, they lack road worthiness which in most cases leads to breakdown that causes obstructions on the highways and which may eventually lead to many RTC related deaths.

2.3.3 Environmental Factors:

The topography of Nigeria's road network has quite remarkable obstructions on road constructions (Odigboh, 2000). Mountains, valleys and rivers contribute to sharp bends, steep hills as well as sharp slopes which are potentially dangerous features against unsuspecting road users. Our tropical climate also poses challenges to road users.

Heavy/torrential rainfall in the south and extremely hot conditions coupled with the harmotan dust in the northern parts of Nigeria affect our road network. Potholes are easily created, deadly black spots all create impediments to road users Odigboh (2009), mentions the following as environmental factors that aid occurrence of RTC's

a. Foggy, hazy, musty weather

- b. Dangerous bends
- c. Sleep sloped
- d. Broken down/abandoned vehicles
- e. Potholes/blackspots

2.4 Road Crash Immunity Delusion Syndrome (RCIDS)

Typical Nigerian driver believes he cannot be involved in crash and so he drives carelessly. This mind or psychology of the average Nigerian driver is aptly referred to as RCIDS (Road Crash Immunity Delusion Syndrome) by the Federal Road Safety Corps. The corps believes that it is more potent and fearsome than the deadly AIDS as it is the greatest killer of most Nigerian drivers on the road.

According to the records of Policy, Research and Statistics of the FRSC, the younger drivers are more at risk through disobedience of traffic rules and regulations. The orders ones are more cautious and make fewer wrong decisions on the highways.

2.5 The Problem of Road Furniture on the Highway:

Road furniture on the highway is a well known crash reducing factor but due to the economic downturn, Adebisi (1996) says

“government can scarcely meet up with social demands of the people thus making the installation of road furniture on the roads a less likely priority”. This has resulted in the loss of several lives and property on the road.

2.6 **Effects of Road Traffic Crashes:**

The consequences that results from the occurrence of RTC in Nigeria are immense RTC is a sad and unfortunate event leading to loss of breadwinner and results in emotional grief and stress suffered by the deceased’s immediate family, relatives and friends.

Another effect is the variety of injuries sustained. In most cases, only a negligible number of the injured victims are treated to complete recovery while many die of their wounds and injuries before they get to the hospital, while many who make it to the hospital die later after expenses have been incurred for their treatment. Others are partially maimed or completely incapacitated all their life, after spending many years in the hospital. They therefore become financial, physical and psychological burden to themselves and their family for life.

Nigeria has lost so much in terms of human and material capital to RTC. She has lost many professionals and other groups who would have contributed their quota towards the President's Transformation Agenda. In this regards, Oyeyemi (2003) posits that "the Government is not left without blame when such tragedy happens, as to formidable ideas for national planning and development of the proponents have been destroyed prematurely. This could also account for Nigeria's developmental shortfall. Without doubt, the untimely demise of the cream of society has serious socio-economic implications which are detrimental to national growth and development".

The effect of road traffic crashes is not limited to Nigeria alone but to the whole world. This is evidenced on the study conducted by the WHO and others on "The Global Burden of Diseases" in 1990⁴. The Global Burden of Diseases study undertaken by the WHO Harvard University and the World Bank showed that in 1990, traffic crashes were assessed as the world's ninety most important health problem. The study forecast was that by year 2020, road crashes

would move up to third place in the table of leading causes of death and disability facing the world community.

Therefore, economic perspective of traffic safety indicated road crashes cost of approximately 1 to 3 percent of a country's annual Gross National Product (GNP) WHO (2003).

The World body further posits that these are resources that no country can afford to lose especially those with developing economies. It is estimated that developing countries currently lose in the region of \$100 billion every year. This is almost twice as much as the total development assistance received worldwide by the developing countries. Nigeria falls within the developing countries; hence it shares out of the worldly burden of traffic crashes.

The estimate of the total national cost of road crashes will help Government to realize the heavy economic losses being incurred annually as described in the gross output" method of crash costing and socio-economic aspects of road crashes in developing countries. Balogun (2006) observed that "between year 2000 and 2005, a total of 65,428 vehicles were involved in RTC, with buses and other mini-

transport means accounting for 51.6% and articulating vehicles accounting for 16.8% while the remaining 31.6% are attributed to cars”. He further posits that at least, three buses got involved in road crash in Nigeria during the reporting period.

Government must try to reduce these loses by providing road safety improvement and should see expenditure on road safety as an investment and not as a list.

2.7 Road Maintenance:

Balogun (2006) has this to say on Road Engineering maintenance. Road safety practitioners and agencies responsible for road maintenance should;

- i. Advice local authorities in traffic engineering measures; and to
- ii. Construct new or improve old road to higher safety standard without generating other problems;
- iii. Engineering construction of bumps, chicanes, local road narrowing and other traffic calming measures, guard rails near crossing.

2.7.1 Road Safety Audit

The Road Safety Auditing of road is a formalized examination of an existing or future road or traffic project or any project which interacts with road users in which an independent, qualified examiner reports on the projects crash potential and safety performance. This entails mapping years of black spots on the road, compilation of Average Daily Traffic (ADT) on the road, taking inventory of location, appropriateness and conditions of road furniture and other obstacles that may act as potential danger of collision and obstruction. By implication the idea of maintaining road “if and when time and money permit” allowing it to be sizeable for contract award is discouraged.

2.8 Safety Tips for Drivers on Vehicle Maintenance:

Motorists should not wait until mechanical problems become breakdowns or cause crashes before attending to their vehicles. Vehicles warn motorists ahead of time or problems. Listen to old sounds, pay attention to any strange noise and look for disconnections, cracks and signs or wears and tears.

Motorists should engage in routine and preventive maintenance.

Vehicle maintenance is the up-keep of a vehicle or the day to day activities carried out in a vehicle to keep it in top form.

