ANALYSIS OF ROAD TRAFFIC ACCIDENT HOTSPOTS ALONG ZARIA-KADUNA EXPRESSWAY, KADUNA STATE, NIGERIA

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ZARIA

AUGUST, 2015

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY, ZARIA-NIGERIA,
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DEPARTMENT OF GEOGRAPHY
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AUGUST, 2015

DECLARATION

I declare that the work in this Thesis entitled "Analysis of Road Traffic Accident Hotspots along Zaria-Kaduna Expressway, Kaduna State, Nigeria" is a record of my own research work under the supervision of Dr. I.J. Musa, and Dr. B. Akpu. The information derived from the literatures has been duly acknowledged in the text and a list of references provided. No part of this work has been submitted for the award of degree in any other University.

Paul Danlami JOBIN _____ _____
Signature Date

CERTIFICATION

This thesis entitled "ANALYSIS OF ROAD TRAFFIC ACCIDENT HOTSPOTS ALONG ZARIA-KADUNA EXPRESSWAY, KADUNA STATE, NIGERIA, meets the regulations governing the award of the degree of Master of Science in Remote Sensing and GIS of Ahmadu Bello University and is approved for its contribution to knowledge and literary presentation.

Dr. I.J. Musa Chairman, Supervisory Committee	_____ (Signature)	_____ Date
Dr. B. Akpu Member, Supervisory Committee	_____ (Signature)	_____ Date
Dr. I.J. Musa Head of Department	_____ (Signature)	_____ Date
Prof. K. Bala Dean, School of Postgraduate Studies	_____ (Signature)	_____ Date

DEDICATION

I dedicate this work to my father Mr. Lawrence Jobin and my late mother, and my siblings whom I believe have been praying for the success of this work wherever they are.

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I am indebted to my supervisors, Dr. I.J. Musa and Dr. B. Akpu for their support and time to ensure that this work became a successful one. Once again, I say thank you.

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ABSTRACT

Road traffic accident is one of the main problems in Nigeria. Due to the rapid growth of human population, the number of vehicles on Zaria-Kaduna road has increased. The number of traffic flows has also increased causing traffic congestion and has increased the number of Road Traffic Accidents on the road. This present study applied Remote Sensing and Geographic Information Systems (GIS) to analyze road traffic accident hotspots along Zaria-Kaduna Expressway, Kaduna State, Nigeria. The accident data used for the study were obtained from Federal Road Safety Commission of Nigeria. Global Positioning System (GPS) was used to collect the coordinates of the accident locations. The accident data were evaluated in ArcGIS version 10.1 environment. Queries and Kernel Density Estimation (KDE) were used to determine the accident hotspots, Analytical Hierarchy Process (AHP) and Accident Point Weightage (APW) formula was used to the rank the accident hotspots. Image interpretation was also carried out to identify the characteristics of the road. The results of the study showed that overspeeding (27.7%), tyre burst (17.6%), loss of control (15.5%) and dangerous driving (13.6%) were the major causes of accidents along the route. The study also discovered that Jaji, Birnin Yero, Foundation and Konar Farakwai are the most dangerous locations along the study route. Finally, characteristics of the road such as Bridges (24.9%), built-up areas (24.9%) were the cause of accident while sharp bend (21.9%), U-turn/intersection (13.8%), stationary vehicles (6.2%), slope (4.2%), market (2.7%), potholes (1.4%) also contributes significantly to accidents along Zaria-Kaduna Expressway. It is therefore recommended that road infrastructure such as road signs and bridges should be adequately maintained, and if possible, improved upon along the entire route. Moreover, infrastructure such as road sign and pedestrian bridge that are lacking along the study route should be provided, with a view to making Zaria-Kaduna expressway to be accident free.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Accident is defined as anything which happens by chance, anything occurring unexpectedly and un-designed (Odugbemi, 2010). Road traffic accident is a collision or similar incident involving a moving vehicle, resulting in property damage, personal injury or death (Astrom, Kent and Jovi, 2006). Road traffic accident is an unexpected phenomenon that occurs as a result of the use or operation of vehicles including bicycles and handcarts on the public highways and roads. Accidents may be fatal, resulting in deaths of the road users (passengers, drivers or pedestrians), or minor when it is not severe enough as to cause substantial hardship (Sarin, 2000).

The economic growth of any country depends upon its transportation network, comprising of road, rail and air connectivity, of which road is the most critical in terms of movement of goods and passengers. Good network of road is important as it provides connectivity between rural and urban areas. Along with this, road safety is an equally important aspect as it plays a key role towards a sustainable transportation development strategy (Atubi, 2012). The adverse impact of modern road transportation systems is injury and loss of life due to road accidents. While the road accident situation is improving in the high income industrialized countries, most developing countries are facing a worsening situation (Zaza and Sleet, 2003). The continuous socio-economic growth over the years is causing an increase in demand for transport service including road transport. With rapid growth in the number of vehicles on the road, more road conflicts develop by traffic accidents (Saxena, Babu, Bajpai and Sarin, 2000).

Nigeria has the highest rate of fatalities from motor accidents in Africa according to statistics. Nigeria leads 43 other nations with 230 deaths in 10,000 vehicle crashes followed by Ethiopia, Malawi and Ghana with 219, 183 and 178 deaths per 10,000 vehicles respectively (Daramola, 2004). International comparison indicates that the chance of a vehicle killing someone in Nigeria is 47 times higher than in Britain. The proportion of fatalities to injuries reported is also very high. For example, while Czech Republic has only one death in 197 accidents, France, one death in 175, South Africa, one death in 47 accidents, Nigeria has one death in 2.65 accidents (Atubi, 2010).

While traffic related injuries take a very large toll in almost every country around the world particularly in developing countries or less industrialized countries, significant progress towards prevention and control has been limited to high income and/or highly industrialized countries (Zaza and Sleet, 2003). Much of the progress in developed countries is attributed to the combination of intervention strategies and policies that have been developed mainly in these developed countries' settings over the past few decades (Rivara, Koepsell, Grossman and Mock, 2000).

As in other developing countries, a road traffic accident in Nigeria is one of the most serious problems in need of pragmatic solution. Yet this 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 rates in Africa and the second in the world (Obinna, 2007).

In Nigeria, road traffic accident situation over the last three decades has been particularly disturbing. In 1976, there were 53,897 road traffic accidents resulting in 7,717 deaths (Atubi, 2010). Although in 1981, the magnitude reduced to 5,114 accidents but the fatality increased to 10,236 which means that there was an average of 96 accidents and the

situation in subsequent years has not been any better. The number of people killed in road accident between 1990 and 2005 rose to 28,253 and the fatality rate remains consistently high (Atubi, 2009).

In almost all countries in Africa, Asia and Latin America, road traffic crashes have become one of the leading causes of death in older children and economically active adults between the ages 30 and 49 years (Jacobs, Aeron-Thomas, and Astrop 2000). Despite this fast growing problem, little attention has been paid to road traffic injury prevention in most developing countries. Efforts to combat the problem of injuries have, in most cases, been hindered by lack of funds and relevant data (Atubi, 2009).

Road traffic accidents' statistics in Nigeria revealed a serious and growing problem with absolute fatality rate and casualty figure rising rapidly. In majority of developing countries, accident occurrence and related deaths are relative to either population or number of vehicles (Gbadamosi, 2002). Ironically, in Nigeria, studies have indicated that better facilities in terms of good quality and standardized roads have been accompanied by increasing number of accidents This is totally contrary to the trends in countries where even the level of sophisticated road network and volume of vehicular traffic are much higher. Most of these accidents result from human error and carelessness on the part of the drivers or pedestrians (Atubi, 2010).

However, the probability of occurrence of road accident, and its severity, can often be reduced by the application of proper traffic control devices, and sound roadway design practice (Sarin, 2000). The success or failure of such control devices and design specifications however, depend extensively upon the analysis of traffic accident records at specific locations. It has long been recognized that one of effective means towards accident

reduction lies in a systematic and scientific approach that is based on the use of accurate and reliable traffic accident data (Saxena, Babu, Bajpai and Sarin, 2000). However, in developing countries, the data required for such analysis is not always available. Most of the accident information available in police records is incomplete and therefore, may not be utilized to the fullest extent (Sarin, 2000).

Abuja- Kaduna- Zaria- Kano road with a total length 402km generates traffic of 436,689 vehicles per day Isa and Afolabi (2011). Due to the rapid growth of human population, the number of vehicles on Zaria-Kaduna road has increased. The number of traffic flows has also increased causing traffic congestion. The increasing number of traffic flows might also increase the number of Road Traffic Accidents on the road (Bala, 2014).

Hotspot is a term used to refer to a section of road that is regarded as a high-risk location for car crashes. Hotspot programs are designed to reduce the crash risk in the areas by improving the physical conditions or management (Kowtanapanich, 2006). According to Gregory and Jarrett (1994) hotspot or a 'high risk site' is the number of personal injury accidents occurring in a 100m grid square or 100m length in a three year period on a particular class of road. Therefore if 12 accidents are recorded over a period of three years on a 100m length of road, then the area is deemed a high-risk site.

Since accident is spatially distributed in nature, use of Geographic Information System (GIS) will provide the capability to store, update, retrieve, compare and spatially display data (Li, 2006). GIS allows Hotspot map to be electronically generated from a well-designed accident database and can also produce rankings of high-accident locations based on either total accidents occurring or accident rates. The advancements in GIS and Remote Sensing can be put to effective use in accident analysis. In addition to promoting linkage

between various types of data and maps, GIS is able to visually display the results of analyses thus enabling sophisticated analysis and quick decision making. Also GIS and Remote Sensing would make analysis less time consuming and less tedious. Thus GIS offers platform to maintain and up-date accident record database which can be used for further analysis (Deepthi and Ganeshkumar, 2010). Hence the need to apply GIS and Remote Sensing in analyzing hotspot along Zaria-Kaduna Expressway is very important.

1.2 STATEMENT OF THE RESEARCH PROBLEM

Road Traffic Accidents are having a worsening effect on our society and economy. Among all accidents, road traffic accidents claim the largest toll of human life and tend to be the most serious problem world over (Kuo, 2011). Worldwide, the number of people killed in Road Traffic Accidents (RTAs) each year is estimated at almost 1.5 million while the number of people injured could be as high as 50 million. Currently, Road Traffic Accidents rank 9th in order of causes of death and are projected to rank 3rd by the year 2020 (WHO, 2004).

The pattern of road accidents in Nigeria seems to suggest that the better the road, the higher the accident and fatality rate as well as the severity and non-survival indices because of drivers' non-compliance with speed limits (Filani and Gbadamosi, 2007). Studies have also shown that most accidents in Nigeria today occur in federal roads and the roads topping the list include Benin-Ore, Lagos-Ibadan Expressway, Abuja-Lokoja-Okene Kaduna-Zaria-Kano, Okigwe-Umuahia, Kaduna-Abuja, Enugu-Awka-Onitsha and Otukpo-Otukpa among others (Godwin, 2012).

Bennett, (2010) used GIS to analyze emergency 911 call-for-service for motor vehicle accidents in Johnson City, Tennessee. The records were compared according to the land use classification for adjacent properties, roadway type, and traffic signal proximity. Data were evaluated through ArcGIS software using proximity analysis, point pattern analysis, and hotspot analysis. The results indicate that localized areas with the highest number of traffic accidents contain the most motor vehicle injury accidents. Twice as many motor vehicle accidents occur near commercial properties compared to residential properties. Motor vehicle accidents are more likely to occur on arterial thoroughfares. His result also showed that approximately 40% of injury accidents happen at roadway intersections, with 22% occurring at signalized intersections.

Rankavat and Tiwari (2013) used Geographic Information Systems (GIS) in identifying pedestrian accident-prone locations. The crash data were geocoded in ArcGIS over the digitized road map of Delhi. Their results highlighted four pedestrian fatal hotspot locations in Delhi. Fatal pedestrian accidents were significantly clustered ($p<0.05$) over the Ring Road of Delhi at intersections. The analysis showed that the pedestrian fatalities at arterial road intersections involving cars and buses were 27% and 14% respectively.

Aworemi and Abdul-Azeez (2010) examined the causal factors of road traffic crashes in some selected states in South Western part of Nigeria. He used regression analysis to establish the relationship between human characteristics, vehicular characteristics, roadway characteristics, environmental characteristics, and road traffic crashes in the study areas. The findings of the study revealed that human, vehicle, roadway and environment had significant contributions of about 79.4% on the road traffic crashes in the study area.

Aderamo (2012) examined the spatial variation of road traffic accident casualties in Nigeria for the period 2004 to 2007. He used multiple regressions to model the spatial pattern of road accident casualties in Nigeria for the study period. The results of the analyzed data depict a spatial variation of road traffic accident casualties across the 36 states and the Federal Capital Territory. The results revealed that Kaduna State was the only state with relatively very high level of motor vehicle deaths in the country.

Umar (2009) mapped Road Traffic Crashes (RTC) along Kano- Zaria Road using Remote Sensing and GIS. The top five black-spots in the study area were highlighted. The results of the study showed that over speeding was the factor most responsible for Road Traffic Crashes along the road with 37.5%.

In most of the studies carried out on Road Traffic Accidents in Nigeria, different methodologies were employed to examine the causes, pattern, trend and the effect of road traffic accident in Nigeria. Unfortunately none of these studies (Bennett, 2010; Rankavat and Tiwari, 2013; Aworemi and Abdul-Azeez 2010; Aderamo 2012; and Umar 2009) have attempted to analyze Road Traffic Accident hotspots on Nigerian highways and Zaria-Kaduna expressway in particular. This is therefore the gap which this work intends to fill.

