KNOWLEDGE, PERCEPTION AND SELF-EFFICACY RELATING TO ROAD TRAFFIC CODE AMONG DRIVERS OF ARTICULATED VEHICLES IN SAGAMU, OGUN STATE

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DEDICATION

This work is dedicated to the Almighty God.

CERTIFICATION

I certify that this project was carried out by Agborume Aluko Tosin of the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, under my supervision.

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ABSTRACT

In Nigeria, the increasing prevalence of fatal Road Traffic Accidents (RTAs) involving Articulated Vehicles (AVs) is largely due to non-adherence to the Road Traffic Code (RTC) by Articulated Vehicle Drivers (AVDs). Although, health education interventions can be used to address the problem. Knowledge, perception and Self-Efficacy (SE) of AVDs relating to RTC are needed in designing evidence-based educational interventions. The study was aimed to explore knowledge, perception and SE of AVDs related to RTC in Sagamu, Ogun State, Nigeria.

The study was a cross-sectional survey and the sampling process involved two steps. Four out of seven motor parks for AVs were randomly selected by balloting. Five hundred consenting AVDs were selected through systematic random sampling using register kept at the motor parks as sampling frame. A semi-structured questionnaire was used for data collection. The items in the instruments included questions on respondents' socio-demographic characteristics, driving related lifestyles including their psychoactive drug use, as well as 38-point knowledge, 10-point perception and 30-point SE scales. Knowledge scores <18, ≥18 ≤26 and >26 were classified as poor, fair and good, respectively. Perception scores >5 and ≤5 were categorised as favourable and unfavourable, respectively. Self-Efficacy scores >15 and ≤15 were classified as high and low, respectively. Data were analysed using descriptive statistics and t-test at a 0.05.

Respondents were males, aged 34.0±9.1 years and those who had ever heard of the RTC constituted 50.8%. Of this sub-group, 30.3% had a copy of the code but only13.4% had ever read it. Most (94.0%) of respondents had ever taken any alcoholic beverages and 92.5% were current alcohol consumers. Other psychoactive substances currently used included; cigarette (53.1%), Marijuana (35.5%) and raw tobacco (5.8%). Most (98.0%) of respondents sleep for less than six hours daily. Respondents' knowledge of the RTC was 19.0±4.4 while those with poor, fair and good knowledge were 46.8%, 45.6% and 7.6%, respectively. Perception score was 4.4±1.4 and the proportion of those with favourable perception was 47.2%. Respondents' SE score was 12.4±4.1. The proportion of respondents with low SE (93.8%) was significantly higher than those with high SE (6.2%). Respondents who had ever read the RTC had SE Score of 17.4±2.2, which was significantly higher than the 11.7±2.3 obtained by those who had never done so. Knowledge score of respondents who ever heard ofRTC was 21.2±4.2 and this was significantly higher than 17.5± 3.7 obtained by those who had never heard of the code. The knowledge score

(25.0±3.1) among respondents who ever read the RTC was significantly higher than the 2.7±4.1 obtained by those who had never done so.

The articulated vehicle drivers had inadequate knowledge of the road traffic code. They had unfavourable perception and low self-efficacy relating to adherence to road traffic code. Training, counseling and peer education are recommended to tackle these challenges.

Keywords: Road traffic code, articulated vehicle drivers, psychoactive substances

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GLOSSARY OF ABBREVIATIONS

ANOVA:	Analysis of Variance
AV:	Articulated Vehicle
BAC:	Blood Alcohol Concentration
BIR:	Board of Internal Revenue
CBN:	Central Bank of Nigeria
DAV:	Drivers of Articulated Vehicles
DLC:	Driver's License Centre
EC:	European Commission
FARS:	Fatal Accident Reporting System
FRSC:	Federal Road Safety Corps
LFN:	Laws of the Federation of Nigeria
LGA:	Local Government Area
VIO:	Vehicle Inspection Officer
MPH:	Master of Public Health.
NAIITSA:	National High way Traffic Safety Administration
NCE:	National Certificate of Education
NCSDR:	National Center on Sleep Disorders Research
NRTC	Nigerian Road Traffic Code
NUPENG	Nigeria Union of Petroleum and Natural Gas Workers
OND:	Ordinary National Diploma
PENGASAN	Petroleum & Natural Gas Workers Senior Staff Association
PRECEDE	Predisposing, Reinforcing and Enabling

RTA:	Road Traffic Accident
RTC:	Road Traffic Code
RTEAN	Road Transport Employer Association of Nigeria
RTI	Road Traffic Injury
SE	Self-Efficacy
SRL	Self-Regulatory Learning
TRACE	Traffic Regulation and Compliance Agency
UK	United Kingdom
UNAIDS:	United Nations Program on HIV/AIDS
USA:	United State of America
WHO:	World Health Organisation

OPERATIONAL DEFINATION

Articulated vehicles: these are vehicle which has a permanent or semi-permanent pivoting joint in its construction (vehicles with 6 tyres and above).

Articulated vehicle driver: a person that drives a vehicle which has a permanent or semi-permanent pivoting joint in its construction (vehicles with 6 tyres and above).

Road traffic code: are provisions relating to road use practices, enforcement procedures and safety issues.

Drivers licence: is a small card showing legal authourization permitting a driver based on competence.

Road traffic accident: a collision or similar incident involving a moving vehicle, resulting in property damage, injury or death.

Self efficacy: The sense of confidence we have to perform a particular task.

Psychoactive substance: substances that have signifant effect on mood or behavior.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Study background

In Nigeria, there is a high demand for the use of articulated vehicles due to the increasing commercial activities by individuals, organisations and industries requiring the haulage of goods across the country (Ipingbemi 2011; FRSC, 2011). The contribution of articulated vehicle operators to Nigeria economy is huge. According to the Federal Road Safety Corps (FRSC), Nigeria has an average of 4500 articulated vehicles on Nigeria roads daily. The organization adds that about 3,000 tankers are involved in wet cargo haulage while 1,500 "trailers" with dry cargo ply Nigerian roads daily (FRSC, 2011). An articulated vehicle is that which has a permanent or semi-permanent pivoting joint in its construction (Louise, 2009). Such vehicles are mostly used to haul heavy loads and they include oil tankers, container-bearing trucks and tippers. The main feature of an articulated vehicle that puts it in a separate vehicle class is its drive system. The drive system is based on the number of wheels on axles used to pull the truck made of two separate sections (a tractor and a trailer) connected by a pivoted bar (Louise, 2009).

Road transportation is the most dominant mode of transportation (Oni, 2006). Use of road transportation cuts across individual commuters, private, corporate and government organizations. The restrictive nature and poor development of water ways, the near collapse of the rail system, and the high cost of air transportation have further exerted a lot of pressure on the road, as over 75 percent of movements in Nigeria are made by road involving the use of several categories of vehicles (Olagunju, 2015; Osita, 2009). Articulated vehicles are used only on the road for the haulage of goods.

Useful as articulated vehicles are, experience has shown that they are implicated in road traffic accidents in Nigeria. It has for instance been reported that from January, 2007 to June, 2010, a total of 4,017 articulated vehicle crashes were recorded on Nigerian roads with a yearly average of 1,148 cases and monthly average of 96 crashes (FRSC, 2011). A steady rise in the number of fatalities has been noted since then and there are predictions that the number will continue to rise (FRSC, 2011). It is often stated that bad roads

contribute to the occurrence of Road traffic Accidents (RTAs) in Nigeria (Adeyemi, 2015). Omoronyia (2013) has added that drivers of articulated vehicles have been implicated in the causation of several RTAs in Nigeria even on good roads.

A good knowledge of the road traffic rules, good driving skills and general consciousness of good driving practice play vital roles in preventing accidents. The Nigeria Road Traffic Code (NRTC) was developed to meet these needs. The code is geared towards helping drivers to act responsibly and enhance their capacity to foresee and react to hazards appropriately (Oni and Okanlawon, 2010). The NRTC states that traffic rules and regulations are for all road users and drivers are particularly expected to demonstrate satisfactory knowledge of these rules as a pre-condition for getting a driver's license (Adogu and Ilike, 2006). This pre-condition are still valid till date.

In many cases, it has been noted that articulated vehicle drivers' involvement in RTAs is due to their low level of knowledge of the road traffic code and poor application of the principles of the code. High level of knowledge and routine adherence to the principles of the road traffic code are potentially useful for reducing RTAs including those involving articulated vehicles. Sagamu is a major commercial centre in Ogun state and Nigeria at large. Several articulated vehicles are used to haul goods of various kinds to various parts of the country from the city. Several articulated vehicles from Lagos and Ibadan pass through Sagamu to link other south-west states, the east and northern parts of Nigeria. However, a systematic determination of the knowledge, perception and self- efficacy of drivers of articulated vehicles based in the city or those that pass by the city relating to the NRTC has not been well explored. This study was therefore designed to address this need and hence the focus of the study.

1.2 Statement of the problem

Road Traffic Accidents (RTAs) constitute a major public health problem worldwide especially in developing countries (Nantulya & Reich, 2002; Gopalakrishnan, 2012). It is particularly a major public health problem in Nigeria (Eze, 2012). In 2002, the prevalence of RTAs ranked as the 9th leading cause of burden of disease in the world. The problem was projected to be ranked as the third in the year 2020 (Salim and Salimah, 2005). According to the World Health Organisation (WHO, 2004), an estimated 1.2 million

people worldwide are killed as a result of injuries resulting from road traffic accidents each year.

In Nigeria, accidents involving articulated vehicles form a fatal category of traffic accidents (Oyedepo and Makinde, 2010; FRSC, 2000). Articulated vehicles pose a serious threat to the occupants of other vehicles and to other vulnerable road users due to their sheer size, height and mass (European Transport Safety Commission [ESTC], 2011; FRSC, 2011). Road accidents involving articulated vehicle create enormous social and economic costs for individuals, families, and society while the resultant injuries place a great strain on health services.

Hundreds of lives have been lost as a result of accidents involving articulated vehicles in Ogun State (Salau, 2015). Many of the articulated vehicles drivers take off from Sagamu or pass by it. Several studies have focused on the prevalence of RTAs in Nigeria (Aganga, Umoh and Abedii, 1983; Odero, Garner and Zwi, 1997; Idika and Sanni, 2004, Atubi, 2009) and pattern of RTAs, especially among motorcyclist (Aganga, Umoh and Abedii, 1983; Adesanya, 1998; Akinlade, 2000; Okedare, 2001; Sangowawa, 2007; Ogunniodede and Akangbe, 2012) with relatively little attention paid to articulated vehicles. Yet results emanating from studies of articulated vehicles have important implications for prevention and control of RTAs. Articulated vehicle drivers have been noted to flaunt larger-than-life character on roads and bully drivers of smaller vehicles for right of way in Nigeria (Akanimo, 2015).

The investigation of driver's knowledge and other behavioral antecedents relating to the NRTC has not been fully explored in Ogun state with special reference to Sagamu community. Drivers of articulated vehicles in the area studied have been implicated in several fatal RTAs. The prevalence of accidents involving articulated vehicles in Ogun state has been put at 11.5% of the total articulated vehicles accident in the country with Ogun state having the highest prevalence of RTA involving articulated vehicles in the country as at 2010 (FRSC, 2011). Sagamu and its environs constituting an emerging major centre for trade and commerce in Ogun state, south western Nigeria. The

prevalence of RTA among articulated vehicles may persist or continue to rise if evidence based interventions are not instituted.

Currently, the issuance of the drivers license to Drivers of Articulated Vehicles (DAVs) is not based on a test of knowledge, perception and self-efficacy relating to the NRTC; rather it is based on the assumption that anyone who can drive, possess adequate knowledge of the road traffic code and so can put into practice the provision of the NRTC (FRSC, 2009). Evidence based information relating to their knowledge, perception and self-efficacy of the NRTC is scarce and needs to be systematically investigated with a view to generating baseline information for the design of appropriate prevention and control interventions. This study was therefore designed to determine articulated vehicle drivers' knowledge and perception of NRTC, as well as to assess their self-efficacy relating to the application of the road traffic code in Sagamu, Ogun state.

1.3 Justification of the study

This research has potential for yielding useful baseline information for health education interventions aimed at upgrading the knowledge and perception of articulated vehicle drivers relating to the NRTC. The results are also useful for initiating programs geared towards enhancing their capacity to adopt safe driving practices including compliance with the provision of NRTC. In addition, the result of this study could be used by relevant traffic related agencies such as the FRSC, Vehicle Inspection Office (VIO) and the police to bring about necessary policy reforms relating to the issuance of licenses to drivers of articulated vehicles and enforcement of the road traffic code.

1.4 Research Questions

1. What is the level of knowledge of drivers of articulated vehicles on NRTC?
2. What are the perceptions of drivers of articulated vehicles concerning NRTC?
3. What is the level of self-efficacy relating to adherence to the NRTC among drivers of articulated vehicles?
4. What are the driving related practices including lifestyles of drivers of articulated vehicles?
5. What are the road accident related experiences of drivers of articulated vehicles?

1.5 Objectives

1.5.1 Broad objective

The broad objective of this research is to investigate the knowledge, perception and self-efficacy relating to NRTC among drivers of articulated vehicles and to determine the accident related experiences of drivers of articulated vehicles.

1.5.2 Specific objectives

The specific objectives were to:

1. Assess the level of knowledge of articulated vehicle drivers on the RTC.

2. Determine the perception of drivers of articulated vehicles relating to the NRTC.

3. Assess the level of self-efficacy of drivers of articulated vehicles relating to adherence to with the NRTC.

4. Determine the driving related practices including lifestyles of drivers of articulated vehicles

5. Identify the road accident related experiences of drivers of articulated vehicles.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 The road traffic code

The Road Traffic code (also motor vehicle code or Highway code) refers to statutes, regulations, ordinances or rules that have been officially adopted by a country to govern the orderly operation and interaction of motor vehicles, bicycles, pedestrians and other road users (Horberry and Mikko, 2006). The code includes provisions relating to road use practices, enforcement procedures, safety issues. Administrative regulations for drivers licensing, vehicle ownership and registration, insurance, vehicle safety inspections and parking violations may also be included in a road traffic code (FRSC, 2008).

The Nigerian Road Traffic Code is published by the Federal Road Safety Commission (Ogunmola, 2013). It is important to every road user it is an important document for guiding the conduct of road safety related training programs (Makinde and Opeyemi, 2012). The manual provides a national standard for traffic signs and road markings, administrative regulations for licensing drivers, vehicle ownership and registration, insurance, vehicle safety inspections and other safe road use matters. In addition, the manual sets out a practical methodology for the application of the Nigeria traffic signs and road markings and other road safety issues on Nigerian highways. The traffic signs and road markings contained in the code are to regulate traffic, warn road users of hazards ahead and to guide traffic by indicating direction, distances and appropriate actions that should be initiated by road users.

Nigeria is a signatory to the Vienna convention on Road Signs and Signals, agreed upon by the United Nations Economic and Social Council at its conference on Road traffic in Vienna, October 1978 (Shinar, Dewar, Summala, & Zakowska, 2003). This is an international treaty designed to increase road safety and international road traffic by standardizing the signing system for road traffic (road signs, traffic lights and road markings) in use internationally.

However, before the establishment of Federal Road Safety Commission in 1988, there was no concrete and sustained policy action to address the carnage on highways. Earlier attempts in this direction were limited to discrete and isolated attempts by some states of the Federation and individuals (Oyeyemi 2003, Balogun 2007, FRSC, 2007). The unpleasant situation resulted in the upsurge in road traffic accidents and this made the Federal Government initiate a search for a credible and effective response to the challenge (Ukiwo, 2007). In February 1988, the Federal Government established the Federal Road Safety Commission through the promulgation of Decree No. 45 of the 1988 as amended by Decree 35 of 1992 referred to in the statute books as the FRSC Act, Cap 141 Laws of the Federation of Nigeria (LFN). Passed by the National Assembly as Federal Road Safety Commission (establishment) Act 2007. The functions of the commission generally relates to making the highway safe for motorists and other road users (Ogunmola, 2013). The other function of the commission includes preventing or minimizing accidents on the highway, clearing obstructions on any part of the highways, educating drivers, motorists and other members of the public on the proper use of the highways, designing and producing the driver's licence (Olaiola, 2010).

2.2 Licensing procedure

In Nigeria, the minimum age to qualify for a driver's license is 18 years and 26 years for commercial and articulated vehicle drivers (FRSC, 2009). The applicant would first attend training at an accredited driving school. Then, the driving school will then present the applicant to a Vehicle Inspection Officer (VIO) for a driving test. Upon passing the driving test, the applicant would obtain a certificate of proficiency from the VIO. The applicant then completes a driver's license application forms at the Driver's License Centre (DLC) or download the form online. Afterwards he pays a license fee online or at the Bank and presents his application forms to the Board of Internal Revenue (BIR) Officer and VIO at the DLC for endorsement. He then proceeds to the FRSC stands at the DLC for biometric data capture. He is given a temporary driver's license which is valid for 60 days. The applicant picks up the original driver's licence at the BIR Office after 60 days.

Traffic accidents have negative impacts on social, health and economic development in developing countries. The public health challenges posed by RTA concerns many stakeholder including the Federal road safety corps, the police who are interested in legal enforcement, the insurance companies and vehicle owners in the monetary cost of road accidents, the accident victim and their relatives in terms of lives lost or disability and related cost of medical care, the health care system and medical personnel who are responsible for the emergency treatment and lifesavings of accident victims (Asogwa 1992).

2.3 Road traffic accidents

Road traffic accidents (RTAs) constitute important public health problems all over the world (Humblet and Lagasse, 2009). They are one of the leading causes of death, and serious morbidity even in developed world (WHO, 2002). Road traffic accidents results in injury or fatality, property damage, loss of man power and productivity (Atubi, 2009). The problem of deaths and injury as a resuh of road accidents is now acknowledged to be a global phenomenon with authorities in virtually all countries of the world concerned about the growth in the number of people killed and seriously injured on their roads (Jacobs and Aeron-Thomas, 1992; Sarpong, 2003). The rising trend in morbidity and mortality rates due to road traffic accidents in low-income and middle-income countries has moved some researchers to declare road traffic accidents an 'epidemic' (Nantulya and Reich, 2002; Roberts et al, 2002, Atubi and Onokala, 2009).

2.4 Prevalence of road traffic accidents

Quoting the world health organisation, Krug et al (2000) noted that road traffic injury caused an estimated 1.24 million death in 2010 and between 20 -50 million more people suffer non – fatal injuries with many incurring disability as a result of road traffic injury. Over 45,000 people are killed on the roads in Europe every year, along with 1.5 million reported casualties. This figure could be as high as 3.5 million when under-reporting is taken into account (European commission, 2000). For example in the Philippines, only one out of five medically reported road deaths are included in police statistics (WHO, 2004). Under-reporting also appears to be high in China which already has the world's highest reported number of road deaths. Results from a number of studies indicated that

in developed countries, under-reporting of fatalities was estimated ranging between 2 - 5 per cent (Mathers, 1991; Simpson, 1997). In Nigeria, figures of accidents and casualties are an under estimation of the realities on Nigerian roads as it has been stated that there are high incidences of non-reporting and under recording of road crashes (Adeloye et al. 2004).

However, like in other developing countries, road traffic accident in Nigeria is one of the most serious public health problems in need of pragmatic solutions (Anabi, 2012). Yet, the problem has been difficult to address probably because of the country's level of development. Nigeria is said to have the highest road traffic accident rate in Africa and the second in the world (Akpophomah, 1998, Obinna, 2007, Anabi 2012). According to a study, the proportion of deaths from road traffic accidents in Nigeria increased from 10.2 percent to 60.2 percent in ten years from 1991 to 2001 (Obinna, 2007). In terms of the personal safety problem, Nigeria is a high risk region with an average of 32 traffic deaths per 1,000 people (Fildes et al. 2007, Anabi, 2012). In terms of the personal safety problem, Nigeria is a high risk region with an average of 32 traffic deaths per 1,000 people (Fildes et al. 2007, Anabi, 2012). This is very high compared with the United States' 1.6 traffic deaths per 1,000 populations and with the United Kingdom's 1.4 deaths per 1,000 people (Fildes et al. 1986, Anabi, 2004). In terms of traffic safety, there are on average 23 accidents per 1,000 vehicles in Nigeria (i.e. 230 per 10,000 vehicles) far in excess of the accident rates in the U.S.A which recorded 2.7 accidents per 10,000 vehicles and the U.K. with 3.2 accidents per 10,000 vehicles. According to CBN (2008), between 2003 and 2007, a total of 225,891 accident cases were reported by the Nigeria Police Force, out of which 29,449 were fatal, 39,163 were severe cases, and 23,300 were minor cases. Road traffic accidents' statistics in Nigeria reveal a serious and growing problem with absolute fatality rate and casualty figure rising rapidly (FRSC, 2009).

