AN ASSESSMENT OF EMERGENCY COMMUNICATION IN ROAD TRAFFIC ACCIDENT AMONG COMMERCIAL DRIVERS IN ZARIA

BY

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DECLARATION

I declare that the work in this dissertation titled "An Assessment of Emergency Communication in Road Traffic Accident among Commercial Drivers in Zaria" was carried out by me in the Department of Mass Communication. All sources used have been duly acknowledged in the text and a list of references provided. No part of this dissertation has been previously presented for another degree or diploma at this or any other institution.

_____ _____

Ijeoma Nwakama ANOKE Date

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CERTIFICATION

This dissertation titled AN ASSESSMENT OF EMERGENCY COMMUNICATION IN ROAD TRAFFIC ACCIDENT AMONG COMMERCIAL DRIVERS IN ZARIA by IjeomaNwakama ANOKE meets the requirements governing the award of the degree of Masters of Science in Mass Communication, Ahmadu Bello University, and is recognized for its contribution to knowledge and literary presentation.

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ABSTRACT

This study was carried out to assess emergency communication in road traffic accident among commercial drivers in Zaria with a view to ascertaining the preference given to communication in road traffic accident in the study area. In this regard, the study aimed at finding out the level of awareness of Federal Road Safety Corps' (FRSC) emergency communication channels among commercial drivers as well as assessing the functionality of the said emergency channels. It also sought to find out the processes that emergency communication goes through before rescue can take place. The study adopted the media richness theory as well as a contextualization of Harold Lasswell's model of communication within the confines of emergency communication. The media richness theory holds that communication channels vary in their capacity to enable users exchange meaning. Therefore communication channels should match the tasks they are used for. Data for the study was collected via a mixed method. First was an in depth interview with the head of operations FRSC, Zaria unit command. Second was a survey of commercial drivers as 400 questionnaires were issued to them using convenience sampling. The findings show that low preference was given to communication. There is a low knowledge of FRSC's emergency communication channels among the study population and that knowledge of the numbers does not determine usage of the numbers. It was also discovered that the numbers were functional and that emergency calls undergo at least three stages before a standby team embarks on a rescue. The study recommends that FRSC should take multiple approaches in publicizing their emergency channels and also that the processes that emergency communication undergoes should be shortened so as to make impact.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Irrespective of where one lives, mobility is essential. The reasons for mobility can range from social interactions to the exchange of goods and services. Therefore, whatever its purpose, mobility is fundamental to human beings and it is this fundamentality that led man to search for safer, more convenient and instantaneous modes of transportation. The era of traveling on foot and the use of animals to pull carts and carriages gave way to the use of ships, automobiles and airplanes for movement. Thus through the years there was a tremendous revolution in the mode of transportation and such revolution is continuing.

One of the most utilized and most beneficial modes of transportation in many countries is road transportation. In Nigeria, about 80% of freight movement takes place on the road (FRSC Digest 2011 in Ukoji 2014).Ofoegbu (2013) corroborates this by noting that about 85% of passenger and freight movement in Nigeria is done on the roads. This makes road transportation an important factor in social and economic development of the country. However, this means of transportation is not without its attendant problems and it has led to certain consequences on the countries that benefit from it.

Road Traffic Accident (RTA) is one of the problems associated with road transportation. Road traffic accident is collision involving one or more vehicles or a moving vehicle and a stationary vehicle/object or pedestrian resulting in deaths, personal injury or damage to vehicle or loss of physical property (OECD/ITF, 2014). Road Traffic Accidents (RTA's) are increasingly recognized as posing momentous problems worldwide as it constitutes a major public health

challenge and also creates social and economic problems for countries and societies (Pedan, Scurfield, Sleet, Mohan, Hyder, Jarawan*et al*2004).

According to the World Health Organization (WHO, 2009) on a global scale, road traffic accident is responsible for an estimated 1.3 million deaths yearly. In Nigeria, the reported accident cases in 2013 were 13,583. The number of fatalities from the crashes was 6,450 (OECD/ITF, 2014). Low and middle income countries have higher RTA fatality rates (21.5 and 19.5 per 100,000 populations, respectively) than high income countries (10.3 per 100,000).The deaths are onlya microcosm of what actually happens. The bigger part is that RTA injures and disables approximately 50 and 20 million people and 80% of all deaths from injuries occur in low and middle income countries (Commission for Global Road Safety, 2008). Again, from the economic perspective, the consequence of crashes is estimated to be 1% and 3% of gross national product of world's countries reaching a total of over $500 billion (WHO, 2011). In this regard, a World Bank study has shown that the economic development of regions and nations is associated with an increase in the number of injuries and deaths from road traffic crashes (Koptis& Copper, 2005).

Substantial empirical evidences indicate that three quarters of RTA deaths are among men and that the highest impact is in the economically active group (15- 44 years), thus hampering efforts at sustainable development (WHO, 2013; CDC, 2004; Ediagbini et al 2011; Yamuragiye et al, 2013; Department of Transport, 2009). In this regard, WHO (2013) predicted that injuries from road traffic accidents (RTA's) will be one of the leading causes of disability and mortality among the most productive segment of the world's population by 2020. Similarly, by 2030 unless action is taken globally, RTA's will become the 5th leading cause of death surpassing HIV/AIDS, malaria, hypertensive heart disease and lung cancers.

From the foregoing, a number of countries have come up with measures to tackle RTA's especially in reducing the seriousness of injuries for victims and saving lives. Paramount among these measures is an emergency response that is facilitated by communication. It has since been established that individuals and societies cannot do without communication. Thus it can be said that communication is fundamental to human beings as it undergirds communities and organizations which consist of different individuals. Hence over time the modes of communication have also been completely transformed. Therefore as the modes of transportation were revolutionized, so also were the modes of communication.

According to Rodrigue, Comtois and Slack (2006) the growth of telecommunications is closely related with the growth of railways and international shipping in the sense that continental rail and telegraphic networks were often laid simultaneously. However, the era of telegraphs has given way to new systems of communication. The dawn of new communication technologies have redefined communication from one way monologue to interactive modes with immediate feedback, thus bridging space and time.

Ngamy and Kamtache, (2010) noted that time is vital to emergency situations. In the event of an accident, time is needed to notify relevant agencies, time to manage the emergency, time to arrive at the scene and time to scoop and run or administer first aid as the case may be. Thus, the polymorphous nature of what has to be done to guarantee survival makes time rare, elusive, precious and golden in emergency situations. In this vein, RTA handbook (2009) cited Cowley (1961) as saying that casualties will have lesser chance of survival if they are not given definitive care within one hour of the accident. The time taken to extricate the casualties of RTA's should not be more than 15 minutes. If time is to be utilized, then instant communication is imperative in emergency situations.

Studies done globally have suggested that there are a lot of preventable deaths from road crashes before arrival at the hospital. Thus, the importance of quick notification about a crash and evacuation of victims cannot be overemphasized (Mock, Nii-Amon-Kotei, Maier, 1997; Hussain, 1994 in WHO, 2004). In this regard it can be said that perhaps nowhere is the demand for rapid and efficient communication more critical than in emergency situations. Emergency communication is a critical communication that should be relied on at all times. Sander (2011) averred that the need for emergency communication includes so many circumstances, one of which is road traffic accident. It should include voice and non voice calls, pictures and videos, depending on the nature of the emergency. It requires that there be constant access to such communication and information between emergency service providers and the public and vice versa.

In the US and some South American countries, 911 is the emergency number to dial for immediate response in the event of an accident. In the UK 999, in a number of European Union countries it is 112. A host of other countries have different emergency telephone numbers which allows a caller to contact emergency services for immediate help. A national emergency number makes the rescue process faster because the people know the numbers and call them easily in emergencies. These unified numbers guarantee that all relevant rescue agencies are warned and involved at the same time.

However, in Nigeria different emergency numbers exist. A look at the emergency services in Nigeria shows that these services are provided by government agencies. The agencies include but are not limited to Federal Road Safety Corps (FRSC), National Emergency Management Agency (NEMA), the Police and Fire Service. These agencies have different phone numbers which operate according to states and localities. In April 2014, Nigerian Monitor reported that Nigeria

Communication Commission (NCC) had harmonized all emergency numbers to 112. However as the report noted, a number of modalities still needs to be put in place before it can function appropriately (Nigerian Monitor, 2014). In this regard, the local varied numbers which are mostly 11 digit numbers are still functional. Besides having different numbers, these emergency service providers do not have the same communication strategies and channels for communication in emergencies.

In this vein, London Borough of Barking and Dagenham said 'The first casualty of war is the truth and the first casualty of any major incident is communication' (London Borough in Nemeth and Somos, 2005).Reckers, Delaney and Wilson (2008) noted that communication teams may be small but communication is an integral part of emergency management that can easily turn to an issue especially if neglected. Again, Ryan (2010) stated that although the consequences of communication around an emergency are hard to measure yet it is evident that it plays a crucial role in emergency management. Hence there is need for a well structured system of communication within the organizational framework of emergency responders, between the organization and its public(s) and from the public to the organization. It has been established that communication is vital in any society and that even under normalnonemergencycircumstances; effective communication undergirds almost all of public health practice. Consequently, Badr (2009) stated that communication is significant to public health and it plays a pivotal role in promoting core public health objective. These objectives include promoting health and preventing diseases which leads to an improvement in the quality of life. It therefore follows that communication plays an important role in attenuating the consequences of road traffic accidents.

1.2 STATEMENT OF THE PROBLEM

The chain of survival of accident victims starts at the scene of the accident. The quick arrival of an emergency response team is an important factor in reducing adverse health consequence. However, CLEEN Foundation (2010) noted that every year more and more Nigerians die as a result of failure of emergency communication services in mobilizing aid to victims of RTA's. It has been argued that communication is a cross cutting issue that should be given due consideration at various levels across different sectors. But the structure for integrating communication and its uses across various sectors is yet to be fully realized and properly utilized (BBC, 2012). Consequently, if communication is not given proper consideration in emergency, a longer time will be taken to extricate accident victims and this will lead to moredeaths from treatable conditions. To buttress this point, Ediagbini, Delia, Aminu, andShehu (2011) in their work on chest trauma in Zaria between 2008 and 2010 found thatthere was 31hours 40 minutes and 12 seconds between the time of accident and admission of victim in the hospital.

In Nigeria, the Federal Road Safety Corps (FRSC) is saddled with the responsibility of safety on the roads. The mission of the Corps is to Regulate, Enforce and Coordinate all Road Traffic and Safety Management activities. One amongst their operational delivery approach is the provision of prompt rescue services and attention to road traffic accident victims. It has been established that communication is instrumental in providing information about accidents from the public to the organization. Hence FRSC has emergency communication channel(s) through which the public can reach it in case of an emergency. However the processes that emergency communication goes through before rescue is not clear and whether or not the public is aware of these channel(s) and the functionality of the said channel(s) is not certain.

1.3 AIM AND OBJECTIVES OF THE STUDY

The aim of the study is to ascertain the preference given to communication in road traffic accident in Zaria through the following objectives:

1. To find out the level of awareness of FRSC's communication channels among commercial drivers in Zaria.

2. To assess the functionality of FRSC's emergency communication channels in Zaria.

3. To ascertain the priority commercial drivers give to communication in road traffic accident.

4. To ascertain the processes that emergency communication undergoes before rescue.

1.4 RESEARCH QUESTIONS

1.What is the level of awareness of FRSC's emergency communication channels among commercial drivers in Zaria?

2. What is the level of functionality of these emergency communication channels?

3. What prioritydo commercial drivers give to communication in road traffic accident?

4. What processes does emergency communication undergo before rescue?

1.5 SIGNIFICANCE OF THE STUDY

In Nigeria, the unavailability of other modes of transportation like the rail has made road transport the most utilized for both passenger and freight movement. There are many accidents on the road and the victims require prompt care. Before any medical care can be given professionally, communication is important, hence the relevance of studying emergency

communication. However studies on road traffic accident seen so far have focused on causes and prevention of accidents while those on emergency communication focus on natural disasters and building operable systems (Aliyu, 2002, Sumaila, 2013, Akinkpelu, 2007, Ukoji, 2013, Owolabi and Ekechi, 2014, Souley and Edemennang, 2013). None of the studies seen so far focused on emergency communication as it has to do with road traffic accident in the study area; therefore this study intends to fill that gap. Also, the study of emergency communication has gained currency in other parts of the world. However, little is known about the communication of emergency and the lives saved in Nigeria as a result of such communication.

Therefore, this study is significant in that it would provide insight into emergency communication in the study area and it will be instrumental in reemphasizing the importance of communication for timely rescue of accident victims. Hence, agencies like National Emergency Management Agency (NEMA) and Federal Road Safety Corps (FRSC) will have basic ideas on how to improve upon their services. The study will also be a reference point for other researchers and students who would conduct related studies.

1.6 SCOPE AND LIMITATIONS OF THE STUDY

The study was carried out in Zaria and thecommunicationchannels of FRSC in Zaria are peculiar to Zaria and given the method of data collection,generalizing the study is not possible. Again, the study is limited to knowing the preference given to communication in road traffic accident in Zaria. Thus consideration will not be given to other factors that are relevant to emergency situations other than communication. Also the study will focus on commercial drivers

only.According to FRSC planning advisory unit, between 2007 and 2010 minibuses caused 30% of total road traffic accidents in Nigeria and 40% of deaths nationwide, hence the choice of commercial drivers (FRSC planning unit analysis, 2012 in Chidoka 2012).The study is also limited by an inability to get the exact population of commercial drivers. Also a number of the drivers did not want to be part of the study because of their misgivings about the FRSC; these drivers may have had valid information which will have enriched the study.

1.7 DEFINITION OF KEY TERMS

The terminologies used in this study are

i**. Commercial Drivers:** commercial vehicles are those vehicles that are used for carrying passengers or goods. Hence commercial drivers are those who drive different types of vehicles that carry either people and or goods in exchange for money. In this context, commercial drivers are those that drive buses or taxi carrying passengers from Zaria to other states and localities.

ii.**Emergency:** for the purpose of this work emergency is an unexpected event that has negative consequence and is strictly confined to road traffic accidents. To be more specific, the emergency communication will be of the accidents that happen interstate (i.e. from Zaria en route other localities).

iii.**Emergency Communication:**Emergency communication is the dissemination of information on a situation that is life threatening with negative consequence. In this case, emergency communication is regarded as a type of communication.

iv.**Processes:** The term processes as is found in research question four refers to the stages that emergency call undergoes before actual rescue takes place. These stages will give a picture of

how long it takes between a call and embarking on a rescue. However the study does not attempt to measure the exact time it takes between an emergency call and actual rescue.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

This chapter introduces the literature review and the theoretical framework. It is subdivided into three parts. First is the conceptual review which looks at concepts as they relate to the study. They include an overview of road traffic accidents, emergency communication as well as organization of emergency communication services in some selected countries. The second part

consists of the empirical review which focused on studies on road traffic accidents and emergency communication. The third part is the theoretical framework, which is the media richness theory and a contextualized model of Harold Lasswell's model of communication.

2.2 CONCEPTUAL REVIEW

(a) Road Traffic Accidents: An Overview

Mobility is an intrinsic necessity of the individual and in many countries it is mainly carried out by means of road transport. Hence road transportation systems have become crucial to the society and are also an important component of modernity (WHO, 2004).Ukoji (2014) stressed that road transport is a key element in the social and economic development of any nation. In Nigeria, the unavailability or inaccessibility of other modes of transport like water, rail and air transport makes road transport preferable. However road transportation has its problems for instance Gauthier (1970) stated that road transport faces the problem of structure (poor planning), poor management and definite policy direction.

Again Ukoji (2014) noted that in 2006, 644,387 vehicles, including government motor cars and motor cycles, private motor cars and motor cycles, and commercial motor cars and motor cycles, were registered nationwide and by 2009 the number increased to 777,835 registered vehicles nationwide. This exponential increase is attributed to growth of urban areas. However, as vehicles increased in number so also did the incidence of road traffic accidents.By2011 the United Nations ranked Nigeria as the second worst in the world with regard to road traffic accidents in position 192 out of 193 countries surveyed (Ofoegbu, 2013).

In its Global Status Report on Road Safety (2013), WHO indicated that, worldwide,the total number of road traffic deaths remains high at about 1.3 million per year and by 2020 the figure

will rise to over 1.9 million deaths yearly. Yakasai (2011) cited Murray and Lopez (1996) who analyzed the global burden of disease ranking for 15 leading causes of death. By 1990 RTA ranked 9 but will be number 3 by 2020. Hence by 2020 25% of the budget of health minister will be on RTA casualties. This threat is not in Africa alone but cuts across the globe. Therefore it can be said that the increase in road traffic accidents has huge health, social and economic impacts on individuals, families, communities and nations.WHO (2013) further predicted that injuries from road traffic accidents (RTA's) will be one of the leading causes of disability and mortality among the most productive segment of the world's population by 2020. Similarly, by 2030 unless action is taken, RTA's will become the 5th leading cause of death surpassing HIV/AIDS, malaria, hypertensive heart disease and lung cancers. Hence the UN decade of action target is to reduce by 50% the expected number of fatalities worldwide.

In the United States of America, Center for Disease Control and Prevention (CDC) (2004) reported that motor vehicle crashes are the leading cause of death for children ages 1 to 3 and ages 4 to 11. Similarly, National Highway Traffic Safety Administration (NHTSA) (2004) noted that in 2002 12,200 adolescents' ages 12 to 19 died from injuries and motor vehicle crashes are the leading cause of death for this age group. Also, traumatic brain injuries among ages 16 to 19 account for more than 240,000 emergency room visits, 36,000 hospitalizations, and more than 5,700 deaths each year. Again, more than 79,500 adults ages 20 to 49 died from injuries in 2002. Motor vehicle crashes were the leading cause of those deaths (CDC, 2004).

In England and Wales, RTA accounts for 4 in every 245 deaths (DFT, 2010). Conversely, Hill and Starrs (2011) noted that Britons are more likely to die on the roads than in any other daily activity. Again in 2010 twelve European Union countries had about 31000 deaths from road crashes which has become one of the three leading causes of death and hospital admission for

those under 50. In Europe it is estimated that for every death, there is an estimated four permanently disabling injuries such as the brain and spinal cord injuries(Mackay, 2005 cited in DACOTA, 2012). A review of deaths in this region shows that about 50% of deaths occur after or en route the hospital. For those patients taken to hospital, the data suggest that comparatively few deaths, only about 15%, occur between one and four hours after the incident, while around 35% occur after four hours. But time between the incident and death varies considerably between patients and between countries(Buyleart, 1999).

However, the incidence of fatal Road Traffic Accidents (RTA) is highest in developing countries especially in sub-Saharan Africa.For instance, over 3000 Kenyans are killed on the roads every year, most of them between the ages of 15 and 44 years. The cost to the Kenyan economy from these accidents is in excess of US$ 50 million which does not include the actual loss of life (MwaiKibaki, former president of Kenya, cited in WHO, 2004). Again Odhiambo, Beynon, Ogwang et al (2013) found that between 2003 and 2008, the proportion of deaths related to trauma in Western Kenya increased from 2.5% to 5·9%, with road traffic accident as the leading cause of death.

Similarly, Abraha (2010) noted that RTA fatality rate per 10,000 is 30-40 times higher than in Africa than in developed countries. Figures from the National Road Safety Commission (Ghana) indicated that an average of 1900 fatalities result from road traffic accidents every year.

In Nigeria, the Federal Road Safety Corps noted 1056 deaths from 7737 accidents between December 2009 and March 2010 (Daily Sun Newspaper, 2010). Similarly, between 2007 and 2010, there were 5,828 road traffic crashes involving buses. The number of deaths from the crashes were 5,582 while those injured were 27, 791 (FRSC Planning Unit, 2012).Conversely, Edaigbini et al (2011) in their work on chest trauma in Zaria between 2008 and 2010 reported

that there were a total of 4,784 patients admitted for trauma in ABU teaching hospital. Road traffic accident was responsible for 61.9% of these cases, a larger percentage of the patients were male with the mean age of 35.4 years.In this vein they noted that injuries from RTA's have dwarfed mortalities from infectious diseases on critical analysis. Similarly, Aderamo (2012) cited Murray et al (1996) and Jacobs et al (2000) who stated that in Nigeria, RTA have become the leading cause of death in economically active adults between ages 30 and 49 years.

Most deaths occur within the first hour of injury, often before the patient arrives at the hospital. Death sometimes occurs from airway obstruction and external bleeding, both of which can be prevented by simple first aid measures and quick arrival of response service (CLEEN Foundation, 2010). Hence a study by Atubi (2012) showed that by international comparison the chance of a vehicle killing someone in Nigeria is 47 times higher than in Britain. The proportion of fatalities due to injuries is also very high. For example, while Czech Republic has only one death in 197 accidents, France one death in 175, South Africa, one death in 47 accidents, Nigeria has one death in approximately 3 accidents. Typically, there are three phases of deaths from severe injury. The first phase occurs quickly as a result of tremendous injury. The second phaseoccurs during the intermediate or sub-acute phase (the sub acute phase means that the injury is not new and perhaps the patient may have gotten initial treatment and stabilized). Deaths from the sub acute phase occur after several hours and are mostly from treatable conditions. The final phase of deaths occurs much later. In this case death occurs days or weeks after the initial injury. They are as a result of infection, multisystem failure or other late complications of trauma (DACOTA, 2012).

A comparative study of mortality among seriously injured patients across a range of countries shows that in low-income and middle-income countries, the vast majority of deaths occurred in

the pre-hospital phase. Among the risk factors for road crashes is the quality and availability of emergency services and acute trauma care (Mock, Jurkovich,nii-Amon-Kotei, Arreola-Risa, & Maier,1998). Beyond the deaths, injuries represent 12% of the global burden of disease (Yakasai, 2011). To buttress this fact, Peden, McGee and Sharma (2002) also noted that the category of injuries worldwide is dominated by those incurred in road crashes. For each road traffic injury death, there are dozens of survivors who are left with short-term or permanent disabilities that may result in continuing restrictions on their physical functioning, or otherwise thereby reducing their quality of life.A Swedish study into survivability showed that 48% of those who died from accidents sustained non survivable injuries. Of those that sustained survivable injuries, 5 % were not located in time to prevent death and 12% will have survived had there been more rapid response and quick transport (Hirsch and Eppinger, 1984 in DACOTA, 2012).

According to WHO (2013) deaths from road traffic injuries account for around 25% of all deaths from injury.96% of all children killed worldwide as a result of road traffic injuries occur in low-income and middle-income countries and over 50% of deaths are among young adults in the age range of 15–44 years. Again, among both children aged 5–14 years, and young people aged 15–29 years, road traffic injuries are the second-leading cause of death worldwide. It is given that mortality is an essential indicator of the scale of any health problem. Also, it has been noted that the international community is doing much to eliminate diseases such as TB and malaria. But road injuries that cause a similar share of mortality have not received much attention in terms of resource allocation or recognition as a development priority (WHO, 2004).

(b) Emergency Communication

During the wars in Europe over 200 years back, flying ambulances orlight horse-drawn carriages were used to carry those who were wounded from the battlefield. From then on, emergency

services have improved tremendously and mortality rates dropped as a result of first aid provided at the scene of injury (ADB, 1995). But before first aid or emergency services can be initiated, communication and the capacity to communicate is paramount (ADB, 1995).

According to Berry (2007), communication is a fundamental process. In fact, it is virtually impossiblenot to communicate at all; even a non-response sends a message. On the onehand, communication seems effortless; yet things can easily go wrong sometimeswith serious consequences because of communication or the lack of it. Communication is central to our everyday functioning and can be thevery essence of the human condition. Without the capacity for sophisticated channels of sharing knowledge, both within and between generations, mans advanced civilization would not exist (Hargie and Dixon, 2004).At its simplest level, communication requires a sender, a message, areceiver and a channel of communication. However, any communicativeevent is enormously complex; senders are often receivers, and multiple andcontradictory messages may exist in a single communication process.

Emergency communication in itself is the dissemination of information on a situation that is life threatening and which requires immediate attention of emergency service providers. These situations could be car crashes, fire incidents and other similar events. In this vein, Portman and Pirzada (2008) noted that reliable and robust communication is vital for successful emergency management operations.

Consequently, effective communication is one of the most crucial elements in responding to emergency incidents. In emergency situations, speed of communications is critical and can make the difference between life and death (Save the Children, 2012). Thus emergency service providers or emergency responders such as FRSC, Police, Fire Service and other agencies rely on effective communications. From the time they get information on an emergency to the time

the actual rescue is done, a lot of communication takes place between all the service providers and the public or between relevant organizations.

As Haddow and Bullock (2003) put it, pertinent issues for organizations in emergencies are communication and coordination. Communication here refers to intra organizational communication (i.e. how an organization sends a message across a channel to another part of the organization) or it could be to another organization (inter organizational communication). Coordination here can be understood as the degree to which there are adequate networks among the organizational parts for intraorganizational communication or among the organizations for interorganizational communication to accomplish goals.The management and sharing of information in the response phase of an emergency is critical in determining the coherence and success of a single or multi-agency response. However the way information is managed and shared on an inter-personal, intra-organizational and inter-organizational basis can be quite complex. According to Yang and Maxwell (2011), individual behaviour in information sharing can be complex and is dependent on a number of different factors some of which include: willingness to share information, motivation, a perceived need to share, channels for sharing information and contextual factors, organizational structure, culture, ritual and norms. But emergency situations require prompt action; hence emergency communication may not follow the usual organizational pattern of communication. In this vein, Badiru and Ratz (2013) averred that emergency involves various emotional, sentimental, reactive and chaotic responses and that human behaviour in emergencies can be complex.

According to Smirnov, Kashevnik, Levashova, Shilov, Shpakov et al (2011) for its effectiveness, an emergency management system must present real time emergency information and data in understandable and easy form. Basically, operational success in responding to an emergency

might easily be measured in terms of the number of lives saved. If response will be prompt, there is need for communication. However, a road safety report in the African region by WHO in 2013 noted that one in three of the 44 countries sampled do not have emergency numbers or a communication system in place in the event of emergencies. Only 36% of the countries have emergency numbers which are mostly multiple. This can affect response to emergencies which in turn affects post crash care.

Basically, the time frame of an emergency influences how immediate the communication has to be.For an emergency message to be successful; it must provide specific information about the location of the event and the nature of the emergency as well. Therefore a typical emergency communication system is made up of devices that may be wireless or wired communication which may include conventional telephone and radio communication. The basic difference between the two is that a wired system uses telephone that in turn uses wires over a limited area. On the other hand, a wireless system makes use of radio frequencies and it has the capacity to operate over a larger geographical area and it can reach unlimited number of users.