Daily Maintenance

This is carried out by the driver before the vehicle is started:

- a. Check fuel level in tank;
- b. Check oil level in engine;
- c. Check water level in radiator;
- d. Check tyre pressure lamps, horn and windscreen.

After starting the engine, check battery charging rate, oil pressure gauge and also check that the brakes are in order.

Weekly or Twice Monthly

- i. Wash down and clean vehicle;
- ii. Check battery electrolyte level and examine battery terminals;
- iii. Grease all vehicle chassis points;
- iv. Check chassis and body for loose bolts;
- v. Examine tyres for cuts or other damages.

Special attention must be paid to:

- a. **Tyres:-** Care must be taken to select correct tyres and inner tube size. Ensure your tyres and the spares are correctly inflated at all times in accordance with the type of tyre. Check the vehicle manual and sides of the tyres for correct pressures.
- b. **Brakes and Clutches:-** Brakes must be efficient and effective. You are heading for a crash if your vehicle swerves to the right and left when you apply the brakes. Always check your brake fluid level.
- c. **Steering Mechanism:-** Ensure your steering system is in good condition. Check your tie-rods and bushings. Do not succumb to the urge to manage it”.
- d. **Wipers:-** Ensure your wipers have good blades and are working efficiently. Do not wait to discover your wipers are ineffective under rain.
- e. **Lighting System:-** like headlamps, side lamps, signal indicators and reverse lights should be in good working conditions.
- f. **Hazard Lights:-** Hazard lights are to be used in case of an emergency to make sure they are working. They are a warning of

dangers. For example, an unexpected holdup or a crash, in which case, they can be augmented by a warning triangle.

Reflective Triangle:

All motorists must carry a reflective or warning triangle. It is placed on the road in an emergency, or breakdown to warn traffic of obstruction. It is placed at least 45 metres on the road (90 metres on the expressway) before the obstruction. It must be placed in an obscure place. It serves as an advance warning to other motorists, and protects you and your vehicle.

2.9 Safety Tips for Drivers on Good Road Culture and Crash Protection:

By far, the most formidable way to avoid crashes/collisions is through defensive driving techniques. The principle of defensive driving is the ability to recognize a hazard, understand the defence and act correctly in time. Defensive driving saves lives, time and money.

Recognizing the hazard means the driver is aware of the conditions around him. He should scan the road ahead of him and

through the mirror driving conditions behind him. He should be alert to sudden changes in driving conditions.

He should understand what to do on spotting a hazard so as to know how to defend himself and others. He must anticipate what will happen and know what to do to avoid a collision and once decided he must act correctly and in time.

Seatbelt

The best protection inside the vehicles is the use of seatbelts. In the event of a crash seatbelts properly used reduces severity of crashes by at least 50%. Other passengers must be made to use seatbelts where possible.

For long journeys, it is advisable for motorists to allow plenty of fresh air in their vehicles and stop at a convenient place to rest or even take a nap. Also walk around to let your blood circulate and reed your brain. All these are to arrest sleep while on wheels.

Monotonous driving can also make one sleepy, so motorists must stay alert. You can have a companion to do this, keep your eyes moving, look at the mirror and so on but try to avoid distractions.

Alcohol and Drugs

Never drive under the influence of alcohol or drugs. Some medications have mood - altering – altering effect. When under medical treatment, consult your doctor about their possible effect on your driving ability.

Care and Patience

Never do anything contrary to common sense while behind the wheels. Exercise care and patience, give way to impatient drivers. Start out on time in case of an appointment based on your knowledge of traffic.

Concentration

Motorists should avoid the temptation to talk, eat, gesticulate, wave and stare at passing friends, light cigarettes, smoke, change radio stations or change cassettes while driving. Disaster can strike due to lack of concentration. The vehicle in front may stop, a child can cross the road. Look with your eyes and see with your mind.

Manage your Nutrition

Do not drive after a heavy meal as the blood concentrates in the stomach to absorb the food. This deprives the brain of oxygen and can cause the driver to sleep.

Obey Speed Limit and Regulations

The law imposes maximum speed of 100km/hr for any vehicle on any highway in Nigeria. However commonsense should dictate lower speed limits.

- a. Avoid dangerous overtaking: Do not Overlake;
 - i. Unless you can do so without forcing the overtaken or approaching vehicles to swerve or reduce speed;
 - ii. At a corner or bend or approaching the brow of a hill; and
 - iii. Across roads

Always give correct signals – look, signal, move.

Safety Tips for Children

- a. Pre-school training of children to cope with fast moving traffic through games, play group, publications and road safety clubs;

- b. Ensure that children are kept at the back seat and properly strapped down with seatbelts;
- c. School bus sign to be displayed on vehicles carrying school children and amber flash light used when students are boarding or alighting;
- d. Enforce low speed for vehicles i.e 20 km/hr in residential areas.

Safety Tips for Pedestrians

- i. **Walking** – Where there is a pavement or suitable footpath, use it. Do not back the traffic.
- ii. **Face on-Coming Traffic** – Where no suitable footpath exist, face on-coming traffic.
- iii. **Walking with Children** – Walk between the children and the traffic.
- iv. **Walking in the Dark** – Wear light coloured or reflective clothing or carry something white. This is especially so on roads without footpaths or walkway.
- v. **Walking in a Group** – People marching should keep to the extreme right of the road. At night, the person in front should

carry white light and the one at the back a red light. Clothes worn to be white, reflective or one with high visibility.

- vi. **Traffic Drill** – Look left, look right and look left again, walk directly across the road as quickly as possible but do not run.

2.10 **Road Traffic Crashes Intervention (Prevention)**

Globally, there is a need to improve the safety of traffic system for users, and to reduce current inequalities in the risk of incurring road crash injuries. (WHO Report, 2005. The FRSC carried out).

2.10.1 **Commission Public Education Office (CPEO)**

The creation of a Commission Public Education Office within the structure of the FRSC is in line with the corps enabling decree (Decree 45 of 1988). This was amended by decree 35 of 1992, referred to in the statute books as the FRSC Act Cap. 141 Laws of the Federation of Nigeria (LFN) 1990. These were repealed and replaced with the FRSC (Establishment Act, 2007 which is the current legislation establishing the FRSC).