The contribution of articulated vehicle related accidents to the prevalence of motor-vehicle accident in Nigeria is immense. It was revealed that between 2007 and June 2010, a total of 4,917 articulated vehicle crashes were recorded on Nigerian roads with a yearly average of 1,345 cases and monthly average of 99 crashes (FRSC, 2011). In a long developing countries, accident occurrences and related deaths are relative to other

population or number of vehicles (Obinna, 2007). Ironically, in Nigeria, studies have indicated that better facilities in terms of good quality and availability of standard roads have been accompanied by increasing number of accidents (Onakomaiya, 1988; Gbadamosi, 2002; Atubi and Onokala, 2009). This is contrary to the trends in countries were even the level of sophisticated road network and volume of vehicular traffic are much higher (Atubi, 2010).

2.5 Causes of Road Traffic Accidents

Road traffic accident can be caused by a single factor or a combination of the factors (Haddon, 1980; AMA, 1983; Stanfield et al, 1992; Robertson, 1992, Adiele, 2012). Most safety studies come to the conclusion that vehicle operator or driver factors (or human error) are the main cause of accidents (Adeniji, 2000; Pludenmann , Parry, Donson and Sukhai, 2006). The causes of road traffic accident are multifactorial and involve the interaction of a number of pre-crash factors which can be broadly divided into vehicle operator or driver factors, vehicle factors, environmental factors and road pavement condition (Hassenet, 2011).

A study done in Calcutta India, revealed that there are some host (human) factors such as the behaviour of drivers and seasonal factors (weather and time) that contribute to fatal road traffic accidents (Zhang, 1998). In Nigeria, some available literature revealed the primary causes of most road accidents to include acts of indiscipline such as: overloading, reckless driving, impatience, dangerous overtaking, ignorance of traffic rules and regulations among others (Oyeyemi, 2003; Balogun, 2007; FRSC, 2007; Chukwu, 2007). Driver factors in road traffic accidents are all factors related to drivers and other road users. They are mostly referred to as Human errors (Agbonkhese, Yisa, Agbonkhese, Akanbi, Aka and Mondigha, 2013).

Human error is estimated to account for between 64 and 95% of all causes of traffic crashes in developing countries (Atubi, 2009). However, unlike the findings of the Traffic Compliance and Enforcement Corps (TRACE), in Nigeria, studies on road traffic accident records have clearly shown that the attitude of the Nigerian driver to driving code and etiquette is the single most important contributing factor to road traffic

accidents. Driver factors solely contributes to about 57 percent of road traffic accidents and 93 percent either alone or in combination with other factors (Eze, 2012). Crashes do not just happen, they are caused. Adherence to road traffic regulations or codes as enshrined in the Highway Code reduces the risk of occurrence of RTA, but road users often flout these crash prevention and impact mitigation rules. The human factor that causes road traffic accidents includes the following; psycho-active drug use, over speeding, drivers fatigue, inexperience and age. These factors will be reviewed and discussed one after the other.

2.5.1 Psychoactive drug use

The association between psychoactive substance use and accidental injury or death has been acknowledged (Oladehinde, Adegbehingbe, Adeoye and Onakoya, 2009). In a study conducted by the European Monitoring Centre for Drugs and Drug Addiction (1999) on the relation between drug use and traffic accidents, it was revealed that alcohol is the most widely used drug in the world and every major society uses alcohol in some form or the other (Summers, Trost, Zerkin, prentice, Feeley & Carnage, 1975). Alcohol misuse presents enormous problems in the society which include: the death and injuries which result from driving under the influence of alcohol (Adamson, Ogunlesi, Momkinyo, Akinhanmi, Onifade, 2015; Abikoye, 2012).

Alcohol is a central nervous system depressant as it slows down the body's functions and its effects are similar to those of a general anaesthetic (Fact sheet, 2013). There is a clear-cut relationship between the use of alcoholic beverages and the incidence and severity of accidents (Nzegwu, Akhiwu, Nzegwu, Banjo and Aligbe, 2011). Specific physiological effects which are detrimental to the driving skills can be noted as consequence of alcohol use (Bello, Fatiregun, Ndifon, and Ikpeme, 2011)

However, literature also gives evidence of deterioration of eye-hand and motor co-ordination at (Blood Alcoholic Concentration BAC's of 0.05 to 0.10%. Lewis (1969) in assessing the effects of varying BAC's on several tasks found that motor co-ordination of subjects was significantly impaired at 0.06% BAC. Weissenborn and Duka (2013) reported a zero to twenty percent loss in performance in subjects on a road test who had

Blood Alcohol Concentration (BAC) range of 0.07 to 0.19%. Also, Tiplady, Franklin and Scholey (2004) found a 25-30% deterioration of driving performance of expert drivers at Blood Alcohol Concentration (BAC) of 0.04 to 0.06%. In addition, Schweizer, Jolicœur, Vogel-Sprott and Dixon (2004) found that all drivers made more driving errors at 0.10% BAC than they did before alcohol.

The experiments suggested that BAC's of about 0.05% are sufficient to begin to impair co-ordination, and that the impairment increases with BAC. It is widely recognised by many experts that judgements is the first function to be impaired by alcohol (Weissenborn and Duka, 2013). The impairment by alcohol is accompanied by the lowering of inhibitions and generalized feelings of well-being (Nzegwu et al, 2011). With respect to automobile driving the phenomenon may be described as a state in which an individual over-estimates his abilities and underestimates the mistakes in his performance.

Also of importance is the noted influence of alcohol on uncommon activities. Matsushita (2011) reported that non-habit actions, such as emergencies, backing up (reversing) and other activities that are normally less often attempted were the first to become impaired in a series of road tests. Williams (2006) showed that alcohol impairment of road tests is greatest with the more complex and less frequently performed manoeuvres. The same conclusion was reached by Fillmore, Marczinski and Bowman (2005). These findings clearly suggest that the effects of alcohol are most crucial in an emergency situation; an intoxicated driver, may do fairly well if called upon to perform common tasks only. Should he encounter an unexpected emergency, the influence of alcohol would become more apparent, for he may then fail to make proper adjustment; hence, drunk driving is a serious problem in traffic (Atubi, 2009).

In the UK for instance, alcohol accounts for 50,000 deaths per year and up to 500,000 hospital admissions annually (Williams, 2006). In the United States of America, about 10,000 deaths were attributed to use of alcohol by young people (New York Times, 2013). The WHO has reported a link between drivers' hazardous use of alcohol and road traffic accidents (WHO, 2009). Approximately 50% of accidents, and its attendant consequences, on Nigerian roads are related to alcohol use (Welcome and Pereverzev,

2010). Many studies in Nigeria have reported common use of alcohol (and other psychoactive substances) among commercial and long distance vehicle drivers (Makanjuola et al, 2007, UNAIDS 2007). Omolase (2011) found a prevalence of 32% of alcohol drinking prior to driving. The Global action on Haimful drinking reported the prevalence of current drinking by commercial drivers in Nigeria (Port Harcourt and Ile-Ife) was 67.2%. Of those drivers, 47% were "heavy" users, 15.3% were "moderate" users and 37.7% were occasional or "mild" users. In addition, Oboyega, (2012) found that between 60% and 70% of commercial drivers engage in drinking and driving. Makanjuola et al, (2007) reported that driving was done in conjunction with the use of the following psychoactive drugs: alcohol (15.9%), tobacco (30.4%), cannabis (4.3%), caffeine (31.9%), sedatives (10.1%) and solvents (8.7%).

2.5.2 Over speeding

The speed at which drivers choose to drive is accepted as being not just a key indicator of driving style, but also as having a major influence on both the number and the severity of traffic accidents (Elliot, Armitage and Baughan, 2003). A number of studies have attempted to model the link between speed and accident rates. An increase in average speed is directly related both to the likelihood of a crash occurring and to the severity of the consequences of the crash (Weissenbom and Duka, 2013). There is ample scientific evidence about the fact that over speeding is a factor that contributes to the risk, severity and fatality of motor vehicle collisions (Aaarts and Schagen, 2006; Elvik, Christensen and Amundsen, 2004). Traffic speed strongly influences the impact and severity of crashes and therefore has major implications for public health (Elvik, 2012). Even, the World Health Organization (2004) has noted excessive and inappropriate speed is the main cause of approximately one in every three serious or fatal crashes in the countries with high rates of motor vehicles use. Travelling too fast for prevailing conditions or above the stipulated speed limit contributes to road traffic accidents (Elliot et al, 2003). The risk of being injured increases exponentially with speed much faster than the average speed (Obeng, 2008). Excessive speed is reported to be an important contributory factor in many crashes (Elliot et al, 2003). Analyses of a number of large data bases in the United States indicated that speeding or excessive speed contributed to around 12 percent of all crashes reported to the police and about one third of fatal crashes (Bowie and Walz,

1991). In Australia, it has been reported that excessive speed is an important factor that account for approximately 20 percent of fatal crashes (Haworth and Rechnitzer, 1993). There is scientific evidence on the fact that higher speeds adversely affect reaction time needed to respond appropriately and effectively to a stimulus which can cause accident Speeding decreases the probability to prevent a collision (Svenson, Eriksson, Slovic, Mertz, and Fuglestad, 2012; Wegman, and Aarts, 2006). In addition, the higher the speed the poorer is the efficiency of the vehicle. Likewise, high speed increases the effects of other drivers' errors, such as distractions or not keeping the appropriate safety distance, so this multiplies the probability of being involved in a traffic crash (NHTSA, 2009, Svenson, Eriksson, Slovic, Mertz, and Fuglestad, 2012).

Kloeden, McLean, Moore and Ponte (1997) report examined the available literature on case control type studies, driver's characteristic speed and crash history studies, and correlation studies. The correlational studies demonstrated a positive association between speed and its involvement crashes. Another study published by Lardelli-Claret (2004) examines the relationship between speed and crashes as well as looking at more general issues surrounding the management. It was observed that there is a correlation between speed and rate of road traffic accident.

2.5.3 Driver Fatigue

Driver fatigue is a major cause of road accidents, accounting for up to 20% of serious accidents on motorways and (Horne and Louise, 2000). A large number of studies have discussed the effects of fatigue on driver behaviour and accident risk, and it has become evident that fatigue is an important issue in road safety (Schagen, 2003; ETSC, 2001; Horne and Reyner, 1995). It is often difficult to ascertain whether an accident was fatigue-related because consequences are often severe and the accident tends to remove symptoms of fatigue (Jettinghof et al., 2003). The European Transport Safety Council (ETSC, 1998) for instance estimates that fatigue is a factor in approximately 20% of commercial road transport crashes. Jettinghuf et al. (2003) estimated that fatigue amongst articulated vehicle drivers in the Netherlands accounted for between 18 and 44 traffic deaths each year. According to some authors fatigue may be a relatively more sensitive safety issue among articulated vehicle drivers than among the drivers of passenger vehicles (ETSC, 2001).

Typical fatigue-related crashes often involve only one vehicle, which may have run off the road. It tends to occur at night when natural alertness is low and typically happen on roads where driving task is unstimulating. Long work hours cut into time available for sleep, and work-related stress makes it hard for drivers to sleep when the time is available. When fatigue-related accidents occur, speeds tend to be higher than average and the consequences are more severe because braking is absent or late (ETSC, 2001).
In the US, 25% of long-distance truck drivers reported falling asleep at the wheel in the previous year; 47% reported falling asleep at some time in their career. Truck drivers were more likely to report falling asleep at the wheel if they split their off-duty periods or if they worked a demanding schedule such as 10 or more hours of consecutive driving or less than 8 hours per day off duty. Australian truck drivers who reported 6 hours sleep or less prior to a trip were significantly more likely to report a hazardous event related to fatigue, such as nodding off (Saltzman and Belzer, 2007).

In the USA, several studies such as NCSDR/NHTSA (1998), Johnson (1998) and Wang (1996) have noted various estimates of the level of sleep related road accidents. The National Highway Traffic Safety Administration (NHTSA) estimate that there are 56,000 sleep related road crashes annually in the USA, resulting in 40,000 injuries and 1,550 fatalities (NHTSA, 1998). Johnson (1998) revealed that 17% (about 1 million) of road accidents are sleep related. Another study on factors that affect fatigue in heavy truck accidents claims that 30% - 40% of accidents involving heavy trucks are caused by driver sleepiness (Eze, 2012). An analysis of road accidents between 1990 and 1992 in North Carolina found 5,104 accidents in which the driver was judged to have fallen asleep. This was about 0.5% of all road accidents during that period (Pack et al, 1995).

Several studies have identified young male drivers, aged less than 30 years, as one of the groups most at risk of being involved in sleep related road accidents (Dissanayake, 2004). About half of the drivers involved in sleep related accidents were males aged below 30 years, with the peak age being 21 – 25 years (Horne and Reyner, 1995). A study conducted in Danish and American revealed that tiredness was common among young male drivers who were driving at night and identified three main risk groups among

drivers. This includes male drivers aged 16 - 29 years, shift workers and people with sleep problems. There appears to be a link between the age of the driver and the peak fatigue time. Younger drivers are more prone to fatigue in the early hours of the morning, whereas older drivers are more likely to fall asleep at the wheel during the afternoon sleep period. (Horne and Reyner, 1999)

A 1998 American study found that about 20% of all fatal crashes and fatalities and 10% of all injuries involving a long-haul truck, occurred between midnight and 6am, the peak period for driver fatigue. These crashes tended to be more severe than crashes during other parts of the day. Truck driver fatigue was a particular problem in single-vehicle fatal crashes, but in crashes involving other vehicles, fatigue was coded more often for the other driver than for the truck driver (Blower et al. 1998).

A two year case-control large truck crashes study in Washington State investigated the relationship between long hour drive and traffic accident. For each large truck involved in a crash, three trucks were randomly selected for inspection at the same time and place where the crash occurred. Driving in excess of eight hours increased the risk of crash involvement. Also, drivers with log book violations, young drivers, and interstate drivers also had increased crash risks (Sagberg, 1999).

2.5.1 Inexperience

Inexperience has been noted to be a major contributor to articulated vehicle driver crash and fatality statistics. Research continues to demonstrate that new drivers have more crashes per year than experienced drivers, although it should also be noted that younger drivers (both new and fully licensed) have more crashes per year than older drivers (Williams and Tefft, 2012). This suggests that both age as well as experience are important contributory factors to articulated vehicle crashes. However, it remains less clear as to what level of inexperience contributes to crash risk (Williams and Tefft, 2012). Research has demonstrated that younger drivers are more likely to disobey traffic signs and regulations and have a higher tendency towards negligence of the potential risks of driving (Oyedepo and Makinde, 2010). Lin, Change, Pai, and Keyl (2003) also found out

that younger drivers have a stronger propensity for risky behaviours and are more willing to break the law and violate the rules of safe driving.

2.5.5 Age of drivers

Williams (1985) focused on the involvement rates of teenage drivers in fatal accidents using the data from the 1977 National Personal Transportation Study conducted by the Bureau of the Census and from the National Highway Traffic Safety Administration (NHTSA). Fatal Accident Reporting System (FARS) files for 1976-1978. Drivers under 19 years had fatal accident involvement rates (involvements per hundred million miles) about 4-6 times the overall rate. Rates for drivers aged 19-20 were 2-3 times the overall rate. Younger drivers continued to be over-involved until about age 25. Williams also examined driving at night. Night time rates for young are about 4 times the daytime rates, and young drivers did somewhat more of their driving at night as compared to older drivers. The probability of fatality in an accident involving a large truck is about twice as high as in accidents not involving large trucks.

A study conducted in Darersalam Tanzania in 2011 revealed that the majority of the articulated vehicle drivers were between the ages 19 to 40 years with a cluster in the 18 to 24 year group. This shows that many articulated vehicle drivers are young and they are in their productive age groups. Kochar, Sharma, Atul and Rehan (2002) reported that maximal fatal accidents have occurred in the age group of 31-40 years and a preponderance of 85% on Fridays. Singh and Dhattarwal (2004) have also observed that the commonest age group involved 30-35 years (27.3%) followed by 35-40 years. Young drivers may be temporarily distracted by factors that are beyond their control, such as roadside features, or voluntary factors such as mobile telephones (Neyens and Boyle 2007).

Another vulnerable driving group are older drivers, and this group represent the largest growing cohort of the Australian driving population. According to predictions by the Australian Institute of Health and Welfare (2001), the population of Australians aged over 65 years of age is anticipated to double from 12.5% in 2000 to 25% in 2021. This follows the global trend of aging population, especially amongst developed countries such as the

United States and Europe. Due to improvement in medical care, older drivers are also keeping their licenses longer (Lyman, Ferguson, Braver, and Williams, 2002), resulting from a range of factors, such as the rapid rise of the older driver cohort, older drivers' high crash rate per distance driven has become a challenging social and health problem for many developed countries (Hakamies . Bomqvist and Peters, 2000). The same study further shows that older drivers who have returned to driving after a long period of absence have a higher crash risk per distance travelled than older drivers who have continued to drive and remain licensed (Haworth and Mulvihill, 2003).

Driver fatality rates reveal a similar pattern of over representation of older drivers (Preusser *et al*., 1998; Retchin and Anapolle, 1993). As older drivers typically drive less distance per year than drivers of other age groups, debate exists whether the increased crash risk reported among older drivers is a result of the low mile age bias (i.e. the lower annual mileage driven, the higher the per-distance crash rate) (Langford, Methorst, and Bomqvist, 2006).

2.6 Consequences of road traffic accident

Road traffic accidents which are generally unintended and preventable are a common risk every day to life that can happen to almost every one, anywhere (Komba, 2006). The problem of road traffic accident is a threat to public health and national development in many developing countries (Krug, 2002). Road traffic accidents contribute to poverty by causing deaths, injuries, disabilities, grief, loss of productivity and material damages. Road traffic accidents are the most frequent causes of injury-related deaths worldwide (Astrom, *et al*, 2006). According to the World Report on Road Traffic Injury Prevention, traffic accidents account for about 3000 daily fatalities worldwide (Peden et al, 2004).

In developing countries the trend has reached an alarming state, but very little attention is paid to the problem (Odero *et al*, 1997). According to research carried out by Pierce and Maunder (1998), under the auspices of Road Research Laboratory in UK, they found out that, road accidents worldwide are estimated to a total of 20,000,000 victims for a time period which 70% of the accidents occurred in developing countries. The number of accidents per registered vehicles was 10% to 20% higher in developing countries than in

the developed world. In developing countries the proportion of serious injured and killed casualties are higher than in the developed countries. An analysis of cross sectional data on road traffic related deaths has shown that the poorest countries have highest road traffic related mortality rates (Soderlund *et al*, 1995).

Studies done worldwide have shown that road traffic accidents are the leading causes of death of many adolescents and young adults (Odero et al, 1997; Balogun, 2007). When taking the population figures into account, developing countries in Sub-Saharan Africa have the highest frequency of various accidents worldwide (Peden *et al*, 2004). According to data from the Nigerian Federal Road Safety Commission, the country has the highest rate of death from motor accidents in Africa; leading 43 other nations in the number of deaths per 10,000 vehicles crashes (Obinna, 2007; FRSC, 2006). Nigeria is followed by Ethiopia, Malawi and Ghana with 219.183 and 178 deaths per 10,000 vehicles respectively (Daramola, 2004). About 2,974 persons were either injured or killed in articulated vehicle crashes in 2007, and a 71.89% increase in 2008 led to a total casualty of 5112 and in 2009, a total of 4,799 which is 6.12% decrease were recorded and as at June, in 2010, 4,185 persons had been killed or injured in crashes involving articulated vehicles (FRSC, 2011).

Further analysis showed that the monthly average casualties figures for 2007 is 247.83 and in 2008, the figure rose to 417 and decreased to 399.92 in 2009 and geometrically rose to 697.5 casualties per month in 2010 (June). Also it was discovered that 8.15 casualties on the average were recorded daily in 2007, 13.73 in 2008, 13.15 in 2009 and 22.99 in 2010 (June). Traffic crashes also impact on the economy of developing countries at an estimated cost of 1.2% of a country's GNP per annum, as a result of morbidity, mortality and property – related costs (WHO, 2004).

2.7 Articulated drivers' knowledge and perception of the road traffic code.

One of the more extensive studies of drivers' knowledge of road traffic code was conducted in the United States by Hulbert et al. (1979). They assessed drivers' comprehension of several traffic sign symbols, traffic signals and pavement markings in a sample of over 3100 drivers from across the United States. Comprehension levels

reported by Hulbert et al (1979) were generally poor. with overall percentages of correct responses to signs, signals. and pavement markings being 74%. 68%. and 45%, respectively. They also found that old drivers were more likely to misunderstand certain road traffic code than those that were younger drivers.

The 1995 Kansas study carried out by Stokes et al (1995) evaluated 43 traffic control devices in terms of driver's understanding of the meaning of the information encoded in the signs and pavement markings Both multiple choice questionnaire and open ended questionnaire were used as survey instruments. The study identified some warning and regulatory signs and pavement markings that were misunderstood by the Kansas drivers and proposed some general recommendations for improving driver's understanding of certain road traffic code.