Chandler (2010) gave qualities of technologies that can be used in disasters response and by inference the characteristics of communication during disaster. These qualities can be extended to emergency communication as is referred to in this study and they include:

i. **Immediacy:** The communication must be immediate especially in the case of rapid-onset events. The faster the message is delivered, the faster help can be given. The speed of delivery here is dependent on knowledge of available channels and functionality of such channels as well as the nature or type of the technology in use.

ii. **Accessibility:** The second characteristic of emergency technology is accessibility. If such technology is to be relevant for emergency communication it must be accessible to all including the hearing impaired and the dumb and people with other forms of disabilities.

iii. **Reliability:** It is important for the technology to be able to disseminate the message in a persistent manner. This alludes to the reliability of the system or technology in question. Technology that can typically operate even with saturation of communication lines or channel can be categorized as reliable.

iv. **Interactive:** Finally, it is also important for emergency technology to be interactive. There should be a two-way communication between the service provider and the affected population.

Similarly, FEMA (2008) define the elements of a desirable communications system as follows:

i.**Interoperable**: able to communicate within and across various agencies and jurisdictions

ii.**Reliable:** able to function irrespective of the type of emergency.

iii.**Portable**: built on standardized radio technologies, protocols, and frequencies

iv.**Scalable:** suitable for use on a small or large scale as dictated by the incident.

v. **Resilient**: able to perform despite damaged or lost infrastructure

vi.**Redundant**: able to use alternate communications methods when primary systems go out.

(c) Organization of Emergency Communication Service in Some Selected Countries

A number of countries organize their emergency communication service through telephone. An efficient call receiving system is essential for quick response. In some states, emergency calls are answered by ambulance services and in others by emergency services like Police and Fire Service or emergency medical services (Buylaert, 1999). Although several countries have established a call receipt performance indicator, it is not certain if all countries have standards for call receipt.

In the European Union, the emergency notification number is 112. It allows European citizens in distress to contact the emergency services in all Member States. 112 havebeen implemented in all EU countries (CEC, 2005).

In the US and some South American countries the emergency number is 911 and in the UK the primary number is 999 and 112 is the secondary number. In New Zealand, 000 is the primary emergency number, 112 and 106 are secondary numbers. In Malaysia, 999, in Germany 112 is the primary number while 110 is the secondary number. In Brazil 190, Philippines 117, Japan 110, Jamaica 119 and Mexico 080 (911 dispatch, n.d). These telephone numbers which operate throughout the countryprovides telephone access to all emergency services like police, fire service, FRSC, ambulance and emergency medical service.

The countries with three digit emergency numbers are seen to have better emergency response time and that the people in those countries use it more.Conversely, the mental noise model notes that when people are in a state of high concern because they perceive a significant threat to their life, their ability to process information effectively and efficiently becomes impaired. So it is easier for them to understand messages in three's (Covello, Peters, Wojtecki& Hyde, 2001). Therefore it can be argued that if emergency numbers are in three's, it's easier to remember. To extrapolate, the people in the countries with three digit emergency numbers have higher level of awareness of these numbers and can easily remember them in emergencies. The simpler the number, the easier it is to recall and thus affecting the timing with which emergencies are responded to. The single digit can also lead to less cost for the state than when different numbers are in use. From the foregoing an important question that can be raised is whether longer 10-13 digit numbers affect people's ability to remember and especially use the emergency numbers.

As much as it is important for countries to harmonize their communication systems, there are crucial questions that they must answer. For instance, who pays for emergency communication in the long run especially if it is made free? Other questions are the types of emergency that should be accessed from the dial of that particular number, call answering method, data base maintenance and how to handle language diversity to mention a few.

For most of the countries with three digit numbers, the way the system works is that on dialing the emergency number, the call gets routed to a call center. These are called Public Safety Answering Point (PSAP). They are usually located in several places within the country or state and are manned by personnel who are well trained to seek specific information from the caller.The address of the caller gets transferred from an Integrated Public Number Database in case of landline calls. For mobile networks, the approximate location coordinates gets transferred from the mobile networks. Then the PSAP's route the emergency calls further to the nearest local emergency responding agency/agencies. These agencies include medical teams, fire service, law enforcement agencies etc. In case of unavailability of location information, the answering personnel will ask the caller for the location information.

In a centralized emergency response model, one of the key features is the transmission of identification and location information by telecom service providers to the PSAP. The identification information may be information like a subscriber or company name. Location information in case of wired line connections can be street name, house number, area or town and postal code at which the telephone is installed. If the call is from a mobile phone, the location information transmitted by the mobile networks can be either the address of the cell site closest to the caller or location derived by triangulation method or with the help of GPS. In some countries like USA, there are rules that require the information regarding the latitude, longitude

or position of the subscriber's equipment to be transferred from the service provider's network to the PSAP (Bhawan, and Marg, 2013).

From the foregoing the importance of communication in emergency response cannot be overstretched. The performances of emergency service providers can be measured by how fast they respond to emergency cases. Response time has become one of the ways to assess the quality of an emergency medical system. But it has been argued that rating a system based on fast driving is overly simplistic because there are other issues that have to be considered. For instance does response time affect clinical outcomes in the long run? Provision of first aid at accident scenes, the state of the health care system, quality of medical personnel and communication system are all important factors that have a direct effect on the overall wellbeing of the patient (Fitch, 2015).

In recent times emergency communication is taking another dimension in some countries. This dimension is the Automatic Crash Notification *(eCall)* which is available in several car models. It is meant to give emergency responders data that indicates the severity of the crash and the type of injuries sustained. It is estimated that more than 765,000 vehicles fitted with eCall have been sold in 11 European countries (Chauvel&Haviotte, 2011). The aim of eCall is to speed up emergency response by reducing the time between a crash and arrival of the emergency services. eCall can be triggered manually or automatically. It is used to send an in-vehicle message through a GPS system to an emergency call centre in the event of the vehicle's involvement in an accident. The least data sent contains information about the incident including time, the exact location of the accident, vehicle identification and information about a possible service provider close by (CEC, 2005).

Similarly, Okereafor (2011) noted that South Africa has an eCall mechanism in some vehicles as safety system. If there is an impact, collision or summersault, the eCall automatically calls the nearest emergency center and communicates its exact location based on GPS support within minutes. A study in (2011) reported the effectiveness of eCall in 202 crashes in France as having a 2.8 % reduction of deaths due to quick response to emergency (Chauvel and Haviotte, 2011).

Other significant improvements in emergency communication have been made due to the growth in use of mobile phones. The International Telecommunication Union (ITU) estimates that globally there are 85.7 mobile subscriptions per 100 inhabitants. In the developed world the figure is 123 per 100 and in the developing world it is 77.8 per 100 (ITU, 2011). This follows that if there is an emergency communication system in place, the people can easily access it as against when land lines were the predominant means of emergency communication. In this regard, Jeffrey Sachs, Director of the Earth Institute at Columbia University described the mobile phone as the "single most transformative tool for development" (Save the Children, 2012). His statement is not unconnected to the reach and wide spread use of mobile phones across the globe.

2.3REVIEW OF EMPIRICAL STUDIES

(a) Review of Works on Road Traffic Accident

Road traffic accident continues to raise concerns in different quarters. These concerns may not be unconnected to the lives lost and those injured or disabled, the families left to mourn quietly or the economies affected. Also, the concerns may not be unconnected to the fact that a number of countries are dependent on their road networks for social and economic activities. As stated earlier, about 80% of freight movement in Nigeria takes place on the road. Thus it does not come as a surprise to find a lot of studies done on road traffic accident in Nigeria and across the globe. Some of these works include:

Aliyu (2002) in a study stated that, the key determinant of accidents and injuries in Nigeria are social factors which deal with inadequate knowledge in accidents and injury prevention especially in rural areas where literacy is low. The other factor is economic and this has to do with the inequitable distribution of resources between rural and urban center. Hence there is inadequacy of health facilities to attend to victims. The last is political factors which includes lack of proper emergency response system to help victims. Again there is no implementation of safety regulations of speed limits, seat belt, drunk driving and use of crash helmet. Also, there is no collaboration between government agencies concerned with the issue of health care. In this regard, he proposed a national emergency health policy to be incorporated to the existing health policy. It should be administered in collaboration with relevant agencies to ensure an effective and efficient emergency medical service and disaster response to Nigerians and it must be sustainable.

Agbonkhese, Agbonkhese, Yisa,, Akanbi,, Aka and Mondigha,(2013) in their study on road traffic accident in Nigeria, causes and preventive measures noted that road traffic accidents are high in developing countries although these countries have just 48% of the world's vehicles. The basic causes of road traffic accidents in Nigeria include driver factor, road pavement, vehicle and environmental factors. Among the preventive measures they advocated are sobriety check points and better road networks.

Similarly, Sumaila (2013) did a critical review of current road safety approaches in Nigeria. This was in order to identify their defects and deficiencies in tackling the road traffic accident problem in the country. He looked at accident records and got other relevant information from Federal Road Safety Corps and The Nigeria Police and Department of Road Transport Services. The findings of his study reveal a high rate of road traffic accidents in Nigeria basically due to

driver's error and FRSC's failure is its inability to properly implement use of driver's license and that Nigerians have a poor traffic education amongst other findings. He therefore called for a restructuring of FRSC and better education for road users. However, by looking at the approaches from the rescue organizations' perspective alone, the tendency for bias is high. The approaches are carried out on commuters. To get a better picture, their opinion should have been sought also.

Assum (1998), using qualitative methods appraised road traffic accident in five African countries. This was in order to identify measures of reducing the number of road traffic accidents and material damages caused by such accidents. He found that part of the reason for neglect on the road is that Africans' are plagued with wars, famine and fatal diseases hence their value for life seems to be low. A few people killed on the road are not as consequential as the huge numbers killed in war or by famine. Thus, to tackle safety issues on the roads there has to be better funding, political prioritization that is more interested in mitigation than response, implementation of road safety laws and attitude change. In this vein, a study of 14 OECD countries by Deverajan, Swaroop, and Hengfu (1996) showed that investment in transport, health and communication has positive impact on productivity. Thus there is need to give precedence to investments on the road for more safety and hence productivity.

Conversely,the lack of investments in this sector has led to failure to save lives that ordinarily should be saved. For instance, in Nigeria and some developing countries, there is no organized ambulance service. In this vein, the injured arepicked up by bystanders or passing motoristsand carried to the nearest emergency department using transport thatis available mostly without any treatment or first aid at thescene of the accident. Also sometimes if there are a lot of victims, they are piled up on each other and rushed to the hospital. This act of cramping the victims together

can hinder their chance of survival. This and other forms of neglect lead to avoidable deaths. The director of RAC foundation noted that stakeholders understand the risks on the road. In essence although knowledge on how to reduce death tolls and injuries on the road are available, yet there is a failure to implement cheap and effective measures to combat them. He further noted that this neglect would not be tolerated in any other area of public health (Glaister 2011, quoted in Hill &Starrs, 2011).

Akinyosoye(2015), looked at the role that language plays in human relations. Language be it verbal or nonverbal is quite significant in human relation. Of importance in non-verbal communication is the use of signs in communication. The study found that the disregard for road signs is one of the causes of accidents on Nigerian roads. Through unstructured interview with union leaders and their members, it was revealed that superstitious belief in the power of Ogun, Yoruba god of iron and war to avert road accident, illiteracy and inability to read road signs contribute to the frequency of traffic accidents on Nigerian roads. Hence the government and its designated agency need to increase media advocacy and literacy activities for all road users.

Aworemi (2010) in a study examined the causal factors of road traffic crashes in some selected states in the South West using the stratified random sampling technique. The basic findings of the study showed that human, vehicle, roadway and environment had significant contribution of about 79.4% to the road traffic crashes in the study area.A couple of other studies have also been done on road traffic accidents across the country and beyond (ETAC, IRU, 2007; Ukoji, 2013; Akinpelu, 2007; Yamuragiye, 2013; Ohakwe et al 2011; Grimm and Treibich, 2010; Chukwuezi and Nwosu 2013; Salako, Adegoke, and Akanmu 2014; Agbeboh. and Osabuohien-Irabor, 2013; Ogunmodede, &Akangbe, 2013).

All the studies have shown that road accidents are caused by the interaction of a plethora of variables. They reveal that at least 80% of road traffic accident is linked to human error/factor. The factors include excessive speeding, visual acuteness, driver fatigue, little or no knowledge of road signs and regulations, health problems and drug abuse. Factors like poor vehicle maintenance, tire blowouts, poor lights, un-roadworthy vehicles, infrastructure, weather and mechanical faults played only a minor role in accident causation. They also showed that most of the accident victims were males with a mean age of 35 years.

Worthy of note is that a number of studies on road traffic accidents in Nigeria have focused on causes and solutions to road traffic accidents without necessarily looking at post crash care although post care is instrumental in the reduction of fatalities from road traffic accidents. Before any post crashcare can commence, the rescue organizations must be notified and this is where communication features as a crucial factor.

(b) Review of Related Works on Emergency Communication

According to Kobusingye, Hyder, Bishai, Hicks, Mock and Joshipura(2005) Emergency happens everywhere and each day they consume resources regardless of whether there are capable systems of achieving good outcomes. Thus, in a study, Iwakosun et al (2013) noted that inadequate communication capability has adversely affected emergency responders and recovery efforts of accident victims in Nigeria. In their study, they came up with a web enabled interoperability system which enables an eye witness to use voice calls and messages to alert relevant agencies that in turn use designated component of the system to make necessary contact for rescue efforts. However, an interoperable systems' functionality may best be on paper except it is put to use. Therefore there is need to study systems that are operational to understand how communication can be prioritized.

Another study by Owolabi and Ekechi (2014), revealed that in most cases of disaster whether natural or artificial, Nigeria has always been caught unawares because there is no efficient disaster management system. Therefore Nigeria suffers significant human and economic loss in the face of disasters. Communication which is an essential part of disaster management techniques has been observed to be inefficient. Their finding is on disaster management which may requires more capacity because when disaster strikes it leaves a lot of damage in its wake and has the capacity of destroying communication infrastructure. But then road traffic accidents have as much consequence as natural disasters. This can be seen in terms of the frequency of occurrence of road traffic accidents and the number of lives lost as its effect is felt more on the economically active segment of the population.

A study by Burke,Hines, Ahn, Walters, Young, Anderson set al (2014) noted that limited communication, untrained personnel and infrastructure amongst a host of other factors negatively impact the ability to deliver quality emergency and urgent healthcare. In the same vein, Njar (2015) noted that the administrative, technical and technological expertise required for sustainable emergency management is grossly inadequate in Nigeria. Even where they exist, there is lack of coordination.

Consequently, the findings of a study done in Nigeria showed that the police force and road safety members were responsible for bringing to the hospital, 40.42% of accident victims; relatives and commercial vehicles were responsible for 52.83% and bystanders 6.74% (CLEEN Foundation, 2010). In a similar study conducted in Ghana, the evacuation and transport of crash victims to the hospital is more often carried out by bystanders, relatives, commercial vehicles and sometimes the police (Forjuah, et al., 1999). This is attributed to limited use of communication. Even where the option of communication is available, a number of the people

do not take it. Also, it has been noted that in a number of developing countries, the common practice is to evacuate victims to a public hospital that is far away and where treatment is cheaper while neglecting a private hospital that is close to the accident scene.

Souley and Edemenang (2013), in their study on tactical emergency response management system noted that effective accident management requires the organization of large amounts of information. In essence, their study showed that an improvement in technology will speed up emergency response. If the organizations involved in rescue process can have a unified process and if they are to use mobile phones to communicate between themselves, they will speed up the whole process of rescue. In this study, an emergency situation was staged and the rescue organizations were called. Their response was found to be prompt. However whether or not this reflects the reality on ground where the study was conducted is questionable. Staging an emergency situation may pass off as a method of training. But the real emergency situation can be overwhelming and completely chaotic. Inthis vein, London Resilience (2005) noted that a major emergency plan should be multiagency based. Hence, the input of every relevant response agency must be recognized and there must be clear cut boundaries or clearly defined roles for each of them.

In another study, using qualitative and quantitative data, Van Gorp, Pogrebnyakov and Maldonado (2015), sought to know how emergency response organizations use social media. They found that social media like Facebook and twitter were used by emergency response organization to disseminate information, get response and input from the public and other relevant organization. But the use of social media for emergency services is subject to leadership decision and staff adoption. The use of social media in emergencies like road traffic accident in Nigeria may be far reaching. Platforms like Whatsapp and Facebook may not be available to the

person communicating emergency. As noted earlier, effective emergency communication channels should be able to present the communication on real time basis (immediately). Hence a study by Condon and Robinson (2014) showed that the reasons for using different media in emergency communication by emergency managers are dependent on various factors. Such factors include the affordability of the technology, the capacity of the technology to transmit information and the function that the message will serve.

Conversely, Yang (2010) in a study noted that instant communication is most important during an emergency. Thus he looked at the potentials of the mobile phones in communicating emergencies. Since mobile phones operate anywhere, anytime and even on the move, mobile phones fulfill emergency demands. Again, Nemeth and Somos (2005) also emphasized the importance of mobile phones in instant communication. However, use of mobile phones raises certain curiosities, likethe extent to which mobile phones can be relied upon given strains like poor network coverage, low or no battery and lack of call credit since emergency calls in Nigeria is yet to be free.

However, it can be argued that in Nigeria the mobile system of communication is well entrenched. Hence if emergency communication channels are functional and publicized, a sizeable number of the people can easily reach the appropriate agencies instantly in the event of emergencies. But despite this availability, Save the Children (2012) highlighted that there is a widespread lack of awareness regarding how mobile phones can be used in emergency response. Also, due to the rapid changes in technology, what works today may not work tomorrow. Again the technology that works effectively in one location may not necessarily work in another. It therefore becomes important that technologies be used contextually.

Hence, Ryan (2010) opined that since rescue is an operation, its success in responding to an emergency can be measured after the event in terms of the number of lives saved and properties protected. However, the effect of communication activities – or a lack of communication around anemergency is hard to measure and most often such measurement is not carried out thereby making it hard to do any kind of evaluation.As he noted, a reason for this difficulty may be that communication teams do not have the necessary resources that they require to do what needs to be done.

From the foregoing, it can be said that studies carried out on emergency communication are done to address a particular area and that not much studies have been seen with specificity to emergency communication in road traffic accidents.

2.4 THEORETICAL FRAMEWORK

The study adopted Media Richness Theory and a contextualization of Harold Lasswell's model of communication within emergency communication to explain key factors in emergency communication and to make a link with Media Richness Theory.

Media Richness Theory

The Media Richness theory looks at communication effectiveness under conditions of uncertainty and ambiguity. The theory has it that the most appropriate communication medium should be chosen in performing a task so as to reduce uncertainty and resolve equivocality. Uncertainty here refers to a lack of information. This basically means the information that an organization has to perform a given task and the information that it actually needs to perform the

said task(Garner, 1962 in El-Shinnawy and Markus, 1997). Equivocality in this context is the existence of multiple and conflicting interpretations about an organizational situation to respond to a need (i.e. confusion and lack of understanding). If there are high levels of uncertainty and ambiguity, then a richer media should be the communication channel (Conklin and Detrick, 2010). Media richness theory is also referred to as information richness theory.

The theory was propounded by Daft and Lengel in 1984. Media Richness theory holds that all communication media vary in their ability to enable users to communicate and exchange understanding. Communication transactions that can overcome different frames of reference or clarify ambiguous issues in a timely manner are considered rich. Communications that require a long time to enable understanding or that cannot overcome different perspectives are lower in richness. Face to face communication, video conferencing and telephone communication are considered richer than written communication. The theory argues that the more ambiguous the message, the richer the medium should be, or in other words, the more information carrying capacity it should have (as determined through speed of feedback, ability to personalize the message, availability of multiple cues, and language variety) (Dainton&Zelley, 2011; Lengel& Daft, 1988).

The theory's supposition that different communication media have varying capacity connotes that certain media used by an organization works better for certain task. This means that task performance is improved when task needs are matched to medium richness. According to the theory, face to face communication is more effective than other types of communication. In their 1988 article regarding media richness theory, Daft and Lengel noted that for a media to be considered rich, it must havecertain characteristics, such as:

i. The mediums capacity for immediate feedback

ii. Availability of cues. Cues here refer to physical presence, body gesture and the voice

iii. Ability to utilize natural language. This refers to how language is used in communication and focuses on non numeric information.

iv. Personalization of message to suite the individual recipient

Conversely, the theory seeks to describe and evaluate communication medium within organizations in terms of their effectiveness. This is because media selection and use can reduce uncertainties in various task performances. It connotes that a medium can reproduce information sent through it accurately, without changing the meaning of the message. In essence, the capacity of the medium is recognized. Although the theory focuses on communication structure within organizations by looking at the media choices made to perform a task, yet it can be said that whatever medium choice an organization makes affects how such organization relates with its internal and external publics.

The Health Communication Capacity Collaborative (HC3) (2014) noted that the richness been talked about here is not necessarily of the channel alone but of the richness of the communication occurring via the said medium which is measurable by the level of understanding of the message and rapidity of feedback. Emergency situation requires that those in need of emergency medical care be attended to immediately because the time between injury and initial stabilization is the single most important factor in patient' survival, with the first 30- 60 minutes being the most important. Therefore, service providers like FRSC have to choose media with a full understanding of the characteristics of such medium to meet emergency needs. These mediums should be chosen on the basis of constant access to channel (i.e. ability to relay information

without hindrances), rapidity of communication and the speed of feedback to mention a few. It is given that each medium has its strength and weaknesses, thus the chosen medium must be that whose advantages outweigh the disadvantages. Basically, various media can be combined to give the desired result (HC3, 2014). Media selection and use moderates uncertainty or ambiguity in various tasks including emergency communication. For instance, in publicizing its emergency communication numbers to the commercial drivers, the FRSC makes use of public enlightenment in registered motor parks as its major communication strategy. In this sense the number of drivers that will know the numbers becomes limited to those that are on ground when the number was publicized. If tasks are not matched to the medium, the likelihood is that limited result will be achieved.

Conversely, from 1990 to 2012, the number of fatalities from accidents decreased by 25%, while the number of peopleseriously injured increased by 73% (OECD, 2014). From the statistics, to reduce the severity of injuries and disabilities, there should be prompt action from rescue organizations. Thus the choice of medium must be done to suite the purpose. The timely and effective flow of information between agencies and the public is vital for facilitating and encouraging appropriate actions.

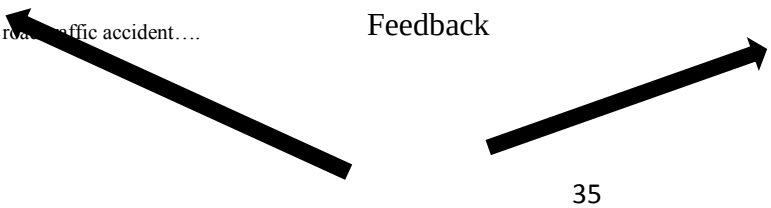
The theory is criticized because the choice of media to use is much more complex than choosing a medium just because it is rich. A rich media may be the media to use but it does not say that a leaner media cannot perform the task. Also social pressures, social background and cultural factors can influence the choice of media to use as against richness (Markus, 1994; Ngwenyama and Lee1997). In essence, media richness is critiqued as being too rational and deterministic. Again, it has been argued that media use may be because of the nature of the media, the position

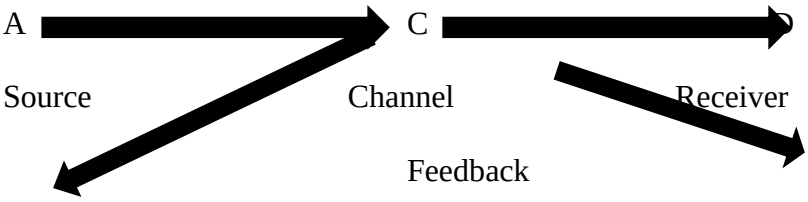
of the person using the medium as well as what the said communication will be used for (Markus and El-Shannaway, 1997).It is also seen as weak because of its preoccupation with face-to-face communication. This is because the advent of new communication technologies has led to more perspectives in communication that have not been considered before now.These criticisms notwithstanding, media richness theory still remains valid for this study. The theory recognizes that tasks should be matched to a mediums and this isrecognition of the capacities of various mediums to enable users exchange meaning within a time frame. It also recognizes that whatever choice of medium the organization makes will affect communication effectiveness within the organization as well as with its external publics, therefore the relevance of the theory.

Model of Emergency Communication

Communication involves processes and in this regard different communication models have been advanced to explain such processes. One of such is the Harold Lasswells' 1948 communication model. The basic components of the model are: WHO, SAYS WHAT, IN WHICH CHANNEL, TO WHOMand WITH WHAT EFFECT. These elements represent the sender, the message, the medium, the receiver and the effects. To Lasswell, the act of any communication process can be explained by answering the questions that form the five components of the model.

In this vein, any emergency communication involves a process or processes as the case may be. Irrespective of the communication process(s), there are certain components that are crucial to the process.





X_2 road traffic accident….

Explanation of the model

i. X – is the object in the sensory field of A. In this case, the observed object is a road traffic accident.

ii. A – Someone perceives an emergency/event and reacts to the event by dialing the emergency numbers.

iii. C- through a channel in this case a mobile phone to convey a message of an emergency

iv. D – The message is received at the Road Safety through exchange between A and D through C. D then prepares to respond to the emergency communication message.

In essence, A observes a road traffic accident; he then decides to pick a phone C which is the most reliable and commonest channel of communication in this case. He dials an emergency number to the Federal Road Safety (it is important to state that the caller has to be aware of the emergency number before usage. Hence awareness is a prerequisite for usage). After some exchanges through the same channel, D responds to the emergency situation. Thus there is exchange of communication between A and D using the channel C. The success of the emergency communication will depend on the following

i. No distortion or noise in the communication channel
ii. That A sends clear and unambiguous messages to D which is the receiver

iii. That the receiver of the message clearly makes meaning out of the message will determine how quickly he responds to the emergency communication message. D's ability to decode the message depends on how easily he internalizes the message.