Part 2. Section 11, sub-section 2(c) of the Act requires the corps to ‘discharge functions relating generally to the education of motorists

and members of the public on the importance of discipline on the highways”.

Sub-section 3(c) of the same section further requires the corps to work out means of “educating drivers, motorists and other members of the public generally on the proper use of the highways”.

The office functions as the pivot on which the corps acceptance and support by the public rests. It therefore, becomes the lines through which the people view safety on the road as a concept, an issue, a way of life.

Public enlightenment campaign concepts, themes and focus are usually designed, developed and co-ordinated by the FRSC Headquarters for field commands to ensure control and uniformity in organizational goals and objectives.

Field commands are expected to adopt these concepts to local settings to eliminate barriers of language, culture and religion. Programmes must be tailored to suit existing situations and spiced with local flavor to enhance communication and at the same time address deficiencies in attitudes and practice of road users in each

locality. Every national designed public enlightenment programme is expected to be modified to suit local audience (target audience) by the field commands.

According to Attah, Y. O. (1996) the Corps Public Education Office if well managed and funded can bring about awareness and consequently curtail crashes.

2.11 Qualities Expected from a Road Marshal:

The core roles of the corps are that of reduction of road traffic crashes and rendering assistance to victims of road traffic crashes. Certain sterling qualities expected of a road marshal according to Yakassai (1998) are;

- i. Discipline: discipline is defined as a state of mind and character that produce self control and habit obedience,
- ii. Sound knowledge of Traffic Rules and Regulations
- iii. Effective Communication: Road Marshals should be able to communicate effectively with road users.
- iv. Politeness and civility to the motoring public;
- v. Honesty and Dedication to duty;

- vi. Good Conduct and Comportment: the Marshal should be seen as the road user's friend, and should let people have confidence in him;
- vii. Good Appearance: A Marshal's appearance and mode of dressing matters a lot;
- viii. Sound knowledge of socio-political background of the Nigerian nation;
- ix. Cooperation with other Government and law enforcement Agencies.

According to the World Health Organization (WHO), Geneva (2004) world report on Road Traffic Injury Prevention summary, the following strategies can prevent Road Traffic crash and injury:

- i. Reducing Exposure through land use and Transport planning.
- ii. Requiring Safety Impact Assessment before planning decisions are made;
- iii. Providing shorter, safer routes for vulnerable road users;
- iv. Discouraging Unnecessary Trips
- v. Encouraging use of safer modes of travel

- vi. Minimizing exposure of High Risk Traffic Scenarios.
(Restructuring access to parts of the road network)
- vii. Giving priority to High occupancy vehicles
- viii. Regulating motor vehicles use by young riders and motorists
- ix. Planning and designing Roads for Safety;
- x. Safety conscious design of roads;
- xi. Safety Audits;
- xii. Remedial action of High Risk crash sites;
- xiii. Protecting motor vehicle occupants;
- xiv. Setting Road Safety Rules and securing compliance;
- xv. Setting and Enforcing speed limits;
- xvi. Setting and Enforcing Alcohol limits;
- xvii. Addressing the problem of Driver fatigue;
- xviii. Reducing the risk of junction crashes;
- xix. Requiring seat-belts and child restraints;
- xx. Requiring helmets on Two-wheelers;
- xxi. Banning drivers from using hand-held mobile phones;
- xxii. Access to emergency service.

CHAPTER THREE

3.0

THEORETICAL FRAMEWORK AND RESEARCH METHODOLOGY

Different approaches have been canvassed as to what constitute the framework of research. The theoretical framework to be adopted is the systems approach.

A system is a whole made up of interrelated parts or components. The Good level's English Dictionary (1989) defines system as "An assemblage of things forming a connected whole...., a complex but ordered whole; the body as a functional unity, a plan, or scheme".

Also, Appeby (1982) defines a system as "an organized combination of parts which form a complex entity with inter-relationships or interactions between the parts and between the system and the environment". According to Harbison (1975) the systems approach is a holistic concept which views an organization as a totality composed of interrelated processes and functions. It is also a global concept in that it views the organization as operating in a larger

environmental universe. It is a synergistic concept in that it assume the optimal integration of the elements that comprise the system”.

In its workability, a system is;

“Organization or complex whole; an assemblage or combination of things or parts forming a complex or unitary whole” Johnson et al--- (1984). Ackeff (1969) sees a system as an entity, conceptual or physical which consists of interdependent parts. Rice and Bishopirck (1991) believe a system consist of pattered, functioning relationship among components .

These definitions indicate that almost all like is a system. Our body is a system made up of sub-systems like respiratory system, digestive system etc.

Likewise an organization is a system made up of such sub-systems as Accounting, Purchasing, Production, Personnel and Training systems etc.

It can be deduced further that none of the sub-systems or units can be independent of the other or by completely isolated from the main unit or system. It then follows that if there is any

dysfunctionality in any of the units or sub-systems, it affects the whole unit.

The system approach is being used as a problem solving mechanism and it is now a universal term. The system approach to solving problems was initially identified with military operations especially during World War II. The effectiveness and precision with which results were achieved encouraged management theorists and practitioners to follow suit and adopt systems approach to solving management problems.

The systems concept has thus become a useful way of visualizing complex jobs or problems and attempting to solving them scientifically.

According to Johnson (1984) “It provides a framework for visualizing internal and external environmental factors as integrated whole It fosters a way of thinking which one hand helps the manager to recognize the nature of the complex problems and thereby operate within perceived environment”.

In essence, systems approach is an attempt to make a science of the study of management. It is a scientific planning procedure by which one goes systematically towards the achievement of a specific goal or a set of goals within the management terrain. It is also a method of finding solution to any managerial, social, training, operational and other human problems by going through clearly delineated lines of actions or responsibilities within the organizational setting.