Parham et al. (2003) studied drivers understanding of the current U.S. system of yellow–white pavement markings through a driver survey. The survey was used to evaluate drivers' ability to describe the pavement marking colour code, drivers' reliance on pavement marking patterns when interpreting marking messages, and drivers' reliance on pavement marking colour when interpreting marking messages. The study involved 851 drivers in 5 states, with respondents representing 47 states, the District of Columbia, and Puerto Rico. The survey results indicate that drivers tend to use signs and other traffic as the primary cue to determine whether a road is one-way or two-way. A substantial proportion of respondents had an understanding of the use of marking colour to differentiate between one-way and two-way roads. Approximately 75% of the drivers surveyed understood the basic concept that a single broken yellow line separates opposing traffic on a two-lane road. The presence of a solid line (either double solid or solid and broken) in the centreline increases comprehension of directional flow to approximately 85%; more than 90% of the drivers surveyed understood that a solid line (either double solid or solid and broken) prohibits passing. Almost 95% of drivers indicated that passing is permitted with a broken line. The survey results indicate that the yellow–white pavement marking system is better understood than previously believed.

Relatively fewer studies have analysed comprehension of traffic signs by age (Dewar et al. 1994) and other safety related characteristics (Al-Madani and Al-Janahi, 2002). Ford and Picha (2000) found that most of the teenage drivers participating in the survey had some degree of difficulty in understanding the traffic control devices that were evaluated. Out of 53 questions, only nine traffic control devices were understood, in terms of rates of correct response, with knowledge level above 80 percent by the respondents. Twenty of the traffic control devices evaluated were understood by more than 60 percent of the respondents. The remaining traffic control devices were understood by less than 60 percent of the teenagers who participated in the survey.

Al-Madani (2000) investigated the influence of drivers' comprehension of signs on accident, while knowledge of signs was increasing with seat belt usage, no significant association with accident involvement was observed, even when age was incorporated with the accidents. Similarly, no significant difference with number of citations received was observed. Furthermore, those with no speed citations, or low number of speed citations, were not significantly better than those with high number of speed citations.

Dewar et al. (1994) evaluated age differences in comprehension of traffic sign symbols using 480 volunteer licensed drivers in the USA and Canada. The sample included 85 color slides of standard US sign symbols. Older drivers had poorer understanding than younger ones in 39% of the symbols examined; for the remainder there were no differences with respect to age. In another study, Luoma and Rama (1998) found recall of speed signs not to be affected by drivers' age.

Al-Madani and Al-Janahi (2002) examined the influence of drivers' accident involvement and personal characteristics on their understanding of 28 traffic regulatory and warning signs. A sample of 9000 drivers who were residents of Bahrain, Kuwait, Oman, Qatar and United Arab Emirates was used. Results showed that on average, drivers fully understood only 56% of all signs. The Gulf States, Asian and Arab drivers understood the signs less well, and were not much helped by the use of pictograms rather than written instructions. Male drivers scored higher than female drivers. Age, marital status, experience and accident rates had no obvious bearing on comprehension of signs.

Driver's understandings of traffic signs were evaluated by conducting a survey among the drivers in the Dhaka city by Razzak and Hasan (2010). In this study, "knowledge" was assessed in terms of how well drivers correctly identify the safety-related messages encoded in certain traffic signs. A multiple-choice type questionnaire for each traffic sign evaluated was prepared. The main objective of this study was to assess the driver's understanding of some selected traffic signs. A total of 42 traffic signs- 20 regulatory, 17 warning, and 5 informatory were evaluated. The knowledge was assessed in terms of how well drivers correctly identified the safety-related messages encoded in certain traffic signs. A questionnaire-type survey instrument was developed for use in this study. The survey form had two parts- multiple-choice responses for each of the 42 traffic signs evaluated and respondents background information. The results indicated a very low level of knowledge of traffic signs among the drivers. The percentage of correct responses for all signs combined was only around 49%- 50% for regulatory signs, 52% for warning signs, and 55% for informatory signs. Based on analyses of demographic and driving characteristics of the respondents, it would be reasonable to assume that the results of the understanding of traffic signs presented here are applicable to male professional drivers of ages between 25 and 44 years. The results indicated that only respondents' age and academic qualification had some meaningful effects on their responses.

Tuokko et al (2007) found that the perceptions of risk, attitudes and beliefs acted as mediators between knowledge and behavior factors. There are other researches focusing on human factors in driving and traffic safety. The main emphasis of Amaratunga, Hijar and Norton (2006) was on drivers' motives and the importance of risk perception in relation to bad driving practices analysing the relationship between driving behaviour and traffic accidents. Lawton et al. (1997) extended the violations scale by adding new items and divided violations into aggressive violations and road traffic code violations, the former one containing an interpersonally aggressive component while the latter one had no specific link to aggression.

Blockey and Hartley (1995) replicated the research of Reason et al. (1990) to confirm the distinction between driving errors and violations in a Western Australian driving

population. Their study also extracted three factors; general errors, dangerous errors, and dangerous violations, the content of the factors being a little different from those of Reason et al. (1990).

In China, Mingke et al. (2008) studied the structure of risky driving behaviour and found out that Highway Code violations, aggressive violations, general errors, and dangerous errors were the four factors of risky behaviour. In addition to this, the authors researched the correlations between risky driving behaviour and the four areas of driving experience, personality, risky driving attitude, and driving skill. Although personality traits are not a decisive factor when determining affects upon driving safety, it is something that cannot be ignored. There are many studies on the relationship between personality traits and traffic accidents. Patil et al. (2006) pointed out that a driver's behaviour is associated with certain personality characteristics and is also influenced by attitudes and beliefs.

2.8 Self-efficacy Belief and Self-regulated Driving

Driver's self-efficacy can influence driving ability. Self-efficacy refers to the sense of confidence we have to perform a particular task (Ajala, 2011). We all have beliefs about what we can do with the skills that we possess (Jinks et al. 2001). Probably the most widely cited theorist regarding performance self-efficacy is Bandura. His work reveals the ways in which belief about ability influences performance. In general, he reports that expectation about cause and effect results from experience and that the most powerful efficacy beliefs are situation-specific (Bandura, 1997). Self-regulated learning (SRL) is tied to self- efficacy. SRL emphasizes the emerging autonomy and responsibility of learners to take charge of their own learning and actions (Paris 2001). Three central characteristics of SRL exist. These are awareness of thinking, use of strategies, and sustained motivation. Paris (2001) has noted that part of becoming self-regulated involves awareness of effective thinking and analyses of one's own thinking habits. Self-regulation of driving has been proposed as a viable means of balancing the autonomy of adults against the sometimes competing demand of public safety (Okonkwo et al. 2007).

Okonkwo et al. (2007) also reported in their study that participants were most likely to avoid driving in bad weather followed by driving at night, driving on high traffic roads,

driving in unfamiliar areas, and taking left-hand turns across oncoming traffic. With the exception of driving at night, drivers at higher risk of crashes generally reported greater avoidance of these driving situations than lower risk drivers. Charlton et al. (2006) reported that most of the drivers they studied were very confident and had no difficulty in driving situations including intersections, busy traffic and other higher risk conditions. Charlton et al. (2006) further found, overall, less than one quarter of participants they studied reported that they routinely avoided difficult driving situations, most especially night driving.

Young drivers typically engage in reckless behavior because they are less able to perceive risk. They have difficulty identifying hazards that could lead to a crash and often overestimate their ability to handle the hazards they do identify (Dissanayake, 2004). Impressionistic drivers also tend to bring along passengers that distract them from driving and encourage them to participate in reckless speeding, racing, or "driving games" (Littlefield 2005).

In a study to determine the risk behaviors and attitude of truck drivers toward Road Safety in Thailand. The study revealed that truck drivers agreed that drivers are the main cause of traffic accidents. This includes attitude to traffic signs, road conditions, the environment and vehicles. Most of the subjects suggested that providing a solution to the listed problems can greatly reduce traffic accidents, this problems are ranked in there order of impotance: repairing potholes and run-down roads, strict enforcement of the laws by officers, training should be made available to truck drivers before receiving their licenses, improving unclear lanes dividers and improving insufficient or confusing traffic lights.

2.9 Conceptual frame work of "PRECEDE

The conceptual frame work are designed and adopted for use is used in research because it allow viewers to instantly visualise and grabs relationships. The PRECEDE model was applied to guide this study.

The acronym "PRECEDE" stands for Predisposing, Reinforcing and Enabling Causes in Educational Diagnosis and Evaluation. The model was first developed by Green and his

contemporaries. It is an important conceptual framework in Health education, planning aimed at diagnosing the health problems of a community, understanding the factors that influence the people's behaviour and developing intervention to promote healthy behaviour or change such behaviour to positive ones (Green and Kreuter, 1999). The model consists of three groups of antecedent factors which are; predisposing, reinforcing and enabling factors that influence human behaviour positively or negatively.

2.9.1 Predisposing factors

The predisposing factors are behavioural antecedent factors that motivate or provide a reason for behaviour. These are factors which must be present before a decision can take place about behaviour. They include – level of education, readiness to change, awareness, attitude, perceptions and belief of articulated vehicle drivers accident. These factors may influence the non-compliance of the road traffic code, awareness concerning knowledge, perception and self-efficacy relating to NRTC among drivers of articulated vehicles in Sagamu, Ogun State.

Belief means acceptance of truth about something. The Belief that accidents are punishment from Gods, or are a natural occurrence and cannot be prevented.

2.9.2 Reinforcing factors

These are factors related to the influence of significant others such as influence of friends, passengers, family members, colleagues and law enforce agencies. These factors can influences articulated vehicle drivers about the risks associated with their type of motor vehicle and the need to acquire knowledge regarding the road traffic code to prevent road traffic accident. Effort by the mass media can also have significant influence on the drivers; however, this may be either positively or negatively depending on the content of the message.

2.9.3 Enabling factors

These are factors that make any health elated behaviour more or less likely to occur. These are factors which are presented before the behavioural decision takes place. These factors include cost of seeking knowledge that could influence perception relating to the road traffic code and self-efficacy that would ensure a safe driving.

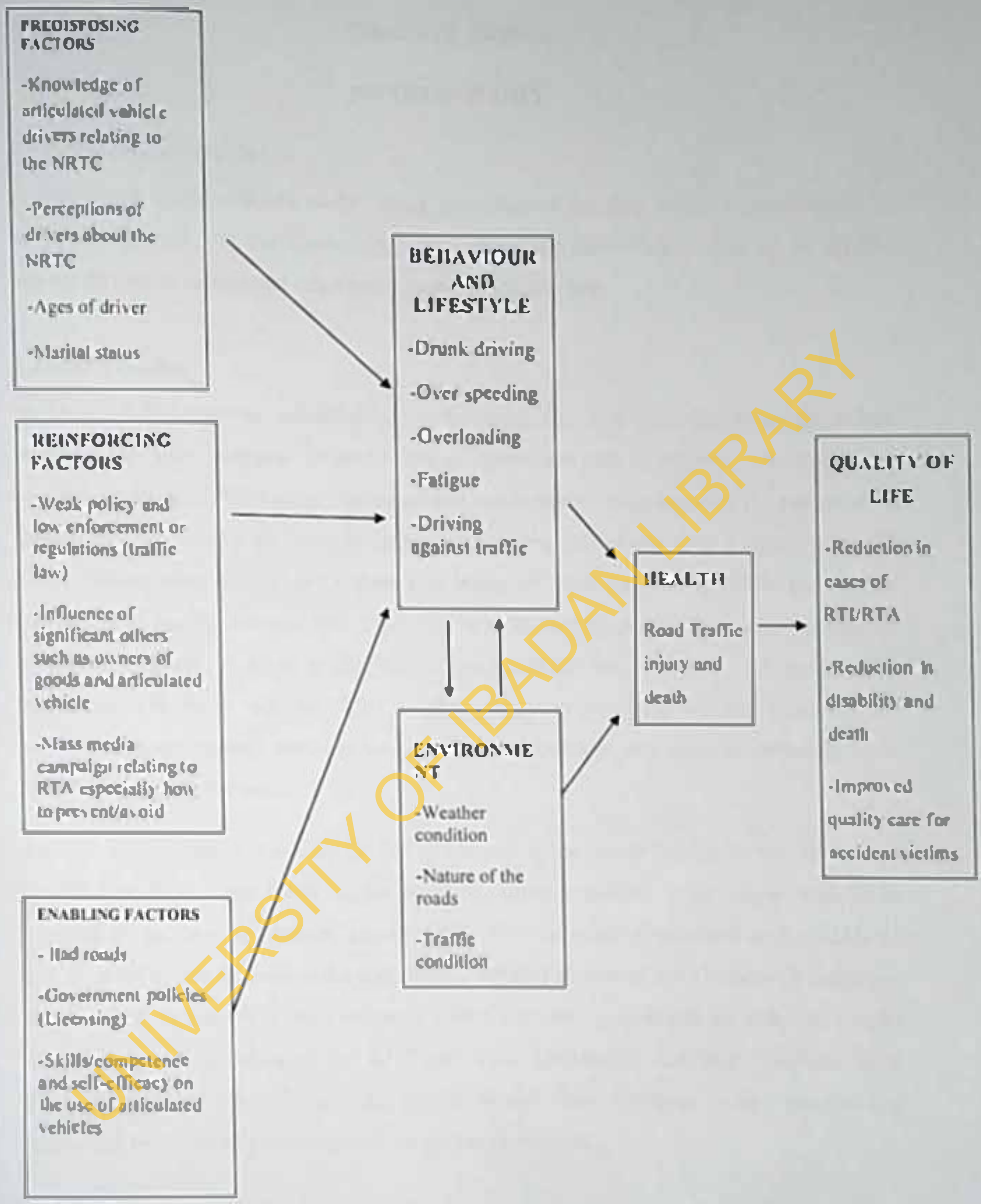

Fig 2.1 Application of PRECEDE Model to Epidemiology of articulated vehicle accidents in Saganu.

CHAPTER THREE

METHODOLOGY

3.1 Study Design and Scope

A descriptive cross-sectional study design was adopted for this study. It was limited in scope to the study of the knowledge, perception and self-efficacy relating to NRTC among drivers of articulated vehicles in Sagamu, Ogun State.

3.2 Study Setting

Sagamu is a fast growing industrial and commercial city. It is a heavily motorized urban area in Ogun state. Sagamu, located in the southwestern part of Nigeria, was said to be founded in the mid-19th century when several small towns came together for purposes of mutual defence during the wars brought about by the fall of the Oyo Empire. Sagamu Local Government Area (LGA) came into being on 23rd September, 1991 and it was carved out of the old Remo LGA. The LGA is populated by people from different ethnic groups in Nigeria. A large proportion of the residents are, however, of the Yoruba extraction. The Sabo area in *Offin* neighbourhood in Sagamu, for instance, can be mistaken for any typical northern town due to the presence of a number of residents of Northern origin in the area.

Sagamu is bounded in the east by Odogbolu and Ijebu North LGAs; in the north it is bounded by Oyo State while in the south it shares boundary with Lagos state. It is bounded in the west by Obafemi-Owode LGA. The community is located on Latitudes 6° and 7° north of the Equator and Longitudes 2°45 and 4° east of the Greenwich meridian. It has a land area of 97,298.34 hectares with a projected population of 253,412. Health care in Sagamu is provided by the Ogun State University Teaching Hospital, local government owned health centres, private health care facilities, some pharmacies, traditional healers and numerous patient medicine vendors.

Different forms of commercial activities take place in Sagamu. A major trading activity in the community is kolanut trade with the northern parts of the country. There are several daily, periodic and night markets in the community which serves as outlets for the sales of agricultural produce and other goods from within and outside the area. Prominent of these

markets are *Sabo- Ofin, Awolowo, Falawo and Oja Oba*. Sabo-olin market is the largest and it is noted for the sale of kolanut and general merchandise (Ajiboye 1995). Sagamu also has one of the country's major cement factories and petroleum depots and it is home to the Products Marketing Company Limited, Mosimi, Sagamu.

It is about 60km from Lagos and 70km from Ibadan. Articulated vehicles are commonly used to transport goods from Sagamu in the west to the east and northern parts of Nigeria. There are seven motor parks for articulated vehicles in the community. These are Cement, Saw Mill, Kara, Isale-oko, Toll-gate Night and Sabo parks. The siting of the tollgate in Sagamu has increased the congestion of articulated vehicles around the tollgate area and has made it a major stopover for drivers, especially in the evenings. These factors contribute to making Sagamu a major articulated vehicle stopover in the country. Consequently, the city and its environs experience a high volume of RTAs.

3.3 Study population

The study population consist of drivers of articulated vehicles who take off from or stop to rest at Sagamu. The population consist of drivers of different socio-demographic characteristics and varying driving experiences who drive articulated vehicle.

3.4 Determination of Sample Size

The minimum sample size for the study was determinated using the Leisle and Kish (1965) formula for sample size determination which is as follow:

$$n = \frac{Z\alpha^2 pq(1-q)}{d^2}$$

Where:

n = minimum sample size required

z = Standard normal deviation set at 1.96 (which correspond to the 95% confidence interval).

p = Prevalence of accidents involving articulated vehicle taken at 11.05% (FRSC, 2011).

p = 1.0-p = 1-0.1105 = 0.8895

d = Degree of accuracy desired (0.03).

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$$n = \frac{1.96^2 \times 0.1105 \times 0.8895}{0.03^2}$$

$$\frac{3.8416 \times 0.1105 \times 0.8895}{0.0009}$$

$$n = 419.54 \quad 420$$

A possible 10% non-response attrition or incomplete response rate was calculated and added to the calculated sample size as follow:

$$\frac{10 \times 420}{100} = 42$$

Hence, the sample size then became 420 + 42 = 462; this was subsequently rounded to 500 in order to enhance the generalizability and power of the results. The total sample size was shared proportionately among the drivers of articulated vehicles in the various parks in Sagamu.

3.5 Sampling Procedure

Five hundred (500) truck drivers were selected for this study using a two-stage sampling technique as follow:

Step 1: All the seven articulated vehicle parks within Sagamu were eligible for study. These are Kara, Isale-oko, Toll-gate Night, Sabo, Cement, Mosimi and Saw mill articulate vehicle parks. A total of four parks were selected by simple random sampling involving balloting. The selected parks were Isale-oko, toll-gate, Kara, Cement.

Step 2: The list of drivers of articulated vehicles in each of the selected packs was generated from the registers kept by the articulated vehicle ticketing officers. This was used as sampling frame for each motor parks. The list revealed that the population of drivers in each parks were Cement 50, Kara 40, Toll-gate 80 and Isale oko 30 respectively. Systematic random sampling was used to select 500 consenting articulated vehicle drivers from the selected four parks in Sagamu using the sample frames as guides.

Table 3.1 The sample frame of the study population according to the parks.

Articulated vehicle Parks	Total number of AVD in each park	Calculation of AVD to be selected based on total sample size of 500	Calculated numbers selected for interview
Cement	50	50 of 500 200	125
Kara	40	40 of 500 200	100
Tollgate	80	80 of 500 200	200
Isale oko	30	30 of 500 200	75
Total	200		500

3.6 Data Collection instrument

A semi-structured interview was designed to facilitate data collection. The instrument was a semi- structure questionnaire. The questionnaire which was interviewer administered, consists of both open-ended and close-ended questions. The questions were organised into sections labelled A-G (see appendix I).

Section A focuses on socio-demographic characteristics of the respondents while section B was used to explore respondents' driving competencies. Questions in section C were used to elicit information on respondents driving related lifestyles. Section D centres on the assessment of knowledge of articulated vehicle drivers relating to NRTC and while section E was used to probe into the perceptions of drivers relating to NRTC. Section F includes questions that were used to assess the self-efficacy of drivers of articulated vehicle regarding adherence to the NRTC. Articulated vehicle drivers accident related experience were determined using questions in section G. The interviewer administered questionnaire was initially drawn in English (See Appendix II for questionnaire)

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3.7 Training, validity and pretesting of instrument

Six Research Assistants (RAs) were used to facilitate data collection. The least educational qualification of the RAs was Ordinary National Diploma or National Certificate of Education (OND/NCE). They were fluent in either English and Yoruba or English and Hausa languages. The training of the RAs focused on the following: general overview of the study objectives, interviewing techniques, interpersonal communication skills and ethical issues in research involving human subjects. Emphasis was laid on the importance of informed consent, confidentiality, voluntary nature of participation in the study and the right of the respondents to withdraw at any time. Training methods used included demonstration and return demonstration, role-play, brief lecture and discussion. The RAs were involved in the pre-test of the instrument. This provided them with prior practical field experience relating to the study.