In order to achieve the purpose of the research, the following guiding questions or lines of inquiry are devised:

i. What are the causal factors associated with Road Traffic Accidents along Zaria Kaduna Expressway?

ii. Where are the Road Traffic Accident hotspots along Zaria- Kaduna Expressway?

iii. Which hotspot is most dangerous along the route?

iv. What are the characteristics of the hotspots?

1.3 AIM AND OBJECTIVES

The aim of this study is to analyze the road traffic accident hotspots along Zaria-Kaduna expressway from 2010-2013. The aim can be achieved through the following set objectives which are to:

i. examine the causal factors associated with Road Traffic Accidents along the route.

ii. map Road Traffic Accident hotspots along the route from 2010-2013.

iii. rank the Road Traffic Accident hotspots along the Zaria-Kaduna Expressway.

iv. examine the Roadway and Roadside characteristics of the Hotspots.

1.4 SCOPE OF THE STUDY

This study covers a total length of the road is 95 kilometers. It is a federal road and it begins from KM 10 from Zaria to Kano, the route passes through Zaria and Igabi L.G.A. to Kawo, Kaduna North Local Government Area, Kaduna state. The route was chosen for the study because studies have shown that the route among others records high accident. FRSC data from 2010 to 2013 was also used in the study; this is because it was the only available data and also for a location/place to called a hotspot, accident must have occurred in that location at least 12 times in three years.

1.5 JUSTIFICATION FOR THE STUDY

Road traffic accidents' statistics in Nigeria reveal a serious and growing problem with absolute fatality rate and casualty figure rising rapidly. In majority of developing countries, including Nigeria, accident occurrence and related deaths are with increase in population and number of vehicles. In Nigeria, studies have indicated that better facilities

in terms of good quality and standardized roads have been accompanied by increasing number of accidents (Atubi and Onokala, 2009).

Hotspot analysis is a prerequisite for the management of road traffic safety and it involves the systematic collection of data on traffic accidents that will enable the identification and determination of the place where there are high concentrations of road accidents. Determination of hotspots is the first step to improve the level of traffic safety on the roads. Interventions in places of accumulation of traffic accidents are considered one of the most effective approaches in prevention of traffic accidents on roads. When hotspots locations are known, it will assist the agencies responsible for road safety which include Federal Road Safety Commission (FRSC), Police; Vehicle inspection office (VIO), Federal Road Maintenance Agency (FEMA) and the road users to know the areas that need urgent attention when making safety decisions.

CHAPTER TWO

CONCEPTUAL, THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 INTRODUCTION

This chapter discussed the concept of road accident and applies various bodies of theories in social and behavioral science, predominantly emphasizing on system theory, risk theory, including literature review. The geographical approach concerning time factor, spatial variation and regional distribution are also used in the study.

2.2 CONCEPTUAL ISSUES

2.2.1 Accident Hotspots

There is very little information in the literature as to what an accident 'hotspot' is and how it is defined spatially and numerically. This lack of a readily available definition highlights the high margin for error when analyzing road traffic 'hotspots'. For example a study by Gregory and Jarrett (1994) on the long term analysis of accident remedial measures defined hotspot or in their words a 'high risk site' by the number of personal injury accidents occurring in a 100m grid square or 100m length in a three year, one year or six month period on a particular class of road. Therefore if 12 accidents are recorded over a period of three years on a 100m length of road, then the area is deemed a high-risk site (Gregory and Jarrett, 1994).

At a practical level because there is no standardization of what constitutes as a hotspot it is very challenging to undertake any sort comparative analysis all the results would be open to interpretation (Anderson, 2003). In order to reduce the hotspot and 'high-levels' of accidents in one specific area the exact cause of the hotspot must be established. In other words the hotspot is there because of a high number of accidents but the cause of

the accidents may differ. For example some incidents could be caused by weather conditions, others by a blind bend and others because it is near a public house, and all of these factors put together can cause a 'hotspot', but take the accident rate on their own (i.e. the independent causation factor) and the area may not be a hotspot (i.e. the problem of equifinality of outcome).

Blackspot analysis is a prerequisite for the management of road traffic safety and it involves the systematic collection of data on traffic accidents that will enable the identification and determination of the place where there are high concentrations of road accidents. Determination of blackspots is the first step to improve the level of traffic safety on the roads. Interventions in places of accumulation of traffic accidents are considered one of the most effective approaches in prevention of traffic accidents on roads. When hotspots locations are known, it will assist the agencies responsible for road safety which include Federal Road Safety Commission (FRSC), Police; Vehicle inspection office (VIO), Federal Road Maintenance Agency (FEMA) and the road users to know the areas that need urgent attention when making safety decisions.

2.2.2 Geographic Information System (GIS)

Geographical Information Systems (GIS) are computer-based systems that enable users to collect, store, process, analyze and present spatial data (David, 2003).

It provides an electronic representation of information, called spatial data, about the Earth's natural and man-made features. A GIS references these real-world spatial data elements to a coordinate system. These features can be separated into different layers. A GIS system stores each category of information in a separate "layer" for ease of maintenance, analysis, and visualization. For example, layers can represent terrain

characteristics, census data, demographics information, environmental and ecological data, roads, land use, river drainage and flood plains, and rare wildlife habitats. Different applications create and use different layers. A GIS can also store attribute data, which is descriptive information of the map features. This attribute information is placed in a database separate from the graphics data but is linked to them. A GIS allows the examination of both spatial and attribute data at the same time. Also, a GIS lets users search the attribute data and relate it to the spatial data. Therefore, a GIS can combine geographic and other types of data to generate maps and reports, enabling users to collect, manage, and interpret location-based information in a planned and systematic way (ESRI, 2006).

GIS systems are dynamic and permit rapid updating, analysis, and display. They use data from many diverse sources such as satellite imagery, aerial photos, maps, ground surveys, and global positioning systems (GPS) (ESRI, 2006).

2.2.2.1 Accident Database and GIS

GIS permits users to display database information geographically. It can also provide a common link between two or more previously unrelated databases. The most useful aspect of GIS as a management tool is its ability to associate spatial objects (street names, milepost, route number, etc.) with attribute information (accidents, cause, etc.). Most of the documents reviewed consider the use of GIS in transportation under either for general data maintenance (primarily inventory of transportation-related incidents) or for simple data analysis (Liang, Masoem, and Hua, 2005).

2.2.2.2 The Use of GIS in Hotspot Analysis

Geographic Information System (GIS) is a computer system for capturing, storing, querying, analyzing and displaying geographic data (ESRI, 2006). GIS represents a new paradigm for the organization of the information and the design of information system, the essential aspect of which is the use of concept of location as the basis of structuring of information systems. Traffic accident analysis means to investigate the causes of accidents, to determine hazardous locations (Accident Prone Locations) and to determine to enhance road features, to evaluate traffic safety and enhancement.

GIS can easily represent accident and road accident based results using various tools like linear referencing, dynamic segmentation, and spatial analyst (Deepthi and Ganeshkumar 2010). Moreover query can be easily performed, enhanced by graphical representation. Road characteristics, demographic and socio-economic data to enhance highway safety analysis can also be integrated into the analysis (Kamalasudhan, 2011).

2.2.3. Road Traffic Accidents

Road accidents do not simply happen, they are caused. Given the fact that Nigeria has the highest road accidents rate as well as the largest number of death per 10,000 vehicles, (Sheriff, 2009), one may be tempted to believe that the level of awareness on the causes of road traffic accidents is very low among Nigerians. On the contrary, however, Asalor (2010) has shown that 'Nigerians know quite a lot about what could cause road traffic accidents' and likened the situation to that 'in which in the midst of plenty, there could be hunger'.

Accident is defined as anything which happens by chance, anything occurring unexpectedly and un-designed, Odugbemi (2010). Road traffic accident is therefore an

unexpected phenomenon that occurs as a result of the use or operation of vehicles including bicycles and handcarts on the public highways and roads. Accidents may be fatal, resulting in deaths of the road users (passengers, drivers or pedestrians), or minor when it is not severe enough as to cause substantial hardship. The dividing line between minor and serious accident is however blurred.

As it has been defined, accident would rarely give warning although reckless drivers should anticipate the consequences of their recklessness. In general, accidents do not just occur; they are basically brought about by human recklessness, carelessness or negligence. Even where the immediate cause of a road accident is attributable to mechanical factor, carelessness in the form of omission to check and maintain the vehicle at the appropriate time would have remotely contributed. Trivial checking and maintenance of the vehicles could avert an imminent accident.

In the ancient Roman Empire, road transport owners / operators in the 11^{th} century must provide a slave who will carry a red flag to warn other road users that a motor car is coming and leave the road space to avoid possible road accident. Today the car has a faster speed and the need to incorporate gadgets like, the horn, braking system, traficators, headlights and break-lights to avoid road accident (Jacobs, 2010). .

Before the 'Oil boom' in Nigeria, road accidents were rather rare. The oil boom brought along with it 'rapid' industrialization which calls for improved accessibility. Roads were therefore built albeit without dire attentions to standard. As the disposable income of people grew vehicle ownership increased. Developments are no matched by

adequate measures and control. Consequently, the roads grew to be a death trap for Nigerian citizens. These are indirect factors of road accident in Nigeria (Sheriff, 2009).

2.2.3.1 Causes of Road Traffic Accidents

The issue of road traffic accidents is one that requires great care in handling as it is hydra headed in nature. The major causes of road traffic accidents could be classified under the following sub-headings.

a) Vehicle related factors

b) Human related factors

c) Environment-related factors

i. Vehicle Design

Every vehicle is designed for a specific maximum load in all its ramifications. It is therefore, not surprising that when subjected to stress over and above the provisions of the design specifications, accelerated wear and tear set in on the vehicles. The net effect of this could result in deterioration for the condition of the vehicle. Design defects affect the subsequent condition of the vehicle once it is put on the road and operated either normally or otherwise which may result to possible road accidents.

ii. The Vehicle Body

The body attribute to some measure in causing road traffic accidents; though less prominent is the firmness of the structure of the vehicle. Hanging parts of the body of a vehicle though rare can greatly affect the stability and hence the level of control by the operator.

iii. The Brake System

The brake subsystem, working jointly with the accelerator is the main synchronizer of the speeds of vehicles. Any malfunctioning of the brake sub-system should be taken very seriously as a potential source of unavoidable accident.

iv. The Vehicle Tyres

The tyre is a dominant factor in determining the safety of automobiles on the road. Tyre related causes of road accidents could be due to one or a combination of:

a) Tyre(s) (are) overinflated

b) Thread are thoroughly worn-out

c) Tyre(s) is (are) 'pregnant' and

d) Tyre(s) is (are) rear peel-off

v. The Vehicle Lights

Vehicle lights fall into two broad categories, namely those that are useful at all times (i.e. in daylight, in darkness and in poor weather) e.g. headlights. Although it is well known that the failure of vehicle light is a major factor in road traffic accident. As pointed out by Adiele (2011), light failure (e.g. of one headlight) has a tendency to misinform and mislead other road users thereby providing a good opportunity for an accident to occur. Similarly, a failed trafficator light will not normally provide the usual warning to the rest of the followers that the vehicle is about to undertake a turning maenovour, for instance. If the vehicle following has a faulty brake subsystem or its operator has not allowed for a sufficient safe-gap, this could result in an accident.

vi. The Engine

The engine sub-system may be considered the head of the vehicle and one whose sudden failure on a highway is more likely to cause an accident if the volume of traffic is sufficiently high. Even when the traffic is reasonably low, mismanagement of the failure by an experienced operator could cause an accident.

vii. Environmental/Road Related Issues

Some of the well-known factors which fall under this category include fog, sunrays, mist and rain. These in no small measure contribute greatly to the rate of road traffic accident in Nigeria today. In particular it is expected that the operator who is the master 'on board' should be able to exercise sufficient control over the vehicle.

A significant number of vehicular accidents are traceable to the road. Recent studies (Asolor, 2010) have demonstrated that the road is another major factor in road accidents in Nigeria. Akinyemi, (2009) collected and analyzed 'data on geometric design information system, roadway surface and road side conditions on seven two lane rural roads in the country. It found that rural roads in the country have low levels of design consistency, sight distance on and between geometer features as insufficient for stopping and overtaking adequate traffic control devices and unforgiving road sides'. He then argues that their deficiencies are due largely to inadequate road design specification and maintenance. Anyata (2009) on the other hand showed that inadequate drainage could render the road a serious accident threat. Another aspect of the road factor is the general condition of the road itself. Issues of potholes, the indiscriminate location of police check points and the

reluctance of the appropriate authorities to continually improve on the condition of the roads are significant in road accidents.

viii. Driver Related Factors

Studies have shown clearly that the single most important contributing factor to road traffic accidents in Nigeria is the attitude of the driver to driving code and etiquette. Driver related issues include sleepiness and fatigue, faulty preparation, ignorance of highway codes or traffic orders, driving under the influence of drugs and or alcohol and inexperience.

2.3 THEORETICAL FRAMEWORK

2.3.1 System Theory

Explanations of the systems theory are based on man-environment adjustments and maladjustments (Muhlrad and Lassare, 2005). The components of the theory are the environment, the means of transport (vehicles) and the behavior of man (Krug *et. al.,* 2000). The environment component comprises of the natural and the built environments and transport networks. The means of transport component comprises of the volume and quality of vehicles on the modes of transport. The behavior of man component comprises of demographic characteristic of road users (age, sex, education, socio-economic status, stage in life cycle), people's perceptions of risk and people's general behavior on the streets. Integrated in the systems theory is a system of highway codes and enforcement mechanisms designed to ensure that road users adhere to the controls and regulations of traffic flow for maintaining road traffic safety. Comprehensive traffic management should be sufficient to maintain road traffic safety (Button, 1993).