To make a linkage with the Media Richness Theory, the Media Richness Theory recognizes face to face communication as the richest form of communication. But in emergency situations like road traffic accident, face to face communication is not necessarily the best. This is because accidents happen anywhere mostly out of the sight of rescue organizations and as such, they have to be notified about it. The faster the communication, the more likely it is that more lives will be saved and that the severity of injuries will also be reduced. As it is, one of the characteristic of a rich medium as stated by the richness is that the medium for communication must have the capacity for immediate feedback. In this regard, the richest medium for emergency communication is the telephone/mobile phone. This is because even though it is mediated, it has capacity for immediate feedback. Therefore, in its simplest sense, it is the interplay of these components that ensure that emergency communication is complete. As showed in the model, the process does not have to be long. It should have the source of information, the channel and the receiver.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter consists of the methodology which explains how the data was collected and how it was analyzed as well as the reliability and validity of the study.

3.2 THE STUDY AREA

The study area is Zaria local government area of Kaduna State. The people of Zaria are predominantly Hausa by tribe. Zaria is often considered a citadel of learning as it has a number of institutions. Therefore, a sizeable proportion of Zaria's population is made up of students who mostly leave after their study. Among the population of Zaria are commercial drivers. There are a number of motor parks in Zaria, some of them are registered and others are not thereby making it difficult to get their exact population. The National Population Commission put the annual

growth rate of Nigeria at 3%. According to the 2006 census, the combined population of Zaria and SabonGari local government was 698,384. Thus from the growth rate and the 2006 population, the current estimated population of Zaria is 886,948 (Population Mongabay, 2012).

3.3 RESEARCH DESIGN

The study used the mixed method of research. First, the in-depth interview was used to get a response from the Federal Road Safety Corps (FRSC). This was done in order to get accurate responses concerning how emergency is communicated and other relevant information. Second, descriptive survey method was used. The survey was of commercial drivers who are residents of Zaria and who shuttle interstate. Survey is used to determine attitudes, beliefs and predict behaviours. Basically, surveys gather data at a particularpoint in time and permit the use of the same instruments and questions for all participants. (Avwokeni, 2006; Kothari, 2004; World Bank, 2010).

There are various types of surveys one of which is the cross sectional survey. In this type of survey, different respondents are studied at different points in time and it produces a kind of snapshot of the population at a particular point in time. It connotes the completion of question answering on a one time basis. In this regard, the cross sectional survey was employed in this research.

3.4 THE STUDY POPULATION

The study was carried out in Zaria. The study populations are commercial drivers in Zaria as well as the staff of FRSC, Zaria. This is because FRSC is saddled with the responsibility of ensuring safety on the roads and are mostly involved in rescuing accident victims. The choice of

commercial drivers was hinged upon the fact that they are one of the most at risk group for accidents, both as victims and initiators of accidents.

3.5 SAMPLING TECHNIQUE

The non probability sampling method was used. Purposive sampling was used to select the head of operations of FRSC for the interview. The criterion used to select the head of operations is that he is in charge of rescue and therefore he is in a good position to answer questions as it relates to the emergency communication within their organization (Wimmer and Dominick, 2006). The convenience sampling method was used to draw a sample of 400 commercial driversand after the study 354 questionnaires were valid. Although the sample was collected in motor parks, a number of the commercial drivers were not available for on the spot sampling. Also, they have some misgivings about the FRSC which made a number of the drivers not wanting to be part of the study. Therefore the criteria for selection were those that were on ground at the time of the visit and who were willing to be sampled. Sample was drawn using this method until the desired sample size was collected.

According to FRSC, Zaria, there are six motor parks which are registered as interstate travel motor parks in Zaria. They are Dadi, Karaduwa, Benue linkz, Gwargwaje, KofarDoka and SabonGari parks. Sample was drawn from Dadi, Gwargwaje, KofarDokaandSabonGari parks. Before the commencement of data gathering, Karaduwa Motor Park was demolished and the drivers dispersed. Then questionnaires could not be issued at Benue linkz because of the unavailability of the drivers for on the spot data collection.

Due to the mobile nature of the respondents, for every visit those who were on ground and willing to be sampled were sampled according to the permission granted by their unions. There

was a repeat visit in the evening or the next day as the need arose where the minimum visit per Motor Park was three visits.

3.6 METHODS OF DATA COLLECTION

Data was collected by personally issuing questionnaire to commercial drivers in the selected motor parks and in a number of instances; the researcher had to help them fill the questionnaire. The questionnaire was administered to drivers on the spot. The second method used was the interview which was conducted in depth with the head of operations of Federal Road Safety Corps(FRSC), Zaria. Occasionally, the interview made use of prompts and probes.While prompts helped the researcher to clarify questions, the probes enabled the interviewer to ask the respondents to extend, elaborate, add to, provide detail for, clarify or qualify the response given. This added richness and depth to responses (Cohen, Manion& Morrison,2005).

In this regard, the instruments that were used to collect data in this study are the interview schedule and the questionnaire. The interview schedule was the instrument for data collection for the in depth interview and it was structured. Then the questionnaire was used to elicit responses for the descriptive survey. There were two sections in the semi structured questionnaire. This allowed for both closed and open ended questions. It basically contained questions on demography and then questions that addressed the research questions raised in chapter one.

3.7 VALIDITY AND RELIABILITY

Reliability

This talks about consistency and replicability. A pilot study was conducted three weeks before the main study. Thirty questionnaires were issued in the study area. The result of the pilot study

showed a low level of awareness of FRSC's emergency number among the drivers. The usefulness of the pilot study was that it confirmed the appropriateness of the questions in answering the research questions raised. It also gave clarifications as to whether or not the respondents understood the questions. Subsequently, adjustments were made to the questions that needed to be adjusted and the questions were simplified before the final distribution.

Validity

The use of both quantitative and qualitative method enhanced the validity of the research in the sense that there is a balance in the information gathered and that most of the biases that may have arisen from the two subjects of the research was checked by the information gotten from the other. Also, the questionnaire was given to a number of lecturers for their input before it was issued to the respondents.

3.8METHODS OF DATA ANALYSIS

The statistical package for the social science (SPSS) was used to analyze the questionnaire and it is presented in tables.Then discussion of findings was done using simple prose for appropriate description. Then the response from the interviewee was transcribed and an exhaustive analysis was done in a narrative style. The narrative was properly structured to describe the interview content. Since there was only one interviewee, the data generated from the interview was used directly to answer the question raised as was relevant and this was done thoroughly.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

This chapter presents, interprets and analyzes the data. It is made up of seven parts. The first is the socio demographic characteristics of the respondents. The second to the sixth part presents the data according to the research objectives raised and the seventh part is the discussion of findings.

4.2 SOCIO DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

This section focuses on the sex of respondents, age, educational qualification and routes plied.

Table 1: Socio Demographic Characteristics of Respondents

VARIABLES	FREQUENCY	PERCENTAGE
SEX		

Male	354	100
Female	-	-
TOTAL	**354**	**100.0**

AGE	**FREQUENCY**	**PERCENTAGE**
20-30	44	12.4
31-40	167	47.2
41 and above	143	40.4
TOTAL	**354**	**100.0**

EDUCATIONAL QUALIFICATION	**FREQUENCY**	**PERCENTAGE**
None Literate	6	1.7
Islamic Education	133	37.6
Primary Education	102	28.8
Secondary Education	102	28.8
Tertiary Education	11	3.1
TOTAL	**354**	**100.0**

ROUTES PLIED	**FREQUENCY**	**PERCENTAGE**
North Central	78	22.0
North East	74	20.9
North West	202	57.1
TOTAL	**354**	**100.0**

From the table, all respondents are male and the drivers between 31-40 years have a higher percentage (47.2%). This is followed closely by those who are above 41 years with 40.4%. Both of these age groups are economically active segments of the population. Those between 20-30 years have 12.4%. The deduction that can be made here is that younger people do not take up driving profession as much as the older ones. As it has to do with education, a higher percentage of the drivers have Islamic education. This speaks for the area where the study is located.

Primary and secondary education tied at 28.8% respectively while tertiary education has 3.1%. The data here shows that the higher the level of literacy a person has, the lesser the likelihood of that person becoming a commercial driver. Nonetheless, the question of who can be referred to as literate is debatable. This statement is hinged on what the Head of Operationssaid in the interview;"lots of the commercial drivers are illiterate, that is why we have problems with them". However, it cannot be inferred here that level of literacy influences awareness, knowledge or usage of emergency numbers; neither can it account for the prioritization that these drivers give to communication in emergencies.

For the routes covered, data shows that the North West was the most plied route by the commercial drivers with 57.1%. The case that can be made here is that Zaria is in the North West region thus the tendency for a number of the commuters to ply the north western routes more. The law of demand and supply states: the higher the demand, the higher the supply. It therefore means that if the commuters for the North West region are more numerous, then more of the drivers will ply that route. Another factor is profit. If they make more profit by plying this route then they ply the route. However this does not in any case state that the North East or the North Central regions are not plied by a lot of the commercial drivers. The data reflects the reality on ground as at the time of sampling.

4.3 LEVEL OF AWARENESS OF FRSC'S EMERGENCY COMMUNICATION CHANNEL(S)

This segment presents the awareness of FRSC emergency numbers among respondents as well as how they came to know the numbers. Tables 2 and 3 and 4 are used for the presentation.

Table 2: Awareness of the Existence FRSC's GSM Channel of Communication

Awareness	Frequency	Percentage
Yes	340	96.0
No	14	4.0
Total	354	100.0

Table 2 above shows that 96% of the commercial drivers are aware that the FRSC have GSM channel of communication. In the course of their driving profession or as part of the members of a union, they have heard that the FRSC have GSM channels of communication through which they can be reached.

Table 3: Knowledge of the Actual Emergency Number of FRSC

Knowledge	Frequency	Percentage
Yes	168	49.4
No	172	50.6
Total	340	100.0

Table 3shows that 49.4% of the respondents know the actual number(s) while 50.5%do not know the numbers. The intrigue here lies in the fact that within the same motor park, some have the number and others do not. In this regard, certain factors become crucial. First is the matter of interest, that is to say whether the commercial drivers are interested in the numbers or not. This statement alludes to the credibility that the drivers attach to the FRSC. For instance, the union office at GwargwajeMotor Park attested that they used to have a box where FRSC number was

boldly written, yet a number of the drivers in that motor park do not have the numbers. The second factor that can explain the gap in knowledge of the actual numbers is the means by which the said numbers are publicized. The basic method that the FRSC use to inform the commercial drivers of their emergency numbers is public enlightenment. In this case those drivers who are on ground during the enlightenment are much more likely to take the numbers down than those who were not on ground.

Table 4: Source of Knowledge of Numbers

Source	Frequency	Percentage
Through FRSC	139	82.7
Through the media (radio/television)	3	1.8
Through the union	26	15.5
Total	168	100.0

From table 4, the basic source of knowledge of the emergency numbers for the commercial drivers is the FRSC with 82.7%. As noted earlier, the major means they use for communicating the number(s) is public enlightenment. It follows thatthe number of commercial drivers who were available during the public enlightenment and who took note of the number got the information through the FRSC. The other source is through the union offices with 15.5%. Some of the union offices noted that the FRSC officials give them their numbers and they in turn give it to the commercial drivers. From the table, we see that the FRSC do not utilize the media (radio and television, in this context) much to publicize their numbers to the general public. But as it is,

wider reach and spontaneity are characteristics of the media. Hence it can be argued that if the media is utilized, a larger number of the respondents will be aware of the number.

4.4 FUNCTIONALITY OF FRSC'S EMERGENCY COMMUNICATION CHANNELS

As the title shows, this section presents the functionality (working) of FRSC numbers.Tables 5 to table 9 as presented in this section will give clarity as to the functionality of FRSC emergency number.

Table 5: Usage of FRSC Emergency Number

knowledge and Usage	Frequency	Percentage
knowledge (usage)	61	36.3
knowledge (non usage)	107	63.7
Total	168	100.0

Table 5 shows that only 36.3% of the respondentswho know the actual number have used the number while 63.7% of the respondents do not use the number. It therefore follows that knowledge of the number does not signify usage. But of course the usage of the number has a lot to do with whether they were part of an accident or if they had seen an accident. Further, it does not say that because they called the number, they would always call the number in an accident situation. But what it says is that perhaps if they have used the number and it worked for them,

the likelihood is that they would use it again. But again this is not a definitive statement given the complex nature of human behaviour.

Table 6: Assessment of Functionality of the Number

How the number worked	Frequency	Percentage
Highly effective	48	78.7
Effective	9	14.8
Not effective	3	4.9
Don't know	1	1.6
Total	61	100

Table 6 shows that (78.7%) of the respondents who used the number consider it to be highly effective while 14.8% of the respondents consider the number effective. This effectiveness is hinged upon the fact that they called the number and it went through and that they got a response. 4.9% said the numbers were not effective and this statement can be attributed to the fact that they called the number and did not get a response or that their distress call did not go through.

Table 7: Assessment of FRSC's Response to Emergency Calls

Speed of Arrival	Frequency	Percentage
Very fast	37	60.7
Fast	10	16.4
Not certain	3	4.9
Did not wait for arrival	11	18.0
Total	61	100.0

Table 7shows the speed of arrival. Out of the respondents that waited for the arrival of FRSC officials, 60.7% rated their arrival as very fast while 16.4% rated them as fast. From the interview, it is evident that there are factors that affect speed of arrival. Some of them are: the closeness of a unit command to the scene of the accident, the clarity of description of location, whether the accident happened in the jurisdiction of the unit command that is contacted and how free the roads are. 18% did not wait for the arrival of the team after they called and therefore cannot make a statement for the speed of arrival.

Table 8: Problems Experienced with usage of the Number

Problem Experienced	Frequency	Percentage
No one picked	6	9.8%
Number busy	1	1.7
Poor network coverage	1	1.7
The number did not connect	1	1.7
Did not experience any problem	52	85.1
Total	61	100.0

Table 8shows that 9.8% of the respondents that used the number noted that no one picked when they called but the head of operation said " anybody holding this office will definitely be with the number throughout, 24/7". The other problems experienced were poor network coverage, number busy and number not connecting with 1.7% each. As noted by Daft and Lengel in Media Richness Theory, communication media vary in their ability to enable users to communicate. Telephone and face to face communication are considered rich mediums. The information carrying capacity of any medium is determined by speed of feedback, ability to personalize messages and language variety. Therefore the choice of a medium for emergency communication must be for optimum performance. From the table 85.1% did not experience problems when they used the number.

Table 9:RespondentsReaction to the Problem

Solution to problem	Frequency	Percentage
Kept trying the number	8	13.1%
Stopped other cars to help	1	1.7%
Usage (did not have any problem	52	85.2
Total	61	100.0

From the table, 13.1% of the respondents that had problems resolved to keep trying the number while 1.7% stopped other cars to help. The implication of this is that time which is an important factor in emergency is lost.

4.5 THE PRIORITY COMMERCIAL DRIVERS GIVE TO COMMUNICATION IN RTA

This segment talks about the priority the commercial drivers place on communication and this can be seen in table 10.

Table 10: Respondents Potential Accident Response

Response in accidents	Frequency	Percentage
Knowledge (use the number)	61	17.9
Knowledge (do not use the number, will take victims to hospital	87	25.6
Knowledge (do not use FRSCs' number but will call their union office)	20	5.9
Non knowledgeable (will help victims to the hospital)	140	41.1
Non knowledgeable(will ask for FRSCs' number)	3	0.9
Non knowledgeable (seriousness of the accident will determine help they will render)	16	4.7
Non knowledgeable (because of the Nigerian health and security system, they will do nothing	8	2.4
Non knowledgeable (will assist in any way possible on the basis of familiarity	5	1.5
Total	340	100.0

Table 10 will give an insight in to the importance of communication in emergency to commercial drivers. Amongst the percentage that know the number, only 17.9% of them ever used FRSC's number. 25.5% do not use the number but would rather help the victims to the hospital while the other 5.9% of the respondents that know the number will rather call their union in an accident

than use FRSC's number. Then of those that do not know the actual numbers, 41.1% will also prefer to take the victims to the hospital, while 4.7%noted that the seriousness of the accident will determine what they will do. Still, 2.4% stated that there is a systemic problem in Nigeria so they will do nothing. The last category of those that are not aware will help the victims on the basis of union affiliation. A parallel can be drawn between those that know the numbers and those that do not know. 25.5% of those that know the numbers do not use the numbers but will take the victims to the hospital while 41.1% of those that do not know the numbers will also take victims to the hospital. A summation of this 25.6% and 41.1% will give 66.7% providing help to victims directly than taking the communication option. On the other hand, 17. 9% used the number, while 5.9 % know the numbers but will rather call their union office and 0.9% do not know the numbers but will ask for the numbers. The summation of 17.9%, 5.9% and 0.9% will give 24.7% as the percentage that will take communication as an option.

In an in-depth interview conducted with the FRSC operations officer, On the part of the FRSC, we can discuss their priority by noting that the basic means by which they communicate their emergency numbers to the commercial drivers is through public enlightenment which they carry out weekly in registered motor parks. The enlightenment is not scheduled specifically to enlighten the drivers about the numbers and emergency communication. Each time they go for a campaign, they have topics that they discuss with the commercial drivers which are pertinent to the driving profession. It is in the course of such lectures that the emergency numbers are given. This has its own implication in terms of the importance that the drivers will attach to the numbers since it comes as an addendum to the main topic of discussion for the day. Also, if an emergency call comes to the unit, the person that received the call goes in person to inform the standby team thereby slowing down the whole rescue process.

4.6 THE PROCESSES EMERGENCY COMMUNICATION UNDERGOES BEFORE RESCUE

This segment presents the processes that emergency communication goes through before a rescue as was described by the head of operations in the interview. He stated that emergency communication within the FRSC takes three formal processes and one informal process. They are:

1. Emergency call→→ FRSC office→→officer in charge informs standby team→→ standby team embarks on rescue.

2. Emergency call→→ team on patrol→→to rescue

3. Emergency call→→FRSC office (not the same jurisdiction) →→FRSC office to FRSC office→→ officer in charge informs standby team→→ standby team embarks on the rescue.

4. Emergency call to an FRSC officer on the basis of familiarity→→ process 1 or process 3 is repeated.

Each of the process above has its implication which is measurable by the speed of response and the lives that are saved as a result of the process. The second process is the fastest process while the fourth informal process is the longest process. Typically, when an emergency call comes in, the officer in charge goes in person to inform the standby team of the accident. Then they head out for the rescue. This process is repeated for all the rescue processes with the exception of the second process. The second process connotes that the team is already out on patrol and receive an emergency. Thus they just embark on the rescue, thereby making it the fastest process. A rescue team consists of four personnel, the driver inclusive.

4.7 DISCUSSION OF FINDINGS

This segment is the discussion of findings and this will be done according to the research objective while making reference to data that has already been presented.

The socio demographic data showed that all respondents were males. From the literature review, a number of the studies noted that a larger number of accident victims were males. However these literatures did not specify whether the victims were drivers or commuters and neither did those studies make any allusions to the fact that men commuted more than women. As it has to do with age, those between 31-40 years had the highest frequency at 47.2%. In this case, a number of the literature showed that the mean age for a larger number of accident victims is 35 years (Ediagbini et al 2011, Yamuragiye et al 2013, &Aderamo, 2012).

The Level of Awareness of FRSC's Communication Channels among Commercial Drivers' in Zaria

In the course of data collection 96% noted that they have heard that FRSC have communication channels through which they can be reached. However such awareness does not translate to knowledge as there is a seemingly low knowledge of the actual FRSC emergency number(s) among the drivers as 49.4% know the number as compared to 50.6% who do not know the numbers.Some reasons have been given for this disparity and they include the disconnection between the drivers and FRSC which may make the commercial drivers to be reluctant to have dealings with the FRSC. In response to the commercial drivers distrust for the FRSC, the head of operations stated "definitely, they will not love us, we are conducting our work and they are not trying to respond to what we are trying to let them understand; most of them are after money and they don't have value for life".The reluctance of a number of drivers to be part of the study is

also a pointer to the disconnection between the drivers and the FRSC which has an effect on their accepting and using the numbers in an emergency. The second reasoncan be advanced is the mode of publicizing the said numbers. The FRSC here in Zaria makes use of public enlightenment to publicize their numbers. To quote the head of operations, "sometimes, we schedule a date and inform the motor parks that we are coming for public enlightenment based on a particular topic". This means that they inform the motor parks that they will visit that particular park to enlighten commercial drivers about issues that are pertinent to their profession and it is in the course of such discussions that they give their emergency numbers to the drivers. Because of the nature of the driving profession, not all the drivers will be in the park when such enlightenment is carried out. Hence the FRSC charge the drivers that are present to give the numbers to their colleagues that were not on ground.

Now, the drivers that were told to inform others are not under any obligation to do so. If for some reason the drivers choose to tell those that were away, the recipients of the information have their priorities and the numbers may not be of such import. In this regard, they may neglect the number. Also, there is the factor of individual difference. That which one holds important may not mean anything to another. Yang and Maxwell (2011) noted that individual behaviour in information sharing is complex. It can depend on a number of factors which may include willingness to share information, motivation, perceived need to share information, contextual factors and culture among other factors. Having said this, it's important to point out that the head of operations expressed his surprise at the fact that some of the commercial drivers do not know their numbers; he said "am surprised that you said they don't know our numbers, definitely they do have our numbers".

Conversely, from table 4, the basic source of awareness for those that know the numbers is the FRSC with 82.7%as is presented. This means that public enlightenment method can be effective. However a combination of a variety of channels will be more effective.

Again it has been shown that knowledge of the number(s) does not mean usage of the number(s). Hence of those that are aware of the number only 36.3% actually used the number while 63.7% did not use the number.To explain this, it has been noted that people do not always act on what they know, the phenomenon is known as the knowledge gap or the communication effects gap where knowledge is available but that knowledge is not put to use (Shingi and Mody 1976 in Snyder 2007). Also, Badr and Ratz (2013) noted that accidents situation leads to a lot of chaotic responses. The response at the point of an accident may not be to call the number. Further, Covello (2001) in the mental noise theory stated that in accident situations, people remember information in threes; hence numbers like 112 will be remembered more quickly as against 11 digit numbers (however this fact may be hinged on whether or not the caller is the one involved in an accident). Closely related to this is the case made by WHO (2013) African report on road safety. They stated that a large number of African countries have multiple numbers; hence remembering them or using them may be an uphill task.

Functionality of the Emergency Communication Channels

Further, 78.7%of the respondentsthat used the number(s) stated that the numbers were very effective. On the other hand, 14.8% of the respondents said the numbers were effective as

presented on table 6. However, the catch 22 situation here is that to say that the number(s) is/are effective or very effective is subjective in the sense that what some see as highly effective may or not be effective to others. But for the respondents who see the number as effective or highly effective, the key factor is that when they called the number, there was a response.

Again a question was raised as to the speed of arrival because time is the currency of emergency. Ngamy and Kamtache (2010) noted that time is vital to emergency situations and Levashova et al (2011) added that the operational success in emergency response might easily be measured in terms of the number of lives saved. 60.7% rated their arrival as very fast while 16.4% rated them as fast. Some countries try to meet a certain rescue time because the first hour after an accident is important. But in the interview, the head of operations stated that they don't have a set rescue time that they try to meet in this regard. They just go as fast as they can while bearing in mind the lives of the drivers of the van or the ambulance as the case may be. However, there are factors that affect how quickly they get to the scene of an accident for a rescue to take place. Some of the factors are clarity of the description of the scene, whether or not the accident happens in the jurisdiction of the caller, how free the roads are and how far away the accident is from the nearest unit command.

Conversely, as is the case with processes and systems, the respondents experienced problems while using the number. 9.8% of them noted that when they called no one picked. Thus they resorted to keep calling till they got a response. The respondents calling and no one picking contradicts the response from the interview, he noted that "anybody holding the office will definitely be with the number throughout 24/7" having said this, it's important to note that mobile communication is not an invincible method of communication. There are factors that

affect its capacity for emergency communication and in this case the factors can include poor network coverage, low battery life and cost of making the calls.

The Priority Commercial Drivers Give to Communication in Road Traffic Accident

Data has showed that respondents who know the number scarcely use it. It therefore led to the imperativeness of understanding their potential response to accidents. In the course of this discussion, some of the reasons for non usage were captured and how the communication option is taken is also presented. 25.6% of those that know the number and 41.1% of those who do not know the numbersaid that they would help the victims to the hospital rather than call the FRSC whose credibility they question. To them waiting for the rescue agencies to come is tantamount to time wastage. So they will quickly carry the victims to the hospital. But then the scoop and run system may have dire consequences depending on the state of the victim.Forjuah*et al* (1999) in their study found that the evacuation of crash victims in Ghana then was mostly carried out by bystanders, relatives, commercial vehicles and sometimes the police. Also Becker, Zaloshnja, Levick, Li, & Miller (2003) in yet another study found that the police and hospital ambulances evacuated only 5.5% and 2.9%, respectively of crash victims in Kenya. In addition, these studies further noted that lack of communication is a bane to emergency situations because bystanders, relatives and commercial drivers are not able to promptly notify rescue organizations of a crash.

Conversely, as related to the data collected, 4.7% of the respondents are not certain what their response will be in that the seriousness of the accident will determine their response while 2.4% will rather not render any help. For the 2.4%, they noted that they do not want a dead victim on their hands. They gave examples of how they were once victims of the security agencies who accused them of being responsible for the accident or death of the victims. Again this category

noted that they are asked to produce a police report at the hospital and that the doctors work in conjunction with the security officers to tarnish the reputation of commercial drivers. Now, if an accident happens and the victim is comatose or in any other critical state, the doctors will need an eye witness account to help them in treating the victim properly. But due to a lot of factors, there are few or no eye witness accounts of accidents.

From the same table 10, we see that 17.9% took the option of communication, and then another 5.9% would also take the option of communication but through their unions and not through the FRSC. Then another 0.9% will ask for FRSC number. So as it is presented in the table, the summation of those that will rather take victims to the hospital is larger (25.6% and 41.1% respectively) than those who will take the communication option at different categories (17.9%, 5.9%, and 0.9% respectively).