The Key Concepts of System Theory

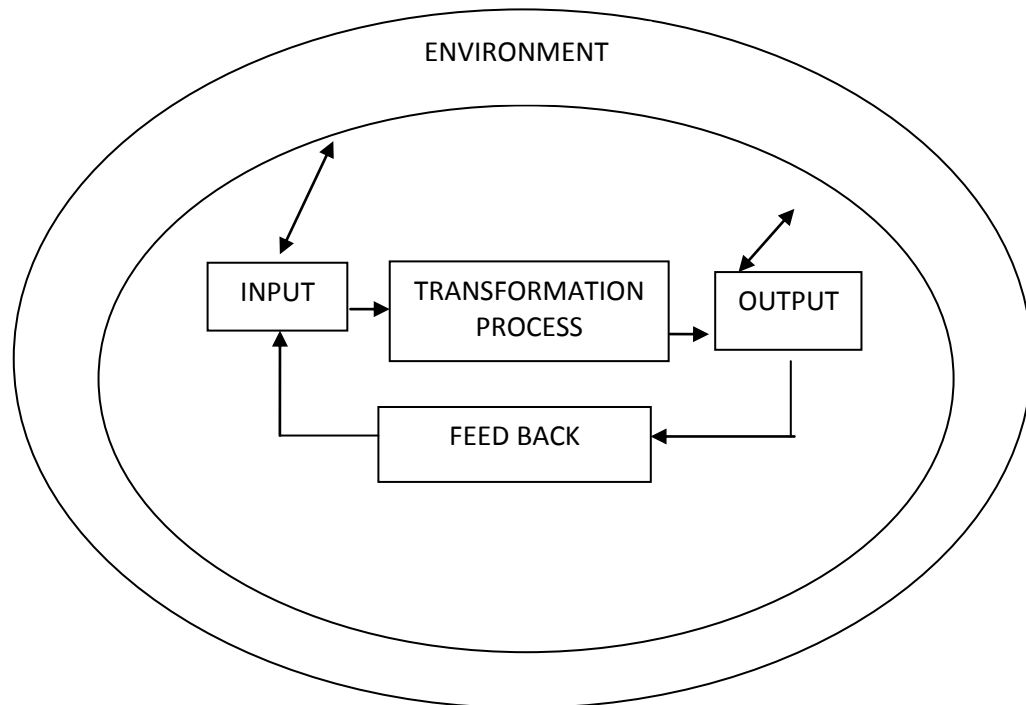
For systems approach to be effective and purposeful, it must be conceptualized thus

- i. A system is more than the sum of its component parts. In other words, it must be viewed as a 'WHOLE'.
- ii. A system can be either closed or open. a system is closed when it has no relationship with its environment. Also, a system is open when it relates or exchanges information with its environment.
- iii. A system must have boundaries or limits or scope.

- iv. For a system to survive, it must have sufficient inputs regularly from its environment.
- v. There must be feedback mechanism to tell whether the system is alive to its responsibilities or not, an indication of dysfunctionality will point to areas where necessary adjustments/amendments are required.
- vi. The system itself is a subsystem of larger system or suprasystem
- vii. Systems grow

A system can further be explained diagrammatically as shown below.

The Input – Output Model of System Approach



Source: Maduabum (1995) Unpublished lecture note

3.1 Conceptual Framework

In order to assess an organization properly, it is necessary to critically examine its organizational structure, the environment, productivity, and how it utilizes its resources (men, money, material, time, technology etc) at its disposal in order to achieve the organizational goals and objectives. The internal environment of an organization is therefore made up of its human resource and non-

human resources. Resources such as operating units, practices and other variables that need to inter-relate with one another within the system in order to enhance performance.

You may now ask, what is organization? An organization can be defined as a deliberate social construct or device for efficiently accomplishing through group means some stated purposes. This means that, it is a patterned relationship among people who are engaged in mutually dependent activities with a specific objective. In this regard, the inter-relationship of people, objectives and structure together with the efficient use of available human and non-human resources, will determine the success or failure of any given organization and the extent of its effectiveness. The Federal Road Safety Commission (FRSC) therefore is an organization with structure and purpose. It has functions and roles to play in the activities of road safety in the country. How efficient most of the Zones are managed depends largely on the efficiency of the commission at the headquarters since no organization exists without a goal. Therefore, the Federal Road Safety Commission has particular targets and goals

for its existence and it also operates targets and goals for its existence and it also operates within a particular environment for sustenance.

3.1.1 **Organizational structure**

An organization's capacity to react quickly to its environment and to maintain an efficient ratio of output depends on its structure. Mullins (1999:113) says structure is pattern of relationships among positions in the organization and among members of the organization. The purpose of structure, Mullins submits in the division of work among members of the organization, and the coordination of their activities. So they are directed towards achieving the goals and objectives of the organization. The structure defines the tasks and responsibilities, work roles and relationship and channel of communication.

Structure is therefore necessary to make possible the effective performance of key activities and to support the efforts of staff.

It is therefore, important to note that the researcher's emphases on this study will be on the effectiveness of the Federal Road safety Commission and the role of human and non-human resources. In

relating the concept of system approach with the problem of reduction of high rate of Road Traffic crashes on the highways is associated with human and non-human factor or both. This is because the achievement of the corporate goal of the Commission depends solely on the resources available.

If the Commission is analyzed to a system, the implication would be that whatever goes wrong in any of the departments or zones would affect the output of the whole. By output of the whole is meant here the delivery of qualitative activities that would reduce carnages on our roads. For instance, if the Research and Statistics Department is unable to produce required data on the roads, it then means that the entire road traffic management will be affected because they rely solely on information from the department. This situation will then continue to spiral in the system and larger society.

3.2 Research Methodology:

For this study, the analytical survey method, observation and personal experience methods were used because the researcher is an experienced officer on the field and also found it convenient than any

other method. The analytical survey method involves designing and distribution of questionnaire to the prospective respondents.