2.3.1.1 Model for Traffic Accidents.

Traffic accidents bear strong elements of man-environment adjustments and maladjustment a well-known approach in Geography (Muhlrad and Lassare, 2005). Based on the logic of a modified human ecological model of a disease the approach can be transferred to studies of road traffic accident. A model for traffic accident as inspired by the ecological model of a disease was developed by Jørgensen and Abane (1999) who made a heuristic adjustment of this basic model to suit road traffic accident analysis. The model is characterized by three main components:

i. The vehicle (corresponding to the vector in disease ecology) which describes vehicles into its composition, age, technical conditions and safety equipment like seat belts in a car.

ii. The environment, comprising the road system and the wider physical and built up environment. The physical environment splits further into different aspects such as; daylight and climate (weather conditions and road conditions), Spatial conditions (arrangements and Macro structures), Settlement pattern (Urban or rural / sparse or populated area), situation of areas of residence and working areas, Principle of traffic separation, topography and road constructions qualities.

iii. The behavior of the population; including its characteristics such as age and sex ratio as well as attitudes and general traffic behavior. And it goes further into driving behavior, driving experience, driving style, risk compensation and risk driving (influence of alcohol and drugs).

Superimposed on this model is a system of traffic laws, regulations and mode of enforcement designed to ensure that the population adheres to the controls and

regulations so as to maintain some level of road safety i.e. traffic rules (speed restrictions, road signs), speed controls and convictions for various road traffic offences (Jørgensen and Abane, 1999).

The model as is shown in Fig 2.1 is used as a framework for understanding the multiple causes and prevention of traffic accidents that occur in developing cities. Available literature identifies traffic accidents in a place as been caused either by physical factors in the road system (environment), the vehicle or behavior factors, and how they interact with enforcement regulations in unique settings.

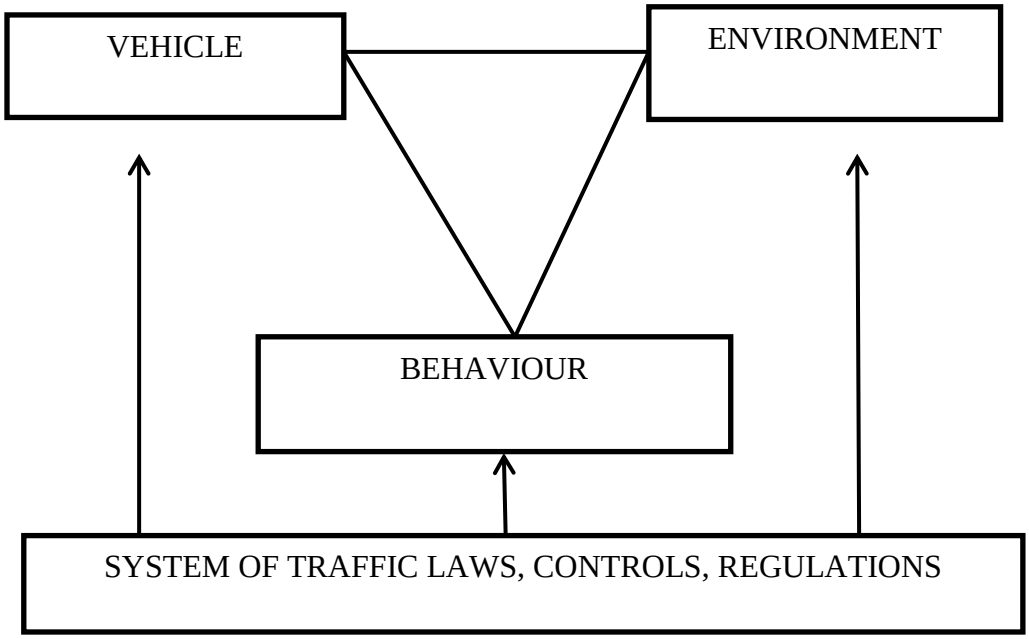


Figure 2.1: A Model for Traffic Accidents
Source: Jørgensen and Abane (1999).

Thus, the relevance of systems theory in understanding the topic under consideration can be seen at three different levels**.** First, the theory helps to identify the system of traffic laws, regulations and mode of enforcement designed to ensure traffic

safety in Nigeria. Second the model help to identify the multiple causes interplay of risk factors and prevention of traffic accidents that occur in the study area. Third, the model assist in identifying/understanding the three major contributory factors of road traffic accident including human, mechanical (vehicle) and road environment factors (Jørgensen and Abane, 1999).

a) Human Behaviour Approaches

A good control of the vehicles on the road depends very much on the behaviours (which is very complex) and skill of the driver (Odero, 1995). Driving is a complex system in which a large number of variables are interacting with each other but also with varying degree of dependence. Accident may be due to judgment errors, ignorance, incompetence, rule violation, lapses or carelessness, all of which are human errors (Lemming, 1969). The human factor contributes to the majority of road traffic accidents. Study by Odero (1995) revealed that human factors were responsible for 85% of all causes of accidents.

i. Driving

Jorgensen and Abane (1999) notes that, concerning road traffic behavior, one can distinguish between driving skills (Knowledge and training) and driving style which reflects attitudes and traffic risk perception. Training of drivers increases their driver's skills. Study done by Asogwa in Nigeria revealed that a sizeable proportion of drivers who possesses driving licenses never showed up in any driving school or went through a driving test but simply bought their licenses. Untrained drivers, not unexpectedly, often result in high accident rates (Asogwa, 1992). In emergence conditions, stopping distance is also important. However this depends very much on

the driver's reaction time, speed of the vehicles, quality of tyres and the condition of the road (Lemming, 1969).

Studies done on drivers after being involved in motor accidents reported that although alcohol is the most prevalent source of driver's impairment, other drugs or substance abuse can also contribute to the problem (Shibata and Fukuda 1994). Driving under the influence of alcohol or other drug abuse is known to impair the driver's ability to judge and control the vehicle (CSA, 1993).

Other studies have suggested that driver's fatigue is a factor in approximately one in four casualty crashes (NSW, 1998). Furthermore, fatigue- related crashes occur more frequently on weekends than weekdays and they typically occur in early morning. Fatigue due to long distance driving is a risk to road accidents. It is advised to plan resting points in advance before starting a long journey. Fatigue also can be caused by day work (NSW, 1998).

Excessive speed is also mentioned as the major contributing factor on road crashes and subsequent injure rates of person injured. Similarly property doge appears to be linked to the vehicle's speed at impact (Shibata *et al* 1994).Some medical conditions are also mentioned to be risk factors for driving (Hayes, 1972).For example, diabetes and epilepsy have been identified as factors that are associated with increased risk if a person is allowed to drive (Odero 1997). Violant (1996) reported that the frequency of road accidents involving epileptics and diabetics is double the normal and for a heart patient it is 60% higher.

ii. Age

The driver's age is also known to be an important factor contributing to occurrence of accidents Available literatures shows that adolescents or young drivers are frequently involved in traffic accidents than other age groups (Bjornskau, 2000) Leon (1996) have also shown the studies that young drivers are more frequent involved in accidents caused by inappropriate speed and loss of control of the vehicle compared to other age group of drivers, Graham (1993) revealed that motor accidents were prevalent in certain age group and they occurred at certain hours of the day and week and at certain locations. Some people there are more susceptible than others and susceptibility is increase by the traffic of alcohol and other drugs as well as other physiologic states such as fatigue (Graham, 1993).

Leon *et al.* (1996) observed that reckless driving in adolescents has been associated with increased risk of crashes (Leon 1996). The problem with young drivers is that they like risk taking behavior; also they lack driving skills (Vasconcellos, 1999). The problem of young drivers is also mentioned as an important variable contributing to high fatalities or injuries (Hakims, 1991). Studies have also shown that old drivers (70 years and over) have the highest rate of fatal accident involvement while young drivers have highest rates of injurious involvement (Massie *et al*. 1995).

iii. Sex

With regards to gender, it appears that males are more involved in motor accidents than females (CSA, 1993). Studies have shown that males compared to females have a higher risk of experiencing fatal crashes, while women have higher rates of involvement in injury crashes (Massie *et al*. 1995). Rivara *et al.* (1985) reported

that among the drivers of motor vehicles that struck victims, 69% of them were males and 31% females, controlled for gender exposure level.

It appears that males are more at risk than females for all age groups, when traffic accident is thrown in a limelight. Odero *et al.* (1997) found out that in developing countries men are more at risk than women of being injured in crashes. The preponderance of males may be attributed due to their greater exposure to traffic and other associated factors. Concerning drivers th e relevance of gender to road safety has long being recognized and it is the contribution of male drivers to accidents which has attracted much attention. This is because driving as a profession is mostly dominated by men (Dopson *et al.* 1999).

iv. Vehicle

It has been established by Abane (1993) that the number of road worthy vehicles operating in developing countries is lower than those in developed countries. Worn out vehicles are more likely to be involved in traffic accidents. Vehicles with seatbelts, adequate lights, brakes, steering wheel, tyres as well as direction indicators among others and in good condition can help to reduce traffic accident.

b) Vehicle Factor Approaches

Under the vehicle factors including its design, lighting system, break system and its use are significant contributors to road traffic accident (Odero, 1995). According to Jørgensen and Abane, (1999), a mixture of different type of vehicle including motorcycles and bicycles operating at different speeds is more widespread in urban areas. This influences the system risk due to the risk of crashes or collisions between various types of vehicles (Light, heavy or overloaded) with various speed levels and

non-motorized road users. Increase in income per capita is associated with increased number of vehicles purchased and in turn this may lead to increased accidents (Khair, 1990). Vehicles distance travelled and periodic vehicle inspection are also variables appearing to affect the number of accidents (Jegede, 1998). There is some evidence from motorways that accident rate per vehicle mile falls with increasing, traffic density up to a certain point and it may raise again after reaching that point. Vehicle characteristics and vehicle use are frequently cited in the literature as being potentially important factors contributing to high motor vehicle related fatality rates.

A study done in Papua New Guinea revealed that vehicles are overloaded and improper vehicles are used to transport passengers thus increasing the risk of accidents. Similarly open back vehicles have also been reported to be associated with increased risk to passengers (Nelson *et al.* 1991).

Among factors associated with increase of human loss, person injuries and material damage only were thought the greater size of the vehicle involved and an increasing number of heavy goods vehicles (Bener *et al.* 1992). Design of the vehicle, well breaking system of the vehicle, better tyres and extended visibility due to improved lighting of the vehicle reduce risk of accidents. Defects in design or manufacture of vehicle can threaten occupants' safety. Improvement of the interior of the vehicle tends to increase the safety of the occupants (Graham, 1993).

c) Environment Factor Approaches

The environments factors including design of road, its geographic location, season, weather, visibility, time of day and traffic regulations (CSA, 1983). A clear

understanding of the causal factors is of utmost importance in any attempt to design a road safety promotion or preventive program (Sarungi, 1981).

Well-designed roads with separate lines for pedestrians and cyclists are much safer than those without such facilities. Sometimes barriers to discourage pedestrians to motor roads reduce the rate of injuries. Modern roads are safe because they are well designed with all important signs (Graham 1993). The road signs should be clear by themselves and should convey an unmistakable message to the driver.

The super elevation of highway roads such as tilting the road surface downward towards the inside curve has shown a positive effect in reducing motor accidents. The mechanism behind is that the slope produces a force tending to push a car inwards and this interacts with some or all of the centrifugal force, which in turn acts outwards on any object moving in a curve path (Leeming, 1969).

It has also been observed that accidents mostly occur on broader roads than narrower ones (Majumder *et al.*1996). In Nigeria they regrettably reported that better roads have resulted in excessive speed and reckless driving resulting in an increase rather than decrease in death toll on national roads (Asogwa 1992).

There is a relationship between seasonality; weather and time factor in road traffic accident occurrence (Jegede, 1988). Fatal accidents mostly occur during winter season. Studies have revealed that most of the accidents occur during the night, weekends and during months of October to December (Kong *et al.* 1996).

Barreto *et al.* (1997) observed that exposure to high intensity noise at work place tends to be associated with occupationally acquired hearing deficits. These deficits increase the risk of motor vehicle injury to pedestrian workers (Barreto *et al.*1997).

Travelling long distances to obtain alcohol is associated with increased risk of pedestrian motor vehicle crashes if the pedestrian has to cross roads when going back home (Gallaher *et al.* 1992).

Activities along the road side such as petty trading, increases exposure risk to traffic accidents Shibata *et al.* (1994), at the same time improved road quality may lead to behavioral adjustments in terms of more risk prone driving (Jørgensen and Abane1999).

.3.1.2 System of Traffic Laws, Control and Regulations.

Enforcement and traffic laws have to do with government policy regarding road safety issues. The aim of traffic regulation systems and enforcement is to ensure adequate operations in the traffic environment and system maintenance by legislation and controls. Regulations by traffic signaling systems, speed limits and speed controls as well as the existence of police patrols and checkpoints can lead to some reduction of accidents by influencing the road user's behavior. Jørgensen and Abane, (1999) also argued in their study in Ghana that, traffic regulation schemes are not systematically implemented and the police service is generally less well trained, equipped and motivated to enforce moving violations, as are evident in cities in developed countries.