In the light of the above, the rescue agencies are usually not at the scene before an accident happens, neither do they have a satellite beaming accident scenes to their offices. As it is, accidents are non-predictable events. But when they happen, there is need to inform the rescue agencies. Information or notification is a precondition for rescue. Studies abound which gives us an image of what happens when rescue agencies are not informed early of an accident. A Swedish studyinto survivability showed that 48% of those who died from accidents sustained non survivable injuries. Of those that sustained survivable injuries, 5 % were not located in time to prevent death and 12% will have survived had there been more rapid response and quick transport (Hirsch and Eppinger, 1984 in DACOTA, 2012). Similarly, Ediagbini et al (2011) in their work on chest trauma in Zaria noted that the average time taken between an accident and hospital admission was 31 hours, 40 minutes and 12 seconds, thereby gravely reducing chances of survival. Save the children (2012) stated that in an emergency, time makes the difference

between life and death. Then as noted earlier, the FRSC's use of public enlightenment to inform drivers of these numbers limit those that will know and use the numbers and then the person who receives the emergency call goes in person to inform the standby team thereby slowing down the whole process. From the foregoing, it can be said that there is low prioritization of communication on the organizational level and from the drivers as well.

The Processes Emergency Communication Undergo before Rescue

Emergency communication within the FRSC takes three formal processes and one informal process. This discussion is based on the interview conducted with the Head of Operations.

1. Emergency call→→ FRSC office→→officer in charge informs standby team→→ standby team embarks on rescue.

2. Emergency call→→ team on patrol→→to rescue

3. Emergency call→→FRSC office (not the same jurisdiction) →→FRSC office to FRSC office→→ officer in charge informs standby team→→ standby team embarks on the rescue.

4. Emergency call to an FRSC officer on the basis of familiarity→→ process 1 or process 3 is repeated.

The discussions for the listed processes are as follows:

Process1. Emergency call→→ FRSC office→→FRSC officer in charge informs standby team→→ standby team embarks on rescue

The first process here shows that when an emergency call is received by the FRSC office directly; "the phones are in the office and is the staff officer operations office which deals with

operations". The communicator is expected to give detailed or partial information of the location of the accident. From the interview, the head of operations noted that they don't just head out immediately after receiving the call. They try to authenticate the call. This they do by listening to the background noise and perhaps receiving another call that has to do with the same accident. After such is done, the person that receives the call personally tells the standby team. They in turn embark on the rescue with their patrol van or ambulance as the case may be.

Process 2. Emergency call→→ team on patrol→→to rescue

A team that is already out on patrol can have the CUG number with them. Hence an emergency call can directly come to their phone. When such happens and they ascertain the location of the crash, they head there immediately. This is the fastest of all the processes.

Process 3. Emergency call→→FRSC office (not the same jurisdiction) →→FRSC office to FRSC office in the jurisdiction of the accident→→ officer in charge informs standby team→→ standby team embarks on the rescue.

It is imperative to clarify that the emergency numbers used here in Zaria are not the same with those used in Kano or Kaduna. In this regard, a resident of Zaria may know just the emergency number(s) that is/are used in Zaria. Thus in an accident situation, the likelihood is that such a person will call the number(s) in Zaria. Now in such situations, the office in Zaria having the location of the accident knows the jurisdiction of the accident and the unit command closest to the scene. Then they will call the unit command and inform them of the accident.

Process 4. Emergency call to an FRSC officer on the basis of familiarity→→ process 1 or process 3 is repeated.

This last process is an informal process but it is used as well. If a person knows the personal phone number of an FRSC officer where he lives or outside where he lives, he could call the number in an accident situation. Depending on the scene of the accident the FRSC officer that is called will communicate to the office domiciled where the accident happened. Where such is not possible, he could communicate to another jurisdiction and the whole process in number 1 or number 3 is repeated.

The four processes discussed above vary significantly from what is obtainable elsewhere. Buylaert (1999) noted that in some states, emergency calls are answered by ambulance service or the emergency medical services. In other countries they are answered by emergency service providers like fire service, police and the likes. But basically the call gets routed to a public safety answering point (PSAP) that is located within several places in the country or state. It is this PSAP that route emergency call further to the nearest local emergency responding agencies (Bharwan and Marg, 2013).

Implication of the Four Processes

The four processes discussed give an indication of the minutes that ticks away whilethe communication process happens. The Head of Operations stated that if the roads are very busy it would affect their speed of getting to the scene and rescuing the victims. But they do their best to meet the victims alive. However the speed of rescue is not in contention here, rather the process that emergency communication actually goes through before a rescue happens.

As was noted by CLEEN Foundation (2010), several Nigerians die because of failure of emergency communication to mobilize aid to the victims. This is not because communication does not have the capacity to mobilize such aid rather; it has to do with how communication is

utilized. RTA hand book (2009) noted that casualties will have lesser chances of survival if they are not given definitive care within the hour of the accident, thus the time taken to extricate the victims should not be more than 15 minutes.

This leads back to the Media Richness theory which is the theoretical framework of this study. The theory supposes that different media have varying capacity. Certain media used by an organization will work better for certain tasks but not for others. Granted, the theory holds that face to face communication is rich because it facilitates rapid feedback, ability to handle information simultaneously and the utilization of natural language. Yet to go in person to inform a stand by team of an accident slows the whole process of communication no matter how close the standby team is. The theory says that if the message is likely to be unclear, then face to face communication should be employed. But then there is no ambiguity in saying an accident has happened. If any ambiguity were to arise, it would probably be about the scene of the crash.

Again, the theory considers telephone communication as a rich medium also. As the Health Communication Capacity Collaborative (HC3) (2014) noted, the richness talked of here can be measured by the level of understanding between the communicating parties and the rapidity of feedback. The emergency communication model adopted in the study shows that if there is interplay of the components necessary for emergency communication to take place, the speed of rescue is dependent on whether or not there is distortion in communication. This distortion can be as a result of noise in the communication process and that the receiver is not able to decode the message because the source did not send a clear message. However, the findings of the study have showed that those who communicated emergency were able to get their message across to the FRSC without many hindrances. When such messages were passed across, there was response thus the rapidity of feedback as earlier mentioned. Summarily, emergency situation

requires prompt action. Thus, the timely and effective flow of information within the organization and between the organization and the public is critical.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter is subdivided into three major parts. They are: summary of major findings, conclusion and recommendations.

5.2 SUMMARY OF MAJOR FINDINGS

The research was designed to assess emergency communication in road traffic accident in Zaria. This was done by looking at the awareness level and functionality of FRSC emergency communication numbers, the prioritization of communication among FRSC and commercial divers as well as the processes that emergency communication undergoes before rescue. The study adopted the media richness theory which holds that all communication media vary in their ability to enable users communicate and exchange understanding. If a message is likely to be ambiguous, then a richer medium should be used.

The study used in-depth interview and cross sectional survey method which led to the use of questionnaires as well as interview schedule to collect data. Thus, the findings from the study revealed that while a large number of the commercial drivers are aware that the FRSC have communication channels, the actual knowledge of the exact emergency numbers is low and that knowledge does not determine usage.

Also, there is proof from data that the numbers are functional. The functionality was rated by the fact that the commercial divers that called the emergency numbers got a response. Also that the victims were rescued by the FRSC as a result of the notification they received. Further, the level of prioritization given to communication was ascertained by how the communication option is taken on the part of the commercial drivers and the FRSC. The priority that they both give to communication can be said to be low. Lastly, that there are at least three basic processes that an emergency call goes through before rescue takes place. This process starts from the emergency caller and ends at the FRSC head of operations office. If the 15 minutes extrication time of accident victims is anything to go by, then the communication process can be said to be long

5. 3 CONCLUSION

Based on the findings, the following conclusion can be drawn:

Communication has the capacity to revolutionize the rescue process by providing timely information that can reduce the number of fatalities as well as severity of injuries of accident victims through the provision of emergency medical service. Granted, communication does not work in isolation. Other factors like health care system, transport, nature of road, socio economic status of victims and national or state policy on health can all influence the survival of accident victims. Having said this, it should be recognized that if communication is appropriately ingrained in organizational systems and if individuals are encouraged to take it as an option in emergencies, there will be a significant increase in the number of lives saved. In this vein from the findings of this study, it can be said that the main problem that emergency communication has in the study area is not necessarily the lack of capacity in communication, rather it is the underutilization of that which is available.

5.4 RECOMMENDATIONS

From the summary and conclusion, the following recommendations are made.

1. That communication should be prioritized in emergency situations. This prioritization can be done by:

a. Harmonizing emergency numbers and cutting its length, from 11 digit numbers to three digit numbers. This will help the public to remember the numbers with ease and use them better. Also that multiple emergency numbers should not exist.

b. Communication capacities should be improved within the organizational framework of the FRSC. These capacities should not just be of the technologies but also rescue operators should have better intra organizational communication process.

c. A multiple approach should be taken to publicize FRSC communication. Such approach should include use of different forms of media.

2. The stages that emergency communication undergoes should be shortened. It is not enough to have an emergency system that is functional, but the shorter the process the more the lives that will be saved.

3. That FRSC should find a way of building trust with commercial drivers so as to enhance relationship which has the capacity of enhancing usage of the number.

5.5 SUGGESTION FOR FURTHER STUDIES

a. A study should be conducted to cater for a wider public such as private car owners and other commuters who do not own a car or other private means of mobility.

b. A study on emergency communication inintra state travel should also be conducted.

c. Studies should be conducted in conjunction with the hospitals to find out those who were actually rescued by the relevant rescue agencies as a result of emergency communication while recognizing the time between accident and hospital admission and whether the victims received any medical care before getting to the hospital.

5.6 CONTRIBUTION TO KNOWLEDGE

Significant literature was reviewed and it was found that the study of emergency communication has not gained currency in the country, neither are emergency communication numbers common. Consequently, a couple of African countries have multiple numbers for emergency, if they exist. Therefore, the contributions to knowledge can be summarized as:

a. The knowledge of emergency communication number does not determine usage. Hence, the basic factor hindering the communication of emergency in the study area is not necessarily a lack of capacity in communication but an underutilization of the available capacity.

b. The richness of any communication medium should be based on context. A medium that is rich in one scenario will not be rich in another; it's a matter of application.

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APPENDIX I

QUESTIONNAIRE FOR COMMERCIAL DRIVERS

Sir/ Madam

I am a Masters student of the above mentioned department and university. As part of requirement for the award of M.SC Mass Communication, I am conducting a research titled "An Assessment of Emergency Communication in Road Traffic Accidents in Zaria." Please kindly assist by answering the questions below. The information provided is confidential and it would be used for academic purposes only.

SECTION A: Please Tick (√)

1. Age distribution

a. less than 20 years [ ] b.20-30 [ ] c. 31-40 [ ] (d) 41 years and above [ ]

2. Sex a. Male [ ] b. Female [ ]

3. Route presently covered

a. North Central [ ] b. North West [ ] c. North East [ ]

4. What is your highest educational qualification?

a. None literate [ ] b. Islamic education [ ] c. primary education [ ]

d. secondary education [ ] e. Tertiary education [ ]

SECTION B: Please Tick (√)

5. How long have you been a commercial driver?

a. less than a year [ ] b. between 1 & 5 years [ ] c. 6 to 10 years [ ] d. 11 years & above [ ]

6. Are you aware that the Federal Road Safety's Corps (FRSC) in Zaria have communication channelsthrough which they can be reached in the event of an accident?

a. Yes [ ] b. No [ ]

(**If your answer to question 6 is No please answer questions 17 and 18 only)**

7. If yes, do you know the actual phone numbers of the FRSC in Zaria?

a. Yes [ ] b. No [ ]

(**If your answer to question 7 is No please answer questions 17 and 18 only)**

8. If yes, what was your source of awareness?

a. Through the media [ ] b. Through FRSC [ ] c.Through the union [ ]
d. Others specify……...

9. Have you ever called the number? a. Yes [ ] b. No [ ]

(**If your answer to question 9is No please answer questions 17 and 18 only)**

10. If yes, why did you call the number?

a. because you were personally involved in an accident [ ] b. because you saw an accident [ ] c. others specify……..

11. How would you rate the working of the number?

a. Highly effective [ ] b. Effective [ ] c. not effective [ ] d. can't say [ ]

12. When you called the number, did you wait for the rescue team to arrive?

a. Yes [ ] b. No [ ]

13. If yes how fast would you rate the arrival of the team from the time you called?

a. Very fast [ ] b. fast [ ] c. Not fast [ ] d. not certain [ ]

14. Did you experience any problems when you called the number?

a. Yes [ ] b. No [ ]

15. If yes, what was the problem you experienced?

a. No network coverage at all [ ] b. poor network coverage [ ] c. language barrier [ ] d. no one picked [ ] e. Others specify……

16. In the event of any of the above in number 15, what did you do?

a. try to help[ ] b. stopped a car to help [ ] c. kept trying the number [ ] d. others specify……..

17. Have you ever been involved in accident /met an accident on the road/ or none. Please indicate as applicable to you……..

18. Since you do not know or have never used FRSC's number, when you meet with an accident on the road what would you do?

a. call your union [ ] b. try to help to the hospital [ ] c ask for FRSC's number from others people[ ] d .others specify……

APPENDIX II

IN-DEPTH INTERVIEW GUIDE

1. What are your emergency communication channels in Zaria?

2. How do you communicate the channels to the public (commercial drivers)? I.e. what media do you use to let the public know about these channels?

3. What are your emergency communication numbers?

a. Are the numbers permanent (constantly in use or do you change them with time)?

b. Are they available any time, i.e. day and night?

c. Who is responsible for receiving the calls?

d. What happens after such call is received? I.e. what is your intra organizational communication like with respect to emergencies?

4. Do these emergency numbers function side by side with 122 which is also your organizations number?

5. Does 122 function differently from 112 which is the harmonized emergency number as announced by NCC

6. How do you operate in terms of jurisdiction? Those traveling from Zaria to Abuja have your numbers. If an accident happens halfway, they call you and you call the next command, what are your boundaries?

a. How long will it take from their call to the time you locate the command closet to them.

b. What information will you require from a caller while communicating emergency?

7. Who makes most of the emergency calls you receive?

8. How do you verify the authenticity of a call that an accident really happened.

9. Do you have a data base for the calls that you get in a month or there about?

10. If the emergency call is within your jurisdiction, what is the typical time between crash notification and actual rescue?

APPENDIX III

Transcription of Interview with the Head of Operations, HA Ibrahim, Staff Officer Operations RS 1.13.Zaria Unit Command.

Question: What are your emergency communication channels in Zaria?

Answer: We do have emergency communication basically based on phones, we use phone in communicating whenever there is emergency

Question: What media do you use to communicate the channels to the public?

Answer: is based on public enlightenment, yes we train our colleagues for public enlightenment. So mostly each week we do have public enlightenment given to motorist or public in general.

Question: How do you situate this public enlightenment? I mean what informs how you will choose where you carry out the enlightenment?

Answer: Sometimes we schedule a date and inform the motor parks that we are coming for public enlightenment based on a particular topic and sometimes when personnel are on the road

patrolling we give them the opportunity or time to enlighten the motorist or give them all these emergency numbers.

Question: From findings and a few of the parks that I have visited, the commercial drivers tell me that they have no idea that this numbers exist, how is that?

Answer: You know definitely we have motor parks that are accredited in Zaria here. You see most of the parks are not accredited. Anyone can just stand up one morning and start his own park. We do have recognized motor parks that we give our numbers and we call them and inform them that we are coming on a particular day and we schedule a date that we will come in for public enlightenment and they will gather their men, their drivers and they will be there and we will come and give them the lecture and enlighten them about how to use the road and give them advice on how to be patient while driving and we give them such emergency numbers.

Question: To deviate a bit, the parks I am talking about are parks that are registered with your office. They acknowledge that you carry out enlightenment with them but that you don't talk about communication or emergency numbers. But that's by the way. What are your emergency communication channels in Zaria?

Answer: Am surprised that you said they do not know our numbers. Definitely they do have our numbers, I don't know which person you met and they gave you this information. Okay most of the drivers maybe I don't know but they do have our number because most of the accidents that occur, they call us because it will not be our personnel that will call us that there is an accident. Most of it, it's the general public that call us and definitely they must have our numbers. The numbers that we have are 08077690017, 08077690069. All these numbers that I called, you can call them at any time and you will have response.

Question: Okay, I noticed that the numbers are glo numbers, is there any reason they are specifically glo numbers?

Answer: Glo are the company that came up and gave us the CUG number and it's a postpaid number.

Question: I don't understand what you mean by postpaid, can you just make it simple for anybody that is going to use this record to understand what you are talking about?

Answer: Is a number that is been paid monthly. It is registered to be paid monthly. It is not like the prepaid thing we have like personal thing that you always recharge it and when it gets exhausted you recharge again and it gets exhausted. But this one you will keep on calling, calling the same CUG numbers and it gets exhausted monthly depending on how you registered the postpaid.

Question: In essence, are these numbers that you have given me permanent?

Answer: Yeah they are permanent, it's an office number. Anybody holding that office will definitely be with the number throughout, 24/7

Question: Who is responsible for receiving these calls, that is an accident happens, I call you, who receives the call?

Answer: As I said earlier, the phones are in the office and like all the numbers is in the staff officer's operations office which deals with the operations. It's supposed to be with any team leader going out on patrol. So whenever there is this distress call for emergency as per rescue concerned, he will embark on it. So each and every team leader when embarking on a patrol will

take a CUG that is this number that they use in calling us so that whenever there is an emergency, he will embark on it with his personnel.

Question: So what happens after the emergency call is received? What is your intra organizational communication like with respect to emergency?

Answer: As you know, our primary assignment is to evacuate, to rescue and respond to any road traffic crashes. So in every of our command, we have a standby vehicle and personnel that are just there for whenever there is an emergency call or a distress call for rescue, they will embark on it. So whenever we receive this call in the office, maybe let's assume that the phone is in the office and we receive a call that there is an emergency, we inform them, they are very close and then they will embark on it.

Question: How do you inform the standby team? Do you go in person or call them on the phone to say go for a rescue.

Answer: As I said we have vehicles and personnel with drivers. They are all on standby, so whenever they are in the office on standby at the base permanently. So whenever there is distress call, we inform them in person, not calling them. They are around, we inform and they embark on the rescue.

Question: The vehicles you have are they ambulances or what kind of vehicles are they?

Answer: We have ambulances and we have patrol vehicles.

Question: But which one do you use for the rescue, ambulance or patrol vehicle?

Answer: There are commands that have ambulances and there are those that don't have it and they use their patrol vehicles to embark on any rescue and it would be as perfect as the

ambulance because we have a first aid box of which the personnel have been trained to issue the first aid to any of the victims.

Question: So you are saying that first aid is part of the requirement of your staff? They are required to know first aid?

Answer: Yeah, we have these in house lectures which are weekly and so are based on the topic chosen. But most of our personnel know first aid. They are thought about it because it is part of their priority.

Question: So when you now go for the rescue, what do you do? Do you just scoop them and run with them or you give them first aid before you take them to the hospital?

Answer: It depends on the nature of the victim. Assuming you met a victim bleeding, you can't just pick him like that and throw him in the vehicle (van) and rush him to the hospital. He might not make it. But we make sure that we stop the bleeding based on the first aid treatment that we would give.

Question: What informs the choice of hospital you would take the victim to?

Answer: If whenthe nature of the victim is critical, we know the capacity of the hospitals that are here in Zaria. If we realize the nature of the victim is critical and cannot be handled in a particular hospital, then we definitely move them to Shika. What we do first is that we reach hospitals that are closer to the scene so that they will give him more of what we are unable to give.

Question: In the course of discussing with some of the staff at the teaching hospital, they told me that they have an emergency number and that you could call them and tell them that you are bringing a victim. Do you do that?

Answer: Yeah we do have their numbers, A & E numbers. Before we reach the hospital we call them and tell them that we are coming along with a victim and these are the state of their situation.

Question: So your staff have the number and its what you always do before you take a victim to the teaching hospital?

Answer: Yeah, most of the time we do call them depending on the situation, seriously. There are situations that you may be carried away with the victims' details and fatality of the accident. So you may be carried away but we do call them that there is an emergency and the state of the emergency so that they will be ready for the response.

Question: In the course of my readings, I found that especially in places like Abuja and the rest of them that your office has a number which is 122 as an emergency number, and in the course of gathering the data some people said they heard of the number, so am curious, does the number operate here in Zaria?

Answer: The emergency numbers we have are the numbers that I just called and whenever you call us irrespective of the time, you would get us and we respond to your calls. Whatever the situation, we will be there.

Question: So in essence 112 and 122 are not necessarily operational here inZaria, not yet?

Answer: Yeah, not yet. The emergency number is yet to be harmonized. But the emergency number I gave is functional and it is constant.

Question: In terms of jurisdiction, what happens? The numbers operational in Zaria are meant for Zaria. So if am on a journey and an accident happens halfway in the journey, I will call the number which I know. So what happens, how do you operate in terms of jurisdiction?

Answer: The emergency numbers are intact. Whenever and wherever you are and you see a rescue going on or there is an accident, whatever number you have, if it is a road safety number,just call it. Whatever and wherever it is, you just mention the scene where the accident occurred and definitely we will know where it is. It is connected, we would know if it is our jurisdiction. If it is not our jurisdiction, we will call the command that is responsible for that and they will be there. Even if the number you know is the private number of any staff, you can call it also.

Question: Give me an idea; let's say in Zaria, how many kilometers out do you go? How further out do you go, say on your to Kaduna, Kano etc. Give me a rough idea of how far out you go from Zaria for a rescue before the next command?

Answer: It's not based on kilometers really. Let me give you an example, from Zaria to TashanYari is like 20 minutes journey. So if there is an accident that is like a 15 minute journey from Zaria definitely it is their responsibility to embark on that rescue. Then if it is less than say 10km, Zaria command or TashanYari command can embark on it. Anyone that is closer because we patrol any day any time 24/7. So whenever there is a distress call, we call on the person that is more close to the jurisdiction. If he is there then he will embark on it.

Question: So are you saying that you have commands in each locality? How far out do you spread?

Answer: Along Kano road from Zaria here we have TashanYari, which is 20 minutes' drive. Then along Kaduna road we have BirninYero which is a 30 minutes journey and along Katsina road we have Funtua unit command which is almost 30 to 35 minutes journey as well. Let me give an example, along Katsina which is Funtua unit command, whenever there is an accident in between Giwa and Shika, Giwa and Shika is more close to Zaria than Funtua, so Zaria unit command will embark on that operation not Funtua. But whenever we call and communicate with each other and Funtua command are operating more closer than us, we call them because all we need here is for them to be rescued and for lives to be saved.

Question: In essence if I make a call not to the command that is within that location where an accident happened, what's your typical response time?

Answer: It depends on the information that the person who called gave the command he called. If you call me as a personnel that there is an accident and you tell me the particular point where it happened, I will know where it is and I will get the information from you. You tell me maybe it's in Kano and you tell me the village. Definitely I know am not in Kano, am in Zaria. I will call Kano command informing the command that there is an accident in so place, then that point will be visited.

Question: So if you locate the command, typically what rescue time do you try to meet?

Answer:whenever distress call for a rescue comes in we have to be extremely sure that truly the need for rescue is genuine and our drivers are trained and they are enlightened not to be driving recklessly because of the rescue because their lives are at stake too. So we make sure that we

make the rescue on time depending on how busy the road is. If the road is busy there is nothing that we can do, our siren is on then we embark on it. And if they understand the reason for the siren, they give way. But some are very stubborn, upon all the siren, they will be stubborn not to make way and they will try to be claiming right.

Question: So on a good day, how many people go for a rescue?

Answer: Rescue is an operation and for every operation we have a team consisting of an officer and 3 marshals including the driver which makes them 4. It is an operation. So there is a standby team. It would be the same officer and his personnel.

Question: What information is required from a person communicating emergency?

Answer: The location of the scene and the state of the accident victims.

Question: For the calls that you receive, who makes the call the most?

Answer: Some, because the drivers are on the road, most of them when they see an accident, they call us and the general publiccall us too. Most of the general public call us because they have our numbers, a number of them come into our office and ask for our emergency numbers so that if there is any accident they will call us. They are so quick to get our numbers, most of them call us for rescue and we embark on it.

Question: Now you are saying members of the public come to you saying they want to know your numbers so that if anything happens they could call you?

Answer: Yes

Question: How do you verify that an accident actually happened, how do you know that the call is authentic?

Answer: Yeah it's funny seriously because we use to experience this kind of situations. They will be using our number to call us with fake information and not the right information. So it depends on the number of calls we receive pointing out the same location of an accident. So when we receive like 2, 3 or 4 different numbers calling us that there is a particular accident at a particular scene, definitely we embark on it; we know that it must be real.

Question: So in essence you are saying before start out, you actually need to get one or two other calls from the first one that called you telling you that its actually real?

Answer: Yeah different numbers or even the same numbers. We used to listen to the background and understand truly by the crowd shouting or crowd trying to assist. From there we will definitely know the fact about the call.

Question: So in a month, roughly do you have an idea of the calls you get.

Answer: We get lots of calls but the calls do not matter but is how serious the accident is. A bike man can easily fall and they will call us that there is an accident and before we reach there the bike man is up and he is going because its not so serious, not the numbers that call but how serious, how critical is the accident.

Question: On a critical note do you get calls on serious accidents? Give me an idea, roughly in a month?

Answer: We have critical calls like this and roughly in a month they could be up to 10-15 in a month. Sometimes, when we embark on it and we are on the scene, some accidents may not be that fatal. Some may be serious or much simpler.

Question: Do you have language problems or any other problems in the course of emergency communication?

Answer: Truly, we don't have language problems. We have Hausa speakers so even if the caller can't speak English, we will understand what the person is saying. Basically as far as communication is concerned, I can say that we do not have issues

Question: What are the problems that you face when you go to rescue?

Answer: Most of the time, the problem we face is the general public. Most of the time, they will try to deprive you from performing your actual duty. Them trying to push that they know what they are doing. Sometimes they cooperate with us and sometimes they give us a little headache by not allowing us to do our work by trying to maybe, when you see a victim lying down and you are trying to put him in the right position that he will be saved or rescued, like giving first aid, it would be a problem for them. They will be thinking that you are not doing what is right. All they are after is for the victim to be taken to the hospital, not allowing you to give him the first aid and attention.

Question: Do you have enough machinery to rescue in critical cases?

Answer: Yeah we have machinery but they are not that sophisticated like maybe drilling and maybe saw and then we cut off a car into two, we have machinery to work and remove the victim out.

Question: To deviate a bit, in the course of the findings, I asked the commercial drivers some questions. There seems to be a disconnection between the FRSC and them. They don't seem to understand what you do. They think that you are insincere, especially the older ones, they don't trust your people. What's your take on this?