3.3. Target Population and Sample:

The targeted population for this study is both the staff of the state sector command and other pedestrians within Dutse/Kiyawa Junction being the main access point to the state. In view of this a hundred (100) staff of the command and the road users within the place were considered.

3.4 Sampling Technique:

The sampling technique adopted in determining the sample size was simple random sampling. This is because the entire population is common in nature without too much diversity. It is also convenient for the researcher. The sample size is limited to fifty (50) which is 50% of the considered population size.

3.5 Instrument for Data Collection:

The instruments used for data collection were questionnaire and unscheduled interview that is informal interview scheduled for the road users along the expressway. For the questionnaire, it has two parts namely:

Part A: This contains matters that focused on individual records or data such as sex, age, marital status etc.

Part B: This focused on the substantive data that are related to the study.

The questionnaire contains the sixteen (16) questions which were mainly open-ended and close coded questions. Fifty questionnaires were administered and forty (40) were retrieved which formed 80% of the sample size.

3.6 Data Analysis Techniques:

In this study, the technique adopted in the data analysis involves the use of tabular presentation of data collected, and its aggregation in summation and percentages. The measurement of central tendency was used as well in ascribing value to the data. The hypothesis were tested with the aid of statistical chi-square (X^2).

$$X^2 = \frac{\Sigma(O-E)}{E}$$

Where Σ = Stands for summation

O = stands for observed frequency

E = stands for expected frequency

3.7 **Limitation on Methods**

So far so good, the limitation expressed was mainly in the process of data collection. Many respondents could not fill the questionnaire while few others misplaced them. All these were replaced with persuasion. Nevertheless, forty (40) questionnaires were duly completed and returned for the analysis. The retrieved percentage is 80% of the target population. This shows an effective and adequate coverage of the target population.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4. Preamble

This chapter is concerned with the presentation, analysis and interpretation of data collected through the aid of instrument called questionnaire. Out of fifty (50) questionnaires duly administered among the officers of the Federal Road Safety Corps, and driven at the Dutse–Kiyawa Road being the main access point to the state, forty (40) were duly completed and returned for the analysis.

4.2 DATA PRESENTATION AND ANALYSIS

TABLE I: QUESTIONNAIRE ADMINISTERED AND
RETRIEVED

RESPONSES	NO OF RESPONDENTS	PERCENTAGE
No of Questionnaire Adm.	50	100
No Retrieved	40	80
No not Retrieved	10	20

The above tables reveal that 50 numbers of questionnaires were administered while 40 or 80% of that number were successfully retrieved and 10 or 20% of the questionnaires were not retrieved from the respondents. It can thus be seen that the number of questionnaires retrieved was quiet sizable to guarantee a meaningful and purposeful study.

TABLE II: RESPONDENTS BY SEX

SEX	NO OF RESPONDENTS	PERCENTAGE OF TOTAL
Male	34	85%
Female	6	15%
Total	40	100%

Table ii above shows the gender distribution. Out of 40 respondents, 34 or 85% were males while the remaining 6 or 15% were females. This analysis reveals that males respondents were more than their female counterparts. This disparity could be due to the reason that they are generally more males involved in motor matters

than females. This will not in any way affect the outcome of the research.

TABLE III: RESPONDENTS CLASSIFIED ACCORDING TO AGE

AGE	NO OF RESPONDENTS	PERCENTAGE OF TOTAL
16 -25	10	25
26 -35	5	12.5
36 -45	10	25
46 and above	15	37.5
Total	40	100%

The above table iii reveals the age bracket and distribution of the respondents. Out of 40 respondents, 10 or 25% of the respondents were between the age of 16 – 25 years while 5 or 12.5% were between the ages of 26 – 25 years, and another 10 or 25% between the age of 36 – 35 years. The remaining 15 or 37.5% falls between 46 years and above. In this regard, it is evident that majority of the respondents were between the age of 46 and above. They are considered matured

and experienced either as Marshals or Drivers and capable of contributing meaningfully to the study.

TABLE IV: RESPONDENTS BY QUALIFICATIONS

QUALIFICATION	NO OF RESPONDENTS	PERCENTAGE
Primary Education	4	10
Secondary Education	11	27.5
HND/BA/B.Sc/B.Ed.	18	45
MA/M.Sc/Ph.D.	4	10
Others	3	7.5
Total	40	100%

The analysis in table iv reveal that only 4 or 10% of the respondents possess primary education qualification while 11 or 27.5% said they possess secondary education qualification. On the other hand, 18 or 45% said they possess a degree or its equivalent and 4 or 10% said post graduate qualification. Another 3 or 7.5% noted other qualification to include City & Guild Certificate and Trade Test.

It can also be seen thus that the respondents are majorly literate and the study will not pose any problem to them.

**TABLE V: RESPONDENTS BY LENGTH OF SERVICE/
EXPERIENCE**

LENGTH OF SERVICE	NO OF RESPONDENTS	PERCENTAGE
6-10 years	4	10
11-15 years	8	20
16-20 years	10	25
21-25 years	6	15
26 years and above	12	30
Total	40	100%

Table v above indicates the working experience of the respondents. 4 or 10% of them indicate 6-10 years while 8 or 20% indicated 11-15 years. 10 or 25% indicated 16-20 % of that number indicated 21-25 years.

The remaining 12 or 30% indicated 26 years and above. This goes to show that the level of maturity and experience of the

respondents was quite high and are adjudged capable of contributing to the success of the study.

TABLE VI: WHETHER RATE OF ROAD CRASHES ARE HIGH ON THE HIGHWAYS

RESPONSES	NO OF RESPONDENTS	PERCENTAGE OF TOTAL
Strongly Agreed	28	70%
Agreed	10	25%
Strongly Disagree	2	5%
Disagreed	-	0%
Not Sure	-	0%
Total	40	100%

From table vi above, it is evident that majority of the respondents are of the view that the rate of road traffic crashes is high on the highways. This is evident by the overwhelming majority of 70% or 28 in number who rated strongly agreed as their choice of response. Another 10 or 25% agreed to this assertion and only 2 or 5 % strongly disagreed with the view expressed above. Disagreed or

Not sure recorded no response. In view of the analysis, it shows that road traffic crash was high on the highway and solution should be provided to slum the tide.