System of traffic laws, control and regulations approaches. Thomson et al found that riders with helmet had an 85% reduction in their risk of head injury compared with those without a helmet (Thomson et al 1989). Rivara has also reported the effectiveness of the helmets in pedal cyclists and motor cyclists (Rivara, 1985).Mandatory use of helmets in Sweden showed the same good effects (Kent 1991). The effectiveness of helmet use is

dependent up on the speed of the motorcyclist. It is more protective at low speed of 50km per hour but less effective at higher speeds. Safety belt use by front seat occupants has been found to reduce motor vehicle related injuries (Leon 1996). Broughton in England observed that compulsory seat belt wearing was beneficial (Broughton, 1991).Seat belts for older, children and adults prevent approximately 50% to 60% of all fatalities resulting from motor traffic accidents (Rivara, 1985).

It is well documented that the use of child restraints, specifically child safety seats, can reduce morbidity and mortality in young victims of motor vehicle crashes (CSA 1983). Approximate restraints prevent approximately 90% of fatalities in 0 to 4 year old age group (Rivara, 1986).

Behavioral intervention and tighter regulations are also important measures (Jayasuria1991; Graham 1993). However legislative and other counter measures proved effective in Nigeria (Asogwa 1992). Promotion of road safety through the use of targeted media campaigns at community level can effectively reduce motor traffic accidents (Tripop, 1994).

2.3.2 Risk Theory

A common agreed upon definition of risk is yet to be articulated. Risk can for instance be defined as subjective assessment of probability for a specific occurrence of a negative event, and how concerned individual is with the consequences of this event (Sjorberg 1983, Rundmo 2004 & Moen 2005), thus the combination of perceived probability and severity of consequences , relate to how the individual perceive risk.

Dejoy (1989) in road traffic, risk is the function of four elements. The first is the exposure-the amount of movement or travel, within the system by different users or a given

population density. The second is the underlying probability of crash, given a particular exposure. The third is the probability of injury, given a crash. The fourth element is the outcome of injury. Risk can be explained by human error, kinetic energy, tolerance of the human body and post-crash care (Bastide, 1989).

The second main theoretical approach this study is related to risk perception and the relation between risk judgments and decision under uncertainty. A variety of factors have been suggested predicting risk perception. Rundmo (2004) identified that poverty and poor countries exhibit a higher risk tolerance culture are the relevant approach in understanding why people neglects risk because of being influenced by other existing risks, in a high risk society people are experiencing several severe risks. Furthermore, risk is associated with personality traits and attitudes. Some people prefer a higher risk level, so called sensation-seekers, most likely in all types of society or cultures (Zuckerman, 1979). Existing literature on traffic accidents have noted the fact that whiles rates of accidents have fallen in industrialized countries, it is rather on the increase in developing countries. As the developing countries are characterized by poverty, majority of the people living in these countries are exposed to various risk situations every day. Risk can be assessed as an "objective" phenomenon or a social cultural or subjective "phenomenon" which could be socially construction (Lupton, 1999).

Several variables are thought to influence risk perceptions among the public. Information about risk from various social relations and the media are for example thought to shape how individuals and societies approach potential risks (Slovic, 1987). A consequence is that the public do not always associate objectively more dangerous activities (Olterdal, Moen, Klempe & Rundmo, 2004). For instance, in Egypt the statistical

probability of being injured in traffic is larger than being struck by a terrorist attack. Still many western tourists tend to worry more about terrorism than traffic accident. During their stay in this country, this example indicates that risk should be regarded as the multi-dimensional concept, which is not always congruent with objective statistical calculations.

When people perceive risk several aspects have to be taken into consideration. The first is the probability of a negative event and the severity of consequences of such an event. In addition, processing theories and appraisal theories account for how affect influences such judgments. The result of several researches carried out previously on road traffic accidents have shown that greater the consequences of the negative event, the more affect will be present when thinking about the risk source and the more precautionary action to avoid an accident is expected (Rundmo and Iversen, 2004).

According to Thompson *et al*. (2002), risk compensation is the name given to a theory which states that an individual provided with a protective device such as automobile seatbelts will act or behave in a riskier manner because of the increase sense of protection from the seatbelt and thereby nullify the protection afforded by the seatbelt.

Wilde (2002) stated that individual's risk-taking decisions represent a balancing act in which perceptions of risk are weighed against propensity to take risk. The propensity to take risk is influenced by expected rewards and as a perceived threats or danger increase, people respond by being more careful. There is therefore a balancing behavior influenced by perceived danger and propensity to take the risk which in turn influences accidents and rewards. If the perceived risk of a situation exceeds our target level, we will act to reduce it and if the perceived risk is lower than the target level, we will attempt to increase our risk back to our target level (risk optimization) through more dangerous actions. Wilde's name

for this process is risk compensation. In his view risk homeostasis is therefore an extreme form of behavioral adaptation, not only do we modify our behavior in response to external changes design to make us more or less safe but we seek to counteract these changes completely and return to our desired risk level.

The target level of accident risk is determined by four categories of motivating factors. First is the expected advantage of comparatively risks behavior alternatives: for instance gaining time by speeding or over speeding when roads are good (risk compensation). Second is the expected cost of comparatively risks behavior alternatives: for instance automobile repair expenses and insurance surcharges for being at fault in an accident. Three is the expected benefits of comparatively safe behavior alternatives. For instance the psychology of insurance discount for accident-free driving, and fourth are the expected costs of comparatively safe behavior alternatives: for instance, using an uncomfortable seatbelt (Wilde, 2002).

2.3.3 Geographical Approach

Despite using various bodies of theories in social and behavioral science in this study, geographical approach will be used based on "Geographical Matters: Place, Time, environment and Road Traffic accident" as an additional conceptual approach in understanding land use, road element, width of the road, bending road, hilly area, topography and regional distribution in occurrence of road traffic accidents in the study area. According to Cutter (1993), geographic scale is important in understanding technological hazards, their distribution, impacts and its reduction. The dictionary of human geography provides us with the definition of medical geography as the application of geographical perspective and methods to the study of health, disease and health care

(Johnston *et al.*, 2000). Accidents such as road traffic accidents are also relevant to study within this subject. According to Curtis and Taket (1996), there are two components or domains of study. The first of these is the study of health and disease which can be extended to include road traffic accidents, which encompasses the analysis of spatial variations in human health or, more often, lack of health i.e. death/ mortality and disease/ morbidity and the search for environmental and social conditions which may be causally related to health or ill health and health behavior (risk-taking) based on cultures, activities and economic condition.

Land use pattern, types of road network, local business and activity pattern will influence the system risk in an area as well as the health risk of the population. There is also rural-urban differences, in urban there are more accidents, lower degree of injury while in rural areas there are lower accidents levels however more serious fatalities (Astrom *et al.*2006).

Time factor in the analysis of road accident pattern is also vital as it will be relevant to know trends in the accident patterns as well as time in a more specific way related to hours of the day, month, or season that people are more at risk of the traffic accident. In Nigeria for instance, it has been observed that traffic accidents increase during festive occasion especially during Christmas season and rainy season in that particular time. According to Odero *et al*. (1997) there is sufficient evidence in support of high incidence of day time causalities in developing countries. In their view this can be explained by greater traffic volume during the day resulting to greater risk of traffic accidents involvement as people travel to work, children go to school and commercial enterprises are open for business. They also found out in their study on Road traffic injuries in developing

countries, which more than 50% of the weekly traffic injuries occur on Friday, Saturday and Sunday, with a high peak on Saturdays Odero. The authors (1997) also revealed that a greater proportion is alcohol related. These are important and interesting observations concerning traffic accidents risk in developing countries.

2.4 LITERATURE REVIEW

The main problem in identifying the accident Hotspot is to determine the highest rate accident locations and the causes of these accidents. This is because the recorded data were not precise enough to carry out the accident study. Some diagnosis system will only be done if the accident data were recorded systematically. The criterion that was taken into account in identifying the accident Hotspot are the accident location areas, types of road where the accidents happened, the road geometry and the light factor.

2.4.1 The Type of Vehicle, Environment and Weather

Design of the vehicle, well breaking system of the vehicle, better tyres and extended visibility due to improved lighting of the vehicle reduce risk of accidents. Defects in design or manufacture of vehicle can threaten occupants' safety. Improvement of the interior of the vehicle tends to increase the safety of the occupants (Graham 1993).

According to Jørgensen and Abane, (1999), a mixture of different type of vehicle including motorcycles and bicycles operating at different speeds is more widespread in urban areas. This influences the system risk due to the risk of crashes or collisions between various types of vehicles (Light, heavy or overloaded) with various speed levels and non-motorized road users.

According to Bener (1992), it is impossible to understand social systems independently from their environments because society's institutional, structural and

behavioral qualities are all contingent upon environmental parameters. The environment not only provides necessary subsistence materials on which humans depend, but also restrict such things as movements and organizations complexity, it is simultaneous permissive and regulatory. The environment can be social, economic, cultural, physical or psychological setting but in this context, it is the physical, built up, and economic setting that matters (Rune, 2002).

Odero *et al* (1991) noted that weather and road conditions in terms of road qualities have a role in the causes of traffic accidents. In the same manner, the situation of areas of residence and working whether in an urban or rural area determines the extent of traffic accident risk in an area.

2.4.2 The Condition of Road, Design and Geometry

Well-designed roads with separate lines for pedestrians and cyclists are much safer than those without such facilities. Sometimes barriers to discourage pedestrians to motor roads reduce the rate of injuries. Modern roads are safe because they are well designed with all important signs (Graham, 1993). The road signs should be clear by themselves and should convey an unmistakable message to the driver.

The geographical approach to the study of traffic accidents relates the concept of place, time and environment to accident occurrence. It is believed that land uses, road element, width of the road, bending of the road, hilly area, topography and regional distribution in occurrence of road traffic accident are factors to be considered. According to Cutter (1993), geographical scale is important for impacts and their reduction. Land use pattern, types of road network, local business and activity pattern will influence the system risk in an area (Komba, 2006). There is an also rural-urban difference. In urban areas, there

are more accidents, lower degree of injury while in rural areas there are lower accident levels but more serious fatalities (Astrom *et. al.* 2006).

Ottong (1977) identified inadequate maintenance of roads, congestion on many roads because of the failure to expand the existing roads system to accommodate contemporary traffic flow, sharing of the road with pedestrian, cyclist, cattle and wheel barrows or animals drawn trucks, the low level of competence of drivers, poor standard of vehicles maintenance, bad or non-existent road signs and carelessness of road users as important factors which contribute to increasing road traffic accidents. He emphasized the importance of traffic education.

Onakomaiya (1977) revealed that 56% of all road traffic accident (RTAs) and casualties in western state of Nigeria were due to drivers' errors. These include, recklessness, over speeding, improper overtaking, in attention or confusion, inexperience, carelessness at road junctions and intoxication. He further classified the causes of these accidents into three groups, human, mechanical, and road conditions. He further reveal out that human cause accounted for 73 percent of the accidents and 74 percent of the casualties, while mechanical causes accounted for 6 percent and road conditions for less than 4 percent.

Malyshkina and Mannering (2010) studied the impact of design exceptions allowed in the highway construction on traffic accident rate (design exception: safety deviation in roadway design factors). They found exceptions do not necessarily increase accidents in their dataset. In another analysis of the data of 10 Canadian cities, Andrey (2010) related weather and accident rates and found that accident rates drop under severe weather conditions.

2.4.3 Causes of Accidents

Ogunmodede, Adio, Ebijuwa, Oyetola and Akintola (2012) studied the factors influencing high rate of commercial motorcycle accidents in Oyo State, Nigeria. The total number of 450 commercial motorcycle riders was considered for the study; the same numbers were returned and found valid for analysis. The findings from the research work showed that demographic information has significant influence on the causes of road accidents among commercial motorcycle riders in Nigeria. Among factors that significantly contributing to increasing rate of commercial motorcycle accidents are overspeeding, wrong overtaking, bad roads, sudden mechanical defects, alcoholic intake etc. It was also discovered that commercial motorcycle riders do not comply with Road Safety Highway Codes.

Onakomaiya (1977) also observed that a reduction in the relative proportion of road traffic accidents (RTAs) and severity indices in Lagos, Oyo, Ogun, Ondo, Kaduna and Kwara states between 1970/75 and 1985/86 could be attributed this to a more matured traffic culture. The author observed a very high road accident rate of 14.4 percent thousand in Nigeria in 1980 compared with about 0.3 and 0.5 for North America and Western Europe respectively. It was concluded that Nigeria has the highest rate of road traffic accidents in the world, which is due mainly to the attitude of the road users.

Ogunjumo (1989) revealed the conspicuous absence of facilities for pedestrians in several Nigerian cities, including Ile-Ife; facilities which will have ensured their safety and convenience. He observed a severe conflict between pedestrian and vehicles all over the cities, which could increase the rate of road traffic accidents. He recommended the

segregation of pedestrian from vehicular traffic by constructing pedestrian ways and footpath, which will eliminate the existing conflicts with faster traffic.

Atubi (2013) examined time series and trend analysis of fatalities from road traffic accident in Lagos State, Nigeria. The research obtained accident records from the Nigeria Police Force and Federal Road Safety Commission for the period of 32 years. From the time series and trend analysis, it was observed that fatalities from road traffic accidents for each of the Local Governments under study between 1970 and 2001, showed that fatalities is on the decrease with the exception of Lagos Island Local Government Area over the period of study. The result also showed that more than 90% of road traffic accidents in the area could be attributed to recklessness on the part of drivers, ignorance of highway codes, driving under the influence of alcohol, over speeding etc.

Jibril and Wabundani (2014) observed the spread of RTA frequencies based on the period of occurrences. The classification was based on two distinctive seasons of wet and dry. Effects of religious festive seasons on road traffic accident occurrence were also considered. A record on Road Traffic Accidents (RTAs) frequency on the study route was analyzed under temporal variable of festivals and seasons against the total cases of accidents covered by the study. To estimate the effects of each of the temporal variables on accidents, one way analysis of variance ANOVA was used at 0.05 level of significance at 95% confident intervals. The result revealed amongst others that road traffic accident is high during wet season throughout the four years of study spanning 2007 to 2010.