Answer: Definitely we have such problems because lots of the drivers are illiterates. They don't understand the picture of what we are doing. Most of the drivers are after money. They don't have discipline in driving; they don't have value for life. So whenever they are driving, they just want to reach their destination anyhow, anyway. So we try as much as possible, we give them lectures about how to respect life and how to respect their own life and the general public but they seem not to understand because it's like we are interrupting and intruding into their own business. Definitely they will not love us because we are conducting our work and they are not trying to respond to what we are trying to let them understand because they are illiterate so it will be hard for them to understand. We have been giving them enlightenment on how to pick passengers, always there will be overloading and you will see a driver without driver's license. He doesn't even know how to drive, he did not go to a driving school but because he can drive locally, he will be picking up passengers without anything and we are trying to correct them. When someone is not trying to understand you definitely there will be problem. So that is the reason. They don't understand what we are after and they don't want us there because they are always in haste.

Question: But some of them have claimed that you people are the ones that give them fake drivers license. How do you hope to correct the disconnection between you and the commercial drivers?

Answer: Most of the time as we talk about road traffic crashes, they are the victims most of the time and we are trying to let them understand that we value their lives and they will not understand. They believe that they own their life so they want to drive anyhow that is just the problem and in terms of fake driver's license, we enlighten them on how to obtain a driver'slicense. So whenever you go prior to what we advise you to do, you are on your own. But to get genuine we enlighten them on step by step process on how to get genuine driver's license.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Irrespective of where one lives, mobility is essential. The reasons for mobility can range from social interactions to the exchange of goods and services. Therefore, whatever its purpose, mobility is fundamental to human beings and it is this fundamentality that led man to search for safer, more convenient and instantaneous modes of transportation. The era of traveling on foot and the use of animals to pull carts and carriages gave way to the use of ships, automobiles and airplanes for movement. Thus through the years there was a tremendous revolution in the mode of transportation and such revolution is continuing.

One of the most utilized and most beneficial modes of transportation in many countries is road transportation. In Nigeria, about 80% of freight movement takes place on the road (FRSC Digest 2011 in Ukoji 2014).Ofoegbu (2013) corroborates this by noting that about 85% of passenger and freight movement in Nigeria is done on the roads. This makes road transportation an important factor in social and economic development of the country. However, this means of

transportation is not without its attendant problems and it has led to certain consequences on the countries that benefit from it.

Road Traffic Accident (RTA) is one of the problems associated with road transportation. Road traffic accident is collision involving one or more vehicles or a moving vehicle and a stationary vehicle/object or pedestrian resulting in deaths, personal injury or damage to vehicle or loss of physical property (OECD/ITF, 2014). Road Traffic Accidents (RTA's) are increasingly recognized as posing momentous problems worldwide as it constitutes a major public health challenge and also creates social and economic problems for countries and societies (Pedan, Scurfield, Sleet, Mohan, Hyder, Jarawan*et al*2004).

According to the World Health Organization (WHO, 2009) on a global scale, road traffic accident is responsible for an estimated 1.3 million deaths yearly. In Nigeria, the reported accident cases in 2013 were 13,583. The number of fatalities from the crashes was 6,450 (OECD/ITF, 2014). Low and middle income countries have higher RTA fatality rates (21.5 and 19.5 per 100,000 populations, respectively) than high income countries (10.3 per 100,000).The deaths are onlya microcosm of what actually happens. The bigger part is that RTA injures and disables approximately 50 and 20 million people and 80% of all deaths from injuries occur in low and middle income countries (Commission for Global Road Safety, 2008). Again, from the economic perspective, the consequence of crashes is estimated to be 1% and 3% of gross national product of world's countries reaching a total of over $500 billion (WHO, 2011). In this regard, a World Bank study has shown that the economic development of regions and nations is associated with an increase in the number of injuries and deaths from road traffic crashes (Koptis& Copper, 2005).

Substantial empirical evidences indicate that three quarters of RTA deaths are among men and that the highest impact is in the economically active group (15- 44 years), thus hampering efforts at sustainable development (WHO, 2013; CDC, 2004; Ediagbini et al 2011; Yamuragiye et al, 2013; Department of Transport, 2009). In this regard, WHO (2013) predicted that injuries from road traffic accidents (RTA's) will be one of the leading causes of disability and mortality among the most productive segment of the world's population by 2020. Similarly, by 2030 unless action is taken globally, RTA's will become the 5th leading cause of death surpassing HIV/AIDS, malaria, hypertensive heart disease and lung cancers.

From the foregoing, a number of countries have come up with measures to tackle RTA's especially in reducing the seriousness of injuries for victims and saving lives. Paramount among these measures is an emergency response that is facilitated by communication. It has since been established that individuals and societies cannot do without communication. Thus it can be said that communication is fundamental to human beings as it undergirds communities and organizations which consist of different individuals. Hence over time the modes of communication have also been completely transformed. Therefore as the modes of transportation were revolutionized, so also were the modes of communication.

According to Rodrigue, Comtois and Slack (2006) the growth of telecommunications is closely related with the growth of railways and international shipping in the sense that continental rail and telegraphic networks were often laid simultaneously. However, the era of telegraphs has given way to new systems of communication. The dawn of new communication technologies have redefined communication from one way monologue to interactive modes with immediate feedback, thus bridging space and time.

Ngamy and Kamtache, (2010) noted that time is vital to emergency situations. In the event of an accident, time is needed to notify relevant agencies, time to manage the emergency, time to arrive at the scene and time to scoop and run or administer first aid as the case may be. Thus, the polymorphous nature of what has to be done to guarantee survival makes time rare, elusive, precious and golden in emergency situations. In this vein, RTA handbook (2009) cited Cowley (1961) as saying that casualties will have lesser chance of survival if they are not given definitive care within one hour of the accident. The time taken to extricate the casualties of RTA's should not be more than 15 minutes. If time is to be utilized, then instant communication is imperative in emergency situations.

Studies done globally have suggested that there are a lot of preventable deaths from road crashes before arrival at the hospital. Thus, the importance of quick notification about a crash and evacuation of victims cannot be overemphasized (Mock, Nii-Amon-Kotei, Maier, 1997; Hussain, 1994 in WHO, 2004). In this regard it can be said that perhaps nowhere is the demand for rapid and efficient communication more critical than in emergency situations. Emergency communication is a critical communication that should be relied on at all times. Sander (2011) averred that the need for emergency communication includes so many circumstances, one of which is road traffic accident. It should include voice and non voice calls, pictures and videos, depending on the nature of the emergency. It requires that there be constant access to such communication and information between emergency service providers and the public and vice versa.

In the US and some South American countries, 911 is the emergency number to dial for immediate response in the event of an accident. In the UK 999, in a number of European Union countries it is 112. A host of other countries have different emergency telephone numbers which

allows a caller to contact emergency services for immediate help. A national emergency number makes the rescue process faster because the people know the numbers and call them easily in emergencies. These unified numbers guarantee that all relevant rescue agencies are warned and involved at the same time.

However, in Nigeria different emergency numbers exist. A look at the emergency services in Nigeria shows that these services are provided by government agencies. The agencies include but are not limited to Federal Road Safety Corps (FRSC), National Emergency Management Agency (NEMA), the Police and Fire Service. These agencies have different phone numbers which operate according to states and localities. In April 2014, Nigerian Monitor reported that Nigeria Communication Commission (NCC) had harmonized all emergency numbers to 112. However as the report noted, a number of modalities still needs to be put in place before it can function appropriately (Nigerian Monitor, 2014). In this regard, the local varied numbers which are mostly 11 digit numbers are still functional. Besides having different numbers, these emergency service providers do not have the same communication strategies and channels for communication in emergencies.

In this vein, London Borough of Barking and Dagenham said 'The first casualty of war is the truth and the first casualty of any major incident is communication' (London Borough in Nemeth and Somos, 2005).Reckers, Delaney and Wilson (2008) noted that communication teams may be small but communication is an integral part of emergency management that can easily turn to an issue especially if neglected. Again, Ryan (2010) stated that although the consequences of communication around an emergency are hard to measure yet it is evident that it plays a crucial role in emergency management. Hence there is need for a well structured system of communication within the organizational framework of emergency responders, between the

organization and its public(s) and from the public to the organization. It has been established that communication is vital in any society and that even under normalnonemergencycircumstances; effective communication undergirds almost all of public health practice. Consequently, Badr (2009) stated that communication is significant to public health and it plays a pivotal role in promoting core public health objective. These objectives include promoting health and preventing diseases which leads to an improvement in the quality of life. It therefore follows that communication plays an important role in attenuating the consequences of road traffic accidents.

1.2 STATEMENT OF THE PROBLEM

The chain of survival of accident victims starts at the scene of the accident. The quick arrival of an emergency response team is an important factor in reducing adverse health consequence. However, CLEEN Foundation (2010) noted that every year more and more Nigerians die as a result of failure of emergency communication services in mobilizing aid to victims of RTA's. It has been argued that communication is a cross cutting issue that should be given due consideration at various levels across different sectors. But the structure for integrating communication and its uses across various sectors is yet to be fully realized and properly utilized (BBC, 2012). Consequently, if communication is not given proper consideration in emergency, a longer time will be taken to extricate accident victims and this will lead to moredeaths from treatable conditions. To buttress this point, Ediagbini, Delia, Aminu, andShehu (2011) in their work on chest trauma in Zaria between 2008 and 2010 found thatthere was 31hours 40 minutes and 12 seconds between the time of accident and admission of victim in the hospital.

In Nigeria, the Federal Road Safety Corps (FRSC) is saddled with the responsibility of safety on the roads. The mission of the Corps is to Regulate, Enforce and Coordinate all Road Traffic and Safety Management activities. One amongst their operational delivery approach is the provision of prompt rescue services and attention to road traffic accident victims. It has been established that communication is instrumental in providing information about accidents from the public to the organization. Hence FRSC has emergency communication channel(s) through which the public can reach it in case of an emergency. However the processes that emergency communication goes through before rescue is not clear and whether or not the public is aware of these channel(s) and the functionality of the said channel(s) is not certain.

1.3 AIM AND OBJECTIVES OF THE STUDY

The aim of the study is to ascertain the preference given to communication in road traffic accident in Zaria through the following objectives:

1. To find out the level of awareness of FRSC's communication channels among commercial drivers in Zaria.

2. To assess the functionality of FRSC's emergency communication channels in Zaria.

3. To ascertain the priority commercial drivers give to communication in road traffic accident.

4. To ascertain the processes that emergency communication undergoes before rescue.

1.4 RESEARCH QUESTIONS

1.What is the level of awareness of FRSC's emergency communication channels among commercial drivers in Zaria?

2. What is the level of functionality of these emergency communication channels?

3. What prioritydo commercial drivers give to communication in road traffic accident?

4. What processes does emergency communication undergo before rescue?

1.5 SIGNIFICANCE OF THE STUDY

In Nigeria, the unavailability of other modes of transportation like the rail has made road transport the most utilized for both passenger and freight movement. There are many accidents on the road and the victims require prompt care. Before any medical care can be given professionally, communication is important, hence the relevance of studying emergency communication. However studies on road traffic accident seen so far have focused on causes and prevention of accidents while those on emergency communication focus on natural disasters and building operable systems (Aliyu, 2002, Sumaila, 2013, Akinkpelu, 2007, Ukoji, 2013, Owolabi and Ekechi, 2014, Souley and Edemennang, 2013). None of the studies seen so far focused on emergency communication as it has to do with road traffic accident in the study area; therefore this study intends to fill that gap. Also, the study of emergency communication has gained currency in other parts of the world. However, little is known about the communication of emergency and the lives saved in Nigeria as a result of such communication.

Therefore, this study is significant in that it would provide insight into emergency communication in the study area and it will be instrumental in reemphasizing the importance of communication for timely rescue of accident victims. Hence, agencies like National Emergency Management Agency (NEMA) and Federal Road Safety Corps (FRSC) will have basic ideas on

how to improve upon their services. The study will also be a reference point for other researchers and students who would conduct related studies.

1.6 SCOPE AND LIMITATIONS OF THE STUDY

The study was carried out in Zaria and thecommunicationchannels of FRSC in Zaria are peculiar to Zaria and given the method of data collection,generalizing the study is not possible. Again, the study is limited to knowing the preference given to communication in road traffic accident in Zaria. Thus consideration will not be given to other factors that are relevant to emergency situations other than communication. Also the study will focus on commercial drivers only.According to FRSC planning advisory unit, between 2007 and 2010 minibuses caused 30% of total road traffic accidents in Nigeria and 40% of deaths nationwide, hence the choice of commercial drivers (FRSC planning unit analysis, 2012 in Chidoka 2012).The study is also limited by an inability to get the exact population of commercial drivers. Also a number of the drivers did not want to be part of the study because of their misgivings about the FRSC; these drivers may have had valid information which will have enriched the study.

1.8 DEFINITION OF KEY TERMS

The terminologies used in this study are

i**. Commercial Drivers:** commercial vehicles are those vehicles that are used for carrying passengers or goods. Hence commercial drivers are those who drive different types of vehicles

that carry either people and or goods in exchange for money. In this context, commercial drivers are those that drive buses or taxi carrying passengers from Zaria to other states and localities.

ii.**Emergency:** for the purpose of this work emergency is an unexpected event that has negative consequence and is strictly confined to road traffic accidents. To be more specific, the emergency communication will be of the accidents that happen interstate (i.e. from Zaria en route other localities).

iii.**Emergency Communication:**Emergency communication is the dissemination of information on a situation that is life threatening with negative consequence. In this case, emergency communication is regarded as a type of communication.

iv.**Processes:** The term processes as is found in research question four refers to the stages that emergency call undergoes before actual rescue takes place. These stages will give a picture of how long it takes between a call and embarking on a rescue. However the study does not attempt to measure the exact time it takes between an emergency call and actual rescue.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

This chapter introduces the literature review and the theoretical framework. It is subdivided into three parts. First is the conceptual review which looks at concepts as they relate to the study. They include an overview of road traffic accidents, emergency communication as well as organization of emergency communication services in some selected countries. The second part consists of the empirical review which focused on studies on road traffic accidents and emergency communication. The third part is the theoretical framework, which is the media richness theory and a contextualized model of Harold Lasswell's model of communication.

2.2 CONCEPTUAL REVIEW

(a) Road Traffic Accidents: An Overview

Mobility is an intrinsic necessity of the individual and in many countries it is mainly carried out by means of road transport. Hence road transportation systems have become crucial to the society and are also an important component of modernity (WHO, 2004).Ukoji (2014) stressed that road transport is a key element in the social and economic development of any nation. In Nigeria, the unavailability or inaccessibility of other modes of transport like water, rail and air transport makes road transport preferable. However road transportation has its problems for

instance Gauthier (1970) stated that road transport faces the problem of structure (poor planning), poor management and definite policy direction.

Again Ukoji (2014) noted that in 2006, 644,387 vehicles, including government motor cars and motor cycles, private motor cars and motor cycles, and commercial motor cars and motor cycles, were registered nationwide and by 2009 the number increased to 777,835 registered vehicles nationwide. This exponential increase is attributed to growth of urban areas. However, as vehicles increased in number so also did the incidence of road traffic accidents.By2011 the United Nations ranked Nigeria as the second worst in the world with regard to road traffic accidents in position 192 out of 193 countries surveyed (Ofoegbu, 2013).

In its Global Status Report on Road Safety (2013), WHO indicated that, worldwide,the total number of road traffic deaths remains high at about 1.3 million per year and by 2020 the figure will rise to over 1.9 million deaths yearly. Yakasai (2011) cited Murray and Lopez (1996) who analyzed the global burden of disease ranking for 15 leading causes of death. By 1990 RTA ranked 9 but will be number 3 by 2020. Hence by 2020 25% of the budget of health minister will be on RTA casualties. This threat is not in Africa alone but cuts across the globe. Therefore it can be said that the increase in road traffic accidents has huge health, social and economic impacts on individuals, families, communities and nations.WHO (2013) further predicted that injuries from road traffic accidents (RTA's) will be one of the leading causes of disability and mortality among the most productive segment of the world's population by 2020. Similarly, by 2030 unless action is taken, RTA's will become the 5th leading cause of death surpassing HIV/AIDS, malaria, hypertensive heart disease and lung cancers. Hence the UN decade of action target is to reduce by 50% the expected number of fatalities worldwide.

In the United States of America, Center for Disease Control and Prevention (CDC) (2004) reported that motor vehicle crashes are the leading cause of death for children ages 1 to 3 and ages 4 to 11. Similarly, National Highway Traffic Safety Administration (NHTSA) (2004) noted that in 2002 12,200 adolescents' ages 12 to 19 died from injuries and motor vehicle crashes are the leading cause of death for this age group. Also, traumatic brain injuries among ages 16 to 19 account for more than 240,000 emergency room visits, 36,000 hospitalizations, and more than 5,700 deaths each year. Again, more than 79,500 adults ages 20 to 49 died from injuries in 2002. Motor vehicle crashes were the leading cause of those deaths (CDC, 2004).

In England and Wales, RTA accounts for 4 in every 245 deaths (DFT, 2010). Conversely, Hill and Starrs (2011) noted that Britons are more likely to die on the roads than in any other daily activity. Again in 2010 twelve European Union countries had about 31000 deaths from road crashes which has become one of the three leading causes of death and hospital admission for those under 50. In Europe it is estimated that for every death, there is an estimated four permanently disabling injuries such as the brain and spinal cord injuries(Mackay, 2005 cited in DACOTA, 2012). A review of deaths in this region shows that about 50% of deaths occur after or en route the hospital. For those patients taken to hospital, the data suggest that comparatively few deaths, only about 15%, occur between one and four hours after the incident, while around 35% occur after four hours. But time between the incident and death varies considerably between patients and between countries(Buyleart, 1999).

However, the incidence of fatal Road Traffic Accidents (RTA) is highest in developing countries especially in sub-Saharan Africa.For instance, over 3000 Kenyans are killed on the roads every year, most of them between the ages of 15 and 44 years. The cost to the Kenyan economy from these accidents is in excess of US$ 50 million which does not include the actual loss of life

(MwaiKibaki, former president of Kenya, cited in WHO, 2004). Again Odhiambo, Beynon, Ogwang et al (2013) found that between 2003 and 2008, the proportion of deaths related to trauma in Western Kenya increased from 2.5% to 5·9%, with road traffic accident as the leading cause of death.

Similarly, Abraha (2010) noted that RTA fatality rate per 10,000 is 30-40 times higher than in Africa than in developed countries. Figures from the National Road Safety Commission (Ghana) indicated that an average of 1900 fatalities result from road traffic accidents every year.

In Nigeria, the Federal Road Safety Corps noted 1056 deaths from 7737 accidents between December 2009 and March 2010 (Daily Sun Newspaper, 2010). Similarly, between 2007 and 2010, there were 5,828 road traffic crashes involving buses. The number of deaths from the crashes were 5,582 while those injured were 27, 791 (FRSC Planning Unit, 2012).Conversely, Edaigbini et al (2011) in their work on chest trauma in Zaria between 2008 and 2010 reported that there were a total of 4,784 patients admitted for trauma in ABU teaching hospital. Road traffic accident was responsible for 61.9% of these cases, a larger percentage of the patients were male with the mean age of 35.4 years.In this vein they noted that injuries from RTA's have dwarfed mortalities from infectious diseases on critical analysis. Similarly, Aderamo (2012) cited Murray et al (1996) and Jacobs et al (2000) who stated that in Nigeria, RTA have become the leading cause of death in economically active adults between ages 30 and 49 years.

Most deaths occur within the first hour of injury, often before the patient arrives at the hospital. Death sometimes occurs from airway obstruction and external bleeding, both of which can be prevented by simple first aid measures and quick arrival of response service (CLEEN Foundation, 2010). Hence a study by Atubi (2012) showed that by international comparison the chance of a vehicle killing someone in Nigeria is 47 times higher than in Britain. The proportion

of fatalities due to injuries is also very high. For example, while Czech Republic has only one death in 197 accidents, France one death in 175, South Africa, one death in 47 accidents, Nigeria has one death in approximately 3 accidents. Typically, there are three phases of deaths from severe injury. The first phase occurs quickly as a result of tremendous injury. The second phaseoccurs during the intermediate or sub-acute phase (the sub acute phase means that the injury is not new and perhaps the patient may have gotten initial treatment and stabilized). Deaths from the sub acute phase occur after several hours and are mostly from treatable conditions. The final phase of deaths occurs much later. In this case death occurs days or weeks after the initial injury. They are as a result of infection, multisystem failure or other late complications of trauma (DACOTA, 2012).

A comparative study of mortality among seriously injured patients across a range of countries shows that in low-income and middle-income countries, the vast majority of deaths occurred in the pre-hospital phase. Among the risk factors for road crashes is the quality and availability of emergency services and acute trauma care (Mock, Jurkovich,nii-Amon-Kotei, Arreola-Risa, & Maier,1998). Beyond the deaths, injuries represent 12% of the global burden of disease (Yakasai, 2011). To buttress this fact, Peden, McGee and Sharma (2002) also noted that the category of injuries worldwide is dominated by those incurred in road crashes. For each road traffic injury death, there are dozens of survivors who are left with short-term or permanent disabilities that may result in continuing restrictions on their physical functioning, or otherwise thereby reducing their quality of life.A Swedish study into survivability showed that 48% of those who died from accidents sustained non survivable injuries. Of those that sustained survivable injuries, 5 % were not located in time to prevent death and 12% will have survived had there been more rapid response and quick transport (Hirsch and Eppinger, 1984 in DACOTA, 2012).

According to WHO (2013) deaths from road traffic injuries account for around 25% of all deaths from injury.96% of all children killed worldwide as a result of road traffic injuries occur in low-income and middle-income countries and over 50% of deaths are among young adults in the age range of 15–44 years. Again, among both children aged 5–14 years, and young people aged 15–29 years, road traffic injuries are the second-leading cause of death worldwide. It is given that mortality is an essential indicator of the scale of any health problem. Also, it has been noted that the international community is doing much to eliminate diseases such as TB and malaria. But road injuries that cause a similar share of mortality have not received much attention in terms of resource allocation or recognition as a development priority (WHO, 2004).

(b) Emergency Communication

During the wars in Europe over 200 years back, flying ambulances orlight horse-drawn carriages were used to carry those who were wounded from the battlefield. From then on, emergency services have improved tremendously and mortality rates dropped as a result of first aid provided at the scene of injury (ADB, 1995). But before first aid or emergency services can be initiated, communication and the capacity to communicate is paramount (ADB, 1995).

According to Berry (2007), communication is a fundamental process. In fact, it is virtually impossiblenot to communicate at all; even a non-response sends a message. On the onehand, communication seems effortless; yet things can easily go wrong sometimeswith serious consequences because of communication or the lack of it. Communication is central to our everyday functioning and can be thevery essence of the human condition. Without the capacity for sophisticated channels of sharing knowledge, both within and between generations, mans advanced civilization would not exist (Hargie and Dixon, 2004).At its simplest level, communication requires a sender, a message, areceiver and a channel of communication.

However, any communicativeevent is enormously complex; senders are often receivers, and multiple andcontradictory messages may exist in a single communication process.

Emergency communication in itself is the dissemination of information on a situation that is life threatening and which requires immediate attention of emergency service providers. These situations could be car crashes, fire incidents and other similar events. In this vein, Portman and Pirzada (2008) noted that reliable and robust communication is vital for successful emergency management operations.

Consequently, effective communication is one of the most crucial elements in responding to emergency incidents. In emergency situations, speed of communications is critical and can make the difference between life and death (Save the Children, 2012). Thus emergency service providers or emergency responders such as FRSC, Police, Fire Service and other agencies rely on effective communications. From the time they get information on an emergency to the time the actual rescue is done, a lot of communication takes place between all the service providers and the public or between relevant organizations.

As Haddow and Bullock (2003) put it, pertinent issues for organizations in emergencies are communication and coordination. Communication here refers to intra organizational communication (i.e. how an organization sends a message across a channel to another part of the organization) or it could be to another organization (inter organizational communication). Coordination here can be understood as the degree to which there are adequate networks among the organizational parts for intraorganizational communication or among the organizations for interorganizational communication to accomplish goals.The management and sharing of information in the response phase of an emergency is critical in determining the coherence and success of a single or multi-agency response. However the way information is managed and

shared on an inter-personal, intra-organizational and inter-organizational basis can be quite complex. According to Yang and Maxwell (2011), individual behaviour in information sharing can be complex and is dependent on a number of different factors some of which include: willingness to share information, motivation, a perceived need to share, channels for sharing information and contextual factors, organizational structure, culture, ritual and norms. But emergency situations require prompt action; hence emergency communication may not follow the usual organizational pattern of communication. In this vein, Badiru and Ratz (2013) averred that emergency involves various emotional, sentimental, reactive and chaotic responses and that human behaviour in emergencies can be complex.

According to Smirnov, Kashevnik, Levashova, Shilov, Shpakov et al (2011) for its effectiveness, an emergency management system must present real time emergency information and data in understandable and easy form. Basically, operational success in responding to an emergency might easily be measured in terms of the number of lives saved. If response will be prompt, there is need for communication. However, a road safety report in the African region by WHO in 2013 noted that one in three of the 44 countries sampled do not have emergency numbers or a communication system in place in the event of emergencies. Only 36% of the countries have emergency numbers which are mostly multiple. This can affect response to emergencies which in turn affects post crash care.

Basically, the time frame of an emergency influences how immediate the communication has to be.For an emergency message to be successful; it must provide specific information about the location of the event and the nature of the emergency as well. Therefore a typical emergency communication system is made up of devices that may be wireless or wired communication which may include conventional telephone and radio communication. The basic difference

between the two is that a wired system uses telephone that in turn uses wires over a limited area. On the other hand, a wireless system makes use of radio frequencies and it has the capacity to operate over a larger geographical area and it can reach unlimited number of users.

Chandler (2010) gave qualities of technologies that can be used in disasters response and by inference the characteristics of communication during disaster. These qualities can be extended to emergency communication as is referred to in this study and they include:

i. **Immediacy:** The communication must be immediate especially in the case of rapid-onset events. The faster the message is delivered, the faster help can be given. The speed of delivery here is dependent on knowledge of available channels and functionality of such channels as well as the nature or type of the technology in use.

ii. **Accessibility:** The second characteristic of emergency technology is accessibility. If such technology is to be relevant for emergency communication it must be accessible to all including the hearing impaired and the dumb and people with other forms of disabilities.

iii. **Reliability:** It is important for the technology to be able to disseminate the message in a persistent manner. This alludes to the reliability of the system or technology in question. Technology that can typically operate even with saturation of communication lines or channel can be categorized as reliable.

iv. **Interactive:** Finally, it is also important for emergency technology to be interactive. There should be a two-way communication between the service provider and the affected population.