The instrument was designed based on the review of relevant literatures including the PRECEDE theoretical framework. The draft instrument was given to experts in Health Promotion and Education, Epidemiology and road safety matters for review and comments. Comments from them as well as from colleagues, lecturers, and my supervisor were then used to further enhance the content validity of the instrument. This exercise constituted the in-house pre-testing of the instrument. The instrument was also pre-tested among drivers in Ibadan, Oyo state, Ibadan is a transit community in Obafemi Owode LGA which share similar characteristics with Sagamu. The pre-test exercise was conducted among 50 drivers of articulated vehicles (10% of the sample size). Necessary corrections and changes were made after the pre-test exercise and the result of the analysis was used to improve the validity of the instrument.

3.8 Reliability

The reliability of an instrument is the degree to which a measurement technique can be depended upon to secure consistent results upon repeated application (Kimberlin, 2008). In this study the Cronbach's Alpha co-efficient was used to assess the reliability of the questionnaire used for data collection.

Copies of the pretested questionnaires were cleaned, coded and entered into a computer for analysis using to the Statistical Package for Social Sciences (SPSS). Cronbach's Alpha

co-efficient score of greater than 0.5 was accepted as being reliable. The reliability correlation co-efficient of 0.87 was obtained, which indicated that the instrument was very reliable.

3.9 Data Collection Procedure

The research assistants and the researcher were involved in the collection of the data. Data collection took place in the month of May 2015 in the evenings from 17:00hrs to late nights 00:30hrs on week days and weekends when it was easier to get the participants. Short debriefing sessions were also held at the end of each day where the day's work was reviewed and the next plan of action discussed with the research assistants. The team of interviewers moved round the 4 selected articulated vehicle parks in Sagamu to conduct interview starting with Toll-gate articulated vehicle Park.

At each articulated vehicle park, establishment of rapport with the officers of the various associations at the parks was made. The various associations included the National Union of Road Transport Workers (NURTW), Road Transport Employers Association of Nigeria (RTEAN), The Nigeria Union of Petroleum and Natural Gas Workers (NUPENG), Petroleum & Natural Gas Workers Senior Staff Association (PENGASAN). Using the sampling frame for each articulated vehicle park, eligible respondents were selected with the cooperation of the officers of the associations at the articulated vehicle parks

Identification and linkup with selected respondents to brief them about the nature of the study was conducted by the RAs. The associated potential benefits, voluntary nature of participation and informed consent were also discussed with the respondents. Each selected respondent who consented to participate in the study was then interviewed using the validated questionnaire in English and Yoruba version (See Appendix IV). This was done in each of the selected articulated vehicle parks until the 500 respondents were interviewed

3. 10 Data Management and Analysis

The researcher checked all the copies of the administered questionnaire one by one and cleaned them for completeness and accuracy. Serial numbers were written on the copies on the questionnaire for easy identification and recall of any copy with problems. The assigned number aided data entry aids analysis.

A coding guide was developed after carefully reviewing the responses. The responses were manually coded before they were entered into the computer using SPSS for analysis. Data analysis was conducted using descriptive statistics, Chi-square, T-test, F-statistic, and Analysis of Variance (ANOVA) at p = 0.05 level of significance. Chi-Square statistics was utilized to assess the association between categorical variables. F-statistics was used to determine the significance of the difference between three or more means.

Knowledge responses relating to the element of the road traffic code was determined using the 38-point knowledge scale included in the data collection instrument (See appendix III). An incorrect answer or no response had a score of 0. The correct scores were summed up to give a composite knowledge score for each respondent. Knowledge scores of respondents for the purpose of this study only, were operationally categorized and defined as follow scores > 26 = good, scores fair ≥18 ≤26 = fair and scores <18 = poor grades.

Perception variables were assessed using a 10-point perception scale (See Appendix III). A response which is not appropriate or no response attracted a score of zero (0). The scores were then summed up to give a composite perception score for each respondent. Perception of respondents were categorized into "unfavourable" perception for score ≤5 and "favourable" perception for score >5.

Respondents' self-efficacy variables were similarly assessed but using a 30-point Self efficacy (S.E). Scale very capable of performing a task attracted a score of 2 point "Capable" to some extent attracted a score of 1 point. while "not capable of doing it" was scored zero. The scores were then summed up to give a composite S.E score for each respondent. Self-efficacy scores of respondents were categorized into high self-efficacy (>15) and low self-efficacy (≤15). The results from the analyses are presented in chapter 4 in tables and charts.

3.11 Ethical considerations

The ethical principles guiding research involving human participants in research were taken into consideration in the conduct of this study. Ethical approval was obtained from the Oyo State Ethical Review Committee. This was done because there was no functional ethical committee in Ogun state. Informed consent to participate in the study was soughed from the participating drivers. Each participating driver was provided with information about the focus of the study, study objectives, methodology and the potential benefits of the study.

Also, participating drivers were assured of the confidentiality of their responses and identity. There were no identifiers such as names of driver on the questionnaires. Only serial numbers, consent signature of participants and date were written on the questionnaires as a means of identification. All information provided by the respondents was kept confidential. (See Appendix I for the informed consent form)

3.12 Challenges and limitations of the Study

The study was characterised by some challenges; there was for instance, dearth of information in the literature on knowledge, perception and self-efficacy relating to road traffic code in Nigeria among drivers of articulated vehicles. This posed a serious challenge in respect of information which could be used to design this study. The challenge was ameliorated through the use of studies conducted outside Nigeria.

Another major challenge of the study was the fact that most of the drivers of articulated vehicle in Sagamu were long distance drivers; accessing them to partake in the research posed a daunting challenge. This challenge was tackled with the help of the officers of the National Union of Road Transport Workers (NURTW) in Sagamu.

The main limitation of the study was the inability to conduct a focus group discussion to assess more information among articulated vehicle drivers relating to RTC. This was not possible because majority of the drivers were always exhausted and so would not want fest with words affecting their resting period. All efforts made by the researcher and the various associations at the parks to persuade them to take part in the discussion proved abortive.

CHAPTER FOUR

RESULTS

4.1: Socio- Demographic Profile of respondents

The ages of respondents ranged from 20 to 67 years with a mean of 34.0 ± 9.1 years. All the respondents (100%) were males and 62.8% married. Majority (69.6%) were Christians, 24.8% were Muslims while 5.6 % were adherents of Traditional African Religion. Many (41.0%) of the respondents were Ibo; 22.2% were Yoruba while South-south ethnic groups (Edo, Ijaw, Isoko and Urhobo) constituted 21.0%. The Hausa comprised 15.8%. (see table 4.1)

Many (40.2%) of the respondents had primary education, 32.2% had secondary education, 25.8% had no formal education while 1.8% had tertiary education (see table 4.1). Few of the respondents (10.8%) had supplementary jobs (i.e other jobs in addition to driving articulated vehicles). The supplementary jobs engaged in by the respondents (see figure 4.1) included trading (24.1%), farming (31.4%), Artisan trades (35.2%) and civil servants (9.3%).

Table 4.1: Respondents' Socio-demographic Information

N=500

Socio-demographic characteristic	No	%
Age in (years):		
20-29	177	35.4
30-39	202	40.4
40-49	77	15.4
50-59	34	6.8
60-69	10	2.0
Education level:		
No formal Edu	129	25.8
Primary Edu	201	40.2
Secondary Edu	161	32.2
Tertiary Edu	9	1.8
Sex:		
Male	500	100.0
Marital status:		
Single	99	19.8
Married	314	62.8
Separated	61	12.2
Divorced	26	5.2
Religion:		
Christianity	348	69.6
Islam	124	24.8
Traditional	28	5.6
Ethnic group:		
Hausa	79	15.8
Igbo	205	41.0
Yoruba	111	22.2
South-south	105	21.0
Engaged in supplementary job:		
Yes	54	10.8
No	446	89.2

* Mean age 34.0 ± 9.1

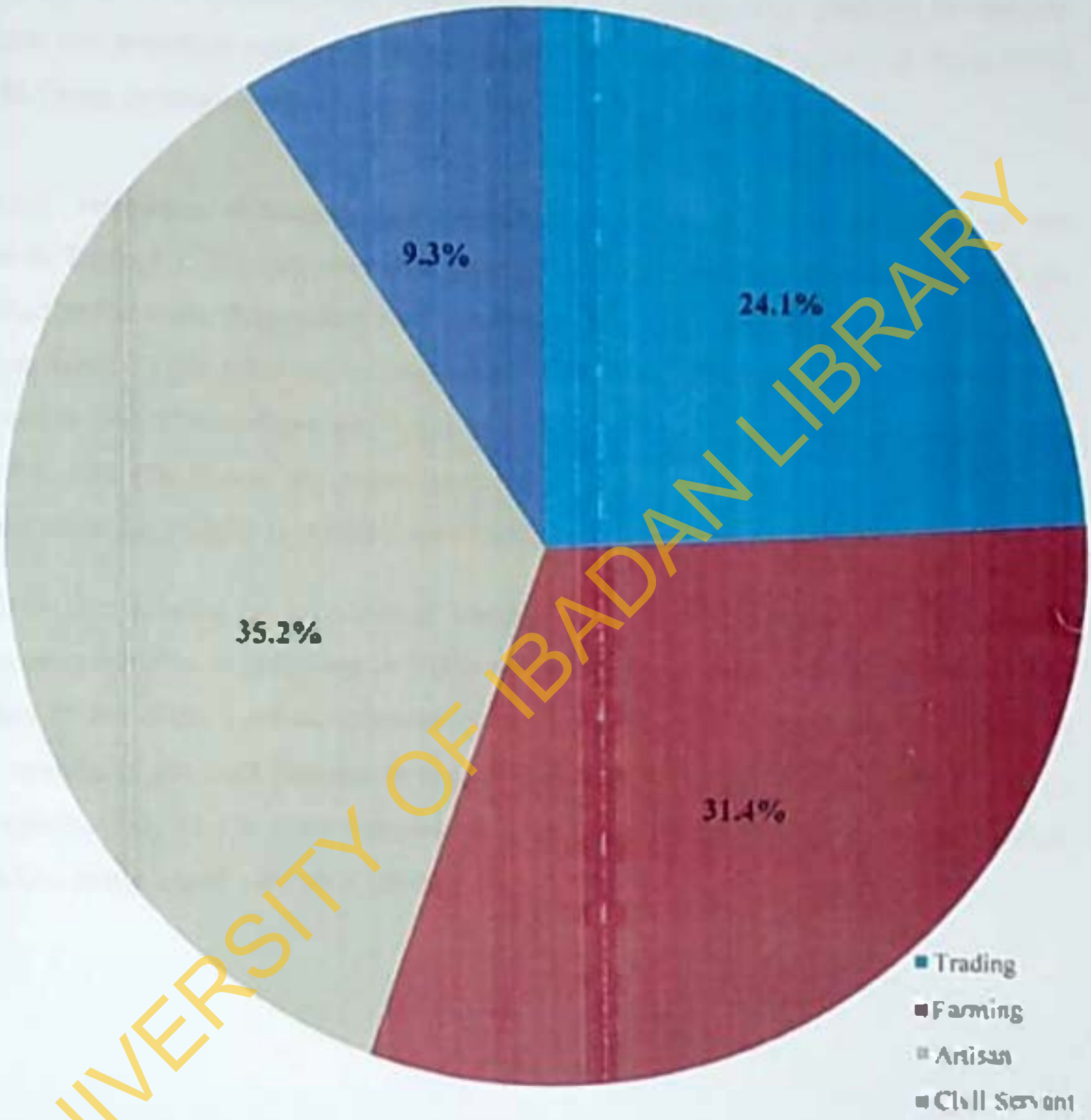


Figure 4.1: Types of supplementary job engaged in by respondents

4.2: Respondent training related experiences

Table 4.2 shows respondents' training related experiences. Majority of the respondents (85.2%) completed their driving training programme. These consist of 76.6% who completed their training as driver and 8.6% who completed their training as a "driver and mechanic" Majority (79.8%) were trained as an apprentice under a master. The duration of training ranged from one month of training to 96 months with a mean of 22.3 ± 14.0 months. Most (95.4%) had been driving an articulated vehicle for more than 12 months.

Respondents' awareness, ownership, and experience of reading RTC related documents are presented in Table 4.3. Slightly over half (50.8%) of the respondents had heard about the Nigeria road traffic code. Respondent who heard about the road traffic code after training as a driver constituted 57.9% followed by respondents who heard about the code before training as a driver (30.3%). Respondents who heard about the road traffic code during training were only 11.8%. Few (30.3%) of the respondents had a copy of the Road traffic code related documents while 13.3% had ever read a road traffic code related document.

The information relating to respondents ownership of driving licenses and pre-license procurement conditions is presented in Table 4.4. Most respondents (94.8%) had a driver's license and 85.8% of the licenses inspected by the investigator were valid. Over half (58.6%) of the respondents got their licenses through the normal procedure while 34.6% got theirs through agents. Only 23.4% of the respondents were tested by the Vehicle Inspection Officer (VIO) before being issued a driver's license.

Table 4.2: Respondents training related experiences

N = 500

Training experiences	No	%
Whether trained before driving:		
Yes, completed training as driver	383	76.6
Yes, did not complete the training	70	14.0
No, I did not receive any training	4	0.8
Yes received training as a driver-mechanic	43	8.6
Trainer:		
Self	6	1.2
Driving school	5	1.0
Relative	58	11.6
Friend	32	6.4
Master	399	79.8
Duration of training as AV driver:		
1-6 months	49	9.8
7-12 months	140	28.0
13-18 months	19	3.8
19- 24 months	192	38.4
≥ 25 months	100	20.0
Duration of driving AV:		
≤12 months	23	4.6
13-24 months	28	5.6
25-36 months	92	18.4
37-48 months	86	17.2
>48 months	271	54.2

Table 4.3: Respondents awareness, ownership, and experience of reading RTC related documents

Variables	No	%
Ever heard of road traffic code (N=500)		
Yes	254	50.8
No	246	49.2
When heard of the RTC (n=254)		
Before training as a driver	77	30.3
During driving training	30	11.8
After driving training	147	57.9
Ownership a copy of the RTC (n=254)		
Yes	77	30.3
No	177	69.7
Ever read RTC (n=254)		
Yes	34	13.3
No	220	86.7

Table 4.4: Ownership of driver's license and pre-licence procurement conditions.

RTC document information	No	%
Ownership of driver's license (N=500)		
Yes	474	94.8
No	26	5.2
Whether driver's license is still valid (n=474)		
Yes	407	85.8
No	67	14.2
How obtained your driver's license (n=474)		
Through normal procedure	278	58.6
Through agents	164	34.6
Self-made	32	6.8
Whether medical test (n=278)		
Yes	236	84.8
No	42	15.2
Whether got tested by VIO before receiving driving licence (n=278)		
Yes	65	23.4
No	213	86.6

4.3 Respondents driving related lifestyles including psychoactive drug use

Most (94.0%) respondents had ever taken alcoholic beverages at one time or the other while 92.5% still take alcohol. As at the time of the study most (91.4%) of the respondent took beer, 51.9% took gin, 19.6% took herbal mixture, 28.5% take wine, and 24.1% take all the alcoholic beverages. Many (45.7%) of them take alcoholic beverages whenever there was the urge to do so, 29.8% drink at night after driving, 16.4% drink at every stop over, while 4.2% take alcoholic beverage shortly before driving. None of the respondents admitted drinking during driving but 30.1% of the respondents admitted they keep alcoholic beverages by their side while driving for use when the need arises. Top on the list of alcoholic beverages kept by their side while driving was gin (18.0%). See table 4.5 for details.

Table 4.6 presents respondents' smoking pattern. Majority (65.2%) of the respondents had smoked at one point in time, 98.4% ever smoke cigarette while 26.6% had ever smoked tobacco among those that have ever smoked. The proportion of those who had ever taken marijuana was 83.4% while 7.1% smoked all. Respondents smoked at varying times or periods. Those who smoke when there is the urge to do so accounted for 50.3%. The duration of sleeping among respondents is highlighted in table 4.7. Most (98.0%) of the respondent sleep for less than 6 hours while only 2.0% slept for 6 hours and above per day.

Table 4.5: Alcohol use behaviour among respondents

Alcohol use behaviour	No	%
Ever took any Alcoholic beverages (N=500)		
Yes	470	94.0
No	30	6.0
Whether still take alcoholic beverages (n=470)		
Yes	435	92.5
No	35	7.5
Whether take beer (n=435)		
Yes	398	91.4
No	37	8.6
Whether take gin (n=435)		
Yes	226	51.9
No	209	48.1
Whether take alcoholic herbal mixture (n=435)		
Yes	216	49.6
No	219	50.4
Whether take wine (n=435)		
Yes	124	28.5
No	311	71.5
Whether take all alcoholic beverages (n=435)		
Yes	105	24.1
No	330	75.9
Time or period alcoholic beverages are taken (n=435)		
Early in the morning before driving	17	3.9
Shortly before driving	18	4.2
While driving	0	0.0
At every stop over	71	16.4
At night after driving	130	29.8
Whenever there is the urge	199	45.7
Type of alcoholic beverage kept by their side while driving for use when need arises (n=435)		
None	303	69.9
Beer	17	3.9
Gin	78	18.0
Herbal mixture	34	7.9
Wine	1	0.3

Table 4.6: Pattern of smoking among respondents

Pattern	No	%
Whether ever smoke any substance (N=500)		
Yes	326	65.2
No	174	34.8
Ever smoked cigarette (n= 326)		
Yes	321	98.4
No	5	1.6
Ever smoked tobacco (n= 326)		
Yes	87	26.6
No	239	73.4
Ever smoked marijuana (n= 326)		
Yes	272	83.4
No	54	16.6
Ever smoked all (i.e cigarette, tobacco, marijuana) (n= 326)		
Yes	23	7.1
No	303	92.9
Substance currently smoked (n= 326)		
None	12	2.0
Cigarette	316	53.1
Tobacco	32	5.8
Marijuana	213	35.5
All kinds of substances	22	3.6
Time or period when smoke any substance (n=326)		
Early in the morning	14	5.6
Immediately before driving	7	2.8
During driving	57	17.4
At every stop over	7	2.8
At night after driving	67	21.1
As body dictates/when there is the urge	164	50.3

Table 4.7: Duration of sleeping in hours per day among respondents.

N=500

Hours of sleep per day	No	%
< 6 hrs	490	98.0
≥ 6 hrs	10	2.0

4.4.1 Respondents knowledge relating to road traffic signs, markings and road traffic related issues.

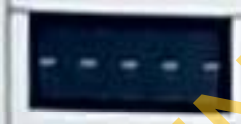
Respondents' level of knowledge relating to road traffic signs and markings are presented in table 4.8. Majority (73.2%) of the respondents had no knowledge of the recommended "*60km/hr*" speed limit road traffic sign. Only 21.2% of the respondents could correctly identify the "*No – overtaking*" road traffic sign. Majority of the respondents (89.0%) had no knowledge of the "*No entry*" road traffic sign. Nearly half of the respondents (49.0%) could identify the no "*U-turn*" road traffic sign. Above half of the respondents (58.4%) could not identify the "*No parking*" traffic sign.

Many 67.0% of the respondents correctly recognised the "*Bumps ahead*" traffic sign. Majority of the respondent (73.6%) could not identify the road traffic sign indicating "*diversion to the left*" The "*pedestrian crossing*" road traffic sign was known to 49.2% of the respondents while 37.0% of the respondents were able to correctly identify the "*sharp bending*" traffic sign. Details of respondents' knowledge relating to road traffic signs and markings are presented in the table under reference.

Figure 4.2 presents the categorization of respondents' knowledge scores relating to road traffic code and road markings. Majority (81.8%) of the respondents had poor knowledge of road traffic signs and road markings. Only 1.8% had good knowledge of the road traffic sign and markings. The mean knowledge score on a 12-point scale was 3.2 ± 2.8.