2.3.4 Application of GIS in Transportation

Several studies describe how GIS help the integration of many transportation elements. Meyer and Sarasua (1996) envisioned a common and coordinated database

system that will serve all aspects of transportation management such as congestion, pavement, bridges, safety, inter-modal activities, and public transportation. Martin (1993) did a similar study, in which he proves that incorporating GIS in a pavement management program improves the reporting and analysis of data through the production of maps and graphic displays.

GIS has been proven to work well in addressing transportation problems related to safety. Affum and Taylor (1996) described the development of a Safety Evaluation Method for a Local Area Traffic Management (SELATM), which is a GIS-based program for analyzing accident patterns over time and the evaluation of the safety benefits. GIS can also be implemented in determining roadway and surface conditions. This was proven by Gharaibeh *et. al*. (1994) when they proposed to use GIS to obtain statistical and spatial analyses of roadway characteristics such as safety, congestion level and pavement conditions.

Fajaruddin, Ismail, Ismail and Abdulaziz (2008) in Pakistan developed an accident prediction model for Federal Route 50 by using multiple linear regression analysis. The road accident trend and black-spot ranking were established at Federal Route (FT50) BatuPahat– Ayer Hitam. Their result revealed that the percentage accident reduction by changing the measures of variables such as access points, speed, vehicle per hour volume, and an increment of one second in gap will reduce accident.

Ghosh, Parida and Uraon (2004) analyzed the Traffic Accident in Dehradun City. They collected their data from the Police for the period of five year (1998-2002) and integrated GIS as supporting tool for analysis. The results reveal that nearly 72% of accidents lead to fatal and grievous injuries. Cars, jeeps and vans are mostly responsible for

accidents and that the occurrence of accidents is mostly concentrated between 2pm to 10pm. The study also reveals that a proper traffic management is required for the city to check the growth of traffic accidents.

Olajuyigbe, Ogan, Adegboyega and Fabiyi (2014) carried out spatio-temporal analysis of Road Accidents in Abuja, Federal Capital Territory (FCT), Nigeria using Geographical Information System (GIS) techniques. They acquired their data from Federal Road Safety Corps (FRSC) and structured questionnaire. Also, topographical map, QuickBird imagery, accident records between 2009 and 2011 were also obtained. These data were integrated and analyzed using spatial analysis tools of AcrGIS 9.3. Overlay function and query operations were performed to determine the accident hotspots based on the frequency of road accidents and their spatio-temporal trend. The results of their study showed that Wuse maintained the highest accident black spots while Asokoro experienced the least accident. It was observed that accidents are caused by road, vehicle, driver and environmental factors.

Studies on rural highways are not directly applicable to urban settings as the traffic pattern and other factors differ at rural and city. Furthermore, before and after studies may be less valuable in rural settings as road design changes are not made as often as in a city with growing traffic volume. Moreover, literature shows that traffic accident analyses are commonly conducted in a larger geographical area.

Many literatures have discussed the variety of factors affecting traffic accidents including road geometry, layout and traffic control factors. However, there is divergence of opinion on what factors have more influence on safety. Also, there are regional differences in the importance of factors which influence safety. This research was built upon past

research and evidence from other literatures to apply Geographic Information System (GIS) of analyzing accidents hotpots along Zaria-Kaduna Expressway.

CHAPTER THREE

STUDY AREA AND METHODOLOGY

3.1 THE STUDY AREA

3.1.1 Location

The study area is lies between Latitudes 10^{o} $40^{'}$ N - 11^{o} $10^{'}$ N and Longitudes 07^{o} $20^{'}$ E - 07^{o} $50^{'}$ E i.e. from KM 10 Kano road to Kawo, Kaduna (see Fig.3.1). The study route is 95 kilometers long and is a well surfaced federal road located in Northern part of Kaduna State, Northern-Nigeria. The Zaria-Kaduna expressway is a four lanes-two ways divided road that runs from Kano and through Zaria to Kaduna. The road passes through some settlements such as Zabi, Dogarawa, Hanwa, Danmagaji, Dumbi, Farakwai Lamban Zango, Zangon Aya, Birnin Yero, among others.

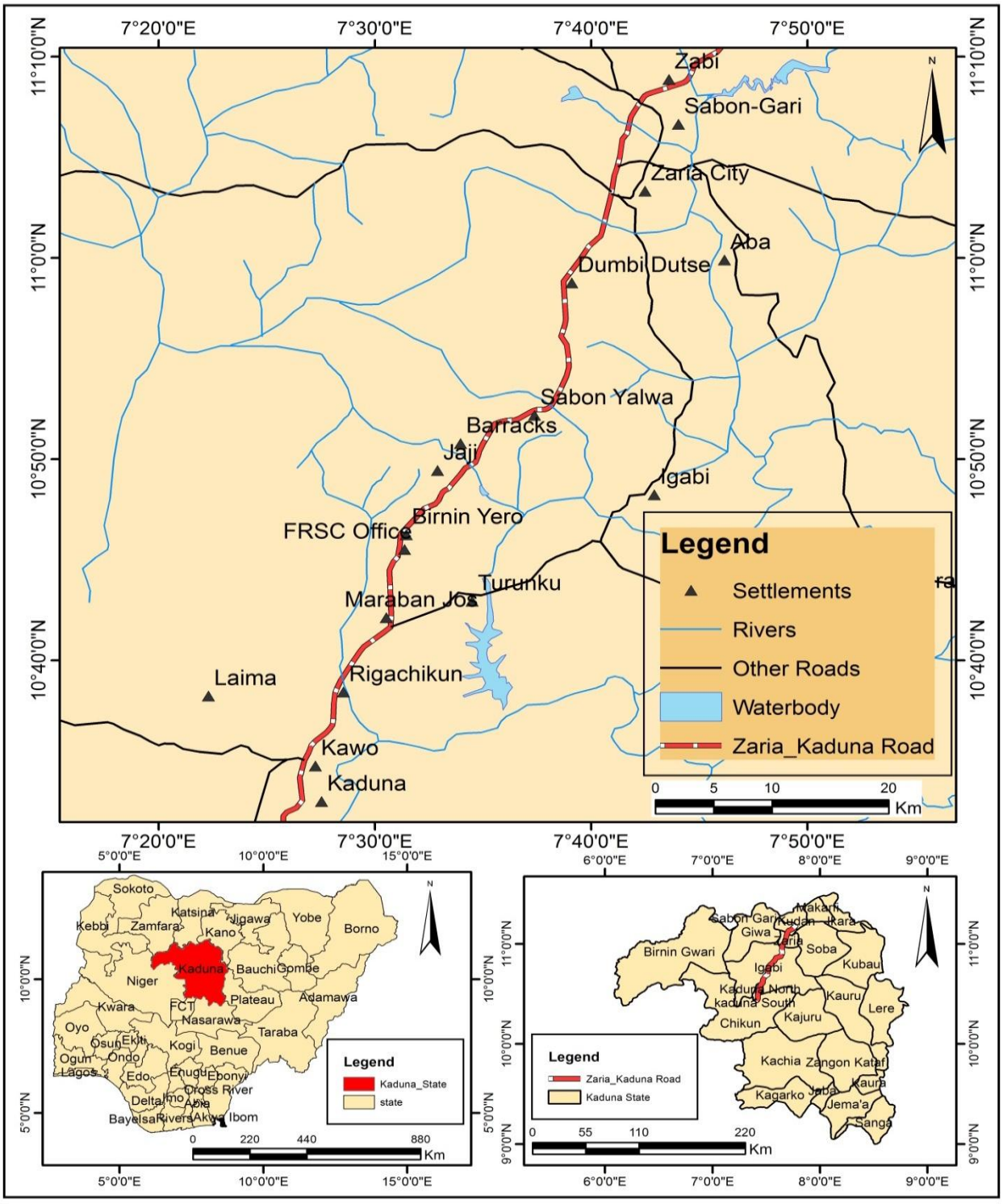


Fig. 3.1: Zaria – Kaduna Expressway
Source: Google Earth Image

3.2.2 Climate

According to Ayoade (1988), Kaduna State has a tropical continental climate type characterized by wet and dry season. The tropical continental is more pronounced in the dry season particularly in December and January. The dry season is dominated by the north-east trade wind called Hamattan which prevails between November-February. The dry season is also rainless from October to April. The wet season is dominated by the tropical maritime trade wind which starts around May to October. The area has a mean daily temperature showing a major peak in April. As such, temperatures are hot all year round except for the dry cool and dusty months of hamattan in November to February. The maximum temperature seldom falls from about 36°C as in April to about 27°C in the heart of rain season (August-October). The annual rainfall is about 1000mm (Ayoade, 1988).

These seasons are controlled by the apparent movement of an imaginary line known as the inter-tropical discontinuity (ITD), which is in turn dictated by two dominated trade winds; are the tropical continental and the tropical maritime. While according to Thornwaites moisture index the climate of Kaduna falls under the dry sub-humid type (Ayoade, 1988).

3.2.3 Vegetation

The natural vegetation of the study area is that of the Northern Guinea Savannah with grass dominating and scattered trees hardly higher than 15ft with broad leaves. Meanwhile, the seasonal character of rainfall in the study area has influenced the vegetation which turns evergreen during the wet season and pale brown in the dry season respectively. Thus, the dominant true species are *Isoberlina Doka, Dodoneaspp,*

and grass communities consist of Hyperhenia and Andropgon species. In the city proper the vegetation is characterized by Silk cotton, Baobab and other protected trees. However, man have greatly affected the vegetation formation in the area, through his activities like; bush burning, cultivation of crops, grazing, lumbering, urbanization and industrial activities among others. The vegetation formation varies and associated with distinct ecological site with particular regard to the nature of the soil (Oguntoyinbo, 1983).

3.2.4 Soils

The soils in the study area have been classified according to Hoores classification scheme for Africa as tropical ferruginous soil. They are zonal soils developed under climatic regimes with appreciable but seasonal rainfall of 500-1200mm and cover nearly half of Northern Nigeria (Oguntoyinbo, 1983). The soil material consists of several feet of deposited silt sand overlaying sedimentary decomposed rock. The soil is poorly drained because of the high percentage of fine textured materials in the upper layers, which results to water logging especially during the rainy season and tends to dry out and cracks during dry season. Alluvial soil is formed a long riversides (fadama). It is made up of several feet of grey white loamy coarse sand with layers of grey heavy molten occurring at varying depths within the profile. The alluvial soils are usually under intense cultivation of sugarcane and vegetables year-in year-out and as a result in farmers resort to using fertilizers to improve soil fertility.

3.2.5 Geology

The geology of the study area is part of the basement complex geology of central Nigeria. It is composed of older high grade-metamorphosed gneiss interspersed by belt of

young meta-sediment of mainly quartzite and schist. The region is underlain by older granitic crystalline, metamorphic rocks of Precambrian to low Paleozoic age (Oguntoyinbo, 1983). It also consists of gneisses which has suffered intense weathering and have remained stable for millions of years. The prolonged weathering under tropical bioclimatic condition has produced rolling plains dotted with residuals of different origin.

The study area lies on the high plains of Hausa land, of height ranging from 550 to 750meters showing a general regional slope to the south and a relative relief of 30 to 45 meters. The plains on which area is situated are parts of the vast, gently undulating plains scenery; which extends almost unbroken from Sokoto to Lake Chad and beyond, from South of Kaduna to the Tidueddi Scarp near Agades. At first sight, they seem remarkable only for their usual monotony and apparent geomorphic simplicity. However, a closer field examination reveals considerable variation in both surface form and composition (Oguntoyinbo, 1983). Sedimentary rocks occur as loose sediments or superficial deposits of clay, laterite and alluvion restricted within flood plains and stream courses. These units of formation which are widespread within Kaduna Metropolis are found to be useful for agricultural purposes (Ali, 2004).

3.2.6 Drainage

The area is drained by river Kaduna and characterized by high stream frequencies and drainage density. The river drains mostly during the raining season, and characterized by seasonal and ephemeral attributes. It takes its source from the highland of Jos. It is a great resource for various water usage (Oguntoyinbo, 1983).

3.2.7 People and Culture

Kaduna and Zaria are trade Centres and a major transportation hub for the surrounding agricultural areas with its rail and road junction. The symbol of Kaduna State is the crocodile, called *kada*in the native Hausa language. Available evidence shows that, the town is inhabited by over 200 different ethnic groups, with Hausa and English as the most general languages used as means of communication. Kaduna is an industrial center of Northern Nigeria, which has attracted population from most states in the north, Nigeria at large (Kaduna State Government, 2012).

3.2.8 Economy

The activities in the study area reflect the commercial, services, administrative, industrial, transport and professional needs of the state and northern Nigeria. The 1956 capital territory law created the limits of the present day Kaduna and set in motion, the rapid and dynamic physical, economic and social transformation of the town. This resulted to the establishment of modern infrastructural facilities such as electric power supply, pipe borne water, good roads, banks, telephone services and international airport.

These modem infrastructures were the backbone of the establishment of industries like; textile mills, breweries, bottling companies, flour mills, motor assembly plants, to mention a few. These have attracted many, especially the youths, to seek for employment and share in the economic development of the in the study area. These industrial growth and high rate of urbanization has attracted both national and international business men, and has make Kaduna one of the strongest commercial center in northern Nigeria and the country at large (Ali, 2004).