Similarly, FEMA (2008) define the elements of a desirable communications system as follows:

i.**Interoperable**: able to communicate within and across various agencies and jurisdictions

ii.**Reliable:** able to function irrespective of the type of emergency.

iii.**Portable**: built on standardized radio technologies, protocols, and frequencies

iv.**Scalable:** suitable for use on a small or large scale as dictated by the incident.

v. **Resilient**: able to perform despite damaged or lost infrastructure

vi.**Redundant**: able to use alternate communications methods when primary systems go out.

(c) Organization of Emergency Communication Service in Some Selected Countries

A number of countries organize their emergency communication service through telephone. An efficient call receiving system is essential for quick response. In some states, emergency calls are answered by ambulance services and in others by emergency services like Police and Fire Service or emergency medical services (Buylaert, 1999). Although several countries have established a call receipt performance indicator, it is not certain if all countries have standards for call receipt.

In the European Union, the emergency notification number is 112. It allows European citizens in distress to contact the emergency services in all Member States. 112 havebeen implemented in all EU countries (CEC, 2005).

In the US and some South American countries the emergency number is 911 and in the UK the primary number is 999 and 112 is the secondary number. In New Zealand, 000 is the primary emergency number, 112 and 106 are secondary numbers. In Malaysia, 999, in Germany 112 is the primary number while 110 is the secondary number. In Brazil 190, Philippines 117, Japan 110, Jamaica 119 and Mexico 080 (911 dispatch, n.d). These telephone numbers which operate throughout the countryprovides telephone access to all emergency services like police, fire service, FRSC, ambulance and emergency medical service.

The countries with three digit emergency numbers are seen to have better emergency response time and that the people in those countries use it more.Conversely, the mental noise model notes that when people are in a state of high concern because they perceive a significant threat to their

life, their ability to process information effectively and efficiently becomes impaired. So it is easier for them to understand messages in three's (Covello, Peters, Wojtecki& Hyde, 2001). Therefore it can be argued that if emergency numbers are in three's, it's easier to remember. To extrapolate, the people in the countries with three digit emergency numbers have higher level of awareness of these numbers and can easily remember them in emergencies. The simpler the number, the easier it is to recall and thus affecting the timing with which emergencies are responded to. The single digit can also lead to less cost for the state than when different numbers are in use. From the foregoing an important question that can be raised is whether longer 10-13 digit numbers affect people's ability to remember and especially use the emergency numbers.

As much as it is important for countries to harmonize their communication systems, there are crucial questions that they must answer. For instance, who pays for emergency communication in the long run especially if it is made free? Other questions are the types of emergency that should be accessed from the dial of that particular number, call answering method, data base maintenance and how to handle language diversity to mention a few.

For most of the countries with three digit numbers, the way the system works is that on dialing the emergency number, the call gets routed to a call center. These are called Public Safety Answering Point (PSAP). They are usually located in several places within the country or state and are manned by personnel who are well trained to seek specific information from the caller.The address of the caller gets transferred from an Integrated Public Number Database in case of landline calls. For mobile networks, the approximate location coordinates gets transferred from the mobile networks. Then the PSAP's route the emergency calls further to the nearest local emergency responding agency/agencies. These agencies include medical teams, fire service, law

enforcement agencies etc. In case of unavailability of location information, the answering personnel will ask the caller for the location information.

In a centralized emergency response model, one of the key features is the transmission of identification and location information by telecom service providers to the PSAP. The identification information may be information like a subscriber or company name. Location information in case of wired line connections can be street name, house number, area or town and postal code at which the telephone is installed. If the call is from a mobile phone, the location information transmitted by the mobile networks can be either the address of the cell site closest to the caller or location derived by triangulation method or with the help of GPS. In some countries like USA, there are rules that require the information regarding the latitude, longitude or position of the subscriber's equipment to be transferred from the service provider's network to the PSAP (Bhawan, and Marg, 2013).

From the foregoing the importance of communication in emergency response cannot be overstretched. The performances of emergency service providers can be measured by how fast they respond to emergency cases. Response time has become one of the ways to assess the quality of an emergency medical system. But it has been argued that rating a system based on fast driving is overly simplistic because there are other issues that have to be considered. For instance does response time affect clinical outcomes in the long run? Provision of first aid at accident scenes, the state of the health care system, quality of medical personnel and communication system are all important factors that have a direct effect on the overall wellbeing of the patient (Fitch, 2015).

In recent times emergency communication is taking another dimension in some countries. This dimension is the Automatic Crash Notification *(eCall)* which is available in several car models.

It is meant to give emergency responders data that indicates the severity of the crash and the type of injuries sustained. It is estimated that more than 765,000 vehicles fitted with eCall have been sold in 11 European countries (Chauvel&Haviotte, 2011). The aim of eCall is to speed up emergency response by reducing the time between a crash and arrival of the emergency services. eCall can be triggered manually or automatically. It is used to send an in-vehicle message through a GPS system to an emergency call centre in the event of the vehicle's involvement in an accident. The least data sent contains information about the incident including time, the exact location of the accident, vehicle identification and information about a possible service provider close by (CEC, 2005).

Similarly, Okereafor (2011) noted that South Africa has an eCall mechanism in some vehicles as safety system. If there is an impact, collision or summersault, the eCall automatically calls the nearest emergency center and communicates its exact location based on GPS support within minutes. A study in (2011) reported the effectiveness of eCall in 202 crashes in France as having a 2.8 % reduction of deaths due to quick response to emergency (Chauvel and Haviotte, 2011).

Other significant improvements in emergency communication have been made due to the growth in use of mobile phones. The International Telecommunication Union (ITU) estimates that globally there are 85.7 mobile subscriptions per 100 inhabitants. In the developed world the figure is 123 per 100 and in the developing world it is 77.8 per 100 (ITU, 2011). This follows that if there is an emergency communication system in place, the people can easily access it as against when land lines were the predominant means of emergency communication. In this regard, Jeffrey Sachs, Director of the Earth Institute at Columbia University described the mobile phone as the "single most transformative tool for development" (Save the Children, 2012). His statement is not unconnected to the reach and wide spread use of mobile phones across the globe.

2.3REVIEW OF EMPIRICAL STUDIES

(a) Review of Works on Road Traffic Accident

Road traffic accident continues to raise concerns in different quarters. These concerns may not be unconnected to the lives lost and those injured or disabled, the families left to mourn quietly or the economies affected. Also, the concerns may not be unconnected to the fact that a number of countries are dependent on their road networks for social and economic activities. As stated earlier, about 80% of freight movement in Nigeria takes place on the road. Thus it does not come as a surprise to find a lot of studies done on road traffic accident in Nigeria and across the globe. Some of these works include:

Aliyu (2002) in a study stated that, the key determinant of accidents and injuries in Nigeria are social factors which deal with inadequate knowledge in accidents and injury prevention especially in rural areas where literacy is low. The other factor is economic and this has to do with the inequitable distribution of resources between rural and urban center. Hence there is inadequacy of health facilities to attend to victims. The last is political factors which includes lack of proper emergency response system to help victims. Again there is no implementation of safety regulations of speed limits, seat belt, drunk driving and use of crash helmet. Also, there is no collaboration between government agencies concerned with the issue of health care. In this regard, he proposed a national emergency health policy to be incorporated to the existing health policy. It should be administered in collaboration with relevant agencies to ensure an effective and efficient emergency medical service and disaster response to Nigerians and it must be sustainable.

Agbonkhese, Agbonkhese, Yisa,, Akanbi,, Aka and Mondigha,(2013) in their study on road traffic accident in Nigeria, causes and preventive measures noted that road traffic accidents are

high in developing countries although these countries have just 48% of the world's vehicles. The basic causes of road traffic accidents in Nigeria include driver factor, road pavement, vehicle and environmental factors. Among the preventive measures they advocated are sobriety check points and better road networks.

Similarly, Sumaila (2013) did a critical review of current road safety approaches in Nigeria. This was in order to identify their defects and deficiencies in tackling the road traffic accident problem in the country. He looked at accident records and got other relevant information from Federal Road Safety Corps and The Nigeria Police and Department of Road Transport Services. The findings of his study reveal a high rate of road traffic accidents in Nigeria basically due to driver's error and FRSC's failure is its inability to properly implement use of driver's license and that Nigerians have a poor traffic education amongst other findings. He therefore called for a restructuring of FRSC and better education for road users. However, by looking at the approaches from the rescue organizations' perspective alone, the tendency for bias is high. The approaches are carried out on commuters. To get a better picture, their opinion should have been sought also.

Assum (1998), using qualitative methods appraised road traffic accident in five African countries. This was in order to identify measures of reducing the number of road traffic accidents and material damages caused by such accidents. He found that part of the reason for neglect on the road is that Africans' are plagued with wars, famine and fatal diseases hence their value for life seems to be low. A few people killed on the road are not as consequential as the huge numbers killed in war or by famine. Thus, to tackle safety issues on the roads there has to be better funding, political prioritization that is more interested in mitigation than response, implementation of road safety laws and attitude change. In this vein, a study of 14 OECD

countries by Deverajan, Swaroop, and Hengfu (1996) showed that investment in transport, health and communication has positive impact on productivity. Thus there is need to give precedence to investments on the road for more safety and hence productivity.

Conversely,the lack of investments in this sector has led to failure to save lives that ordinarily should be saved. For instance, in Nigeria and some developing countries, there is no organized ambulance service. In this vein, the injured arepicked up by bystanders or passing motoristsand carried to the nearest emergency department using transport thatis available mostly without any treatment or first aid at thescene of the accident. Also sometimes if there are a lot of victims, they are piled up on each other and rushed to the hospital. This act of cramping the victims together can hinder their chance of survival. This and other forms of neglect lead to avoidable deaths. The director of RAC foundation noted that stakeholders understand the risks on the road. In essence although knowledge on how to reduce death tolls and injuries on the road are available, yet there is a failure to implement cheap and effective measures to combat them. He further noted that this neglect would not be tolerated in any other area of public health (Glaister 2011, quoted in Hill &Starrs, 2011).

Akinyosoye(2015), looked at the role that language plays in human relations. Language be it verbal or nonverbal is quite significant in human relation. Of importance in non-verbal communication is the use of signs in communication. The study found that the disregard for road signs is one of the causes of accidents on Nigerian roads. Through unstructured interview with union leaders and their members, it was revealed that superstitious belief in the power of Ogun, Yoruba god of iron and war to avert road accident, illiteracy and inability to read road signs contribute to the frequency of traffic accidents on Nigerian roads. Hence the government and its designated agency need to increase media advocacy and literacy activities for all road users.

Aworemi (2010) in a study examined the causal factors of road traffic crashes in some selected states in the South West using the stratified random sampling technique. The basic findings of the study showed that human, vehicle, roadway and environment had significant contribution of about 79.4% to the road traffic crashes in the study area.A couple of other studies have also been done on road traffic accidents across the country and beyond (ETAC, IRU, 2007; Ukoji, 2013; Akinpelu, 2007; Yamuragiye, 2013; Ohakwe et al 2011; Grimm and Treibich, 2010; Chukwuezi and Nwosu 2013; Salako, Adegoke, and Akanmu 2014; Agbeboh. and Osabuohien-Irabor, 2013; Ogunmodede, &Akangbe, 2013).

All the studies have shown that road accidents are caused by the interaction of a plethora of variables. They reveal that at least 80% of road traffic accident is linked to human error/factor. The factors include excessive speeding, visual acuteness, driver fatigue, little or no knowledge of road signs and regulations, health problems and drug abuse. Factors like poor vehicle maintenance, tire blowouts, poor lights, un-roadworthy vehicles, infrastructure, weather and mechanical faults played only a minor role in accident causation. They also showed that most of the accident victims were males with a mean age of 35 years.

Worthy of note is that a number of studies on road traffic accidents in Nigeria have focused on causes and solutions to road traffic accidents without necessarily looking at post crash care although post care is instrumental in the reduction of fatalities from road traffic accidents. Before any post crashcare can commence, the rescue organizations must be notified and this is where communication features as a crucial factor.

(b) Review of Related Works on Emergency Communication

According to Kobusingye, Hyder, Bishai, Hicks, Mock and Joshipura(2005) Emergency happens everywhere and each day they consume resources regardless of whether there are capable

systems of achieving good outcomes. Thus, in a study, Iwakosun et al (2013) noted that inadequate communication capability has adversely affected emergency responders and recovery efforts of accident victims in Nigeria. In their study, they came up with a web enabled interoperability system which enables an eye witness to use voice calls and messages to alert relevant agencies that in turn use designated component of the system to make necessary contact for rescue efforts. However, an interoperable systems' functionality may best be on paper except it is put to use. Therefore there is need to study systems that are operational to understand how communication can be prioritized.

Another study by Owolabi and Ekechi (2014), revealed that in most cases of disaster whether natural or artificial, Nigeria has always been caught unawares because there is no efficient disaster management system. Therefore Nigeria suffers significant human and economic loss in the face of disasters. Communication which is an essential part of disaster management techniques has been observed to be inefficient. Their finding is on disaster management which may requires more capacity because when disaster strikes it leaves a lot of damage in its wake and has the capacity of destroying communication infrastructure. But then road traffic accidents have as much consequence as natural disasters. This can be seen in terms of the frequency of occurrence of road traffic accidents and the number of lives lost as its effect is felt more on the economically active segment of the population.

A study by Burke,Hines, Ahn, Walters, Young, Anderson set al (2014) noted that limited communication, untrained personnel and infrastructure amongst a host of other factors negatively impact the ability to deliver quality emergency and urgent healthcare. In the same vein, Njar (2015) noted that the administrative, technical and technological expertise required for

sustainable emergency management is grossly inadequate in Nigeria. Even where they exist, there is lack of coordination.

Consequently, the findings of a study done in Nigeria showed that the police force and road safety members were responsible for bringing to the hospital, 40.42% of accident victims; relatives and commercial vehicles were responsible for 52.83% and bystanders 6.74% (CLEEN Foundation, 2010). In a similar study conducted in Ghana, the evacuation and transport of crash victims to the hospital is more often carried out by bystanders, relatives, commercial vehicles and sometimes the police (Forjuah, et al., 1999). This is attributed to limited use of communication. Even where the option of communication is available, a number of the people do not take it. Also, it has been noted that in a number of developing countries, the common practice is to evacuate victims to a public hospital that is far away and where treatment is cheaper while neglecting a private hospital that is close to the accident scene.

Souley and Edemenang (2013), in their study on tactical emergency response management system noted that effective accident management requires the organization of large amounts of information. In essence, their study showed that an improvement in technology will speed up emergency response. If the organizations involved in rescue process can have a unified process and if they are to use mobile phones to communicate between themselves, they will speed up the whole process of rescue. In this study, an emergency situation was staged and the rescue organizations were called. Their response was found to be prompt. However whether or not this reflects the reality on ground where the study was conducted is questionable. Staging an emergency situation may pass off as a method of training. But the real emergency situation can be overwhelming and completely chaotic. Inthis vein, London Resilience (2005) noted that a major emergency plan should be multiagency based. Hence, the input of every relevant response

agency must be recognized and there must be clear cut boundaries or clearly defined roles for each of them.

In another study, using qualitative and quantitative data, Van Gorp, Pogrebnyakov and Maldonado (2015), sought to know how emergency response organizations use social media. They found that social media like Facebook and twitter were used by emergency response organization to disseminate information, get response and input from the public and other relevant organization. But the use of social media for emergency services is subject to leadership decision and staff adoption. The use of social media in emergencies like road traffic accident in Nigeria may be far reaching. Platforms like Whatsapp and Facebook may not be available to the person communicating emergency. As noted earlier, effective emergency communication channels should be able to present the communication on real time basis (immediately). Hence a study by Condon and Robinson (2014) showed that the reasons for using different media in emergency communication by emergency managers are dependent on various factors. Such factors include the affordability of the technology, the capacity of the technology to transmit information and the function that the message will serve.

Conversely, Yang (2010) in a study noted that instant communication is most important during an emergency. Thus he looked at the potentials of the mobile phones in communicating emergencies. Since mobile phones operate anywhere, anytime and even on the move, mobile phones fulfill emergency demands. Again, Nemeth and Somos (2005) also emphasized the importance of mobile phones in instant communication. However, use of mobile phones raises certain curiosities, likethe extent to which mobile phones can be relied upon given strains like poor network coverage, low or no battery and lack of call credit since emergency calls in Nigeria is yet to be free.

However, it can be argued that in Nigeria the mobile system of communication is well entrenched. Hence if emergency communication channels are functional and publicized, a sizeable number of the people can easily reach the appropriate agencies instantly in the event of emergencies. But despite this availability, Save the Children (2012) highlighted that there is a widespread lack of awareness regarding how mobile phones can be used in emergency response. Also, due to the rapid changes in technology, what works today may not work tomorrow. Again the technology that works effectively in one location may not necessarily work in another. It therefore becomes important that technologies be used contextually.

Hence, Ryan (2010) opined that since rescue is an operation, its success in responding to an emergency can be measured after the event in terms of the number of lives saved and properties protected. However, the effect of communication activities – or a lack of communication around anemergency is hard to measure and most often such measurement is not carried out thereby making it hard to do any kind of evaluation.As he noted, a reason for this difficulty may be that communication teams do not have the necessary resources that they require to do what needs to be done.

From the foregoing, it can be said that studies carried out on emergency communication are done to address a particular area and that not much studies have been seen with specificity to emergency communication in road traffic accidents.

2.4 THEORETICAL FRAMEWORK

The study adopted Media Richness Theory and a contextualization of Harold Lasswell's model of communication within emergency communication to explain key factors in emergency communication and to make a link with Media Richness Theory.

Media Richness Theory

The Media Richness theory looks at communication effectiveness under conditions of uncertainty and ambiguity. The theory has it that the most appropriate communication medium should be chosen in performing a task so as to reduce uncertainty and resolve equivocality. Uncertainty here refers to a lack of information. This basically means the information that an organization has to perform a given task and the information that it actually needs to perform the said task(Garner, 1962 in El-Shinnawy and Markus, 1997). Equivocality in this context is the existence of multiple and conflicting interpretations about an organizational situation to respond to a need (i.e. confusion and lack of understanding). If there are high levels of uncertainty and ambiguity, then a richer media should be the communication channel (Conklin and Detrick, 2010). Media richness theory is also referred to as information richness theory.

The theory was propounded by Daft and Lengel in 1984. Media Richness theory holds that all communication media vary in their ability to enable users to communicate and exchange understanding. Communication transactions that can overcome different frames of reference or clarify ambiguous issues in a timely manner are considered rich. Communications that require a long time to enable understanding or that cannot overcome different perspectives are lower in richness. Face to face communication, video conferencing and telephone communication are considered richer than written communication. The theory argues that the more ambiguous the message, the richer the medium should be, or in other words, the more information carrying capacity it should have (as determined through speed of feedback, ability to personalize the

message, availability of multiple cues, and language variety) (Dainton&Zelley, 2011; Lengel& Daft, 1988).

The theory's supposition that different communication media have varying capacity connotes that certain media used by an organization works better for certain task. This means that task performance is improved when task needs are matched to medium richness. According to the theory, face to face communication is more effective than other types of communication. In their 1988 article regarding media richness theory, Daft and Lengel noted that for a media to be considered rich, it must havecertain characteristics, such as:

i. The mediums capacity for immediate feedback

ii. Availability of cues. Cues here refer to physical presence, body gesture and the voice

iii. Ability to utilize natural language. This refers to how language is used in communication and focuses on non numeric information.

iv. Personalization of message to suite the individual recipient

Conversely, the theory seeks to describe and evaluate communication medium within organizations in terms of their effectiveness. This is because media selection and use can reduce uncertainties in various task performances. It connotes that a medium can reproduce information sent through it accurately, without changing the meaning of the message. In essence, the capacity of the medium is recognized. Although the theory focuses on communication structure within organizations by looking at the media choices made to perform a task, yet it can be said that whatever medium choice an organization makes affects how such organization relates with its internal and external publics.

The Health Communication Capacity Collaborative (HC3) (2014) noted that the richness been talked about here is not necessarily of the channel alone but of the richness of the communication occurring via the said medium which is measurable by the level of understanding of the message and rapidity of feedback. Emergency situation requires that those in need of emergency medical care be attended to immediately because the time between injury and initial stabilization is the single most important factor in patient' survival, with the first 30- 60 minutes being the most important. Therefore, service providers like FRSC have to choose media with a full understanding of the characteristics of such medium to meet emergency needs. These mediums should be chosen on the basis of constant access to channel (i.e. ability to relay information without hindrances), rapidity of communication and the speed of feedback to mention a few. It is given that each medium has its strength and weaknesses, thus the chosen medium must be that whose advantages outweigh the disadvantages. Basically, various media can be combined to give the desired result (HC3, 2014). Media selection and use moderates uncertainty or ambiguity in various tasks including emergency communication. For instance, in publicizing its emergency communication numbers to the commercial drivers, the FRSC makes use of public enlightenment in registered motor parks as its major communication strategy. In this sense the number of drivers that will know the numbers becomes limited to those that are on ground when the number was publicized. If tasks are not matched to the medium, the likelihood is that limited result will be achieved.

Conversely, from 1990 to 2012, the number of fatalities from accidents decreased by 25%, while the number of peopleseriously injured increased by 73% (OECD, 2014). From the statistics, to reduce the severity of injuries and disabilities, there should be prompt action from rescue organizations. Thus the choice of medium must be done to suite the purpose. The timely and

effective flow of information between agencies and the public is vital for facilitating and encouraging appropriate actions.

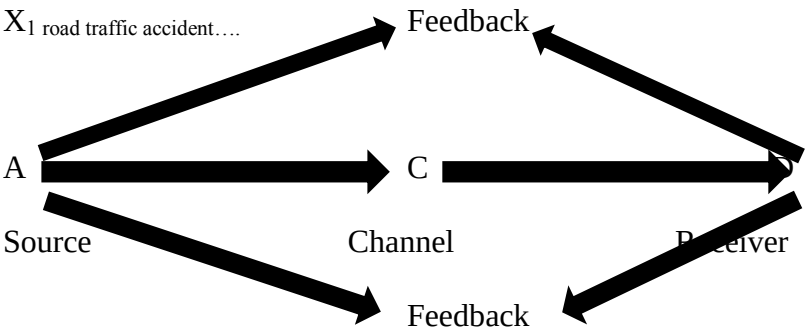
The theory is criticized because the choice of media to use is much more complex than choosing a medium just because it is rich. A rich media may be the media to use but it does not say that a leaner media cannot perform the task. Also social pressures, social background and cultural factors can influence the choice of media to use as against richness (Markus, 1994; Ngwenyama and Lee1997). In essence, media richness is critiqued as being too rational and deterministic. Again, it has been argued that media use may be because of the nature of the media, the position of the person using the medium as well as what the said communication will be used for (Markus and El-Shannaway, 1997).It is also seen as weak because of its preoccupation with face-to-face communication. This is because the advent of new communication technologies has led to more perspectives in communication that have not been considered before now.These criticisms notwithstanding, media richness theory still remains valid for this study. The theory recognizes that tasks should be matched to a mediums and this isrecognition of the capacities of various mediums to enable users exchange meaning within a time frame. It also recognizes that whatever choice of medium the organization makes will affect communication effectiveness within the organization as well as with its external publics, therefore the relevance of the theory.

Model of Emergency Communication

Communication involves processes and in this regard different communication models have been advanced to explain such processes. One of such is the Harold Lasswells' 1948 communication model. The basic components of the model are: WHO, SAYS WHAT, IN WHICH CHANNEL,

TO WHOMand WITH WHAT EFFECT. These elements represent the sender, the message, the medium, the receiver and the effects. To Lasswell, the act of any communication process can be explained by answering the questions that form the five components of the model.

In this vein, any emergency communication involves a process or processes as the case may be. Irrespective of the communication process(s), there are certain components that are crucial to the process.



Explanation of the model

i. X – is the object in the sensory field of A. In this case, the observed object is a road traffic accident.

ii. A – Someone perceives an emergency/event and reacts to the event by dialing the emergency numbers.

iii. C- through a channel in this case a mobile phone to convey a message of an emergency

iv. D – The message is received at the Road Safety through exchange between A and D through C. D then prepares to respond to the emergency communication message.

In essence, A observes a road traffic accident; he then decides to pick a phone C which is the most reliable and commonest channel of communication in this case. He dials an emergency number to the Federal Road Safety (it is important to state that the caller has to be aware of the emergency number before usage. Hence awareness is a prerequisite for usage). After some exchanges through the same channel, D responds to the emergency situation. Thus there is exchange of communication between A and D using the channel C. The success of the emergency communication will depend on the following

iv. No distortion or noise in the communication channel

v. That A sends clear and unambiguous messages to D which is the receiver

vi. That the receiver of the message clearly makes meaning out of the message will determine how quickly he responds to the emergency communication message. D's ability to decode the message depends on how easily he internalizes the message.

To make a linkage with the Media Richness Theory, the Media Richness Theory recognizes face to face communication as the richest form of communication. But in emergency situations like road traffic accident, face to face communication is not necessarily the best. This is because accidents happen anywhere mostly out of the sight of rescue organizations and as such, they have to be notified about it. The faster the communication, the more likely it is that more lives will be saved and that the severity of injuries will also be reduced. As it is, one of the characteristic of a rich medium as stated by the richness is that the medium for communication must have the capacity for immediate feedback. In this regard, the richest medium for emergency communication is the telephone/mobile phone. This is because even though it is mediated, it has capacity for immediate feedback. Therefore, in its simplest sense, it is the interplay of these components that ensure that emergency communication is complete. As showed in the model,

the process does not have to be long. It should have the source of information, the channel and the receiver.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter consists of the methodology which explains how the data was collected and how it was analyzed as well as the reliability and validity of the study.

3.2 THE STUDY AREA

The study area is Zaria local government area of Kaduna State. The people of Zaria are predominantly Hausa by tribe. Zaria is often considered a citadel of learning as it has a number of institutions. Therefore, a sizeable proportion of Zaria's population is made up of students who mostly leave after their study. Among the population of Zaria are commercial drivers. There are a number of motor parks in Zaria, some of them are registered and others are not thereby making it difficult to get their exact population. The National Population Commission put the annual growth rate of Nigeria at 3%. According to the 2006 census, the combined population of Zaria and SabonGari local government was 698,384. Thus from the growth rate and the 2006 population, the current estimated population of Zaria is 886,948 (Population Mongabay, 2012).