Table 4.8 Knowledge of Road Sign and markings

N = 500

Road sign and markings	Official meaning	Could correctly identify it. N (%)	Could not correctly identify it. N (%)
	60km/hr speed limit	134 (26.8)	366 (73.2)
	No overtaking	106 (21.2)	394 (78.8)
	No entry	55 (11.0)	445 (89.0)
	No U turn	245(49.0)	255 (51.0)
	No parking	208 (41.6)	292 (58.4)
	Bumps ahead	335 (67.0)	165 (33.0)
	Single carriage way	119 (23.8)	381 (76.2)
	Diversion to the left	132 (26.4)	368 (73.6)
	Pedestrian crossing	246 (49.2)	254 (50.8)
	Sharp bending	185 (37.0)	315 (63.0)
	Overtaking allowed	40 (8.0)	460 (92.0)
	No overtaking	4 (0.8)30	496 (99.2)

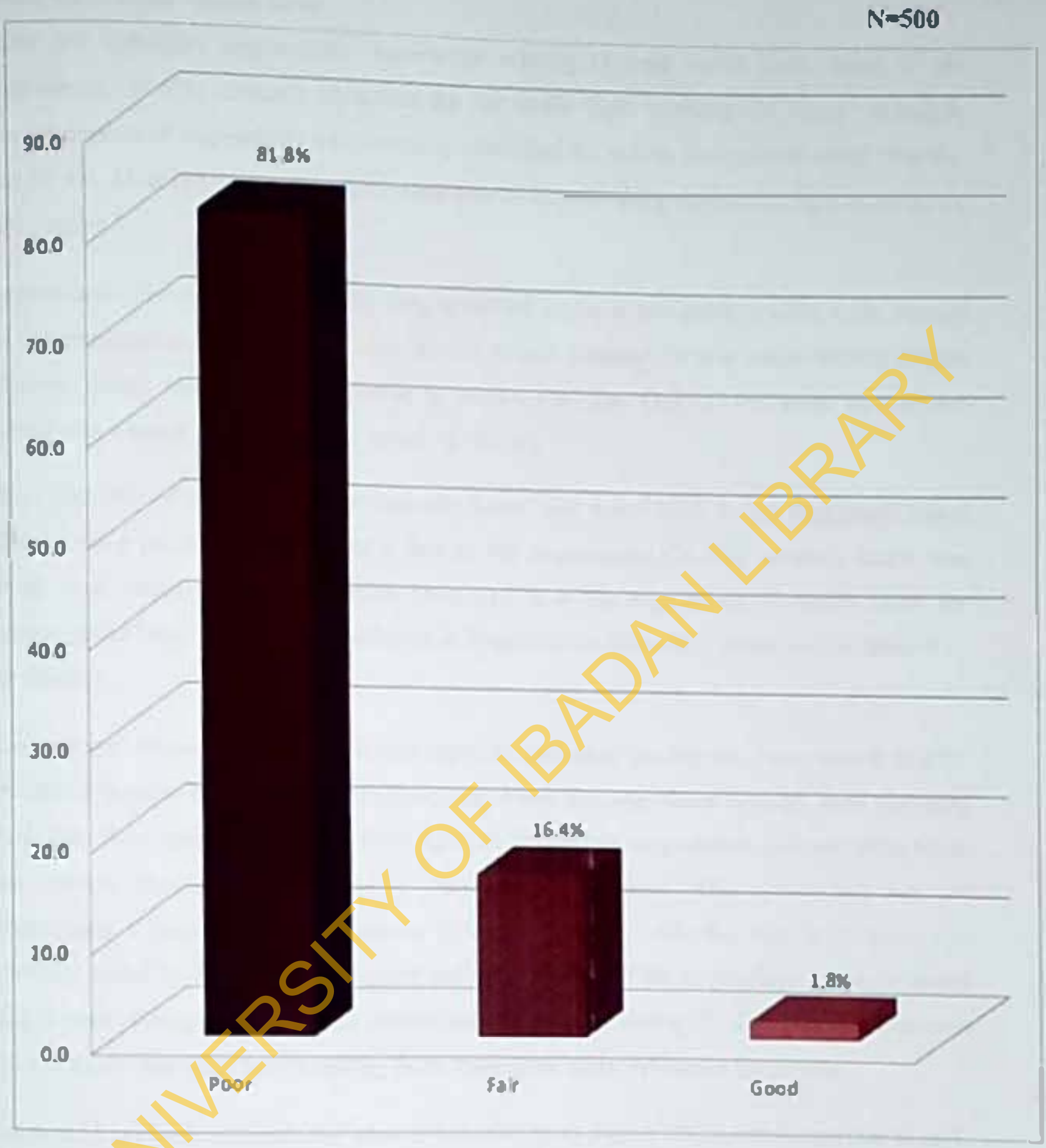


Figure 4.2: Categories of knowledge scores relating to road traffic signs and road marking among the respondents.

Other knowledge related issue

Table 4.9 highlights respondents' knowledge relating to road traffic light. Most of the respondents (99.6%) correctly identified the red traffic light to mean the "Stop" indicator. The proportion of respondents who correctly identified the yellow indicator to mean "Ready" was 98.4%. Most (98.8%) respondents were able to identify the green traffic light to mean the "Go" signal.

Respondents' knowledge concerning fatigue related issues is presented in table 4.10. Almost all the respondents (95.8%) knew that drivers should suspend driving when feeling fatigue (drowsy, sleepy being tired) and unable to sustain attention. Only 37.6% knew that drivers should take a break after every four hours' of driving.

Many (42.0%) of the respondents correctly knew that speed limit is the maximum speed allowed on a particular road while a few of the respondents (36.6%) correctly knew that speed limit varies from road to road. Only 21.2% of the respondents correctly knew the general speed limit for articulated vehicles in Nigeria to be 60km/hr – 80km/hr (see table 4.11 for details).

Respondents' knowledge of the carrying capacity, and other driving practices related to RTC are shown in table 4.12. Most (90.0%) correctly knew that articulated vehicles must not carry more than their carrying capacity. Over half (58.0%) of the respondents also correctly knew that drivers should avoid driving if they consume alcohol. The appropriate way of maintaining a required driving distance to avoid collision with the vehicle in front was correctly stated by 77.0% of the respondents. Few (17.6%) of the respondents correctly stated that drivers of articulated vehicles should horn before overtaking. 77.2% of the respondents did not know that tyres have expiring dates. (See table under reference for details)

Table 4.13 presents respondents' knowledge relating to places which are dangerous to park. Majority (64.8%) of the respondents correctly mentioned parking at Road junctions. While 86.6% of the respondents also stated correctly that it is dangerous to park at bends or corners. Some respondents (34.2%) incorrectly stated that a designated bus-stop is not a dangerous place to park (see table for details).

Respondents' knowledge of possible causes of traffic accident is presented on table 4.14. Slightly over half (51.4%) of the respondents correctly stated that alcohol use can lead to an accident while 89.8% knew that drug use can cause a road traffic accident. Majority (89.6%)

of the respondents were correct in stating that excessive speed could cause traffic accident (see table for detail).

Knowledge relating to factors that cannot lead to an accident among respondents is presented in table 4.15. Few of the respondents incorrectly state that the following factors cannot lead to RTA; Fatigue (26.2%); driving against traffic (15.2%) and unmaintained vehicle (7.8%). Nearly half (49.0%) wrongly stated that the use of mobile phone while driving cannot lead to RTA. (See table for details).

Table 4.9 Respondents knowledge relating to traffic lights

Meaning of traffic light colours	N=500	
	No	%
Red traffic light		
Stop*	498	99.6
Ready	2	.4
Go	0	0
Yellow traffic light		
Stop	2	.4
Ready*	492	98.4
Go	6	1.2
Green traffic light		
Stop	3	.6
Ready	3	.6
Go*	494	98.8

Table 4.10: Respondent knowledge on fatigue related issue

Fatigue related issue	No	N=500 %
Driver should suspend driving when experiencing		
lack of sustained attention		
True*	479	95.8
False	10	2
Don't know	11	2.2
Knowledge of when to take a break		
After every 4 hours of driving*	188	37.6
After every 8 hours of driving	248	49.6
Don't know	64	12.8

* Correct response

Table 4.11: Respondents' knowledge relating to speed

N=500

Speed related issues	Responses		
	True	False	Dont know
	N (%)	N (%)	N (%)
Speed limit is the maximum allowed speed for a particular road	210(42.0)*	147(29.4)	143(28.6)
Acceptable speed limit varies from road to roads	183 (36.6)*	77(15.4)	240(48.0)
Knowledge of speed limit			
General speed limit for AV is 60-80km/hr	106 (21.2)*		
General speed limit for AV is 100-120km/hr	205 (41.0)		
General speed limit for AV is 140-160km/hr	12 (2.4)		
Don't know	177 (35.4)		

* Correct response

Table 4.12: Respondents knowledge of other RTC related issue

Other road traffic code related issue	N=500 Responses		
	True N (%)	False N (%)	Dont know N (%)
Articulated vehicles should not carry more than their carrying capacity	450 (90.0*)	41 (8.2)	9 (1.8)
Drivers should not to drive after consuming alcohol	290 (58.0)*	205 (41.0)	5 (1.0)
Seeing the rear tyre of the vehicle in front is a reliable way of maintaining a reasonable distance between ones vehicle and the vehicle in front	385 (77.0)*	91 (18.2)	24 (4.8)
It is not necessary for articulated vehicle driver to horn before overtaking	88 (17.6)	404 (80.8)*	8 (1.6)
There is no expiring date for tyres	56 (11.2)	386 (77.2)*	58 (11.6)

* Correct responses

Table 4.13: Respondents' knowledge relating to places which are dangerous to park

Dangerous places	Responses		
	True	False	Total
	N (%)	N (%)	N (%)
Road junctions	324 (64.8)*	276 (35.2)	500 (100)
Bend and Corners	433 (86.6)*	67 (13.4)	500 (100)
At designated bus-stop	329 (65.8)*	171 (34.2)	500 (100)
Along narrow road	419 (83.8)*	81 (16.2)	500 (100)
Opposite other vehicle on the oncoming lane.	346 (69.2)*	154 (30.8)	500 (100)

* Correct response

Table 4.14: Respondents' knowledge of the possible causes of road traffic accident

Possible causes of RTA	True	False	Dont know
	N (%)	N (%)	N (%)
Use of alcohol	232 (46.4)*	257 (51.4)	11 (2.2)
Psychoactive drug use	449 (89.8)*	38 (7.6)	13 (2.6)
Excessive speed	448 (89.6)*	52 (10.4)	0 (0)
Disregard for traffic rules	334 (66.8)*	115 (23)	51 (10.2)

* Correct response

Table 4.15: Respondents' knowledge of factors which cannot lead to traffic accident

Factors which cannot lead to accidents	True	False	Dont know
	N (%)	N (%)	N (%)
Fatigue	131 (26.2)	358 (71.6)*	11 (2.2)
Use of mobile phone while driving	245 (49.0)	255 (51.0)*	0 (0)
Unmaintained vehicle	39 (7.8)	449 (89.8)*	12 (2.4)
Driving against traffic	76 (15.2)	354 (70.8)*	70 (14.0)

* Correct responses

4.4.3 Categories of knowledge scores and factors associated with respondents' knowledge

The categories of respondents' overall knowledge scores are highlighted in table 4.16. The mean knowledge score on a 38-point scale was 19.0 ± 4.4. Overall 46.8% of the respondents had poor while 45.6% had fair knowledge score. Overall, only 7.6% had good knowledge score relating to the road traffic code.

The comparison of respondents' categories of knowledge score relating to road signs and markings by age is highlighted in table 4.17. Most (91.5%) of the respondents aged 20-29 years had poor knowledge scores. None of the respondents in this age group had good knowledge of road traffic sign and markings. Majority (79.7%) of respondents aged 30-39 years had poor knowledge scores. Only ten respondents were aged 60-69 years and so were merged with those aged 50-59. The table showed that there was a significant association between respondents' age and their knowledge of road traffic signs and markings (See details in table 4.17)

The comparison of respondents' categories of knowledge scores relating to road signs and marking by level of education is shows in table 4.18. Majority (89.1%) of those without formal education had poor knowledge. 10.1% of them had fair knowledge while 0.8% had good knowledge. Also majority (68.2%) with secondary education had poor knowledge. 27.1% had fair knowledge and 4.7% had good krtowledge. Only nine respondents had tertiary education and so were merged with those that had secondary education .

Table 4.19 highlights the comparison of respondents' categories of knowledge scores on RTC by awareness of RTC. Few (6.3%) of the respondents who were aware of the code had poor knowledge of the code. Majority (65.0%) of the respondents who were aware of the code had fair knowledge of the road traffic code. Most (70.3%) of the respondents who had never heard of the RTC had fair knowledge relating to the code.

The comparison of respondents' mean knowledge scores by age is shown in Table 4.20. Respondents aged 50 years and above had the highest mean knowledge score of 17.9±3.3. Respondents within the 40-49 years age range had a mean knowledge score of 16.8±3.1. Overall, there was a significant relationship between respondents' knowledge score and their age (see table for details).

Table 4.21 highlights the comparison of respondents mean knowledge score on road traffic code by level of education. Respondents with no formal education had a mean knowledge score of 15.3±2.9; those with primary education had a mean score of 15.5±2.6 while respondents with secondary education and above had a mean score of 17.5±3.2. The difference in the mean knowledge scores was statistically significant.

The comparison of respondents mean knowledge scores on road traffic code by history of ever reading the road traffic code related documents is presented in table 4.22. Respondents who had ever read the road traffic code related documents had a mean knowledge score of 25.0±3.1 while those who had never read such road traffic code related document had a mean knowledge score of 18.7±4.1. The difference in their mean scores was statistically significant.

The comparison of respondents' mean knowledge scores on road traffic code by possession of a driving licence is shown in table 4.23. Respondents who had a driver's licence had a mean knowledge score of 19.4±4.3 while those without a driving license had a mean knowledge score of 19.6±4.9. The difference in the respondents mean knowledge of road traffic code and possession of drivers licence was not statistically significant.

Table 4.24 shows respondents' mean knowledge scores on road traffic code by prevalence of alcohol use. Respondents who consumed alcohol had a mean knowledge score of 17.9±2.9 while those who were not consuming alcohol had a mean knowledge score of 20.5±2.3. There was a statistically significant difference between the respondents mean knowledge scores.

The comparison of respondents mean knowledge scores on road traffic code by length of driving experience in months is presented in table 4.25. Respondents with > 48 months of driving experiences had the highest mean score of 19.3±4.1. This group was followed by respondents with driving experience of 37-48 months with a mean score of 17.8±3.5. Overall there was a significant difference between respondent's knowledge and length of driving experience (see table for other details).

Table: 4.16: Categorization of Respondents' overall knowledge Scores

N=500

Knowledge scale.	Scores	Frequency	Percentage
Poor	<18	234	46.8
Fair	≥18-≤26	228	45.6
Good	>26	38	7.6
Total	38	500	100.0

$\bar{x} = 19.0 \pm 4.4$

Table 4:17 comparison of the categories of respondents' knowledge scores relating to road signs and markings by age.

Age (in years)	Categories of knowledge of road traffic signs and markings			
	Poor	Fair	Good	Total
	n (%)	n (%)	n (%)	N (%)
20-29	162(91.5)	15 (8.5)	0 (0)	177 (100)
30-39	161 (79.7)	38 (188)	3 (1.5)	202 (100)
40-49	56 (72.7)	16 (20.8)	5 (6.5)	77 (100)
≥50	30 (68.2)	13 (29.5)	1 (2.3)	44 (100)

Df=8, X^2=8.2, p-value=0.000

Table 4.18 Comparison of respondents' educational background with the level of knowledge of road sign and markings.

Educational background	Knowledge of road traffic sign and markings			
	Poor	Fair	Good	Total
	n (%)	n (%)	n (%)	N (%)
No Formal education	115 (89.1)	13 (10.1)	1 (0.8)	129 (100)
Primary education	178 (88.6)	23 (11.4)	0 (0.0)	201 (100)
Secondary education and above	116 (68.2)	46 (27.1)	8 (4.7)	170 (100)

Df=8, X^2=9, P-value=0.000

***Significant

Table 4.19: Comparison of respondents' categories of knowledge scores on RTC by awareness of RTC

Ever heard of the code	Level of knowledge on road traffic code						
	Poor	Fair	Good	Total	df	x^2	p-value
	n (%)	n (%)	n (%)	N (%)			
Yes	16(6.3)	165(65.0)	77(28.7)	254(100.0)	2	2.221	.000
No (Never)	36(14.6)	173(70.3)	37(15.1)	246(100.0)			

***Significant

Table 4.19: Comparison of respondents' categories of knowledge scores on RTC by awareness of RTC

Ever heard of the code	Level of knowledge on road traffic code						
	Poor n (%)	Fair n (%)	Good n (%)	Total N (%)	df	x^2	p-value
Yes	16(6.3)	165(65.0)	77(28.7)	254(100.0)	2	2.221	.000
No (Never)	36(14.6)	173(70.3)	37(15.1)	246(100.0)			

***Significant

Table 4.20: Comparison of respondents' mean knowledge Scores of road traffic code by age.

Age (in years)	Mean knowledge scores					
	No	$\bar{x}$	sd	F-value	df	p-value
20-29	177	15.5	2.6	4.843	4	0.001***
30-39	202	16.0	3.1			
40-49	77	16.8	3.1			
>50	41	17.9	3.3			

*** Significant

Table 4.21: Comparison of respondents' mean knowledge Scores on road traffic code by level of education.

Level of education	Mean knowledge score				
	No	$\bar{x}$	SD	F-value	p-value
No formal education	129	15.3	2.9	13.312	.000 ***
Primary education	201	15.5	2.6		
Secondary education and above	170	17.5	3.2		

*** Significant

Table 4.22: Comparison of respondents mean knowledge Scores on road traffic code by history of reading the road traffic code related document.

Ever read RTC related document	Mean knowledge score					
	No	$\bar{x}$	Sd	t-value	Df	p-value
Yes	34	25.0	3.1	5.8	252	0.000***
No	220	18.7	4.1			

*** Significant

ble 4.23: Comparison of respondents' mean knowledge Scores on road traffic code by ssession of the driver's license.

Possession of drivers licence	Mean knowledge score					
	No	$\bar{x}$	Sd	t-value	df	p-value
Yes	474	19.4	4.3	-0.271	498	0.787
No	26	19.6	4.9			

Not significant

Table 4.24: Comparison of respondents' mean knowledge Score on road traffic code by prevalence of alcohol use.

Prevalence of alcohol use	Mean knowledge score					
	No	$\bar{x}$	SD	t-value	df	p-value
Yes	470	17.9	2.9	-4.732	4	0.000 ***
No	30	20.5	2.3			

***Significant

Table 4.25: Comparison of respondents' mean knowledge score on road traffic code by driving experience in months.

Driving experience in months	Mean knowledge score					
	No	$\bar{x}$	SD	F-test	Df	p-value
≤12	23	17.0	3.5	7.559	5	0.000***
13-24	28	17.1	3.4			
25-36	92	18.6	4.2			
37-48	86	17.8	3.5			
>48	271	19.3	4.1			

***Significant

4.5 Perception related to road traffic codes

Table 4.26 shows the perception of respondents relating to the road traffic code. Majority (68.2%) of the respondents were of the view that a good knowledge of the Highway Code is not necessary to drive safely on Nigerian roads, 12.6% disagree while 19.2% were undecided. Many (62.4%) of the respondents were of the view that alcohol consumption before driving makes a drivers' eyes to be clear during driving while 35.0% disagreed with the view. Majority (72.4%) of the respondent were of the belief that road traffic signs and markings are not important once the driver is an expert; only 17.4% had a contrary view. The perception of 70.0% of the driver was that drivers of articulated vehicles must take "one thing or the other" (psychoactive substance) in order to be alert while driving; 27.2% of them objected to this perception.

Majority of the respondents (74.0%) did not share the perception that driving at high speed is necessary so that one can have *more delivery*; 23.6% supported the perception while few (2.4%) undecided. Slightly over half (53.4%) shared the view that driving very close to the vehicle in front is necessary in order to overtake; 44.6% disagreed while 2.0% were undecided. The other details of the respondents' perception are contained in the table under reference.

The distribution of respondents who had supportive and non-supportive perception are highlighted in table 4.27. Respondents who had scores >5 point constituted 47.2% while those with perception scores ≤ 5 was 52.8%.

The comparison of respondents' mean perception scores is shown in table 4.28. The mean supportive perception score was 6.54 ± 1.4 and this score was significantly higher than the mean non-supportive perception score of 2.26 ± 1.2

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The comparison of respondents' mean perception scores is shown in table 4.28. The mean supportive perception score was 6.54 ± 1.1 and this score was significantly higher than the mean non-supportive perception score of 2.26 ± 1.2.

Table 4.26: Perception related to road traffic codes

Perception Relating to Road Traffic code	Pattern of response			
	Disagree	Undecided	Agree	Total
	N (%)	N (%)	N (%)	N (%)
A good knowledge of the Nigerian highway code is not necessary to drive safely on Nigerian road.	63 (12.6)*	96 (19.2)	341 (68.2)	500 (100%)
Alcohol consumption before driving makes a driver's eyes clear during driving	175 (35.0)*	13 (2.6)	312 (62.4)	500 (100%)
Road signs are not important once the driver is an expert or has experience	87 (17.4)*	51 (10.2)	362 (72.4)	500 (100%)
Drivers of articulated vehicle must take one thing or the other in order to be alert while driving	136 (27.2)*	13 (2.6)	351 (70.0)	500 (100%)
Driving at high speed is necessary so that one can have more delivery per day.	370 (74.0)*	12 (2.4)	118 (23.6)	500 (100%)
In order to overtake well, it is better to drive very close to the vehicle in front of you	223 (44.6)*	10 (2.0)	267 (53.4)	500 (100%)
It is not necessary to horn before overtaking because the noise made by articulated vehicle is enough	342 (68.4)*	10 (2.0)	148 (29.6)	500 (100%)
Accident is an act of God and there is nothing anybody can do about it if its destined to happen	137 (27.4)*	6 (1.2)	357 (71.4)	500 (100%)

*supportive perception

Table 4.27: The distribution of the supportive and non-supportive perception among respondents

Nature of Perception	Frequency (N)	Percentage (%)
>5 (Supportive)	236	47.2
≤5 (Non-supportive)	264	52.8
Total	500	100

$\bar{x}$ = 4.4, Sd=1.4

Table 4.28: Comparison of respondents' mean perception scores

Nature of Perception	Frequency	Mean score	Sd	t-value	p-value
≤5 (Supportive)	236	6.54	1.443	-36.7	.000
>5 (Non-supportive)	264	2.26	1.169		
Total	500				

4.6 Self-efficacy related to road traffic codes

Table 4.29 shows respondents' self-efficacy relating to the road traffic code. Majority (72.4%) of the respondents stated that they were capable of driving at moderate speed to some extent; a few (22.6%) were not capable of doing so. Majority (62.6%) were, to some extent, capable of avoiding drinking alcohol whenever they were about to drive or during driving. Many (36.2%) of the respondents were not capable of obeying road signs while driving. Only 13.4% were very capable of not overtaking at a corner or bend.