3.2.9 Land Use Pattern

Residential land uses occupy the largest area in Kaduna city. This consists of low, medium and high residential neighborhoods that fall into different Local Climatic Zones (LCZ).The major residential areas include; Kawo, Rigachikun, Birnin Yero, Zango Aya, Dandami, Konar Farakwa, Foundation, Jaji, Maraban Jos, Sabon Yalwa, Dumbi, Gwargwaje, Danmagaji, Hanwa, Dogarawa and Zabi among others. These neighborhoods are a combination of modem and traditional categories (Ali, 2004).The road and Agricultural land uses cut across all categories of slope. However, agricultural land uses are found majorly along the route (Kaduna State Government, 2012).

3.2 METHODOLOGY

3.2.1 Reconnaissance Survey

A reconnaissance survey was carried out. The purpose was to get the researcher acquainted with the study area. The FRSC officers controlling the Zaria-Kaduna road i.e. Kaduna, Zaria and Birnin Yero unit command were contacted which helped the researcher to gain a good insight on issue regarding Road Traffic Accidents and hotspots/black-spots in the area.

3.2.2 Types of Data Required

The data used for this study include:

i. Satellite imagery (Google Earth)

Google Earth imagery with spatial resolution of 1m was acquired and used to extract the route for the study.

ii. Coordinates of the accident locations.

The GPS was taken to the field and was used to collect the coordinates of the accident locations.

iii. Digital Elevation Model

The DEM of the study area was extracted from shuttle radar topographic mission data using ArcGIS version 10.1 and was used create the relief map using the 3D analyst tool.

iv. Accident record from Federal Road Safety Commission. The data will include the following:

a) Date of accident
b) Time of occurrence of accident
c) Location/route of accident
d) No. of vehicle involved
e) Type of vehicles involved
f) Vehicle registration number
g) Type of accident (fatal, severe or minor)
h) Causes of accident
i) No. of people involved in the accident
j) Sex of the persons involved in the accident

The data from the Federal Road Safety Commission, the coordinates of the accident and the characteristics of the road will be used for creation of the database.

3.2.3 Sources of Data

The data would be sourced from two major sources viz primary and secondary. The primary data source that was used for the study will include field data that will be collected with the use of Global Positioning Systems (GPS). The GPS survey will be carried out all over the road. Google Earth with 1metres spatial resolution was used to the extract the route. The bulk of attributes for the database obtained from Federal Road Safety Commission State Sector Command (Kaduna) and two of its seven Unit Commands, (Zaria and Birnin Yero). Other secondary data were obtained from textbooks, journals, past projects etc.

3.2.4 Data Processing

a) Vector Data Creation (Road Map)

The Google Earth interface covering the study area was imported in the ArcGIS 10.1 environment using the Arc2Earth extension tool. Features such the study route, junctions, U-turn, intersecting roads was digitized using the Editor.

b) Creation of Database

All vector data (i.e. line and point features) were arranged in separate attribute tables. Here the road was labeled with its name. Similarly the accident location attribute table contains the records from the federal road safety commission. The coordinates and their attributes was entered in Microsoft excel and then saved as Comma Separated Values CSV (comma delimited) format and imported into the ArcGIS 10.0 environment. The x and y coordinates define the position of an accident location on the map as a point feature and each point has its own attributes.

The database is necessary in this study so that analysis can be performed on the data. The flow chart for data processing is represented in Fig.3.2.

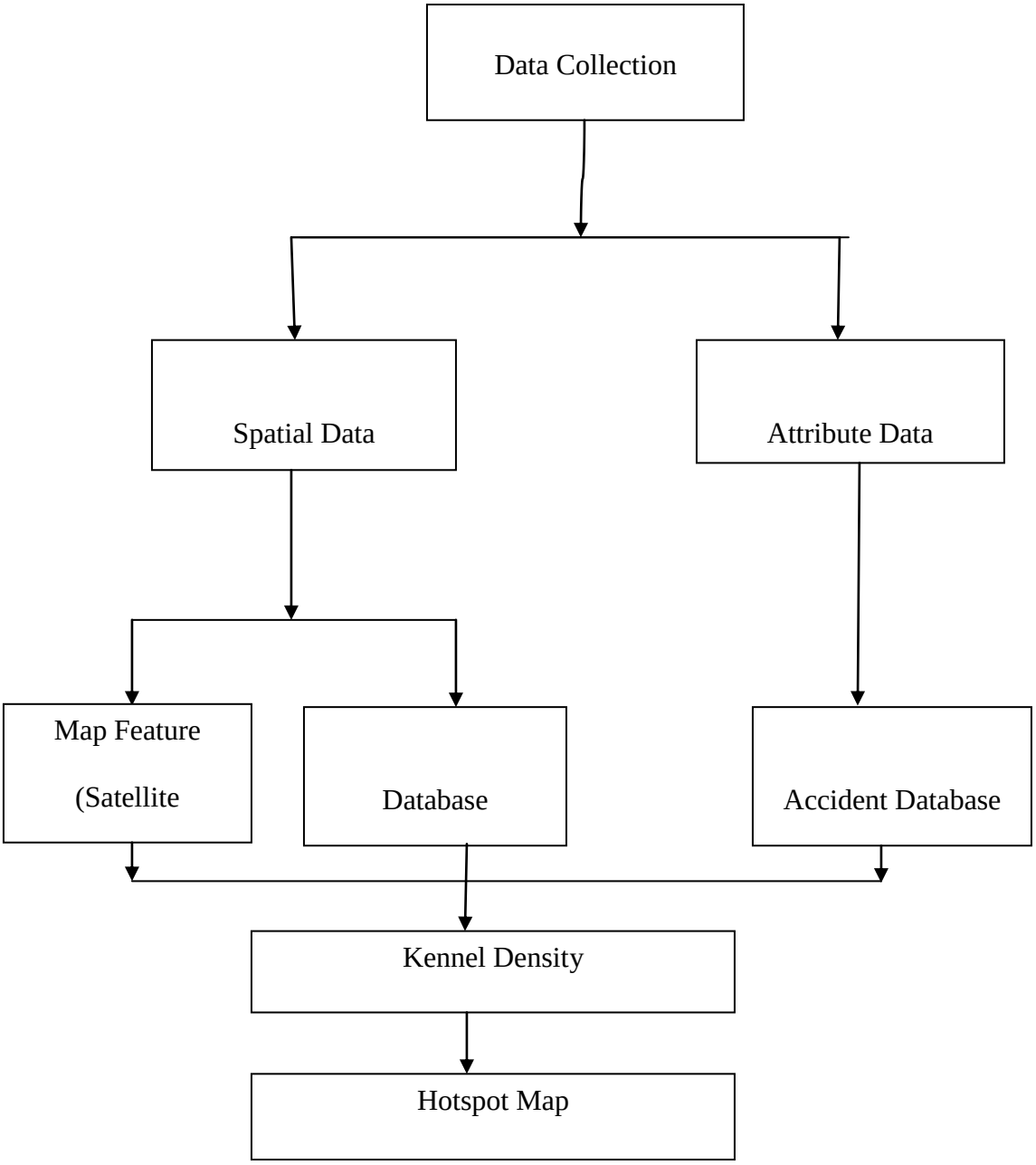


Fig 3.2.: Flow Chart for Data Processing.
Source: Adapted from Liang, Ma'seom and Hua (2005).

3.2.5 Methods of Data Analysis

❖ **Analysis on Causes of Accident**

The Federal Road Safety Corps data stored in the database and a simple query statement (SQL) was used to visualize the causes of accidents from the record of FRSC and the result was summarized on maps, charts and tables.

❖ **Hotspot Analysis**

The Kernel Density Estimation in ArcGIS 10.1 was utilized in mapping the accident hotspots along the route. Kernel Density Estimation provides an estimate of the proportion of total accident that can be expected to occur in any given map location. It works by first overlaying an area of interest with a fine rectangular grid. It then calculates an estimate of the density of accident in each grid cell which is based on a weight function - the kernel. The kernel is a function of specified shape and bandwidth (or search radius). The Kernel Density Estimation is given by the equation below (Deepthi and Ganeshkumar, 2010):

$$f(x,y) = \frac{1}{nh^2}\sum_{i=1} K\left(\frac{d_i}{h}\right)$$

Where $f(x,y)$is the density estimate at location *(x,y),h* is the search radius (bandwidth or kernel size), *n* is numbers of observations (total number of accidents), *K* is the kernel function and d_i, is the distance between the location (event point) *(x,y)* and location of the ith observation.

The mean and standard deviation of the Kernel Density Estimation was used to determine the hotspot and also a raster map was generated, where the intensity of traffic accidents is represented by continuous surfaces. Lighter shades were used

represent locations with a lower traffic accident density, while darker shades represent locations characterized by the highest traffic accident density. The summary of the procedure for the hotspot map is presented in Figure 3.2.

- **Ranking of Accident Hotspots**

The ranking of the accident hotspots was done by weighting the nature of the accident (fatal, severe and minor) using the Analytical Hierarchy Process (AHP) and the Accident Point Weighting (APW) was calculated using the formula bellow:

$$APW = X_1W_1 + X_2W_2 + X_3W_3$$

Where X_1, X_2 and X_3 are the expected number of fatal , severe and minor injuries and

W_1, W_2 and W_3 are the Weightage of fatal , severe and minor injuriesrespectively (Troung and Sekhar, 2011).

Table 3.1: Weightages of types of Accidents

	Fatal	Serious Injury	Minor Injury	Weight ($W_{i)}$
Fatal	1	5	9	0.7
Serious Injury	1/5	1	9	0.25
Minor Injury	1/9	1/9	1	0.05

Consistency Ratio=0.30

$APW = 0.7X_1 + 0.25X_2 + 0.05X_3$ ---------- (1)

- **Characteristics of the road traffic accident hotspots.**

Field observation was used in characterizing the hotspots and relationship between Road traffic accident hotspots and the characteristics of the road as sharp Bends, Bad Roads, and Intersections; was examine using the Multiple Regression Analysis.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

4.1 INTRODUCTION

This chapter is concerned with identifying the causes of Road Traffic Accidents (RTA) along the Zaria-Kaduna Expressway, identifying and mapping of the hotspots (dangerous locations)using the Kernel Density Estimation (KDE). The hotspots were also ranked according to their order of severity using the Accident Point Weighting (APW). Finally the hotspots were characterized and the joint contribution of the Roadway and Roadside characteristics of the RTA Hotspots was examined.

4.2 CAUSES OF RTA ON ZARIA-KADUNA EXPRESSWAY

In an attempt to identify the factors causing road traffic crashes in the study area, Federal Road Safety Commission (FRSC) data from 2010 to 2013 were analyzed, and the following variables were investigated; over speeding, dangerous driving, tyre burst, dangerous overtaking, loss of control, stationary vehicles/obstruction, sleeping on steering, route violation, light sign violation, drugs/alcohol, mechanical deficient vehicles, bad roads, use of Global System Mobile Communication (GSM) while driving etc. Table 4.1 represents the contributory causes of the road traffic accidents reported along the route in from 2010 to 2013.

Table 4.1: The Contributory Causes of the Road Traffic Accidents Reported along the Route in from 2010 to 2013.

S/N	Causes	2010 Freq.	%	2011 Freq.	%	2012 Freq.	%	2013 Freq.	%	Total Freq.	%
1	Over Speeding	87	36.1	78	22.4	73	32.3	50	23.6	288	27.7
2	Dangerous Driving	31	12.9	57	16.4	24	10.6	29	13.7	141	13.6
3	Tyre Burst	48	19.9	65	18.7	39	17.3	31	14.6	183	17.6
4	Brake Failure	0	0.0	3	0.9	1	0.4	2	0.9	6	0.6
5	Dangerous Overtaking	5	2.1	14	4.0	7	3.1	16	7.5	42	4.0
6	Loss of Control	30	12.4	58	16.7	35	15.5	38	17.9	161	15.5
7	Stationary Vehicle	3	1.2	9	2.6	5	2.2	3	1.4	20	1.9
8	Sleeping on Steering	3	1.2	2	0.6	0	0.0	1	0.5	6	0.6
9	Route Violation	1	0.4	12	3.4	9	4.0	11	5.2	45	4.3
10	Light Sign Violation	2	0.8	6	1.7	0	0.0	1	0.5	9	0.9
11	Driving under Alcohol/Drug	7	2.9	0	0.0	1	0.4	2	0.9	10	1.0
12	Poor Weather	0	0.0	2	0.6	2	0.9	0	0.0	4	0.4
13	Mechanical Deficient Vehicle	11	4.6	18	5.2	16	7.1	6	2.8	51	4.9
14	Bad Road	4	1.7	6	1.7	2	0.9	1	0.5	12	1.2
15	Overloading	5	2.1	8	2.3	10	4.4	13	6.1	36	3.5
16	Use of GSM while Driving	1	0.4	1	0.3	1	0.4	0	0.0	4	0.4
17	Others	3	1.2	9	2.6	1	0.4	8	3.8	21	2.0
		241	100.0	348	100.0	226	100.0	212	100.0	1039	100.0

Source: Author's Analysis, 2015

Table 4.1 shows that 1039 accidents cases where within the period of study from 2010 to 2013. The result reveals that (27.7%) of road accidents on the road were due to Over Speeding. This is because at high speed, the driver reduces his/her possibility to respond in time when necessary. The driver need time to process information, to decide whether or not to react and, finally to execute a reaction. When speeding the distance covered in this period is longer and distance between starting to brake and a complete stand still is longer as well. Therefore, the possibility to avoid a collision becomes difficult. Other identified causes include tyre burst with (17.6%), Loss of Control (15.5%), Dangerous Driving (13.6%), Route Violation (4.3%), and Dangerous Overtaking (4.0%). The use of GSM while driving, poor weather, sleeping on steering, light sign violation, driving under alcohol/drugs and bad road were identified by (0.4%), (0.4%), (0.4%), (0.1%), (1.0%) and (1.2%) respectively.