TABLE VII: HIGH RATE OF ROAD TRAFFIC CRASHES ARE CAUSED BY BAD ROADS

RESPONSES	NO OF RESPONDENTS	PERCENTAGE OF TOTAL
Yes	36	90
No	4	10
Not Sure	-	0.10
Total	40	100%

Table vii; reveals that much rate of road traffic crash is caused by the state of roads in the country which is generally bad. To ascertain this fact, 36 or 90% were affirmative while the remaining 4 or 10% were of the negative view that bad road is not responsible for high rate of road traffic crashes.

The analysis has thus revealed that one of the major causes of road traffic crashes on our highways was bad road. The authority should therefore note this fact.

TABLE VIII: WHETHER ROAD TRAFFIC CRASHES ARE CAUSED BY BAD/POOR DRIVING HABITS

RESPONSES	NO OF RESPONDENTS	PERCENTAGE OF RESPONSES
Yes	38	95
No	2	5
Not Sure	-	0
Total	40	100%

Table viii reveals that aside from the bad roads, bad/poor driving habit by drivers also contributes to the high rate of road traffic crashes on our highways. 38 or 95% of the respondents attested to this fact while only 2 or 5% disagreed. In view of this finding, appropriate measure, in the form of driver education is need to be taken.

TABLE IX: POOR ROAD NETWORK CAUSES ROAD TRAFFIC CRASHES.

RESPONSES	NO OF RESPONDENTS	PERCENTAGE OF RESPONSES
Strongly Agreed	32	80
Agreed	-	-
Strongly Disagreed	8	20
Disagreed	-	-
Not Sure	-	-
Total	40	100%

Findings from table ix reveal that poor road network causes road traffic crashes on our highways. This is affirmed by 32 or 80% who strongly agreed with the statement while the remaining 8 or 20% strongly disagreed.

The opinion expressed by the respondents should therefore be noted.

TABLE X: INADEQUATE SERVICEABLE TOWING VEHICLES CAUSES ROAD TRAFFIC CRASHES.

RESPONSES	NO OF RESPONDENTS	PERCENTAGE OF RESPONSES
Yes	30	75
No	10	25
Not Sure	-	-
Total	40	100%

Analysis of above table x indicates that inadequate serviceable towing vehicles also causes road traffic crashes on the highways. To buttress this fact, 30 or 75% of the respondents were affirmative in their view while 10 or 25% were negative. Arising from the responses, one can safely say that inadequate towing vehicles to remove dead, abandoned or damaged vehicles on the highways are a contributory factor to high rate of road traffic crashes.

TABLE XI: INADEQUATE SAFETY PROGRAMMES LEAD TO ROAD TRAFFIC CRASHES

RESPONSES	NO OF RESPONSES	PERCENTAGE OF RESPONSES
Yes	36	90
No	4	10
Not Sure	-	0
Total	40	100%

Above analysis from table xi indicates that insufficient education on road safety causes road traffic crash on the highways. 36 or 90% of the respondents were affirmative to this fact while the remaining 4 or 10% disagreed. The import of this finding should be noted.

TABLE XII: WHETHER ROAD TRAFFIC CRASH ON THE HIGHWAYS CAN BE REDUCED OR STOPPED.

RESPONSES	NO OF RESPONDENTS	PERCENTAGE OF TOTAL
Yes	40	100
No	Nil	0%
Not Sure	Nil	%
Total	40	100%

Table xii above reveals that road traffic crashes on the highways can be reduced or even stopped. This is evidenced by all the 40 respondents who agreed to this fact. This is an indicator that if the right things are done, the road traffic crash situation can be improved or ameliorated.

Since the entire respondents were affirmative in their responses to question (12), therefore, there was no response for the next question.

TABLE XIII: WHETHER SUFFICIENT PUBLICITY HAS BEEN GIVEN TO ROAD USERS ON CAUSES OF ROAD TRAFFIC CRASHES.

RESPONSES	NO OF RESPONDENTS	PERCENTAGE OF TOTAL
Yes	16	40
No	24	60
Not Sure	-	0%
Total	40	100%

Table xiii above indicates that sufficient publicity has not been given to road users on causes of road traffic crashes on the highways. 16 or 40% were of the view that adequate publicity has been given while the remaining 24 or 60% said it was not given. Therefore, insufficient information on road signals can easily cause road crashes because drivers need to know where to slow down and also where to increase their speed. These are essential and necessary factors that ensure road safety.

TABLE XIV: WHETHER MAJOR ROAD CRASHES ARE CAUSED BY CARELESSNESS OF THE DRIVERS ON HIGHWAYS.

RESPONSES	NO OF RESPONDENTS	PERCENTAGES OF TOTAL
Yes	36	90
No	4	10
Not Sure	-	-
Total	40	100%

Majority of the respondents numbering 36 or 90% attested that carelessness of drivers on the highways causes road traffic crashes while only 4 or 10% did not share this view. It can be said that when drivers are not careless while on the steering wheel, the roads could become safer for road users.

TABLE XV: WHETHER MOST OF THE CRASHES ARE INFLUENCED BY IMPROPER CONTROL BY OFFICERS/MEN OF THE CORPS.

RESPONSES	NO. OF RESPONDENTS	PERCENTAGE OF RESPONDENTS
Yes	-	-
No	40	100%
Not Sure	-	-
Total	40	100%

Table xv above shows that all the respondents did not attribute activities of Officers and Marshals on the highways as a causative factor on road traffic crashes. This is an indication that the Officers/Marshals of the corps are properly in control of the road and the reasons for road traffic are caused by other factors.