Few of the respondents (3.2%) were very capable of refusing to carry more than the carrying capacity of their vehicles in order to avoid traffic accident. Majority (73.0%) of the drivers were to some extent capable of examining their vehicles to see if it needs repair or servicing in order to ensure safety on the road. Majority (73.6%) stated that they were capable of carrying out minor repairs on their vehicle which could have caused road obstruction or risk to other road users. A high proportion (78.0%) of the respondents was not capable of comprehending the content of the high way code. (See table 4.29 for other details)

The categories of self-efficacy scores among the respondents are highlighted in table 4.30. Most of the respondents (93.8%) had a low self-efficacy relating to adherence to the Nigerian road traffic code. Their mean self-efficacy was 12.1 ± 4.1.

The comparison of the mean self-efficacy scores of respondents with high and low self-efficacy is presented in table 4.31. The table shows that the mean self-efficacy score among respondents with high self-efficacy was 16.2 ± 3.5 while the mean self-efficacy score among those with low self-efficacy was 9.6± 3.7; a significant difference was noted.

Table 4.29: Respondents' self-efficacy related to road traffic codes

Self-efficacy Relating to adherence to the Road traffic code	Pattern of response			
	VC	C	NC	Total
Driving at a moderate speed	25(5.0)	362 (72.4)	113 (22.6)	500 (100%)
Avoid drinking alcohol whenever I am driving	80 (16.0)	313 (62.6)	107 (21.4)	500 (100%)
Obeying traffic signs while driving	21 (4.2)	298 (59.6)	181 (36.2)	500 (100%)
Obeying road markings while driving	11 (2.2)	197 (39.4)	292 (58.4)	500 (100%)
Park to refresh if feeling sleepy while driving	13 (2.6)	252 (50.4)	235 (47.0)	500 (100%)
Not overtaking at a corner or bend	67 (13.4)	424 (84.8)	9 (1.8)	500 (100%)
Refusing request to carry more than the carrying capacity of your vehicle.	16 (3.2)	252 (50.4)	232 (46.4)	500 (100%)
Examining the vehicle to see if it needs repair or service	124 (24.8)	365 (73.0)	11 (2.2)	500 (100%)
Avoid tailgating	4 (0.8)	429 (85.8)	67 (13.4)	500 (100%)
Carry out minor repairs on the vehicle as a driver	126 (25.2)	368 (73.6)	6 (1.2)	500 (100%)
Stopping at a junctions before entering the main road	115 (23.0)	364 (72.8)	21 (4.2)	500 (100%)
Checking tyres expiring date to avoid buying an expired tyre and preventing over usage	14 (2.8)	81 (16.2)	405 (81.0)	500 (100%)
Reading the highway code	9(1.8)	231 (46.2)	260 (52.0)	500 (100%)
Understanding the highway code	6 (1.2)	185 (37.0)	309 (61.8)	500 (100%)
Practicing everything specified in the highway code	31 (6.2)	295 (59.0)	174 (34.8)	500 (100%)

Note: VC-Very capable of doing it, C-Capable of doing it, NC-Not capable of doing it

Table 4.29: Respondents' self-efficacy related to road traffic codes

Self-efficacy Relating to adherence to the Road traffic code	Pattern of response			
	VC	C	NC	Total
Driving at a moderate speed	25(5.0)	362 (72.4)	113 (22.6)	500 (100%)
Avoid drinking alcohol whenever I am driving	80 (16.0)	313 (62.6)	107 (21.4)	500 (100%)
Obeying traffic signs while driving	21 (4.2)	298 (59.6)	181 (36.2)	500 (100%)
Obeying road markings while driving	11 (2.2)	197 (39.4)	292 (58.4)	500 (100%)
Park to refresh if feeling sleepy while driving	13 (2.6)	252 (50.4)	235 (47.0)	500 (100%)
Not overtaking at a corner or bend	67 (13.4)	424 (84.8)	9 (1.8)	500 (100%)
Refusing request to carry more than the carrying capacity of your vehicle.	16 (3.2)	252 (50.4)	232 (46.4)	500 (100%)
Examining the vehicle to see if it needs repair or service	124 (24.8)	365 (73.0)	11 (2.2)	500 (100%)
Avoid tailgating	4 (0.8)	429 (85.8)	67 (13.4)	500 (100%)
Carry out minor repairs on the vehicle as a driver	126 (25.2)	368 (73.6)	6 (1.2)	500 (100%)
Stopping at a junctions before entering the main road	115 (23.0)	364 (72.8)	21 (4.2)	500 (100%)
Checking tyres expiring date to avoid buying an expired tyre and preventing over usage	14 (2.8)	81 (16.2)	405 (81.0)	500 (100%)
Reading the highway code	9(1.8)	231 (46.2)	260 (52.0)	500 (100%)
Understanding the highway code	6 (1.2)	185 (37.0)	309 (61.8)	500 (100%)
Practicing everything specified in the highway code	31 (6.2)	295 (59.0)	174 (34.8)	500 (100%)

Note: VC-Very capable of doing it. C-Capable of doing it, NC-Not capable of doing it

Table 4.30: categories of respondents' self-efficacy scores relating to adherence to road traffic code.

Self – efficacy scores	Frequency	(%)
High (>15)	31	6.2
Low (5 15)	469	93.8
Total	500	100

$\bar{X} = 12.4$, Sd = 4.1

Table 4.31: Comparison of the mean self-efficacy scores of respondents with high and low self-efficacy

Self-efficacy	Frequency	Mean	Sd	Df	p-value
High (≤5)	31	16.23	3.497	13.073	.000***
Low (>5)	469	9.57	3.732		
Total	500				

*** Statistical significant.

4.7 History of involvement in road traffic accidents

Table 4.32 highlights the accident-related experiences of respondents. Majority (89.2%) of the respondents had ever had an accident involving articulated vehicles. A total of 64.1% had been involved in an accident in the last two years preceding the study. Majority (81.1%) of the respondents who had accident in the last two years preceding the study were involved in an accident once. Majority (71.7%) of the experienced accidents were mild. It was noted that 61.9% of the accident occurred during week days.

The typology or nature of the experienced accident are shown in table 4.33. Many (40.2%) of the accidents involved an articulated vehicle and other types of vehicles. This was followed by accidents involving AV and another articulated vehicle (30.6%) (see table for details). Figure 4.3 presents the causes of RTAs among the AV drivers. Over speeding (27.3%) topped the list of the causes of RTAs followed by wrong over-taking (25.5%). The other details relating to causes of the RTA are shown in the figure under reference.

The prevalence of road traffic accident by age categories is shown in table 4.34. The highest number or proportion of respondent (90.6%) who had ever had an articulated vehicle-related accident were within the age 30-39 years. Majority (81.9%) of persons aged 20-29 years had ever been involved in an accident involving an articulated vehicle. The problem of involvement in RTC tends to increase with age. There was a significant association between the occurrence of RTA and age using fishers extract test.

The prevalence of RTA among respondents by level of education is presented in table 4.35. Respondents with no formal education, primary education, secondary education and above were 94.6%, 89.9% and 85.1% respectively. There was no significant relationship between respondents' level of education and their involvement in RTA.

Table 4.32: Accident related experiences among respondents

Experience of involvement in accidents	No	%
Ever been involved in an accident while driving an articulated vehicle accident (N = 500) :		
Yes	446	89.2
No	54	10.8
Wether experienced AV accident within the last two years preceding study (n = 446) :		
Yes	286	64.1
No	160	35.9
Number of times ever involved in AV accidents in the past 2 years (n = 286) :		
Once	232	81.1
Twice	48	16.7
Thrice	6	2.2
Perceived severity of the accident experience within the last two years:		
Mild	205	71.7
Severe	63	22.0
Fatal	18	6.3
Period of the week when the accident occurred :		
Weekday	177	61.9
Weekend	109	38.1
Can't remember		
Time of the day when accident occurred :		
Morning	100	34.9
Afternoon	104	36.5
Evening	45	15.7
Night	37	12.9

Table 4.33: Topology or nature of accident experienced

N = 286

Type / nature of accident experienced	No	%
Articulated vehicle accident not involving another vehicle,		
animal or person (lone accident)	63	22.0
Articulated vehicle with another articulated vehicle	87	30.4
Articulated vehicle accident with pedestrian	13	4.5
Articulated vehicle with animal	5	1.7
Articulated vehicle accident with another type of vehicle	118	40.2

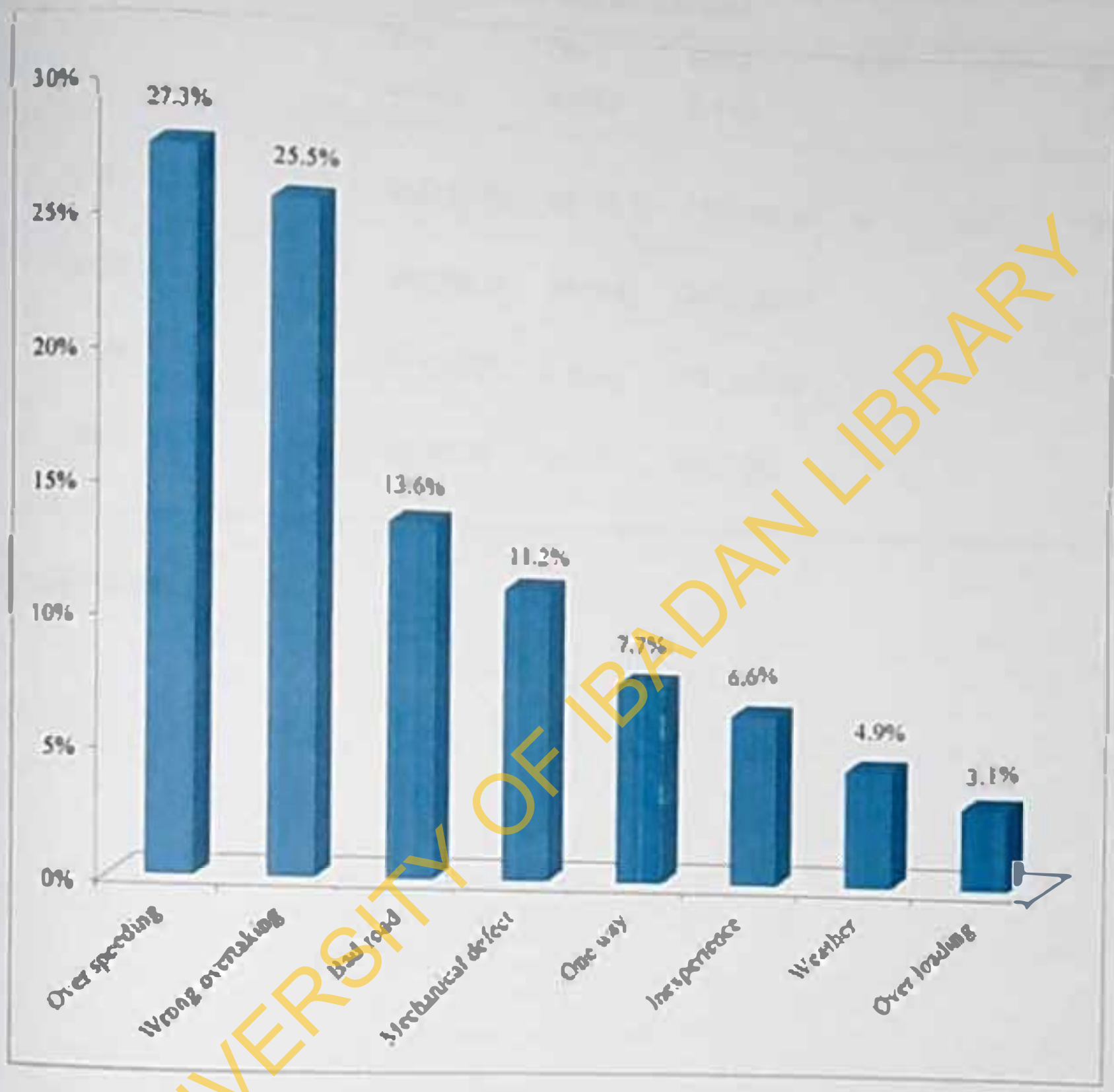

Figure 4.3: Causes of road traffic accidents among drivers of articulated vehicle in the study area (Sagamu)

Table 4.34: Prevalence of RTA among respondent by Age

Age in years	Ever had an accident					
	Yes n (%)	No n (%)	Total N (%)	Df	x^2	p-value
20-29	145 (81.9)	32 (18.1)	177 (100.0)	4	18.9	.001***
30-39	183 (90.6)	19 (9.4)	202 (100.0)			
40-49	75 (97.4)	2 (2.6)	77 (100.0)			
≥50	43 (97.7)	1(2.3)	44 (100)			

*** Significant

Table 4.35: Prevalence of RTA among respondents by level of education.

Level of education	Ever had an accident					
	Yes n (%)	No n (%)	Total N (%)	Df	x^2	p-value
No formal education	122 (94.6)	7 (5.4)	129 (100.0)	4	7.9	.092
Primary education	180 (89.6)	21 (10.4)	201 (100.0)			
Secondary education and above	144 (85.1)	26 (14.9)	170 (100.0)			

Not significant

CHAPTER FIVE

DISCUSSION, CONCLUSSION AND RECOMMENDATIONS

5.1 Socio- demographic characteristics

A large proportion of the drivers of articulated vehicle in Sagamu are within 20 - 39 years age bracket with a mean age of 34.0 ± 9.1 years. A study by Makanjuola, Aina and Onigbogi (2014) revealed a mean age of 37.2 ± 8.0. This indicates that most of the respondents are young adults. The high involvement of young adults may be due to the fact that the driving of articulated vehicle requires a lot of energy which is found more among young people. Drivers with a lot of energy are physically fit and are more able to work for long hours and remain alert while driving compared to old people. The reason adduced by Ipingbemi (2011) for the high involvement of young people in articulated vehicle driving in their study was the issue of unemployment in the country. The result of a similar study by Makinde and Opeyemi (2012) revealed that drivers aged 36-40 years (35.1%) top the list among drivers in their study. The age profile of the drivers studied by Ubogu, Ariyo and Mammam (2011) is not radically different from what this study revealed. The result showed that the extremely active age groups are the ones that are involved in articulated vehicle driving.

In this study, a sizeable number of drivers of articulated vehicles were below the 25 years age limit (Ipingbemi, 2011) for driving an articulated vehicle in Nigeria. According to FRSC (2014) young drivers are inexpericnced. The implication of these is that they are prone to road accident in Nigeria (Azuonwo, Erhabor and Peterside, 2010). The result of this study is also similar to what was observed by Makanjuola et al (2014) who observed non-involvement of females in the driving of articulated vehicles. Diverse reasons have been adduced for this. The lengthy duration of learning how to drive an articulated vehicle and risk associated with driving an articulated vehicle are probable reasons for this situation. The apprentice mode of training and the tedious nature associated with articulated vehicle driving (Thompson, Martina and James, 2014; Makanjuola et al., 2014) and the day and night time mode of operation of articulated vehicle drivers (Hughes, 1990) are the other reasons that restrict the involvement of females.

Majority of the study population had less than secondary education. This result was however not different from what a similar study conducted by Hughes (1990) revealed. According to Hughes (1990) 54.9% of the drivers of articulated vehicles in Kaduna refinery had less than secondary education.

5.2.1 Driving competencies

In this study 85.2% of the respondents reportedly received and completed training on how to drive an articulated vehicle: this is a desirable development. The study did not, however, probe into the content of the training with a view to determine whether issues relating to the Nigeria Highway Code were taught or not learnt during training because the issue was outside the scope of the study. Majority of the respondents were trained by a master under an informal process of training by observation. This mode of training is always unstructured and not based on any formal curriculum, like most apprenticeship programmes for artisans and other trades in Nigeria. Drivers of articulated vehicles need to be well trained to avoid being a danger to other road users. According to Okugbeni (2014) driving a truck is a sensitive assignment because by the time it is loaded with materials (whether wet or dry cargo), it becomes "a potential weapon" of mass destruction, if it is not driven by a competent or trained driver. Innovative strategies are needed to integrate core safe road use values and desirable driving practices including adherence to the provision of the Highway Code into the driving apprenticeship programme for drivers of articulated vehicles with the collaboration of the Nigerian Union of Road Transport Workers.

Most respondents had a valid driver's license. This may be attributable to the regular checks conducted by various law enforcement agencies and the imposition of penalties for non-possession of a valid license while driving. In Nigeria the various law enforcement agencies that enforce compliance with the Highway Code include, the FRSC, Nigerian police force and the Vehicle Inspection Officers. Okafor et al., (2014) similarly noted that most drivers they studied had a valid driver's license in Lagos. Okafor et al., (2014) observed in their study that 52.3% of the drivers obtained their driver's license illegally. This practice is slightly higher than the 41.4% observed among drivers of articulated vehicles in this study. The practice of procuring driving and licenses illegally has been noted in a recent study by the clean foundation in 2015. In this study,

majority (86.6%) of the drivers who got their license through the official process did not undergo the required driving test before being issued a driver's license. It has been observed over a decade ago that one out of every five fatal crashes involved at least one driver who is not properly licensed (Griffin and Zerda, 2000).

5.2.2 Awareness of the Highway Code

Slightly less than half (49.2%) of the respondents were not aware of the existence of the road traffic code related document. This low awareness of the road traffic code related document may be due to the fact that most of their masters who taught them how to drive were not aware of the existence of the code. Only 11.8% of the respondents in this study heard about the Code during their training as articulated vehicle drivers. This observation is a revelation of the deficiency in the training received by drivers of articulated vehicles. The Highway Code should be the reference guide for the training of drivers as stipulated by the Federal Road Safety Corps (FRSC, 2009).

5.3 Driving related lifestyles

The lifetime use of alcohol among respondents in this study was 94.0%. The response rate obtained was higher than the 71.6% recorded in a previous study among long distance drivers by Makanjuola et al., (2007) in Ilorin. The establishment of rapport by the researcher with the various drivers' union officials prior to data collection and assurance of full cooperation by them during the study may have encourage respondents to open up on their alcohol use behaviour. The officials assisted in initiating contact with the prospective respondents and encouraged them to participate in the study. In addition the involvement of the officials of the union assisted in reassuring the respondents that the information obtained from them would not be used against their interest. It was noted also that alcohol is readily available in the study area and in the motor parks used by the drivers. This might be responsible for the significantly high prevalence of daily alcohol use among the respondents.

The most commonly used alcoholic beverages among respondents were beer, gin, herbal mixtures and wine. This is similar to the findings in previous studies (Makanjuola et al., 2007; Adamson, Ogunlesi, Morakinyo, Akinbami and Onifade, 2015). Majority of the respondents consumes alcohol as the "*body dictates*" (i.e whenever there is the urge to

take) and at every stop over. This pattern of alcohol consumption may be indicative of addiction to the substance with the feeling of as the "*body dictates*" referring to the associated craving desire. The usual stop over points for drivers of articulated vehicles. are motor parks located along their routes. More efforts are therefore needed to control alcohol sales in and around motor parks.

5.4 Knowledge of road traffic code

The result of this study shows that majority of drivers of articulated vehicles exhibited a fair knowledge of the road traffic code. Similar findings were reported in a Nigerian study conducted in Anambra state. which revealed that despite the aggressive campaign by various stake holders on road safety related matters. such effort over the years seems to have yielded poor results. Drivers in their study possess a poor knowledge of the road traffic code (Adugo and Ilika. 2006). A poor knowledge of road traffic sign and markings was observed among drivers of articulated vehicles as 81.8% of the respondents had poor knowledge of the road traffic sign and road marking. Many of them are therefore a potential risk to other road users as their limited knowledge of road sign and markings can lead to accidents involving other road users.

A study by Ukegbu (2012) similarly shows that participants in their study lacked adequate knowledge of the road sign and markings. The study revealed that the poor road-user behaviour exhibited by drivers in their study was due to their lack of knowledge about road safety rules and regulations. Another study in Lagos by Okafor, Odeyemi and Dolapo in 2013 also revealed poor knowledge of road traffic signs among bus drivers.