The outcome of this study is not different from the study of Umar, (2009) that concluded that over speeding was the major cause of accident along Kano-Zaria highway. Another study by federal road safety of Nigeria FRSC (2015) shows the over-speeding also accounts for 65% of road traffic accidents in Plateau State.

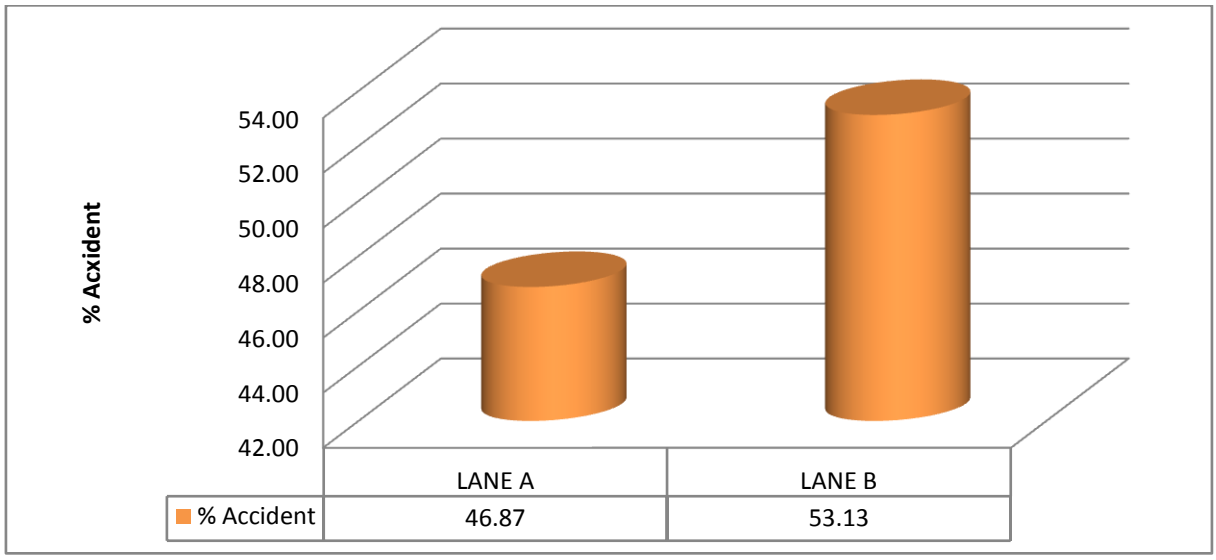
4.3 SPATIAL DISTRIBUTION OF RTA FREQUENCY AND HOTSPOTS ON ZARIA-KADUNA EXPRESSWAY

This section looks at the distribution and the casualties involved in road traffic accidents in the study area. The Mobile GPS receiver device was used to obtain the coordinates of each of the road traffic accidents scenes along the study route from 2010-2013 and the frequencies of occurrence of the accidents was overlaid on a road map. The

spatial distribution of the Road Traffic Accident was mapped and is presented in Figure 4.2, Figure 4.3, Figure 4.5, and Figure 4.5 from 2010 to 2013. Further analysis was carried out and the results are shown in figure 4.6.

4.3.1 Frequency RTAs along Zaria-Kaduna Expressway

The accident data collected from Federal Road Safety Commission (FRSC) showed that a total of 1,039 accidents were recorded along the route during the period of study. Figure 4.1 shows the spatial distribution of road traffic accident's frequency on Lane A and Lane B in percentage along Zaria-Kaduna Expressway from 2010-2013.



Lane A =Zaria-Kaduna and Lane B =Kaduna-Zaria

Figure 4.1: Distribution of RTA by Lane

Source: Author's Analysis, 2015

The results show that the frequencies of the road traffic accident on Lane B in higher with 53.13% i.e. (from Kaduna to Zaria) while Lane A (from Zaria to Kaduna) contributed about 46.87% of the road accidents. The accident is found to be more frequent on Kaduna-Zaria lane because of the commercial activities and sharper bends on the lane.