With regards to question 16, a summary of the respondents suggestions on the ways to eliminate or reduce high rate of Road Traffic crashes on the highways are;

- i. Road network should be sustained and maintained
- ii. The highways should be re-surfaced and be free of pot holes
- iii. Provision of serviceable towing vehicles on the highways
- iv. Trailers packed side by side of the road should be removed/stop
- v. Whenever there is traffic jam, it is very necessary to get the on-coming vehicle informed earlier so as to change or divert to the other axis
- vi. Adequate vehicles patrol & rescue equipment/materials should be provided for the state command to enable them succeed in their assignments.

4.3 **TEST OF HYPOTHESIS**

Hypothesis 1

H₀: There is no significant relationship between poor road network and Road Traffic crash on Highways.

CONTINGENCY TABLE

O	E	O - E	(O - E) ²	$\frac{\Sigma (O - E)^2}{E}$
32	20	12	144	7.2
8	20	-12	-144	7.2
				14.4

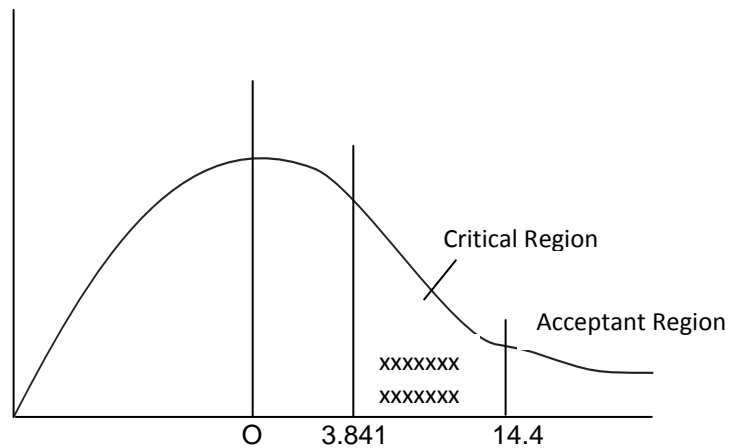
$$X^2 = 14.4$$

Degree of freedom (df) = n-1 = 2-1 = 1

$$\text{Expected value} = \frac{\Sigma f}{2} = \frac{40}{2} = 20$$

Calculated $X^2 = 14.4$

X^2 from Table at 0.05 or 5% level of significance is 3.841



DECISION AND CALCULATION

Calculated chi-square $X^2 = 14.4 - 73.841$, therefore, it falls on the critical region, we reject the null hypothesis that says that “there is no significant relationship between traffic crash and road network and accept the alternative hypothesis which states that “there is significant relationship between poor road network and road traffic crash.

The implication of this is that the relevant authorities should ensure adequate road network as it will improve the crash situation.

HYPOTHESIS II

H_0 : There is no significant relationship between inadequate serviceable vehicles and road traffic crash.

Contingency Table

O	E	O-E	$(O-E)^2$	$\frac{\Sigma (O-E)^2}{E}$
30	20	10	100	5
10	20	-10	100	5
40	40			10

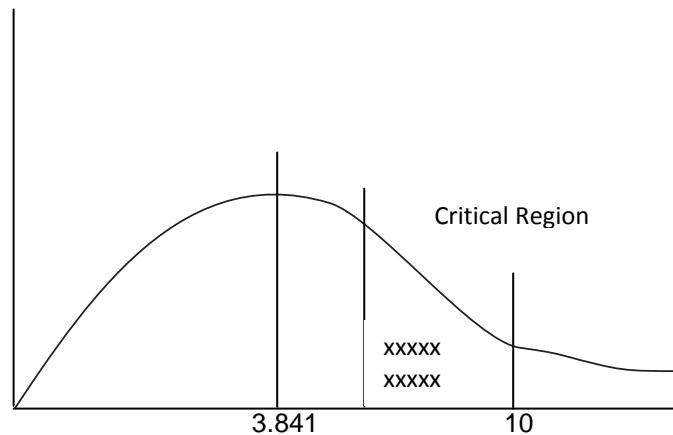
$$X^2 = 10$$

$$\text{Degree of freedom (df)} = n-1 = 2-1 = 1$$

$$\text{Expected value} = \frac{\Sigma f}{2} = \frac{40}{2} = 20$$

Calculated $X^2 = 10$

X^2 from Table at 0.05 or 5% level of significance is 3.841



DECISION AND CALCULATION

Calculated $X^2 = 10 > 3.841$, therefore, it falls on the critical region, we reject the null hypothesis that state states “there is no significant relationship between inadequate serviceable towing vehicles and road traffic crash and on the highways and we accept the alternative hypothesis that states there is significant relationship between serviceable towing vehicles and road traffic crash on highway.

The implication of this fact to the Federal Road Safety Corps is that sufficient and serviceable towing vehicles should be provide on

all the highways in the state. This is because, it is evidently noted that most of the broken down vehicles on the highways causes road traffic crashes if they are not towed away from the road on time.

HYPOTHESIS III

H₀: There is no significant relationship between inadequate safety programmes and road traffic crashers on the highways.