Poor knowledge of the road traffic code cuts across the various age groups among the drivers in the study. A study conducted by Okafor et al., (2013) reveals that drivers knowledge relating to road traffic code declines with age. There is also a significant difference in knowledge between those who have heard about the code and those who have not heard about it.

Furthermore, majority of articulated vehicle drivers do not know the actual speed limit they are expected to maintain while driving. Their responses revealed that they have always driv vembove the 60-80km/hr speed limit which is the normal speed limit that should be maintained on the road by articulated vehicle drivers. Drivers of articulated

vehicles were aware of the belief that the following could lead to accident: drug use, excessive speed, unmaintained vehicle, fatigue, driving against traffic, disregard for traffic light, use of mobile phone, over speeding. Those beliefs documented in the study are in agreement with the results of previous studies such as those of Ohakwa, Iwueze, and Chikezie (2011) and Ukoji (2014).

5.5 Perception relating to road traffic code

Over half of the respondents had perceptions which were not favourable to the road traffic code. It is of concern that 62.4% of the drivers of articulated vehicles in this study were of the view that alcohol consumption before driving makes a driver's eyes clear during driving. Perceptions such as this have potential for encouraging alcohol use among drivers. It is to be noted that alcohol use by motor vehicle drivers have been implicated in several road traffic accidents.

A majority (72.4%) stated that road signs and marking are not useful to driver. This perception cannot be divorced from their limited knowledge of the road signs and markings. Almost all the drivers of articulated vehicle (70%) were of the view that drivers of articulated vehicle must take one thing or the other in order to be alert while driving. This is a risky perception because it tends to promote the use of psychoactive substances among drivers. Most psychoactive substances make drivers to be vulnerable to road traffic accidents (Makanjuola, 2007; USAIDS 2007). Alcohol for instance, makes a driver to misjudge distances (Gboyega, 2012; Omolase, 2011). Also documented is the perception that an accident is an act of God and there is nothing anybody can do about it if it is destined to happen. This is a misleading and fatalistic view of the occurrence of accidents

5.6 Self-efficacy

The self-efficacy of drivers of articulated vehicles relating to adherence to the road traffic code was low. Many of the drivers stated that they were not capable of reading and understanding the Highway Code and consequently have problems adhering to the provision of the code. A study conducted by Okonkwo et al., (2007) revealed that drivers in their samples were confident in reading and comprehending the provision of the Highway Code. Drivers studied by Okonkwo et al., (2007) were most likely to avoid

driving in bad weather, driving at night, driving at moderate speed and avoid on-coming traffic and tailgating.

5.7 Accident related experience

This study shows that half of the drivers of articulated vehicle in the study have been involved in at least one accident in the last two years preceding the study. This high prevalence is a source of concern. This study did not however focus on the causes of road traffic accident experienced by drivers in terms of whether the accident occurred as a result of a vehicular problem, bad road, or failure to adhere to the road traffic code. The prevalence indicates that a health education intervention is needed to reduce the possible causes of road traffic accident and what drivers can do to avoid them.

According to Eze (2012) the burden of road traffic accidents has not received the desired attention. It was noted in a study by Hakkanen and Summala (2001) that articulated vehicle accidents accounted for 16% of all accidents and that young age and inexperience were the principal determinants of road traffic accidents. The causes of road traffic accidents among drivers of articulated vehicles have been previously documented. Over speeding, wrong overtaking, inexperience and over loading top the list of the causes of road traffic accidents among drivers of articulated vehicles (Agbonkhese, Yisa, Akanbi, Aka and Mondigha, 2007). Several recent studies have revealed that articulated vehicle accidents form a fatal category of motor vehicle accidents in Nigeria (Omoronyia, 2013; FRSC, 2011 and Osita, 2009)

Broadly, the factors which influences the rate of accident involving articulated vehicle have been found to include human, vehicular and road factors. The human factor causing articulated vehicle accident was high compared to the other factors that lead to road traffic accidents. The human factors includes over speeding (Aaart, Christensen and Amundsen, 2004), wrong overtaking, inexperience, over loading, driving against traffic. The non-human factors include mechanical defect like brake failure, unfavourable weather condition (Olawole, 2016), bad road condition. Mechanical factors such as brake failure do occur but human factors are by far the most important causation of crashes (Oluwasanmi, 1993). Atubi (2009) reported human factor as the most potent contributor to motor vehicular crashes in Nigeria

In this study, there was a significant reduction in accident rate with higher level of education among drivers of articulated vehicles. This is similar to the result of the study

conducted by Adejugbagbe, Fatiregun, Rukewe and Alonge (2015) that showed a proportionate decrease in road traffic accident rate with a higher educational qualification among drivers.

There was also a significant difference in the prevalence of accidents among drivers that consume psychoactive substances compared to those that do not consume such substances. Drivers of articulated vehicle that consumes any of the substances had at a point been involved in road traffic accident in this study

5.8 Implication for health education

Health education focuses on the modification of people's behaviour and behavioural antecedents (Green and Kreuter, 1991). It can thus be used to address the challenges identified in this study. Results from this study documents a poor knowledge of road traffic sign and markings among drivers of articulated vehicles. This has potential for contributing to road traffic accidents. Public enlightenment through appropriate communication media will help to address this challenge among drivers of articulated vehicles.

The study also revealed that few articulated vehicle drivers had good knowledge of the road traffic code with majority having unfavourable perception of the code. The perception that the knowledge of the road traffic code is not necessary for safe driving practices is a misconception that needs to be discouraged. There is a need for training programmes to re-orientate drivers of articulated vehicles on the need to have a good knowledge and a favourable perception of the road traffic code. However, for such training programmes to be effectively implemented, the FRSC and the VIO should be actively involved. It is imperative to base such training programmes on well conducted training needs assessments. The results of the study is a useful needs assessment that can be used to design a training reference for the study population in Sagamu.

This study shows that majority of articulated vehicle drivers were trained informally through the apprenticeship scheme. This method of training is often unstructured and allow for omission of vital information relating to the road traffic code. Consequently, trainees do not have access to vital information relating to the road traffic code during their training because they were not provided by their trainers. This procedure continues

to breed drivers who pose a threat to other road users. This study suggests the need for the development of a training curriculum for the training of drivers of articulated vehicles. In addication, the FRSC and the VIO should develop a certifying programme for drivers who want to be involved in the training of potential articulated vehicle drivers.

Findings from this study indicated that majority of the drivers of articulated vehicles had low self-efficacy relating to the adherence to the provision of the code. Effort should be made to have a standardized self-efficacy test for intending license applicants and those seeking license renewals.

Programmes that discourage the use of alcohol and other psycho-active substances among drivers of articulated vehicles should be promoted as finding from this study indicated a high prevalence use of alcohol use among drivers. The FRSC should intensify campaigns against the use of alcohol and other psycho-actives substances. Routine checks should be made to garages, parks and toll-gates to discourage the sales of such substances. A strict penalty should be imposed on offenders to discourage the use of these substances among drivers of articulated vehicles.

The outcome of this study indicates that there is a high prevalence of traffic accidents among drivers of articulated vehicles. There are several factors which contribute to the occurrence of these accidents. Majority of the accidents were caused by human factors which could be avoided. It is therefore necessary to upgrade articulated vehicle drivers' knowledge, perception and self-efficacy relating to the road traffic code.

5.9 Conclusion

The following conclusions are drawn based on the findings this study. Young adults constitute a great proportion of the drivers of articulated vehicles in the study area with majority of them having little or no formal education. Although, some of the drivers completed their training as a driver or a driver mechanic, many never heard of the road traffic code during their training. The study participants were trained through the apprenticeship scheme and so were not exposed to the provisions of the highway code in Nigeria.

There is evidence of undue issuance of drivers' licenses to participants without due process among drivers of articulated vehicles. Many of the drivers of articulated vehicles

with driver's license did not undergo a vehicle inspection officer test drive to ascertain their driving skills.

The consumption of psychoactive substance is common among the study participants. This calls for the design and implementation of road safety education programmes aimed at discouraging the use of alcohol among articulated vehicle drivers.

Knowledge of road traffic signs and marking is poor among the drivers. Only few participants had good knowledge of road traffic code. In addition, their perception relating to RTC was relatively unfavourable and their self-efficacy was low. Many of the study participants were found to have been involved in traffic accidents in the last two years preceding the study. Human factors such as over speeding, wrong overtaking, inexperience, driving against traffic and overloading were the major causes of the accidents. These factors are avoidable through adherence to the road traffic code. All this could be prevented with a good knowledge, positive perception and a high self-efficacy relating to the Nigeria road traffic code among drivers of articulated vehicles.

5.10 Recommendation

1. The FRSC should design a curriculum which will integrate core safe road use values and driving practices into the apprenticeship programme for drivers of articulated vehicles with the collaboration of Nigerian Union of Road Transport Workers.
2. The training of articulated vehicle drivers should only be done by trained and certified drivers using the designed articulated vehicle driver's apprenticeship programme curriculum.
3. The issuance and renewal of driver's licences should be done based on demonstrable driving competences and self-efficacy test by the vehicle Inspection office.
4. The FRSC should launch and sustain a periodic enlightenment programme based on the knowledge needs of the drivers relating to the road traffic code.
5. There should be strict penalties for drivers caught driving under the influence of alcohol and the sales of psychoactive substance should be discouraged in and around parks or garages.

6. This study underscores the need for reinforced road safety intervention to reduce the menace of road traffic accidents among drivers of articulated vehicles.

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APPENDIX I

INFORMED CONSENT FORM

Knowledge, Perception and Self-Efficacy Relating to Road Traffic Code among Drivers of Articulated Vehicle in Sagamu, Ogun State.

I am a postgraduate student of the department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan. I am assessing the knowledge, perception and self-efficacy relating to road traffic code among drivers of articulated vehicle in Sagamu, Ogun state. Your honest answers to these questions will be useful in designing programmes for reducing motor vehicle accident in Nigeria. I assure you that the information disclosed to me by you will be used for this research purpose alone. Remember that your name is not required in the interview. You are also free to ask questions about the study at any time.

Are you willing to participate?

1. Yes (continue with the interview) ☐ 2. No (stop the interview) ☐

AGBORUME, A. Tosin. safedrivers@gmail.com 07032309985

APPENDIX II:

A QUESTIONNAIRE ON

KNOWLEDGE, PERCEPTION AND SELF-EFFICACY RELATING TO ROAD TRAFFIC CODE AMONG DRIVERS OF ARTICULATED VEHICLE IN SAGAMU, OGUN STATE

INTRODUCTION

I am a postgraduate student of the department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan. I am assessing the knowledge, perception and self-efficacy relating to road traffic code among drivers of articulated vehicle in Sagamu, Ogun state. Your honest answers to these questions will be useful in designing programmes for reducing motor vehicle accident in Nigeria. I assure you that the information disclosed to me by you will be used for this research purpose alone. Remember that your name is not required in the interview. You are also free to ask questions about the study at any time.

Are you willing to participate?

2. Yes (continue with the interview) ☐ 2. No (stop the interview) ☐

AGBORUME, A. Tosin. sukdrivers@gmail.com 07032309985

For official use only_____
Serial Number_____
Interviewer's Name:_____
Date_____

Section A: Socio – demographic data

Note: In this section, please tick (√) the appropriate boxes and fill the spaces provided for written response

1. Age at last birthday _____years.
2. Sex: 1. Male ☐ 2. Female ☐
3. Marital Status: 1. Single ☐ 2. Married ☐ 3. Separated ☐ 4. Divorced ☐
4. Religion: 1. Christianity ☐ 2. Islam ☐ 3. Traditional ☐
   4. Others (specify)_____
5. Ethnic group 1. Yoruba ☐ 2. Hausa ☐ 3. Igbo ☐ 4. Others (specify)_____
6. Educational background:
   1. No formal education ☐
   2. Primary education ☐
   3. Secondary education ☐
   4a. Tertiary education ☐ 4b. Specify tertiary education received _____

7a. Do you have any other job apart from driving an articulated vehicle?

1. Yes ☐ 2. No ☐ *(If no, skip to question 8a)*

7b. What other types of job or business are you involve in apart from driving (*Please tick (√) one)*

1 .Farming ☐ 2 .Trading ☐ 3. Artisan ☐ 4. Civil servant. ☐ 5. Student ☐

6. Others (specify)_____

Section B: Driving competencies

8a. Did you receive any form of training on driving before driving for the first time?

1. Yes, completed the training ☐
2. Yes, did not complete the training ☐
3. No, I did not receive any training ☐
4. Yes received training as a driver mechanic ☐

8b. Who taught you how to drive an Articulated vehicle? 1. Self ☐ 2. Driving school ☐

3. Relative ☐ 4. Friend ☐ 5. Master ☐ 6. Others (specify)_____

9a. Have you ever heard of the Nigeria Highway Code? 1. Yes ☐ 2. No ☐

(If no, move to question 10)

9b. When did you hear of the Nigeria Highway Code? 1. Before training as a driver ☐

2. During driving training as a driver ☐ 3. After driving training as a driver ☐

9c. Do you have a copy of the Nigeria High way Code? 1. Yes ☐ 2. No ☐

9d. Have you ever read it? Yes ☐ 2. No ☐

10a. How long did it take you to learn how to drive an articulated vehicle (In months/years).

.....

10b. How long have you been driving an articulated vehicle.....

11a. Do you have a driver's license for driving an articulated vehicle?

1. Yes ☐ 2. No ☐ *(If no, move to question 12)*

11b. Is the driver's license still valid? 1. Yes ☐ 2. No ☐ *(observe to validate)*

11c. How did you obtain the driver's license? 1. Through procedure ☐ 2.Through Agents ☐

3. Self-Made ☐ *(If not through procedure, skip to question no 12)*

Section D: Knowledge related issues

The table below contains road signs and road marking used on Nigeria road; for each, tell me what it stands for.

Knowledge of Road Sign and markings

Table 1

Number	Road sign	What it stands for	*Official use only* Tick(√)	
			Correct	Wrong
15.1				
15.2				
15.3				
15.4				
15.5				
15.6				
15.7				
15.8				
15.9				
15.10				
15.11				
15.12				

11d. Did you undergo a medical test as part of the requirements for obtaining your license?
1. Yes ☐ 2. No ☐

11e. Did you undergo VIO test-drive with an articulated vehicle before you were given a license?
1. Yes ☐ 2. No ☐

Section C: Driving related lifestyle

Note: In this section, please tick as applied to the respondent

12a. Have you ever taken any alcoholic beverage? 1. Yes ☐ 2. No ☐ ***(If no, move to question 13)***

12b. Do you take any alcoholic beverage? 1. Yes ☐ 2. No ☐
(If no, move to question 13)

12c. If yes to question 12b, which of the following alcoholic beverage do you take? ***(Tick all that applies to respondent)*** 1. Beer ☐ 2. Gin ☐ 3. Herbal Mixture ☐ 4. Wine ☐ 5. All ☐

12d. If yes to question 12b, when do you normally drink? 1. Early in the morning before driving ☐ 2. Immediately before driving ☐ 3. During driving ☐ 4. At every stop over ☐ 5. At night after driving ☐ 6. As body dictates ☐

12e. If yes to question 12b, which of the following alcoholic beverage do you keep by your side for use at any time you need it on your journey? 1. None ☐ 2. Beer ☐ 3. Gin ☐ 4. Herbal Mixture ☐ 5. Wine ☐ 6. All ☐

13a. Have you ever smoked? 1. Yes ☐ 2. No ☐ ***(If no move to question 14)***

13b. Which of these have you ever smoke? ***(Tick as many as applied to the respondent)***
1. Cigarette ☐ 2. Tobacco ☐ 3. Marijuana ☐ 4. All ☐

13c. Which of these do you smoke now? ***(Tick as many as applied to the respondent)***
1. None ☐ 2. Cigarette ☐ 3. Tobacco ☐ 4. Marijuana ☐ 5. All ☐
(if none, move to question 14)

13d. when do you usually smoke? 1. Early in the morning ☐ 2. Immediately before driving ☐ 3. During driving ☐ 4. At every stop over ☐ 5. At night after driving ☐ 6. As body dictates ☐

14. How many hours sleep do you have per day?
.....

Note: In this section, please tick (√) in the appropriate boxes according to the response of the respondents

Knowledge relating to traffic light

16a. What does the red traffic light mean? 1. Stop ☐ 2.Ready ☐ 3. Go ☐ 4. Do not know ☐

16b. What does the yellow traffic light indicate? 1. Stop ☐ 2.Ready ☐ 3. Go ☐ 4. Do not know ☐

16c. What does the green traffic light mean? 1. Stop ☐ 2.Ready ☐ 3. Go ☐ 4. Do not know ☐

Fatigue related knowledge questions

17a. When feeling drowsy or sleepy, being tired and unable to concentrate and sustain attention drivers should avoid driving? 1. True ☐ 2. False ☐ 3. Do not know ☐

17b. How often should long distance drivers take a break while driving? 1. After every four hour driving ☐
2. After every eight hour driving ☐ 3. Do not know ☐

Speed related knowledge questions

18a. Speed limit is the maximum allowed speed for a particular road? 1. True ☐ 2. False ☐
3. Do not know ☐

18b. Acceptable speed limit varies from roads to roads? 1. True ☐ 2. False ☐ 3. Do not know ☐

18c. What is the general speed limit for articulated vehicles in Nigeria? 1. 60-80km/hr ☐ 2. 100-120km/hr ☐ 3. 140 -160km ☐ 4. Donot know ☐

Other Knowledge Question

19. Articulated vehicles should not carry more than there carrying capacity? 1. True ☐ 2. False ☐
3. Do not know ☐

20. After consuming alcohol, drivers should not drive? 1. True ☐ 2. False ☐ 3. Do not know ☐

21. In order to maintain the drive distance between you and the next vehicle, driver behind should make sure he sees the tyre of the car in front? 1. True ☐ 2. False ☐ 3. Donot know ☐

22. It is not necessary for articulated vehicle driver to horn before overtaking? 1. True ☐ 2. False ☐
3. Do not know ☐

23. There is no expiring date for tyres? 1. True ☐ 2. False ☐ 3. Do not know ☐

Please tick true, false or do not know for the following question as apply to the respondent.

Table 2

Number	It is dangerous to park at or near	True	False	Do not know
24.1	Road junction			
24.2	Bends and corners			
24.3	Designated bus-stop			
24.4	Narrow road			
24.5	Opposite another vehicle on the on-coming lane			

25a. Which of the following can lead to accident?

Table 3a

Number	Practices that can lead to accidents	True	False	Do not know
25a.1	Use of alcohol			
25a.2	Drug use (Cannabis, cocaine etc.)			
25a.3	Excessive speeding			
25a.4	Disregard for traffic rules			

25b. Which of the following cannot lead to accident?

Table 3b

Number	Practices that cannot lead to accidents	True	False	Do not know
25b.1	Fatigue			
25b.2	Use of mobile phone while driving			
25b.3	Unmaintained vehicle			
25b.4	Driving against traffic			

Section E: **Perception related issues.**

Note: In this section, tick Agree, Disagree or No opinion as apply to the respondent ***Table 4***

Number	Perception Statement	Disagree	Agree	No opinion / undecided
26.1	A good knowledge of the Nigerian highway code is not necessary to drive safely on Nigerian road			
26.2	Alcohol consumption before driving makes a driver's eyes clear during driving			
26.3	Road signs are not important once the driver is an expert or has experience			
26.4	Drivers of articulated vehicle must take one thing or the other in order to be alert while driving			
26.5	Driving at high speed is necessary so that one can have more delivery per day.			
26.6	In order to overtake well, it is better to drive very close to the vehicle in front of you?			
26.7	It is not necessary to horn before overtaking because the noise made by articulated vehicle is enough			
26.8	The expiry date of a tyre is not important once it look physically alright			

26.9	Overloading a vehicle cannot lead to an accident			
26.10	Accident is an act of God and there is nothing any body can do about it if its destined to happen			

Section F: Self-efficacy

The following question asks about drivers of articulated vehicles' *self-efficacy towards road traffic code.*

Table 5

No 27	Efficacy Statement	I am very capable of doing it	I can do it to some extent	Cannot do it at all
27.1	Driving at a moderate speed(i.e 80km/hr or less)			
27.2	Avoid drinking alcohol whenever I am driving			
27.3	Obeying traffic signs while driving			
27.4	Obeying road markings while driving			
27.5	Park to refresh if feeling sleepy while driving			
27.6	Not over taking at a corner or bend			
27.7	Refusing request to carry more than the carrying capacity of your vehicle			
27.8	Examining the vehicle to see if it needs repair or service			
27.9	Avoiding tailgating			
27.10	Carry out minor repairs on the vehicle as a driver			
27.11	Stopping at a junctions before entering the main road			
27.12	Checking tyres expiring date to avoid buying an expired tyre and preventing over usage.			
27.13	Reading the highway code			
27.14	Understanding the highway code			
27.15	Practicing everything specified in the highway code			

Section G: Accident related experience

Note: In this section, please tick (√) in the appropriate boxes or fill the spaces provided for written response as applied to the respondent

28a. Have you ever had an articulated vehicle accident no matter how minor? 1. Yes ☐ 2. No ☐

(If "No", skip this section)

28b. If yes to question 28a, have you had an articulated vehicle accident within the last 24 months or 2 years? 1. Yes ☐ 2. No ☐ **(If "No", skip this section)**

28c. If Yes to question 28b. how many times have you been involved in accident in the last 24 months (2 years)?_____

28d. How would you describe the nature of the last accident that you had in the last 24 month (2 years)?