3.3 RESEARCH DESIGN

The study used the mixed method of research. First, the in-depth interview was used to get a response from the Federal Road Safety Corps (FRSC). This was done in order to get accurate responses concerning how emergency is communicated and other relevant information. Second, descriptive survey method was used. The survey was of commercial drivers who are residents of Zaria and who shuttle interstate. Survey is used to determine attitudes, beliefs and predict behaviours. Basically, surveys gather data at a particularpoint in time and permit the use of the same instruments and questions for all participants. (Avwokeni, 2006; Kothari, 2004; World Bank, 2010).

There are various types of surveys one of which is the cross sectional survey. In this type of survey, different respondents are studied at different points in time and it produces a kind of snapshot of the population at a particular point in time. It connotes the completion of question answering on a one time basis. In this regard, the cross sectional survey was employed in this research.

3.4 THE STUDY POPULATION

The study was carried out in Zaria. The study populations are commercial drivers in Zaria as well as the staff of FRSC, Zaria. This is because FRSC is saddled with the responsibility of ensuring safety on the roads and are mostly involved in rescuing accident victims. The choice of commercial drivers was hinged upon the fact that they are one of the most at risk group for accidents, both as victims and initiators of accidents.

3.5 SAMPLING TECHNIQUE

The non probability sampling method was used. Purposive sampling was used to select the head of operations of FRSC for the interview. The criterion used to select the head of operations is that he is in charge of rescue and therefore he is in a good position to answer questions as it relates to the emergency communication within their organization (Wimmer and Dominick, 2006). The convenience sampling method was used to draw a sample of 400 commercial driversand after the study 354 questionnaires were valid. Although the sample was collected in motor parks, a number of the commercial drivers were not available for on the spot sampling. Also, they have some misgivings about the FRSC which made a number of the drivers not wanting to be part of the study. Therefore the criteria for selection were those that were on

ground at the time of the visit and who were willing to be sampled. Sample was drawn using this method until the desired sample size was collected.

According to FRSC, Zaria, there are six motor parks which are registered as interstate travel motor parks in Zaria. They are Dadi, Karaduwa, Benue linkz, Gwargwaje, KofarDoka and SabonGari parks. Sample was drawn from Dadi, Gwargwaje, KofarDokaandSabonGari parks. Before the commencement of data gathering, Karaduwa Motor Park was demolished and the drivers dispersed. Then questionnaires could not be issued at Benue linkz because of the unavailability of the drivers for on the spot data collection.

Due to the mobile nature of the respondents, for every visit those who were on ground and willing to be sampled were sampled according to the permission granted by their unions. There was a repeat visit in the evening or the next day as the need arose where the minimum visit per Motor Park was three visits.

3.6 METHODS OF DATA COLLECTION

Data was collected by personally issuing questionnaire to commercial drivers in the selected motor parks and in a number of instances; the researcher had to help them fill the questionnaire. The questionnaire was administered to drivers on the spot. The second method used was the interview which was conducted in depth with the head of operations of Federal Road Safety Corps(FRSC), Zaria. Occasionally, the interview made use of prompts and probes.While prompts helped the researcher to clarify questions, the probes enabled the interviewer to ask the respondents to extend, elaborate, add to, provide detail for, clarify or qualify the response given. This added richness and depth to responses (Cohen, Manion& Morrison,2005).

In this regard, the instruments that were used to collect data in this study are the interview schedule and the questionnaire. The interview schedule was the instrument for data collection for the in depth interview and it was structured. Then the questionnaire was used to elicit responses for the descriptive survey. There were two sections in the semi structured questionnaire. This allowed for both closed and open ended questions. It basically contained questions on demography and then questions that addressed the research questions raised in chapter one.

3.7 VALIDITY AND RELIABILITY

Reliability

This talks about consistency and replicability. A pilot study was conducted three weeks before the main study. Thirty questionnaires were issued in the study area. The result of the pilot study showed a low level of awareness of FRSC's emergency number among the drivers. The usefulness of the pilot study was that it confirmed the appropriateness of the questions in answering the research questions raised. It also gave clarifications as to whether or not the respondents understood the questions. Subsequently, adjustments were made to the questions that needed to be adjusted and the questions were simplified before the final distribution.

Validity

The use of both quantitative and qualitative method enhanced the validity of the research in the sense that there is a balance in the information gathered and that most of the biases that may have arisen from the two subjects of the research was checked by the information gotten from the other. Also, the questionnaire was given to a number of lecturers for their input before it was issued to the respondents.

3.8METHODS OF DATA ANALYSIS

The statistical package for the social science (SPSS) was used to analyze the questionnaire and it is presented in tables.Then discussion of findings was done using simple prose for appropriate description. Then the response from the interviewee was transcribed and an exhaustive analysis was done in a narrative style. The narrative was properly structured to describe the interview content. Since there was only one interviewee, the data generated from the interview was used directly to answer the question raised as was relevant and this was done thoroughly.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

This chapter presents, interprets and analyzes the data. It is made up of seven parts. The first is the socio demographic characteristics of the respondents. The second to the sixth part presents the data according to the research objectives raised and the seventh part is the discussion of findings.

4.2 SOCIO DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

This section focuses on the sex of respondents, age, educational qualification and routes plied.

Table 1: Socio Demographic Characteristics of Respondents

VARIABLES	**FREQUENCY**	**PERCENTAGE**
SEX		
Male	354	100
Female	-	-
TOTAL	**354**	**100.0**

AGE	**FREQUENCY**	**PERCENTAGE**
20-30	44	12.4
31-40	167	47.2
41 and above	143	40.4
TOTAL	**354**	**100.0**

EDUCATIONAL QUALIFICATION	**FREQUENCY**	**PERCENTAGE**
None Literate	6	1.7
Islamic Education	133	37.6
Primary Education	102	28.8
Secondary Education	102	28.8
Tertiary Education	11	3.1
TOTAL	**354**	**100.0**

ROUTES PLIED	FREQUENCY	PERCENTAGE
North Central	78	22.0
North East	74	20.9
North West	202	57.1
TOTAL	**354**	**100.0**

From the table, all respondents are male and the drivers between 31-40 years have a higher percentage (47.2%). This is followed closely by those who are above 41 years with 40.4%. Both of these age groups are economically active segments of the population. Those between 20-30 years have 12.4%. The deduction that can be made here is that younger people do not take up driving profession as much as the older ones. As it has to do with education, a higher percentage of the drivers have Islamic education. This speaks for the area where the study is located. Primary and secondary education tied at 28.8% respectively while tertiary education has 3.1%. The data here shows that the higher the level of literacy a person has, the lesser the likelihood of that person becoming a commercial driver. Nonetheless, the question of who can be referred to as literate is debatable. This statement is hinged on what the Head of Operationssaid in the interview;"lots of the commercial drivers are illiterate, that is why we have problems with them". However, it cannot be inferred here that level of literacy influences awareness, knowledge or usage of emergency numbers; neither can it account for the prioritization that these drivers give to communication in emergencies.

For the routes covered, data shows that the North West was the most plied route by the commercial drivers with 57.1%. The case that can be made here is that Zaria is in the North West region thus the tendency for a number of the commuters to ply the north western routes more. The law of demand and supply states: the higher the demand, the higher the supply. It therefore

means that if the commuters for the North West region are more numerous, then more of the drivers will ply that route. Another factor is profit. If they make more profit by plying this route then they ply the route. However this does not in any case state that the North East or the North Central regions are not plied by a lot of the commercial drivers. The data reflects the reality on ground as at the time of sampling.

4.3 LEVEL OF AWARENESS OF FRSC'S EMERGENCY COMMUNICATION CHANNEL(S)

This segment presents the awareness of FRSC emergency numbers among respondents as well as how they came to know the numbers. Tables 2 and 3 and 4 are used for the presentation.

Table 2: Awareness of the Existence FRSC's GSM Channel of Communication

Awareness	Frequency	Percentage
Yes	340	96.0
No	14	4.0
Total	354	100.0

Table 2 above shows that 96% of the commercial drivers are aware that the FRSC have GSM channel of communication. In the course of their driving profession or as part of the members of a union, they have heard that the FRSC have GSM channels of communication through which they can be reached.

Table 3: Knowledge of the Actual Emergency Number of FRSC

Knowledge	Frequency	Percentage

Yes	168	49.4
No	172	50.6
Total	340	100.0

Table 3shows that 49.4% of the respondents know the actual number(s) while 50.5%do not know the numbers. The intrigue here lies in the fact that within the same motor park, some have the number and others do not. In this regard, certain factors become crucial. First is the matter of interest, that is to say whether the commercial drivers are interested in the numbers or not. This statement alludes to the credibility that the drivers attach to the FRSC. For instance, the union office at GwargwajeMotor Park attested that they used to have a box where FRSC number was boldly written, yet a number of the drivers in that motor park do not have the numbers. The second factor that can explain the gap in knowledge of the actual numbers is the means by which the said numbers are publicized. The basic method that the FRSC use to inform the commercial drivers of their emergency numbers is public enlightenment. In this case those drivers who are on ground during the enlightenment are much more likely to take the numbers down than those who were not on ground.

Table 4: Source of Knowledge of Numbers

Source	Frequency	Percentage
Through FRSC	139	82.7
Through the media (radio/television)	3	1.8
Through the union	26	15.5

Total	168	100.0

From table 4, the basic source of knowledge of the emergency numbers for the commercial drivers is the FRSC with 82.7%. As noted earlier, the major means they use for communicating the number(s) is public enlightenment. It follows thatthe number of commercial drivers who were available during the public enlightenment and who took note of the number got the information through the FRSC. The other source is through the union offices with 15.5%. Some of the union offices noted that the FRSC officials give them their numbers and they in turn give it to the commercial drivers. From the table, we see that the FRSC do not utilize the media (radio and television, in this context) much to publicize their numbers to the general public. But as it is, wider reach and spontaneity are characteristics of the media. Hence it can be argued that if the media is utilized, a larger number of the respondents will be aware of the number.

4.4 FUNCTIONALITY OF FRSC'S EMERGENCY COMMUNICATION CHANNELS

As the title shows, this section presents the functionality (working) of FRSC numbers.Tables 5 to table 9 as presented in this section will give clarity as to the functionality of FRSC emergency number.

Table 5: Usage of FRSC Emergency Number

knowledge and Usage	Frequency	Percentage
knowledge (usage)	61	36.3
knowledge (non usage)	107	63.7

Total	168	100.0

Table 5 shows that only 36.3% of the respondentswho know the actual number have used the number while 63.7% of the respondents do not use the number. It therefore follows that knowledge of the number does not signify usage. But of course the usage of the number has a lot to do with whether they were part of an accident or if they had seen an accident. Further, it does not say that because they called the number, they would always call the number in an accident situation. But what it says is that perhaps if they have used the number and it worked for them, the likelihood is that they would use it again. But again this is not a definitive statement given the complex nature of human behaviour.

Table 6: Assessment of Functionality of the Number

How the number worked	Frequency	Percentage
Highly effective	48	78.7
Effective	9	14.8
Not effective	3	4.9
Don’t know	1	1.6
Total	61	100

Table 6 shows that (78.7%) of the respondents who used the number consider it to be highly effective while 14.8% of the respondents consider the number effective. This effectiveness is hinged upon the fact that they called the number and it went through and that they got a response. 4.9% said the numbers were not effective and this statement can be attributed to the fact that they called the number and did not get a response or that their distress call did not go through.

Table 7: Assessment of FRSC's Response to Emergency Calls

Speed of Arrival	Frequency	Percentage
Very fast	37	60.7
Fast	10	16.4
Not certain	3	4.9
Did not wait for arrival	11	18.0
Total	61	100.0

Table 7shows the speed of arrival. Out of the respondents that waited for the arrival of FRSC officials, 60.7% rated their arrival as very fast while 16.4% rated them as fast. From the interview, it is evident that there are factors that affect speed of arrival. Some of them are: the closeness of a unit command to the scene of the accident, the clarity of description of location, whether the accident happened in the jurisdiction of the unit command that is contacted and how free the roads are. 18% did not wait for the arrival of the team after they called and therefore cannot make a statement for the speed of arrival.

Table 8: Problems Experienced with usage of the Number

Problem Experienced	Frequency	Percentage
No one picked	6	9.8%
Number busy	1	1.7
Poor network coverage	1	1.7
The number did not connect	1	1.7
Did not experience any problem	52	85.1
Total	61	100.0

Table 8shows that 9.8% of the respondents that used the number noted that no one picked when they called but the head of operation said " anybody holding this office will definitely be with the number throughout, 24/7". The other problems experienced were poor network coverage, number busy and number not connecting with 1.7% each. As noted by Daft and Lengel in Media Richness Theory, communication media vary in their ability to enable users to communicate. Telephone and face to face communication are considered rich mediums. The information carrying capacity of any medium is determined by speed of feedback, ability to personalize messages and language variety. Therefore the choice of a medium for emergency communication must be for optimum performance. From the table 85.1% did not experience problems when they used the number.

Table 9:RespondentsReaction to the Problem

Solution to problem	Frequency	Percentage
Kept trying the number	8	13.1%
Stopped other cars to help	1	1.7%
Usage (did not have any problem	52	85.2
Total	61	100.0

From the table, 13.1% of the respondents that had problems resolved to keep trying the number while 1.7% stopped other cars to help. The implication of this is that time which is an important factor in emergency is lost.

4.5 THE PRIORITY COMMERCIAL DRIVERS GIVE TO COMMUNICATION IN RTA

This segment talks about the priority the commercial drivers place on communication and this can be seen in table 10.

Table 10: Respondents Potential Accident Response

Response in accidents	Frequency	Percentage
Knowledge (use the number)	61	17.9
Knowledge (do not use the number, will take victims to hospital	87	25.6
Knowledge (do not use FRSCs' number but will call their union office)	20	5.9
Non knowledgeable (will help victims to the hospital)	140	41.1
Non knowledgeable(will ask for FRSCs' number)	3	0.9
Non knowledgeable (seriousness of the accident will determine help they will render)	16	4.7
Non knowledgeable (because of the Nigerian health and security system, they will do nothing	8	2.4
Non knowledgeable (will assist in any way possible on the basis of familiarity	5	1.5
Total	340	100.0

Table 10 will give an insight in to the importance of communication in emergency to commercial drivers. Amongst the percentage that know the number, only 17.9% of them ever used FRSC's number. 25.5% do not use the number but would rather help the victims to the hospital while the other 5.9% of the respondents that know the number will rather call their union in an accident

than use FRSC's number. Then of those that do not know the actual numbers, 41.1% will also prefer to take the victims to the hospital, while 4.7%noted that the seriousness of the accident will determine what they will do. Still, 2.4% stated that there is a systemic problem in Nigeria so they will do nothing. The last category of those that are not aware will help the victims on the basis of union affiliation. A parallel can be drawn between those that know the numbers and those that do not know. 25.5% of those that know the numbers do not use the numbers but will take the victims to the hospital while 41.1% of those that do not know the numbers will also take victims to the hospital. A summation of this 25.6% and 41.1% will give 66.7% providing help to victims directly than taking the communication option. On the other hand, 17. 9% used the number, while 5.9 % know the numbers but will rather call their union office and 0.9% do not know the numbers but will ask for the numbers. The summation of 17.9%, 5.9% and 0.9% will give 24.7% as the percentage that will take communication as an option.

In an in-depth interview conducted with the FRSC operations officer, On the part of the FRSC, we can discuss their priority by noting that the basic means by which they communicate their emergency numbers to the commercial drivers is through public enlightenment which they carry out weekly in registered motor parks. The enlightenment is not scheduled specifically to enlighten the drivers about the numbers and emergency communication. Each time they go for a campaign, they have topics that they discuss with the commercial drivers which are pertinent to the driving profession. It is in the course of such lectures that the emergency numbers are given. This has its own implication in terms of the importance that the drivers will attach to the numbers since it comes as an addendum to the main topic of discussion for the day. Also, if an emergency call comes to the unit, the person that received the call goes in person to inform the standby team thereby slowing down the whole rescue process.

4.6 THE PROCESSES EMERGENCY COMMUNICATION UNDERGOES BEFORE RESCUE

This segment presents the processes that emergency communication goes through before a rescue as was described by the head of operations in the interview. He stated that emergency communication within the FRSC takes three formal processes and one informal process. They are:

1. Emergency call→→ FRSC office→→officer in charge informs standby team→→ standby team embarks on rescue.

2. Emergency call→→ team on patrol→→to rescue

3. Emergency call→→FRSC office (not the same jurisdiction) →→FRSC office to FRSC office→→ officer in charge informs standby team→→ standby team embarks on the rescue.

4. Emergency call to an FRSC officer on the basis of familiarity→→ process 1 or process 3 is repeated.

Each of the process above has its implication which is measurable by the speed of response and the lives that are saved as a result of the process. The second process is the fastest process while the fourth informal process is the longest process. Typically, when an emergency call comes in, the officer in charge goes in person to inform the standby team of the accident. Then they head out for the rescue. This process is repeated for all the rescue processes with the exception of the second process. The second process connotes that the team is already out on patrol and receive an emergency. Thus they just embark on the rescue, thereby making it the fastest process. A rescue team consists of four personnel, the driver inclusive.

4.7 DISCUSSION OF FINDINGS

This segment is the discussion of findings and this will be done according to the research objective while making reference to data that has already been presented.

The socio demographic data showed that all respondents were males. From the literature review, a number of the studies noted that a larger number of accident victims were males. However these literatures did not specify whether the victims were drivers or commuters and neither did those studies make any allusions to the fact that men commuted more than women. As it has to do with age, those between 31-40 years had the highest frequency at 47.2%. In this case, a number of the literature showed that the mean age for a larger number of accident victims is 35 years (Ediagbini et al 2011, Yamuragiye et al 2013, &Aderamo, 2012).

The Level of Awareness of FRSC's Communication Channels among Commercial Drivers' in Zaria

In the course of data collection 96% noted that they have heard that FRSC have communication channels through which they can be reached. However such awareness does not translate to knowledge as there is a seemingly low knowledge of the actual FRSC emergency number(s) among the drivers as 49.4% know the number as compared to 50.6% who do not know the numbers.Some reasons have been given for this disparity and they include the disconnection between the drivers and FRSC which may make the commercial drivers to be reluctant to have dealings with the FRSC. In response to the commercial drivers distrust for the FRSC, the head of operations stated "definitely, they will not love us, we are conducting our work and they are not trying to respond to what we are trying to let them understand; most of them are after money and they don't have value for life".The reluctance of a number of drivers to be part of the study is

also a pointer to the disconnection between the drivers and the FRSC which has an effect on their accepting and using the numbers in an emergency. The second reasoncan be advanced is the mode of publicizing the said numbers. The FRSC here in Zaria makes use of public enlightenment to publicize their numbers. To quote the head of operations, "sometimes, we schedule a date and inform the motor parks that we are coming for public enlightenment based on a particular topic". This means that they inform the motor parks that they will visit that particular park to enlighten commercial drivers about issues that are pertinent to their profession and it is in the course of such discussions that they give their emergency numbers to the drivers. Because of the nature of the driving profession, not all the drivers will be in the park when such enlightenment is carried out. Hence the FRSC charge the drivers that are present to give the numbers to their colleagues that were not on ground.

Now, the drivers that were told to inform others are not under any obligation to do so. If for some reason the drivers choose to tell those that were away, the recipients of the information have their priorities and the numbers may not be of such import. In this regard, they may neglect the number. Also, there is the factor of individual difference. That which one holds important may not mean anything to another. Yang and Maxwell (2011) noted that individual behaviour in information sharing is complex. It can depend on a number of factors which may include willingness to share information, motivation, perceived need to share information, contextual factors and culture among other factors. Having said this, it's important to point out that the head of operations expressed his surprise at the fact that some of the commercial drivers do not know their numbers; he said "am surprised that you said they don't know our numbers, definitely they do have our numbers".

Conversely, from table 4, the basic source of awareness for those that know the numbers is the FRSC with 82.7%as is presented. This means that public enlightenment method can be effective. However a combination of a variety of channels will be more effective.

Again it has been shown that knowledge of the number(s) does not mean usage of the number(s). Hence of those that are aware of the number only 36.3% actually used the number while 63.7% did not use the number.To explain this, it has been noted that people do not always act on what they know, the phenomenon is known as the knowledge gap or the communication effects gap where knowledge is available but that knowledge is not put to use (Shingi and Mody 1976 in Snyder 2007). Also, Badr and Ratz (2013) noted that accidents situation leads to a lot of chaotic responses. The response at the point of an accident may not be to call the number. Further, Covello (2001) in the mental noise theory stated that in accident situations, people remember information in threes; hence numbers like 112 will be remembered more quickly as against 11 digit numbers (however this fact may be hinged on whether or not the caller is the one involved in an accident). Closely related to this is the case made by WHO (2013) African report on road safety. They stated that a large number of African countries have multiple numbers; hence remembering them or using them may be an uphill task.

Functionality of the Emergency Communication Channels

Further, 78.7%of the respondentsthat used the number(s) stated that the numbers were very effective. On the other hand, 14.8% of the respondents said the numbers were effective as

presented on table 6. However, the catch 22 situation here is that to say that the number(s) is/are effective or very effective is subjective in the sense that what some see as highly effective may or not be effective to others. But for the respondents who see the number as effective or highly effective, the key factor is that when they called the number, there was a response.

Again a question was raised as to the speed of arrival because time is the currency of emergency. Ngamy and Kamtache (2010) noted that time is vital to emergency situations and Levashova et al (2011) added that the operational success in emergency response might easily be measured in terms of the number of lives saved. 60.7% rated their arrival as very fast while 16.4% rated them as fast. Some countries try to meet a certain rescue time because the first hour after an accident is important. But in the interview, the head of operations stated that they don't have a set rescue time that they try to meet in this regard. They just go as fast as they can while bearing in mind the lives of the drivers of the van or the ambulance as the case may be. However, there are factors that affect how quickly they get to the scene of an accident for a rescue to take place. Some of the factors are clarity of the description of the scene, whether or not the accident happens in the jurisdiction of the caller, how free the roads are and how far away the accident is from the nearest unit command.

Conversely, as is the case with processes and systems, the respondents experienced problems while using the number. 9.8% of them noted that when they called no one picked. Thus they resorted to keep calling till they got a response. The respondents calling and no one picking contradicts the response from the interview, he noted that "anybody holding the office will definitely be with the number throughout 24/7" having said this, it's important to note that mobile communication is not an invincible method of communication. There are factors that

affect its capacity for emergency communication and in this case the factors can include poor network coverage, low battery life and cost of making the calls.

The Priority Commercial Drivers Give to Communication in Road Traffic Accident

Data has showed that respondents who know the number scarcely use it. It therefore led to the imperativeness of understanding their potential response to accidents. In the course of this discussion, some of the reasons for non usage were captured and how the communication option is taken is also presented. 25.6% of those that know the number and 41.1% of those who do not know the numbersaid that they would help the victims to the hospital rather than call the FRSC whose credibility they question. To them waiting for the rescue agencies to come is tantamount to time wastage. So they will quickly carry the victims to the hospital. But then the scoop and run system may have dire consequences depending on the state of the victim.Forjuah*et al* (1999) in their study found that the evacuation of crash victims in Ghana then was mostly carried out by bystanders, relatives, commercial vehicles and sometimes the police. Also Becker, Zaloshnja, Levick, Li, & Miller (2003) in yet another study found that the police and hospital ambulances evacuated only 5.5% and 2.9%, respectively of crash victims in Kenya. In addition, these studies further noted that lack of communication is a bane to emergency situations because bystanders, relatives and commercial drivers are not able to promptly notify rescue organizations of a crash.

Conversely, as related to the data collected, 4.7% of the respondents are not certain what their response will be in that the seriousness of the accident will determine their response while 2.4% will rather not render any help. For the 2.4%, they noted that they do not want a dead victim on their hands. They gave examples of how they were once victims of the security agencies who accused them of being responsible for the accident or death of the victims. Again this category

noted that they are asked to produce a police report at the hospital and that the doctors work in conjunction with the security officers to tarnish the reputation of commercial drivers. Now, if an accident happens and the victim is comatose or in any other critical state, the doctors will need an eye witness account to help them in treating the victim properly. But due to a lot of factors, there are few or no eye witness accounts of accidents.

From the same table 10, we see that 17.9% took the option of communication, and then another 5.9% would also take the option of communication but through their unions and not through the FRSC. Then another 0.9% will ask for FRSC number. So as it is presented in the table, the summation of those that will rather take victims to the hospital is larger (25.6% and 41.1% respectively) than those who will take the communication option at different categories (17.9%, 5.9%, and 0.9% respectively).

In the light of the above, the rescue agencies are usually not at the scene before an accident happens, neither do they have a satellite beaming accident scenes to their offices. As it is, accidents are non-predictable events. But when they happen, there is need to inform the rescue agencies. Information or notification is a precondition for rescue. Studies abound which gives us an image of what happens when rescue agencies are not informed early of an accident. A Swedish studyinto survivability showed that 48% of those who died from accidents sustained non survivable injuries. Of those that sustained survivable injuries, 5 % were not located in time to prevent death and 12% will have survived had there been more rapid response and quick transport (Hirsch and Eppinger, 1984 in DACOTA, 2012). Similarly, Ediagbini et al (2011) in their work on chest trauma in Zaria noted that the average time taken between an accident and hospital admission was 31 hours, 40 minutes and 12 seconds, thereby gravely reducing chances of survival. Save the children (2012) stated that in an emergency, time makes the difference

between life and death. Then as noted earlier, the FRSC's use of public enlightenment to inform drivers of these numbers limit those that will know and use the numbers and then the person who receives the emergency call goes in person to inform the standby team thereby slowing down the whole process. From the foregoing, it can be said that there is low prioritization of communication on the organizational level and from the drivers as well.

The Processes Emergency Communication Undergo before Rescue

Emergency communication within the FRSC takes three formal processes and one informal process. This discussion is based on the interview conducted with the Head of Operations.

1. Emergency call→→ FRSC office→→officer in charge informs standby team→→ standby team embarks on rescue.

2. Emergency call→→ team on patrol→→to rescue

3. Emergency call→→FRSC office (not the same jurisdiction) →→FRSC office to FRSC office→→ officer in charge informs standby team→→ standby team embarks on the rescue.