Contingency Table

O	E	O-E	(O-E) ²	$\frac{\Sigma (O-E)^2}{E}$
36	20	16	256	12.8
4	20	-16	256	12.8
40				25.5

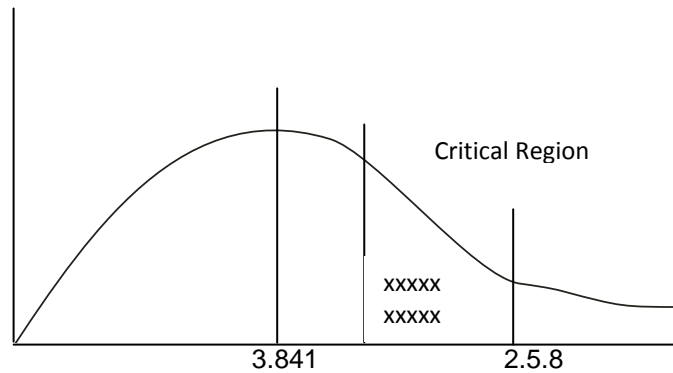
$$X^2 = 25.6$$

$$\text{Degree of freedom (df)} = n-1 = 2-1 = 1$$

$$\text{Expected value} = \frac{\Sigma f}{2} = \frac{40}{2} = 20$$

$$\text{Calculated } X^2 = 25.6$$

X² from Table at 0.05 or 5% level of significance is 3.841



DECISION AND CALCULATION

Calculated $X^2 = 25.8 > 3.841$, therefore, it falls on the critical region, we reject the null hypothesis that state states there is no significant relationship between inadequate safety programmes and road traffic crash and on the highways and we accept the alternative hypothesis which states there is significant relationship between inadequate safety programmes and road traffic crash on the highway.

The implication of this fact to the Federal Road Safety Corps is that education should not be under rated among the road users. No matter what, enlightenment should be part of the day to day activities of the corps, irrespective of the cost because the corps has a mission to ensure effective road safety on our highways throughout the country. Therefore the corps public enlightenment unit of the corps has a role to play in this perspective.

CHAPTER FIVE

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

5.1 Findings:

“There are not many roads, there is a single road that extends across the length and breadth of our vast planet. Each of us is responsible for a segment of that road. The road safety decisions that we make or do not make, ultimately have the power to affect the lives of people everywhere”. We are one road – one World” (Rochelle Sobel, president, Association for safe International Road Travel, USA).

Based on the proceeding analysis and discussions. The following are findings from the study;

- i. The major causes of road traffic crashes along the highways in Jigawa state is human factors (crash caused by drivers)
- ii. **Bad Roads:-** Majority of the respondents agreed that most of the road traffic crashes are caused by pot holes on the highways. It was also mentioned that the roads are narrow, that is not wide enough to accommodate vehicles with heavy

carriage. Hence it is identified that bad roads contribute immensely to road traffic crashes on the highways.

- iii. **Poor Road Network:-** It was mentioned that poor road network causes road traffic crash on the highways, according to the statement, the road network is minimal and does not allow access or link to other areas. In fact, it was a one way traffic. Therefore, improper road network has been identified as a problem.
- iv. **Inadequate Serviceable Towing Vehicles:-** Majority of the respondents agreed that insufficient functional towing vehicles to remove broken down vehicles from the highways add more problems to crashes on the highways. The towing vehicles play a significant role in reducing road traffic crashes and decongestions.
- v. **Lack of Safety Programmes:** The road users were not properly educated about the road safety programmes, whereas provisions are made for this in corps policy. In fact, education plays a vital role in leading human beings aright. Therefore, ill-equipped drivers may go astray hence the issue of educating the drivers on traffic signs is paramount.

- vi. **Meeting with Transport Unions:-** It was noted with dismay that many trailer, trucks, and lorries do not have enough packing space especially at the Dutse – Kijawa road hence they park indiscriminately on both sides of the highway. This tends to cause crashes and congestions on the highways.
- vii. The funding of the Federal Road Safety Corps is grossly inadequate. To meet with the mandate of the corps of reducing and minimizing road traffic crashes, adequate funds should be provided so that it can sufficiently contribute to the transformation agenda of the Federal government.
- viii. Another finding from the study is that a reasonable number of road users are not adhering to traffic rules and regulations.
- ix. It was also gathered that road furniture such as road signs, markings as well as street lightings are virtually non-existing on our roads. There is therefore the problem of proper maintenance of roads.
- x. The need for in depth knowledge of the existence of the FRSC by the public and creating awareness of the corps activities among the road users still requires more efforts.

5.2 RECCOMENDATIONS

Arising from the findings, the following recommendations are proffered in order to ensure that reduction of high rate of road traffic crashes on the highways is reduced or eliminated.

i. **Sustenance of Level FRSC Approach to Traffic Management**

It is recommended that the FRSC should sustain all the methods it has adopted in the course of managing traffic crashes in the country. Such method as Education/Public enlightenment, enforcement, emergency rescue services and others should be enhanced for better service delivery of reduction in traffic crashes.

- ii. The public enlightenment campaign should be given more boost by ensuring that the corps activities get to the grass root level. The corps should encourage the translation of more of its code or medium of communication in local dialects for easy understanding by the people. More publicity should be given to the corps activities in order to enhance the general knowledge of the public on road safety matters

- iii. **Creation of more Unit Command, Road side clinics and Road help areas:-** It is recommended that more unit

commands, Road side clinics and Help Areas should be established for wider implementation of the method of approach to check road traffic crash occurrence through collaboration with the various states and local Government Areas.

- iv. **Funding of Federal Road Safety Corps:-** In view of the enormous tasks before the corps, increased funding by the Government is being recommended. Many good programmes of Government have failed due to lack of funds. In order to ensure that the FRSC succeeds, funds should be provided to prosecute its laudable programmes.
- v. **Provision of Operational Equipment:-** Presently, lack of adequate patrol equipment such as vehicles, rescue equipment/materials and others are affecting staff performance in terms of giving their best on the job. Hence, the provision of adequate operational equipment will definitely refocus, reposition and re-engineer the FRSC towards improved performance of its statutory roles.
- vi. **Checking of Operational Misconduct:-** It is recommended that corrupt Officers/Marshals should be identified and dealt

with according to the extant rules and regulations of the corps. This will serve as a deterrent to others and also go a long way to improve the corps image.

- vii. **Establishment of Driving Schools:-** Based on interaction with the drivers during the course of this study. It was observed that most of the drivers are illiterates, hence it is recommended that the FRSC should be fully involved through the Public – Private Partnership (PPP) initiative in the establishment of driving schools nationwide.

The corps should partner with all the relevant stakeholders to achieve this. This is because the process of obtaining drivers license determines the quality of drivers that operates on our highways.

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