1. Mild ☐ 2.Severe ☐ 3. Fatal ☐

28e. What period of the week did you had the last accident you had in the last 24 month (2 years)?

1. Weekday ☐ 2. Weekend ☐ 3. Cannot remember ☐

28f. What time of the day did the last accident occur? 1. Morning ☐ 2. Afternoon ☐ 3. Evening ☐ 4. Night ☐

29 What type of accident was the last accident? (Use table 6 for your answer)

Table 6

S/N	Type of accident	YES (1)	NO (2)
29.1	Articulated vehicle accident not involving another vehicle, animal or person.		
29.2	Articulated vehicle accident with another articulated vehicle.		
29.3	Articulated vehicle accident with pedestrian.		
29.4	Articulated vehicle accident with animal		
29.5	Articulated vehicle with another type of vehicle		
	Causes of road traffic accidents		
30.1	Over speeding		
30.2	Wrong overtaking		
30.3	Inexperience		
30.4	Overloading		
30.5	Driving against traffic (one way)		
30.6	Weather		
30.7	Bad road		
30.8	Mechanical defect		

APPENDIX III:

IWE IHERE LORI

IMO. IWOYE ATI IDANGAJIYA ENI TI O NI SE PELU AWON OFIN IRINNA NI OJU OPOPONA WA LAARIN AWON AWAKO AJAGBE EJO (AKERU) NI ILU SAGAMU. IPINLE OGUN.

Mo je akecko gboye ni eka ti ilera. igbega ati cko eka Ilera gbogbo gboo. ile cko ifafiti ti ilu Ibadan. Alo n se agbeyewo imo. iwoye ati imo ara eni ti o ni se pelu awon ofin irinna ni oju opopona wa laarin awon awako ajagbe ejo (akeru) ni ilu sagamu ni ipinle Ogun. sise otilo aipa idahun si awon ibeere wonyi yooo tan wa lowo lati se agbekale awon eto ti yio mu ki ajaye ti e fi to mi leti yii yoo wulo fun ise iwadii yii nikan. Ako nilo oruko yin ninu ise iforowanilenu wo yii. E tun ni afaani lati beere awon ibeere nipa ise iwadi yi nigba kuu gba.

Nje e fe lati kopa ni be?

3. Beeni (tesiwaju ninu iforowanilenu wo) ☐ 2. Becko (dake iforowanilenu wo) ☐

AGBORUAE. A. Tosin. safedriveng@gmail com 07032309985

For official use only_____
Serial Number_____
Interviewer's Name:_____
Date_____

Ipin A: **Awon owun ti o je olukopa ninu iwadi**

Akiyesi: ni ipin yi, efo ami yi (√) si inu awon apoti ti o ye ninu eyi ti a ti pese sile

1. Kinni ojo ori yin _____
2. Okunrin ni yin ni tabi obinrin: 1. Okunrin ☐ 2. Obinrin ☐
3. Ipo yin ninu igbeyawo: 1. Apon ☐ 2. Mo ti fe iyawo ☐
   4. Ako jo gbe ☐ 4. Mo ti ko sile ☐
4. Esin: 1. Onigbagbo ☐ 2. Imale ☐ 3. Elesin ibile ☐
   4 .Omiran (salaye)_____
5. Eya wo 1. Yoruba ☐ 2. Awusa ☐3. Igbo ☐4. Omiran (salaye)_____
6. Iwe ti e ka:
   1. mi o ka we rara ☐
   2. Mo ka iwe mefa ☐
   3. Mo ka ile iwe ☐
   4a. iwe giga ☐4b. Se alaye ile iwe giga ti o lo

7a. Nje oni ise miran yato si oko wiwa? 1. Beeni ☐2. Beeko ☐

(If no, skip to question 8

7b. Ise miran tabi owo miran won i e tun nse lehin oko wiwa *(Si ami yii si (V)*

1 .Ise agbe ☐ 2 .Trading ☐ 3.aworan yiya ☐ 4.Osise ijoba.☐ 5. Akeeko ☐

6. Omiran (salaye)_____

Ipin U: Ikinju osuwon ninu oko wiwa

8a. Nje ogba idanileko Kankan ki o to maa wa oko fun igba akoko?

5. beeni mo pari ikeko oko wiwa ☐
6. Beeni. mi o pari ikeeko naa ☐
7. Rara, mi o gba idanileko rara ☐
8. Beeni mo gba idani leko gegebi atoko se awako ☐

8b. Talo koo bi a se wa oko akeru? 1. Mo ko ra mi☐2. Ile eko ti won ti nko ni leko oko wiwa ☐ 3. Ibatan mi ☐4 Ore mi ☐ 5.Olukoni ☐ 6. Omiran (salaye)_____

9a. Nje oti gbo nipa ofin oju popo ni orile ede Naijiria ri? 1. Benni ☐2. Beeko ☐

(Ti ko ba ribe, lo si ibeere 10)

9b. Igba wo gan lo gbo nipa ofin oju popo ni orile ede Naijiria? 1. Kin to gba idanileko gegebi awako☐ 2. Lasiko ti mo ngba idanileko oko wiwa☐ 3.Lehin ti mo ti gba idanileko oko wiwa tan☐

9c. Nje oni iwe ilewo ti ofin irina ti Naijiria? 1. Beeni ☐2. Beeko ☐

9d. Nje o ti le kaa ri? Beeni ☐2. Beeko ☐

10a. O to bi igbawo te fi ko bi a se nwa oko akeru (Osu tabi odun die).....

10b. O to bi igbawo ti e ti n wa oko eleru.....

11a. Nje o ni iwe ase lati wa oko eleru? 1. Beeni ☐2. Beeka ☐ *(Ti ko ba ribe lo si ibeere 12)*

11b. Nje iwe ase awako re si wulo? 1. Beeni ☐ 2. Beeko☐*(observe to validate)*

11c. Bawo gan lo se gba iwe ase awako? 1. Nipase agbekale eto☐ 2. Nipase asoju☐

3. Atowoda temi funrami ☐*(Ti ko ba je nipa agbekale eto, losi ibeere 12)*

11d. Nje o se ayewo ilera gegebi ohun elo lati gba iwe ase awako? 1. Beeni ☐ 2. Beeko ☐

11e. Nje ose idanrawo lodo awon VIO ki a to fun o ni iwe ase awako?

1. Beeni ☐ 2. Beeko ☐

Ipin C: Igbe aye to je mo oko wiwa

Akiyesi: Ni ipin yii, fa ami si ibi ti o ba ye. Kegebi eni to n dahun ibeere se salaye

12a. Nje o ti mu oti lile ri? 1. Beeni ☐2. Beeko☐ *(Ti ko ba ribe, lo si ibeere 13)*

12b. Nje o maa nmu oti lile? 1. Beeni ☐2. Beeko☐
(Ti ko ba ribe, lo si ibeere 13)

12c. ti idahun ba je beeni

12b. Ewo ninu awon oti lile won yii lo maa nmu? *(fa ami si gbogbo eyi to ba je beeni)* 1. Oti olofutu ☐2. Gbekun rana ☐3. Agbo igo ☐4. Waini ☐5. Gbogbo ee ☐

12d. Ti idahun si ibeere 12b ba je beeni, igbawo gan an lo maa nmu oti? 1. Lowuro kutukutu kin to wa oko ☐2. To ba ku die ki nwa oko ☐3. Iasi ko ti nba wa oko☐ 4. Ni gbogbo ibudoko☐ 5Lale lohun ti mo nba ti wa oko tan☐6. Igba ti ara bat i bere fun☐

12e. Ti idahun si ibeere 12b ba je beeni. ewo ninu awon oti wonyi lo maa npese si egbe re fun ilo ni igbakugba ti oba nrin irin ajo? 1. Kosi ☐2. Oti olofutu ☐3Ogogoro tabi gbekun rana ☐4. Agbo igo ☐5. Waini ☐6. Gbogbo nse ☐

13a. Nje o ti fa nkan elefin ri? 1. Beeni ☐ 2. Beeko☐ *(Ti ko buri be lo si ibeere 14)*

13b. Ewo ninu awon wonyi ni oti fa ri? *(Fi ami si gbo eyi ti o ba n fa)*
1. Siga ☐2. Aasa ☐3. Igbo☐4. Gbogbo nse ☐

13c. Ewo lo n mu lowolowo bayii ninu awon wonyii? *(Fi ami si gbogbo eyi ti o ba nmu)* 1. Kosi ☐2. Siga ☐3. Aasa ☐4. Igbo☐ 5. Gbogbo nse ☐
(Ti ko ba ri bee lo si ibeere 14)

13d. Igba wo lo n mu saba n faa? 1. Owuro kutukutu☐ 2. To ku die ki nwa oko☐
3. Iasiko ti nba wa oko ☐ 4. Ni gbogbo ibudoko☐ 5. ale ti nba ti siwo oko wiwa☐
6. bi ara ba se bere fun ☐

14. wakati meelo lo maa fi nsun loojo? .....

Ipin D: Ibere Lori Imo

The table below contains road signs and road marking used on Nigeria road; for each, tell me what it stands for.

Knowledge of Road Sign and markings

Tabill I

Number	Ami oju popo	Kinni o duro fun	Official use only	
			Fami si(√)	
			Beeni	Beeko
15.1				
15.2				
15.3				
15.4				
15.5				
15.6				
15.7				
15.8				
15.9				
15.10				
15.11				
15.12				

Akiyesi: Ni ipin yii fi nmi yii si apoti to ba je kegbi oludahun.

Ina nipa ina ti o wan i opopo ona

16a. Kini ina pupa duro fun? 1. Duro ☐2. Gbaradi ☐ 3. Maalo ☐4. Mio mo ☐

16b. Kin ni ina alawo ofeefe duro fun ai irona? 1. Duro ☐2. Gbaradi ☐ 3. Maalo ☐4. Mio mo ☐

16c. Kin ni ina alawo ewe duro fun? 1. Duro ☐2. Gbaradi ☐ 3. Maalo ☐4. Mi o mo ☐

Ina to nise pelu aare nipa ise sise

Ti enikan ba n toogbe tabi o tile nsun nipase aare lenu ise ti ko si le gbojusun tabi ti okan si ohun to se, irufe awakobee ko gbodo wa oko rara? 1. Beeni ☐ 2. Beeko ☐ 3. Mio mo ☐

17b. Bi igba melon i awako lo si ona jijin gbodo sinmi rinpe ti o ba nwa oko? 1. Iehin wakati merin to o wa oko☐ 2. Lehin wakati mejo to ti wa oko☐ 3. Mi o mo ☐

Ibeere lori imo nipa ere sisa

18a. Odiwon ere sisa ti o ye ni a gba laye fun irin ajo? 1. Beeni ☐ 2. Beeko ☐
3. Mi o mo ☐

18b. odiwon ere sisa ti a fi aye gba wan i orisinsi bi o na se ri? 1. Beeni ☐ 2. Beeko ☐ 3. Mi o mo ☐

18c. Iyatoo odiwon ere siso ti a gba laaye fun awon oko a koru ni orile ede Naijiria? 1. 60-80km/hr☐
2. 100-120km/hr☐ 3. 140-160km ☐ 4. Mi o mo ☐

Ibeere lori awon imo miran

19. Awon oko akeru ko gbodo ko eru ju agbara won lo? 1. beeni ☐2. Beeko ☐ 3. Mi o mo ☐

20. Awako ko gbodo wa oko leyin ti o bat i mu oti lile? 1. Beeni ☐2. Beeko ☐3. Mi o mo ☐

21. Iwi le li aye silelarin oko to nlo niwaju ati eyi to nbo leyin, awako to wa lehin gbodo ri daju wipe ona ti aya oko tin lo niwaju re? 1. Beeni ☐2. Beeko ☐3. Mi o mo ☐

22. ko pari dandan fun awako oko eleru ki o fon fere ko to ya lara oko to n lo niwaju?
1. Beeni 2 Beeko ☐ 3. Mi o mo ☐

23. ko si ojo kan pato ti a le so wipe taya oko ti baje? 1. beeni ☐2 beeko ☐3. Mi o mo ☐

Fi ami Beeni, Beeko tabi Mi o mo si awon ibeerewun yii gege bi oludahun se fe si. *Tabili 2*

Number		Beeni	Beeko	Mi o mo
24.1	Ole wa lati gbe oko si			
24.2	Ikomia meta			
24.3	Ni ibiti ona ko ba tin gbooro			
24.4	Ibuso ti ati pese sile lati ja ero			
24.5	Ona ti tin-in rin			
	Ni a dojuko oko miran to mbo			

25a Ewo ninu awon wonyi lo le fa ijamba oko?

Tabili 3a

Number	Awon iwa to le fa ijamba oko	Beeni	Becko	Mi o mo
25a.1	Lilo oti oloro			
25a.2	Lilo ogun to ban i igbo ninu			
25a.3	Ere asa pajude			
25a.4	Aika ofin oju ona			

25b. Ewo ni ko le fa ijamba oko ninu awon wonyi?

Tabili 3b

Number	Awon iwa ti ko le yori si ijamba oko	Beeni	Becko	Mi o mo
25b.1	Aare leyin ise oseju			
25b.2	Lilo ero alagbeka			
25b.3	Alsamojuto oko			
25b.4	Wiwa oko lodi si ofin oju popo			

Ipin E: **Erongba okan.**

Alaye: ninu ipin yii, fi a mi si mo gba, mi o gba tabi ko ye mi, gegebi oludahun se fesi *Tabili 4*

Number	Erongba okan	Mi o gba	Mo gba	Ko ye mi
26.1	Ko pon dandan ki awako ni imo nipa iloni to wa loju popo ki o to le wa oko pelu abo ni awon ona to wan i or le ede Naijiria			
26.2	Mimu oti lile ka awako to wa oko mas mu ki oju re mole kedere lasiko to ba nwa oko			
26.3	Awon ami oju popo ko se Pataki ni iwon igba ti awako tije onimo ijinle ninu oko wiwa			
26.4	Awako oko eleru gbodo mu ohun kan tabi omiran ti o le taaji ni gba to ba nwa oko			
26.5	Ere asa pajude se dandan ki awako ba le pa owo to po wole			
26.6	Ki awako to le ya lara oo to wa niwaju, awako gbodo sunmo oko to wa niwaju daradara			
26.7	Kan pon dandan lati fon fere ki oko akeru to ya oko miran, nitori pe ariwo ti e fun rare ti to ni fere loto			
26.8	Ojo ti taya oko mas baje ko se Pataki niwon igba ti taya bee ti daraloju			
26.9	Kiko eru ti o po ju agbara oko lo ko le fa ijamba oko			
26.10	Amuwa olorun ni ijamba oko je kosi ohun ti enikeni le so tit, toba ti je ayanmo lati tele			

Ipin F: Idara eni loju

Awon ibeere to wan i isale wonyii ni se pelu idaraeni loju awon awako otoko eru ni paitoni to wa loju ona

Tabili 5

No 27	Oro idara eni loju	Mo le se	Mo le se die	Mi o le se
27.1	Wiwa oko pelu ere sisa niwotu n wosi bii ogorin ibuso laarin wakati kan tabi dinkin sii			
27.2	Mo le wa oko lai mu oti lile			
27.3	Sise igboran si ami oju popo ti mba wa oko			
27.4	Sise igboran si awon ipa ti a fi si oju ona ti mba nwa oko			
27.5	Ki n duro lati nara ti ooru ban kun mi lasiko ti mba nwa oko			
27.6	Ki n ma se ya lara oko ni ibi ti bat i wo			
27.7	Ki nko jale lati ko eru to ju agbara oko lo			
27.8	Ki n ma sayewo oko lorekore lati mo boya oko nilo atunse			
27.9	Ki n maa wa oko sunmo eyi to ban lo niwaju			
27.10	Ki n ma se atunse kekeeke lara oko funraini gegebi awako			
27.11	Ki n ma danu duro ni ikorita ki n to bo si oju popo			
27.12	Ki n ma ya ojo ti iaya yio baje wo. ki n ma bao ta iaya ti ojo re ti pale			
27.13	Ki n ma aka iwe itoni oju ona			
27.14	Ki n ni oye nipa itoni oju popo			
27.15	Ki n maa se amulo ohun gbogbo to wa ninu itoni oju popo			

Ipin G: Imo to je mo ijamba oko

Akiyesi: Ni ipin yii, fi ami yii (√)si inu apoti to ye, tabi ki o kun awon aye ti o pese sile bi o ti ye

28a. bi o ti wu ki o kere mo,nje o ati i ijamba oko pelu oko akeru ri? 1. Beeni ☐ 2. Beeko ☐

(ti ko bari bee, fi ipin yii sile)

28b. Ito ba je bee si ibeere 28a, nje o ni ijamba oko pelu oko eleru laarin osu merinleloogun (odun meji)? 1. Beeni ☐ 2. Beeko ☐(Ti ko bari be, fi ipin yii sile)

28c. ti ibeere si 28b baje beeni, bi igba melo lo tin i ijamba oko lasin osu merinleloogun (odun meji)? _____

28d bawo lo se ma sala,e ijamba oko laarin osu merinleloogun (odun meji)?

1. kekere ☐ 2.Opo die ☐ 3. Oburu jaye ☐

28e. ojo wo laarin ose ni ijamba oko tl o ni bi osu mesinleloogun(odun meji) schin?
1. Aarin o se ☐2. Opin ose ☐ 3. Mi o le ranti☐

28f. akooko won i ojo naa ni ijamba yen sele? 1. Aaro ☐2. Osan ☐3 Irole ☐ 4.Oru☐

29 iru ijamba wo loni gbeyin? (Lo tabili 6 fun idahun ibeere re)

Tabili 6

SS	Iru ijamba	BEENI (1)	BEEKO (2)
30.1	Ijamba oko eleru ko ni nkan se pelu oko miran, eran tabi enikan.		
30.2	Ijamba oko eleru pelu oko eleru miran.		
30.3	Ijamba oko eleru pelu awon to fi ese rin.		
30.4	Ijamba laarin oko eleru oti eran		
30.5	Ijamba oko eleru pelu orisii oko miran		
	Ohun to n fa ijamba oko toju ona		
30.1	Ere asa pajude		
30.2	Yiya oko lona ti ko to		
30.3	Aimimo to		
30.4	Kiko eru to po ju bose ye		
30.5	Wiwa oko ni a dojuko oko to mbo		
30.6	Oju ojo ti ko dara		
30.7	Aidara onse		
30.8	Al dara oko		

APPENDIX II

Knowledge relating to road traffic code

Knowledge scores

Total Knowledge scores = 38

Correct knowledge score = 1

Incorrect knowledge score =0

Knowledge scales

Good	> 26
Fair	≥ 18 ≤ 26
Poor grades	< 18

Perception relating to road traffic code

Perception Score

Total Perception Score = 10

Correct score = 1

Incorrect score =0

Perception scale

Unfavourable perception for score	≤ 5
Favourable perception for score	> 5

Self - efficacy relating to road traffic code

Self-efficacy score

Total self-efficacy score = 30

Very capable of doing it =2

Capable to some extent =1

Not capable =0

Self-efficacy scale

High self-efficacy	> 15
Low self-efficacy	≤ 15

TELEPHONE.....

MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION

PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref. No. .....

All communications should be addressed to the Honorable Commissioner quoting

Our Ref. No. AD 13/ 479/8/14

March, 2015

The Principal Investigator,
Department of Health Promotion and Education,
Faculty of Public Health,
College of Medicine,
University of Ibadan,
Ibadan.

Attention: Agborumie Aluko

Ethical Approval for the Implementation of your Research Proposal in Oyo State

This acknowledges the receipt of the corrected version of your Research Proposal titled: "Knowledge, Perception and Self-Efficacy Relating to Road Traffic Code among Drivers of Articulated Vehicle in Sagamu, Ogun State."

2. The committee has noted your compliance with all the ethical concerns raised in the initial review of the proposal. In the light of this, I am pleased to convey to you the approval of committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of the findings as this will help in policy making in the health sector.

4. Wishing you all the best.

OYO STATE RESEARCH ETHICS COMMITTEE
MINISTRY OF HEALTH, IBADAN
Signature & Date

Sola [illegible]
Director, Planning, Research & Statistics
Secretary, Oyo State, Research Ethical Review Committee