4. Emergency call to an FRSC officer on the basis of familiarity→→ process 1 or process 3 is repeated.

The discussions for the listed processes are as follows:

Process1. Emergency call→→ FRSC office→→FRSC officer in charge informs standby team→→ standby team embarks on rescue

The first process here shows that when an emergency call is received by the FRSC office directly; "the phones are in the office and is the staff officer operations office which deals with

operations". The communicator is expected to give detailed or partial information of the location of the accident. From the interview, the head of operations noted that they don't just head out immediately after receiving the call. They try to authenticate the call. This they do by listening to the background noise and perhaps receiving another call that has to do with the same accident. After such is done, the person that receives the call personally tells the standby team. They in turn embark on the rescue with their patrol van or ambulance as the case may be.

Process 2. Emergency call→→ team on patrol→→to rescue

A team that is already out on patrol can have the CUG number with them. Hence an emergency call can directly come to their phone. When such happens and they ascertain the location of the crash, they head there immediately. This is the fastest of all the processes.

Process 3. Emergency call→→FRSC office (not the same jurisdiction) →→FRSC office to FRSC office in the jurisdiction of the accident→→ officer in charge informs standby team→→ standby team embarks on the rescue.

It is imperative to clarify that the emergency numbers used here in Zaria are not the same with those used in Kano or Kaduna. In this regard, a resident of Zaria may know just the emergency number(s) that is/are used in Zaria. Thus in an accident situation, the likelihood is that such a person will call the number(s) in Zaria. Now in such situations, the office in Zaria having the location of the accident knows the jurisdiction of the accident and the unit command closest to the scene. Then they will call the unit command and inform them of the accident.

Process 4. Emergency call to an FRSC officer on the basis of familiarity→→ process 1 or process 3 is repeated.

This last process is an informal process but it is used as well. If a person knows the personal phone number of an FRSC officer where he lives or outside where he lives, he could call the number in an accident situation. Depending on the scene of the accident the FRSC officer that is called will communicate to the office domiciled where the accident happened. Where such is not possible, he could communicate to another jurisdiction and the whole process in number 1 or number 3 is repeated.

The four processes discussed above vary significantly from what is obtainable elsewhere. Buylaert (1999) noted that in some states, emergency calls are answered by ambulance service or the emergency medical services. In other countries they are answered by emergency service providers like fire service, police and the likes. But basically the call gets routed to a public safety answering point (PSAP) that is located within several places in the country or state. It is this PSAP that route emergency call further to the nearest local emergency responding agencies (Bharwan and Marg, 2013).

Implication of the Four Processes

The four processes discussed give an indication of the minutes that ticks away whilethe communication process happens. The Head of Operations stated that if the roads are very busy it would affect their speed of getting to the scene and rescuing the victims. But they do their best to meet the victims alive. However the speed of rescue is not in contention here, rather the process that emergency communication actually goes through before a rescue happens.

As was noted by CLEEN Foundation (2010), several Nigerians die because of failure of emergency communication to mobilize aid to the victims. This is not because communication does not have the capacity to mobilize such aid rather; it has to do with how communication is

utilized. RTA hand book (2009) noted that casualties will have lesser chances of survival if they are not given definitive care within the hour of the accident, thus the time taken to extricate the victims should not be more than 15 minutes.

This leads back to the Media Richness theory which is the theoretical framework of this study. The theory supposes that different media have varying capacity. Certain media used by an organization will work better for certain tasks but not for others. Granted, the theory holds that face to face communication is rich because it facilitates rapid feedback, ability to handle information simultaneously and the utilization of natural language. Yet to go in person to inform a stand by team of an accident slows the whole process of communication no matter how close the standby team is. The theory says that if the message is likely to be unclear, then face to face communication should be employed. But then there is no ambiguity in saying an accident has happened. If any ambiguity were to arise, it would probably be about the scene of the crash.

Again, the theory considers telephone communication as a rich medium also. As the Health Communication Capacity Collaborative (HC3) (2014) noted, the richness talked of here can be measured by the level of understanding between the communicating parties and the rapidity of feedback. The emergency communication model adopted in the study shows that if there is interplay of the components necessary for emergency communication to take place, the speed of rescue is dependent on whether or not there is distortion in communication. This distortion can be as a result of noise in the communication process and that the receiver is not able to decode the message because the source did not send a clear message. However, the findings of the study have showed that those who communicated emergency were able to get their message across to the FRSC without many hindrances. When such messages were passed across, there was response thus the rapidity of feedback as earlier mentioned. Summarily, emergency situation

requires prompt action. Thus, the timely and effective flow of information within the organization and between the organization and the public is critical.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter is subdivided into three major parts. They are: summary of major findings, conclusion and recommendations.

5.2 SUMMARY OF MAJOR FINDINGS

The research was designed to assess emergency communication in road traffic accident in Zaria. This was done by looking at the awareness level and functionality of FRSC emergency communication numbers, the prioritization of communication among FRSC and commercial divers as well as the processes that emergency communication undergoes before rescue. The study adopted the media richness theory which holds that all communication media vary in their ability to enable users communicate and exchange understanding. If a message is likely to be ambiguous, then a richer medium should be used.

The study used in-depth interview and cross sectional survey method which led to the use of questionnaires as well as interview schedule to collect data. Thus, the findings from the study revealed that while a large number of the commercial drivers are aware that the FRSC have communication channels, the actual knowledge of the exact emergency numbers is low and that knowledge does not determine usage.

Also, there is proof from data that the numbers are functional. The functionality was rated by the fact that the commercial divers that called the emergency numbers got a response. Also that the victims were rescued by the FRSC as a result of the notification they received. Further, the level of prioritization given to communication was ascertained by how the communication option is taken on the part of the commercial drivers and the FRSC. The priority that they both give to communication can be said to be low. Lastly, that there are at least three basic processes that an emergency call goes through before rescue takes place. This process starts from the emergency caller and ends at the FRSC head of operations office. If the 15 minutes extrication time of accident victims is anything to go by, then the communication process can be said to be long

5. 3 CONCLUSION

Based on the findings, the following conclusion can be drawn:

Communication has the capacity to revolutionize the rescue process by providing timely information that can reduce the number of fatalities as well as severity of injuries of accident victims through the provision of emergency medical service. Granted, communication does not work in isolation. Other factors like health care system, transport, nature of road, socio economic status of victims and national or state policy on health can all influence the survival of accident victims. Having said this, it should be recognized that if communication is appropriately ingrained in organizational systems and if individuals are encouraged to take it as an option in emergencies, there will be a significant increase in the number of lives saved. In this vein from the findings of this study, it can be said that the main problem that emergency communication has in the study area is not necessarily the lack of capacity in communication, rather it is the underutilization of that which is available.

5.4 RECOMMENDATIONS

From the summary and conclusion, the following recommendations are made.

1. That communication should be prioritized in emergency situations. This prioritization can be done by:

a. Harmonizing emergency numbers and cutting its length, from 11 digit numbers to three digit numbers. This will help the public to remember the numbers with ease and use them better. Also that multiple emergency numbers should not exist.

b. Communication capacities should be improved within the organizational framework of the FRSC. These capacities should not just be of the technologies but also rescue operators should have better intra organizational communication process.

c. A multiple approach should be taken to publicize FRSC communication. Such approach should include use of different forms of media.

2. The stages that emergency communication undergoes should be shortened. It is not enough to have an emergency system that is functional, but the shorter the process the more the lives that will be saved.

3. That FRSC should find a way of building trust with commercial drivers so as to enhance relationship which has the capacity of enhancing usage of the number.

5.5 SUGGESTION FOR FURTHER STUDIES

a. A study should be conducted to cater for a wider public such as private car owners and other commuters who do not own a car or other private means of mobility.

b. A study on emergency communication inintra state travel should also be conducted.

c. Studies should be conducted in conjunction with the hospitals to find out those who were actually rescued by the relevant rescue agencies as a result of emergency communication while recognizing the time between accident and hospital admission and whether the victims received any medical care before getting to the hospital.

5.6 CONTRIBUTION TO KNOWLEDGE

Significant literature was reviewed and it was found that the study of emergency communication has not gained currency in the country, neither are emergency communication numbers common. Consequently, a couple of African countries have multiple numbers for emergency, if they exist. Therefore, the contributions to knowledge can be summarized as:

a. The knowledge of emergency communication number does not determine usage. Hence, the basic factor hindering the communication of emergency in the study area is not necessarily a lack of capacity in communication but an underutilization of the available capacity.

b. The richness of any communication medium should be based on context. A medium that is rich in one scenario will not be rich in another; it's a matter of application.

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APPENDIX I

QUESTIONNAIRE FOR COMMERCIAL DRIVERS

Sir/ Madam

I am a Masters student of the above mentioned department and university. As part of requirement for the award of M.SC Mass Communication, I am conducting a research titled "An Assessment of Emergency Communication in Road Traffic Accidents in Zaria." Please kindly assist by answering the questions below. The information provided is confidential and it would be used for academic purposes only.

SECTION A: Please Tick (√)

1. Age distribution

a. less than 20 years [ ] b.20-30 [ ] c. 31-40 [ ] (d) 41 years and above [ ]

2. Sex a. Male [ ] b. Female [ ]

3. Route presently covered

a. North Central [ ] b. North West [ ] c. North East [ ]

4. What is your highest educational qualification?

a. None literate [ ] b. Islamic education [ ] c. primary education [ ]

d. secondary education [ ] e. Tertiary education [ ]

SECTION B: Please Tick (√)

5. How long have you been a commercial driver?

a. less than a year [ ] b. between 1 & 5 years [ ] c. 6 to 10 years [ ] d. 11 years & above [ ]

6. Are you aware that the Federal Road Safety's Corps (FRSC) in Zaria have communication channelsthrough which they can be reached in the event of an accident?

a. Yes [ ] b. No [ ]

(**If your answer to question 6 is No please answer questions 17 and 18 only)**

7. If yes, do you know the actual phone numbers of the FRSC in Zaria?

a. Yes [ ] b. No [ ]

(**If your answer to question 7 is No please answer questions 17 and 18 only)**

8. If yes, what was your source of awareness?

a. Through the media [ ] b. Through FRSC [ ] c.Through the union [ ]
d. Others specify……...

9. Have you ever called the number? a. Yes [ ] b. No [ ]

(**If your answer to question 9is No please answer questions 17 and 18 only)**

10. If yes, why did you call the number?

a. because you were personally involved in an accident [ ] b. because you saw an accident [ ] c. others specify……..

11. How would you rate the working of the number?

a. Highly effective [ ] b. Effective [ ] c. not effective [ ] d. can't say [ ]

12. When you called the number, did you wait for the rescue team to arrive?

a. Yes [ ] b. No [ ]

13. If yes how fast would you rate the arrival of the team from the time you called?

a. Very fast [ ] b. fast [ ] c. Not fast [ ] d. not certain [ ]

14. Did you experience any problems when you called the number?

a. Yes [ ] b. No [ ]

15. If yes, what was the problem you experienced?

a. No network coverage at all [ ] b. poor network coverage [ ] c. language barrier [ ] d. no one picked [ ] e. Others specify……

16. In the event of any of the above in number 15, what did you do?

a. try to help[ ] b. stopped a car to help [ ] c. kept trying the number [ ] d. others specify……..

17. Have you ever been involved in accident /met an accident on the road/ or none. Please indicate as applicable to you……..

18. Since you do not know or have never used FRSC's number, when you meet with an accident on the road what would you do?

a. call your union [ ] b. try to help to the hospital [ ] c ask for FRSC's number from others people[ ] d .others specify……

APPENDIX II

IN-DEPTH INTERVIEW GUIDE

1. What are your emergency communication channels in Zaria?

2. How do you communicate the channels to the public (commercial drivers)? I.e. what media do you use to let the public know about these channels?

3. What are your emergency communication numbers?

a. Are the numbers permanent (constantly in use or do you change them with time)?

b. Are they available any time, i.e. day and night?

c. Who is responsible for receiving the calls?

d. What happens after such call is received? I.e. what is your intra organizational communication like with respect to emergencies?

4. Do these emergency numbers function side by side with 122 which is also your organizations number?

5. Does 122 function differently from 112 which is the harmonized emergency number as announced by NCC

6. How do you operate in terms of jurisdiction? Those traveling from Zaria to Abuja have your numbers. If an accident happens halfway, they call you and you call the next command, what are your boundaries?

a. How long will it take from their call to the time you locate the command closet to them.

b. What information will you require from a caller while communicating emergency?

7. Who makes most of the emergency calls you receive?

8. How do you verify the authenticity of a call that an accident really happened.

9. Do you have a data base for the calls that you get in a month or there about?

10. If the emergency call is within your jurisdiction, what is the typical time between crash notification and actual rescue?

APPENDIX III

Transcription of Interview with the Head of Operations, HA Ibrahim, Staff Officer Operations RS 1.13.Zaria Unit Command.

Question: What are your emergency communication channels in Zaria?

Answer: We do have emergency communication basically based on phones, we use phone in communicating whenever there is emergency

Question: What media do you use to communicate the channels to the public?

Answer: is based on public enlightenment, yes we train our colleagues for public enlightenment. So mostly each week we do have public enlightenment given to motorist or public in general.

Question: How do you situate this public enlightenment? I mean what informs how you will choose where you carry out the enlightenment?

Answer: Sometimes we schedule a date and inform the motor parks that we are coming for public enlightenment based on a particular topic and sometimes when personnel are on the road

patrolling we give them the opportunity or time to enlighten the motorist or give them all these emergency numbers.

Question: From findings and a few of the parks that I have visited, the commercial drivers tell me that they have no idea that this numbers exist, how is that?

Answer: You know definitely we have motor parks that are accredited in Zaria here. You see most of the parks are not accredited. Anyone can just stand up one morning and start his own park. We do have recognized motor parks that we give our numbers and we call them and inform them that we are coming on a particular day and we schedule a date that we will come in for public enlightenment and they will gather their men, their drivers and they will be there and we will come and give them the lecture and enlighten them about how to use the road and give them advice on how to be patient while driving and we give them such emergency numbers.

Question: To deviate a bit, the parks I am talking about are parks that are registered with your office. They acknowledge that you carry out enlightenment with them but that you don't talk about communication or emergency numbers. But that's by the way. What are your emergency communication channels in Zaria?

Answer: Am surprised that you said they do not know our numbers. Definitely they do have our numbers, I don't know which person you met and they gave you this information. Okay most of the drivers maybe I don't know but they do have our number because most of the accidents that occur, they call us because it will not be our personnel that will call us that there is an accident. Most of it, it's the general public that call us and definitely they must have our numbers. The numbers that we have are 08077690017, 08077690069. All these numbers that I called, you can call them at any time and you will have response.

Question: Okay, I noticed that the numbers are glo numbers, is there any reason they are specifically glo numbers?

Answer: Glo are the company that came up and gave us the CUG number and it's a postpaid number.

Question: I don't understand what you mean by postpaid, can you just make it simple for anybody that is going to use this record to understand what you are talking about?

Answer: Is a number that is been paid monthly. It is registered to be paid monthly. It is not like the prepaid thing we have like personal thing that you always recharge it and when it gets exhausted you recharge again and it gets exhausted. But this one you will keep on calling, calling the same CUG numbers and it gets exhausted monthly depending on how you registered the postpaid.

Question: In essence, are these numbers that you have given me permanent?

Answer: Yeah they are permanent, it's an office number. Anybody holding that office will definitely be with the number throughout, 24/7

Question: Who is responsible for receiving these calls, that is an accident happens, I call you, who receives the call?

Answer: As I said earlier, the phones are in the office and like all the numbers is in the staff officer's operations office which deals with the operations. It's supposed to be with any team leader going out on patrol. So whenever there is this distress call for emergency as per rescue concerned, he will embark on it. So each and every team leader when embarking on a patrol will

take a CUG that is this number that they use in calling us so that whenever there is an emergency, he will embark on it with his personnel.

Question: So what happens after the emergency call is received? What is your intra organizational communication like with respect to emergency?

Answer: As you know, our primary assignment is to evacuate, to rescue and respond to any road traffic crashes. So in every of our command, we have a standby vehicle and personnel that are just there for whenever there is an emergency call or a distress call for rescue, they will embark on it. So whenever we receive this call in the office, maybe let's assume that the phone is in the office and we receive a call that there is an emergency, we inform them, they are very close and then they will embark on it.

Question: How do you inform the standby team? Do you go in person or call them on the phone to say go for a rescue.

Answer: As I said we have vehicles and personnel with drivers. They are all on standby, so whenever they are in the office on standby at the base permanently. So whenever there is distress call, we inform them in person, not calling them. They are around, we inform and they embark on the rescue.

Question: The vehicles you have are they ambulances or what kind of vehicles are they?

Answer: We have ambulances and we have patrol vehicles.

Question: But which one do you use for the rescue, ambulance or patrol vehicle?

Answer: There are commands that have ambulances and there are those that don't have it and they use their patrol vehicles to embark on any rescue and it would be as perfect as the

ambulance because we have a first aid box of which the personnel have been trained to issue the first aid to any of the victims.

Question: So you are saying that first aid is part of the requirement of your staff? They are required to know first aid?

Answer: Yeah, we have these in house lectures which are weekly and so are based on the topic chosen. But most of our personnel know first aid. They are thought about it because it is part of their priority.

Question: So when you now go for the rescue, what do you do? Do you just scoop them and run with them or you give them first aid before you take them to the hospital?

Answer: It depends on the nature of the victim. Assuming you met a victim bleeding, you can't just pick him like that and throw him in the vehicle (van) and rush him to the hospital. He might not make it. But we make sure that we stop the bleeding based on the first aid treatment that we would give.

Question: What informs the choice of hospital you would take the victim to?

Answer: If whenthe nature of the victim is critical, we know the capacity of the hospitals that are here in Zaria. If we realize the nature of the victim is critical and cannot be handled in a particular hospital, then we definitely move them to Shika. What we do first is that we reach hospitals that are closer to the scene so that they will give him more of what we are unable to give.

Question: In the course of discussing with some of the staff at the teaching hospital, they told me that they have an emergency number and that you could call them and tell them that you are bringing a victim. Do you do that?

Answer: Yeah we do have their numbers, A & E numbers. Before we reach the hospital we call them and tell them that we are coming along with a victim and these are the state of their situation.

Question: So your staff have the number and its what you always do before you take a victim to the teaching hospital?

Answer: Yeah, most of the time we do call them depending on the situation, seriously. There are situations that you may be carried away with the victims' details and fatality of the accident. So you may be carried away but we do call them that there is an emergency and the state of the emergency so that they will be ready for the response.

Question: In the course of my readings, I found that especially in places like Abuja and the rest of them that your office has a number which is 122 as an emergency number, and in the course of gathering the data some people said they heard of the number, so am curious, does the number operate here in Zaria?

Answer: The emergency numbers we have are the numbers that I just called and whenever you call us irrespective of the time, you would get us and we respond to your calls. Whatever the situation, we will be there.

Question: So in essence 112 and 122 are not necessarily operational here inZaria, not yet?

Answer: Yeah, not yet. The emergency number is yet to be harmonized. But the emergency number I gave is functional and it is constant.

Question: In terms of jurisdiction, what happens? The numbers operational in Zaria are meant for Zaria. So if am on a journey and an accident happens halfway in the journey, I will call the number which I know. So what happens, how do you operate in terms of jurisdiction?

Answer: The emergency numbers are intact. Whenever and wherever you are and you see a rescue going on or there is an accident, whatever number you have, if it is a road safety number,just call it. Whatever and wherever it is, you just mention the scene where the accident occurred and definitely we will know where it is. It is connected, we would know if it is our jurisdiction. If it is not our jurisdiction, we will call the command that is responsible for that and they will be there. Even if the number you know is the private number of any staff, you can call it also.

Question: Give me an idea; let's say in Zaria, how many kilometers out do you go? How further out do you go, say on your to Kaduna, Kano etc. Give me a rough idea of how far out you go from Zaria for a rescue before the next command?

Answer: It's not based on kilometers really. Let me give you an example, from Zaria to TashanYari is like 20 minutes journey. So if there is an accident that is like a 15 minute journey from Zaria definitely it is their responsibility to embark on that rescue. Then if it is less than say 10km, Zaria command or TashanYari command can embark on it. Anyone that is closer because we patrol any day any time 24/7. So whenever there is a distress call, we call on the person that is more close to the jurisdiction. If he is there then he will embark on it.

Question: So are you saying that you have commands in each locality? How far out do you spread?

Answer: Along Kano road from Zaria here we have TashanYari, which is 20 minutes' drive. Then along Kaduna road we have BirninYero which is a 30 minutes journey and along Katsina road we have Funtua unit command which is almost 30 to 35 minutes journey as well. Let me give an example, along Katsina which is Funtua unit command, whenever there is an accident in between Giwa and Shika, Giwa and Shika is more close to Zaria than Funtua, so Zaria unit command will embark on that operation not Funtua. But whenever we call and communicate with each other and Funtua command are operating more closer than us, we call them because all we need here is for them to be rescued and for lives to be saved.

Question: In essence if I make a call not to the command that is within that location where an accident happened, what's your typical response time?

Answer: It depends on the information that the person who called gave the command he called. If you call me as a personnel that there is an accident and you tell me the particular point where it happened, I will know where it is and I will get the information from you. You tell me maybe it's in Kano and you tell me the village. Definitely I know am not in Kano, am in Zaria. I will call Kano command informing the command that there is an accident in so place, then that point will be visited.

Question: So if you locate the command, typically what rescue time do you try to meet?

Answer:whenever distress call for a rescue comes in we have to be extremely sure that truly the need for rescue is genuine and our drivers are trained and they are enlightened not to be driving recklessly because of the rescue because their lives are at stake too. So we make sure that we

make the rescue on time depending on how busy the road is. If the road is busy there is nothing that we can do, our siren is on then we embark on it. And if they understand the reason for the siren, they give way. But some are very stubborn, upon all the siren, they will be stubborn not to make way and they will try to be claiming right.

Question: So on a good day, how many people go for a rescue?

Answer: Rescue is an operation and for every operation we have a team consisting of an officer and 3 marshals including the driver which makes them 4. It is an operation. So there is a standby team. It would be the same officer and his personnel.

Question: What information is required from a person communicating emergency?

Answer: The location of the scene and the state of the accident victims.

Question: For the calls that you receive, who makes the call the most?

Answer: Some, because the drivers are on the road, most of them when they see an accident, they call us and the general publiccall us too. Most of the general public call us because they have our numbers, a number of them come into our office and ask for our emergency numbers so that if there is any accident they will call us. They are so quick to get our numbers, most of them call us for rescue and we embark on it.

Question: Now you are saying members of the public come to you saying they want to know your numbers so that if anything happens they could call you?

Answer: Yes

Question: How do you verify that an accident actually happened, how do you know that the call is authentic?

Answer: Yeah it's funny seriously because we use to experience this kind of situations. They will be using our number to call us with fake information and not the right information. So it depends on the number of calls we receive pointing out the same location of an accident. So when we receive like 2, 3 or 4 different numbers calling us that there is a particular accident at a particular scene, definitely we embark on it; we know that it must be real.

Question: So in essence you are saying before start out, you actually need to get one or two other calls from the first one that called you telling you that its actually real?

Answer: Yeah different numbers or even the same numbers. We used to listen to the background and understand truly by the crowd shouting or crowd trying to assist. From there we will definitely know the fact about the call.

Question: So in a month, roughly do you have an idea of the calls you get.

Answer: We get lots of calls but the calls do not matter but is how serious the accident is. A bike man can easily fall and they will call us that there is an accident and before we reach there the bike man is up and he is going because its not so serious, not the numbers that call but how serious, how critical is the accident.

Question: On a critical note do you get calls on serious accidents? Give me an idea, roughly in a month?

Answer: We have critical calls like this and roughly in a month they could be up to 10-15 in a month. Sometimes, when we embark on it and we are on the scene, some accidents may not be that fatal. Some may be serious or much simpler.

Question: Do you have language problems or any other problems in the course of emergency communication?

Answer: Truly, we don't have language problems. We have Hausa speakers so even if the caller can't speak English, we will understand what the person is saying. Basically as far as communication is concerned, I can say that we do not have issues

Question: What are the problems that you face when you go to rescue?

Answer: Most of the time, the problem we face is the general public. Most of the time, they will try to deprive you from performing your actual duty. Them trying to push that they know what they are doing. Sometimes they cooperate with us and sometimes they give us a little headache by not allowing us to do our work by trying to maybe, when you see a victim lying down and you are trying to put him in the right position that he will be saved or rescued, like giving first aid, it would be a problem for them. They will be thinking that you are not doing what is right. All they are after is for the victim to be taken to the hospital, not allowing you to give him the first aid and attention.

Question: Do you have enough machinery to rescue in critical cases?

Answer: Yeah we have machinery but they are not that sophisticated like maybe drilling and maybe saw and then we cut off a car into two, we have machinery to work and remove the victim out.

Question: To deviate a bit, in the course of the findings, I asked the commercial drivers some questions. There seems to be a disconnection between the FRSC and them. They don't seem to understand what you do. They think that you are insincere, especially the older ones, they don't trust your people. What's your take on this?

Answer: Definitely we have such problems because lots of the drivers are illiterates. They don't understand the picture of what we are doing. Most of the drivers are after money. They don't have discipline in driving; they don't have value for life. So whenever they are driving, they just want to reach their destination anyhow, anyway. So we try as much as possible, we give them lectures about how to respect life and how to respect their own life and the general public but they seem not to understand because it's like we are interrupting and intruding into their own business. Definitely they will not love us because we are conducting our work and they are not trying to respond to what we are trying to let them understand because they are illiterate so it will be hard for them to understand. We have been giving them enlightenment on how to pick passengers, always there will be overloading and you will see a driver without driver's license. He doesn't even know how to drive, he did not go to a driving school but because he can drive locally, he will be picking up passengers without anything and we are trying to correct them. When someone is not trying to understand you definitely there will be problem. So that is the reason. They don't understand what we are after and they don't want us there because they are always in haste.

Question: But some of them have claimed that you people are the ones that give them fake drivers license. How do you hope to correct the disconnection between you and the commercial drivers?

Answer: Most of the time as we talk about road traffic crashes, they are the victims most of the time and we are trying to let them understand that we value their lives and they will not understand. They believe that they own their life so they want to drive anyhow that is just the problem and in terms of fake driver's license, we enlighten them on how to obtain a driver'slicense. So whenever you go prior to what we advise you to do, you are on your own. But to get genuine we enlighten them on step by step process on how to get genuine driver's license.