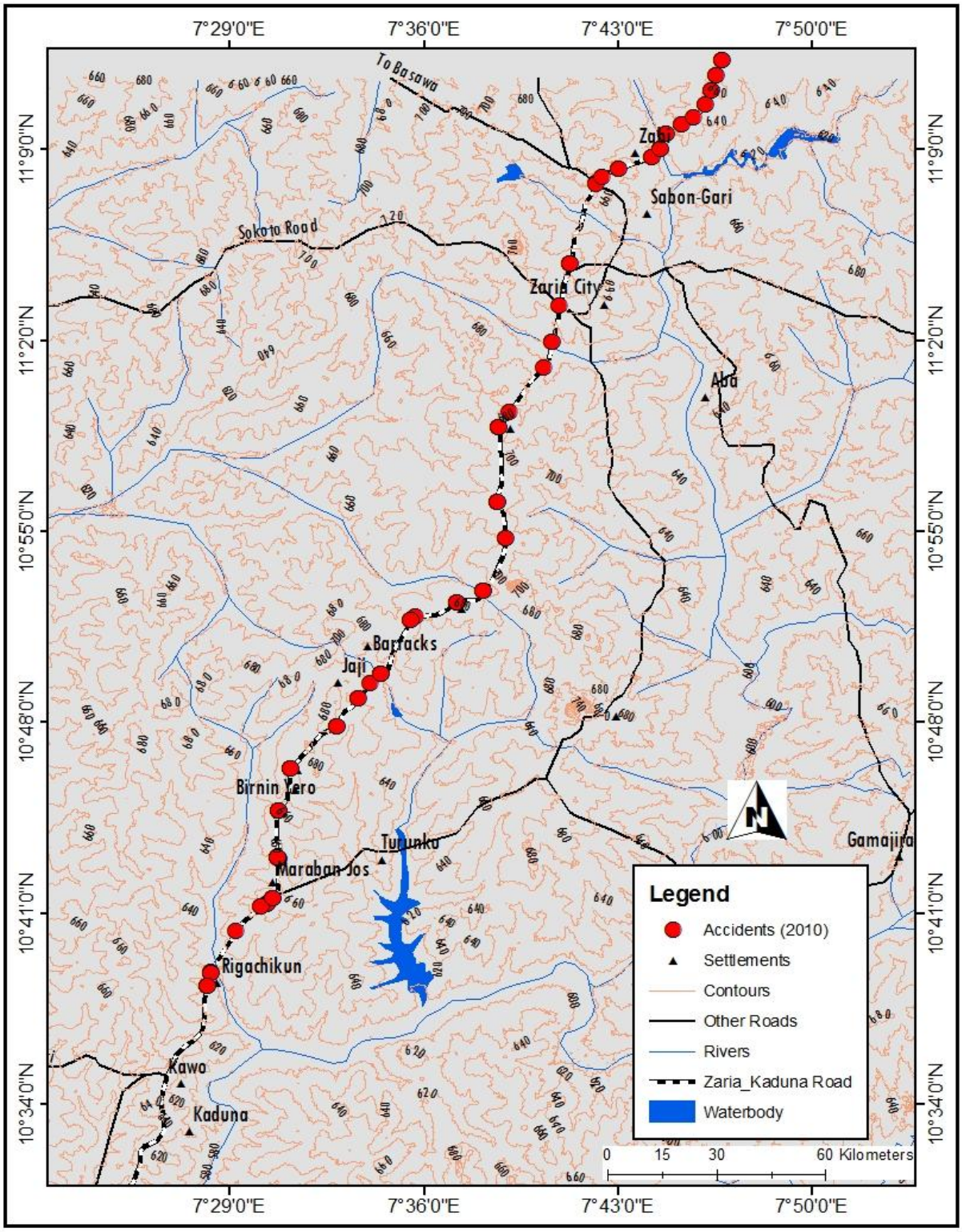


Figure 4.2: Distribution of RTA at Zaria-Kaduna Expressway in 2010

Source: Author's Analysis, 2015

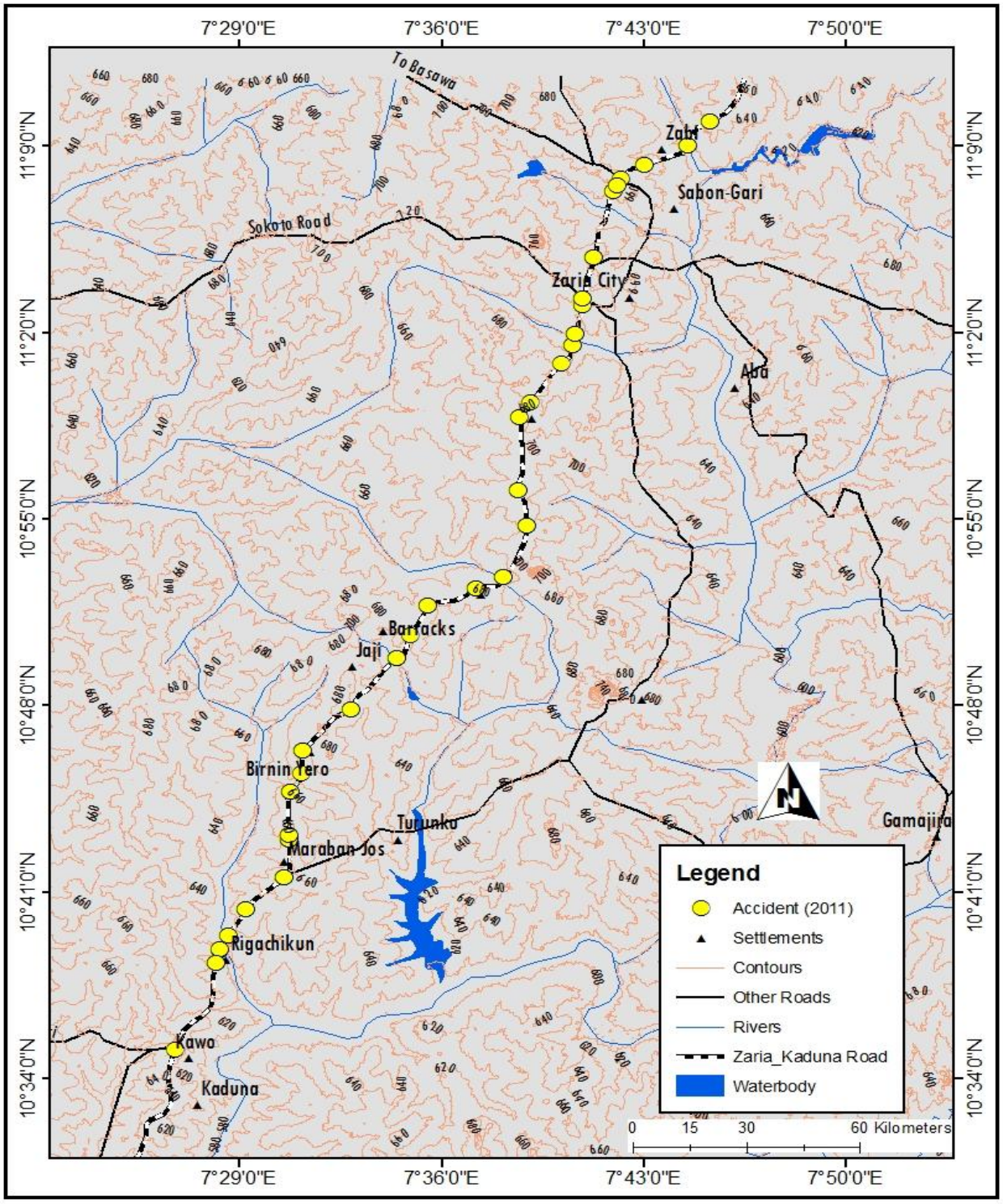


Figure 4.3: Distribution of RTA at Zaria-Kaduna Expressway in 2011

Source: Author's Analysis, 2015

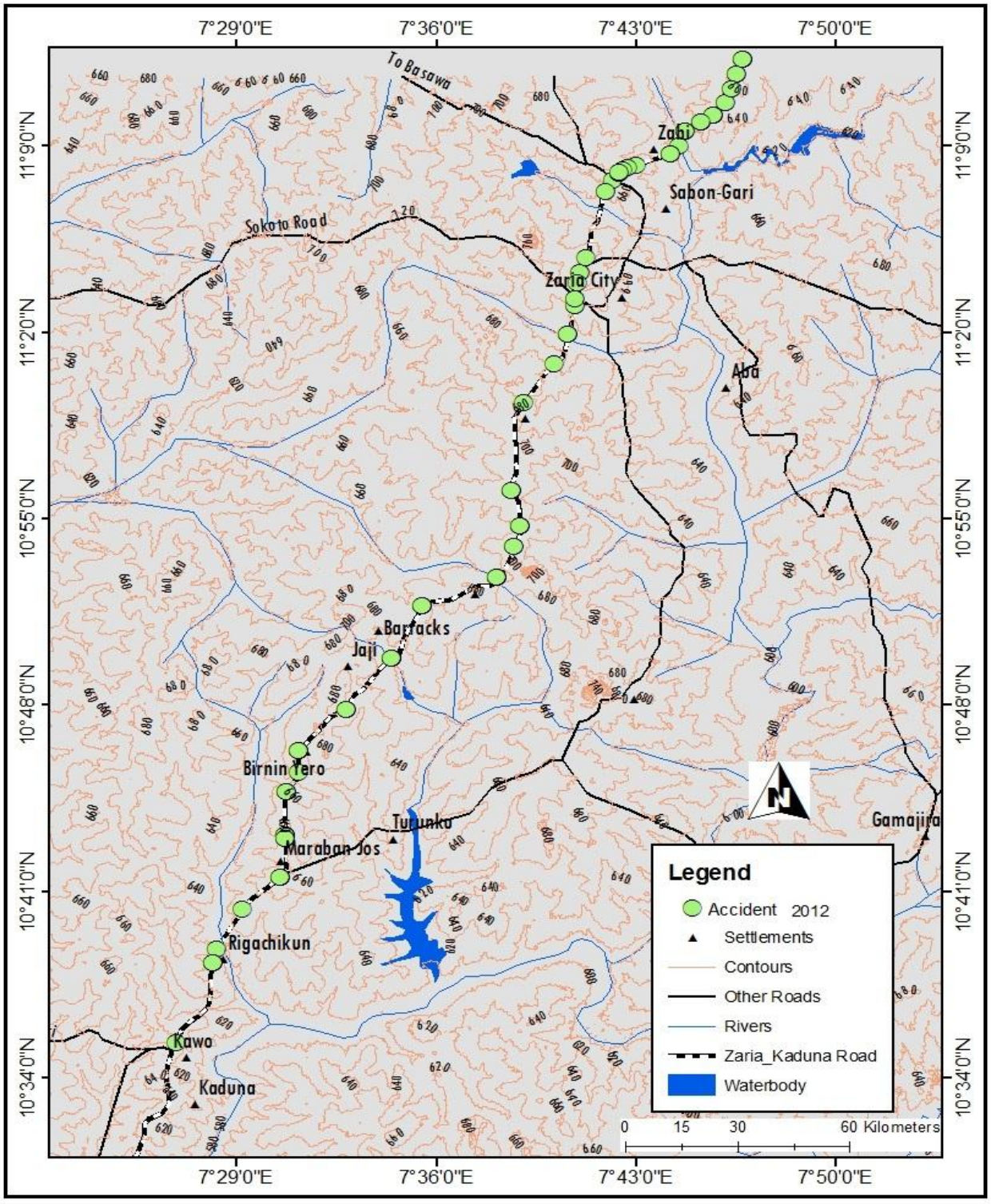


Figure 4.4: Distribution of RTA at Zaria-Kaduna Expressway in 2012

Source: Author's Analysis, 2015

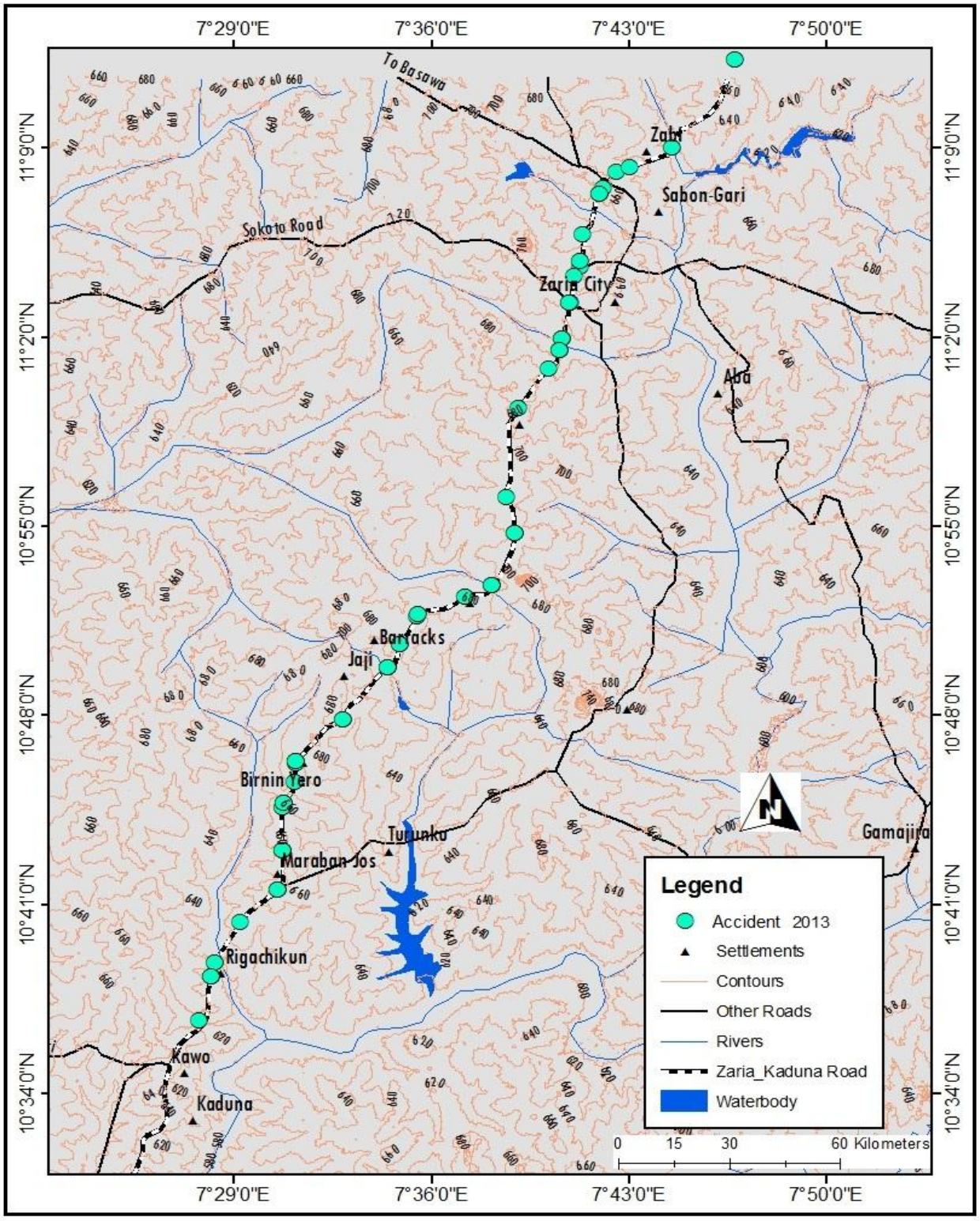


Figure 4.5: Distribution of RTA at Zaria-Kaduna Expressway in 2013
Source: Author's Analysis, 2015

Figure 4.2 to Figure 4.5 shows the spatial distribution of road accident along Zaria-Kaduna highway from 2010-2013. This revealed that the concentration of the accidents are not evenly distributed along the route as more of the occurrences appear to be regular at some flash points such as where there are sharp bends, steep slope, U-turns, market and bad sections of the road. Also, the study depicts other major crash occurrence within the settlements of Rigachuku, BirninYero, Jaji and Zaria, Kaduna State. At such places of various road conditions, over speeding drivers usually find it difficult to control their vehicles, which may eventually result to road traffic accident.

4.3.2 Distribution of Accidents and Casualties along the Study Route

The FRSC record showed that 1,039 accident cases were reported at Zaria-Kaduna Route between 2010-2013 with 5,889 persons involved, of which 467 persons were killed and 3,347 persons injured. Table 4.2 shows distribution of road traffi accidents and casualties along the study route.

Table 4.2: Accident and Casualty on Zaria-Kaduna Highway.

YEAR	No. of Accidents	Fatal freq.	%	Severe freq.	%	Minor freq.	%	Total
2010	253	72	28.4	172	68.0	9	3.6	100.0
2011	348	93	26.7	234	67.2	21	6.1	100.0
2012	226	54	23.9	162	71.7	10	4.4	100.0
2013	212	52	24.5	145	68.4	15	7.1	100.0
Total	1039	271		713		55		

Source: Author's Analysis, 2015.

The results show that in 2010, 253 accident cases were recorded and 28.4% of the cases were fatal, 68.0% were serious injuries and 9 were minor injuries. In 2011 the number of accidents increased by 9% resulting to 348 accidents, of which 93 (26.7%) were fatal, 234 (67.2%) were serious injuries and 21 (6.1%) minor injuries. The number of accidents decreased by 12% in 2012 of which 54 (23.9%) were fatal, 162 (71.7%) were serious injuries and 10 (4.4%) minor injuries. The number of accidents decreased again in 2013 by 1% of which 52 (24.5%) were fatal, 145 (68.4%) were serious injuries and 15 (7.4%) minor injuries.The reduction in the accident that took place in 2012 and 2013 may be attributed to the effective policing of Federal Road Safety Corps that eventually translates to gradual compliance with traffic rules by the road users in the study area.

The result shows that accidents are decrease except for 2011 that experienced an increase in accidents. The result is similar to the findings of Atubi (2013) which showed that a fatality also decreasing.

4.4 ACCIDENT HOTSPOTS ALONG ZARIA-KADUNA EXPRESSWAY

The Hot-spot analysis was done for the route to show the sections of the road or locations where there is concentration of accidents. Kernel Density Estimation method in ArcGIS 10.1 environment was used to calculate the density of accidents with a search radius of 500m. A 500m search radius selected was based on the black spots identification criteria for highways given by Xie and Yan (2008). The accident hotspots are presented in figure 4.6.

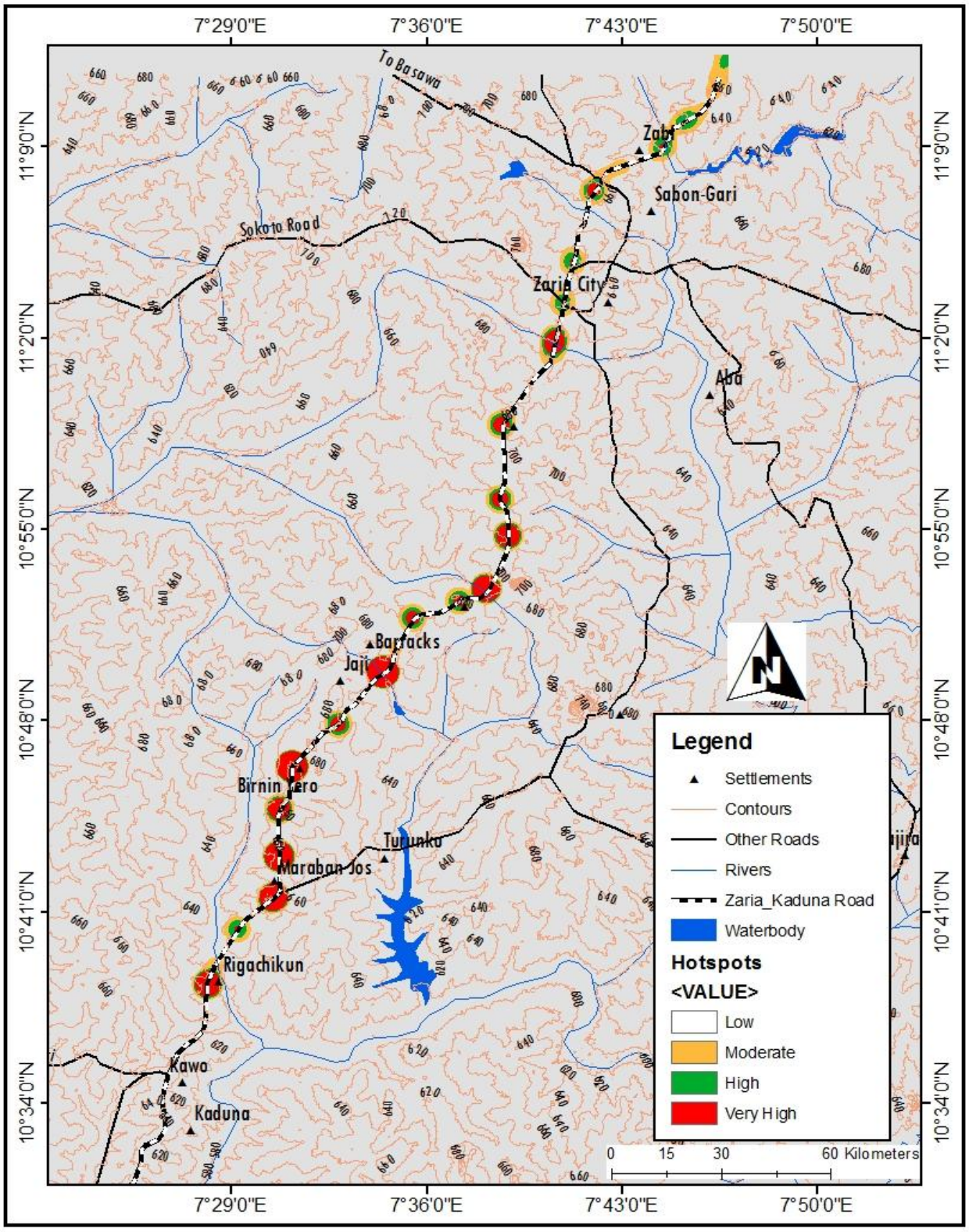


Figure 4.6: Road Traffic Accident Hotspot by Kernel Density Estimation.

Source: Source: Author's Analysis, 2015

The results of the density estimation identified twenty (20) different hotspot locations. The hotspots include, Jaji, Birnin-Yero, Foundation, Konar Farakwai, Maraban Jos, Rigachikun, Polytechnic, Laban Zango, Anur Mosque, Dumbi, Sabawa Farm, Dandami, Konar Tsintsiya, Sabon Yalwa, Dan-Magaji, Zangon Aya, Yankarfe, KM 10 to Kano, Zabi, and Toll Gate. It shown on the map that the hotspots with higher density are regular at points where there are settlements, intersecting road, sharp bend and river crossing the road indicating places with bridges. Figure 4.7 shows the frequencies of road accident at the hotspots along the route.

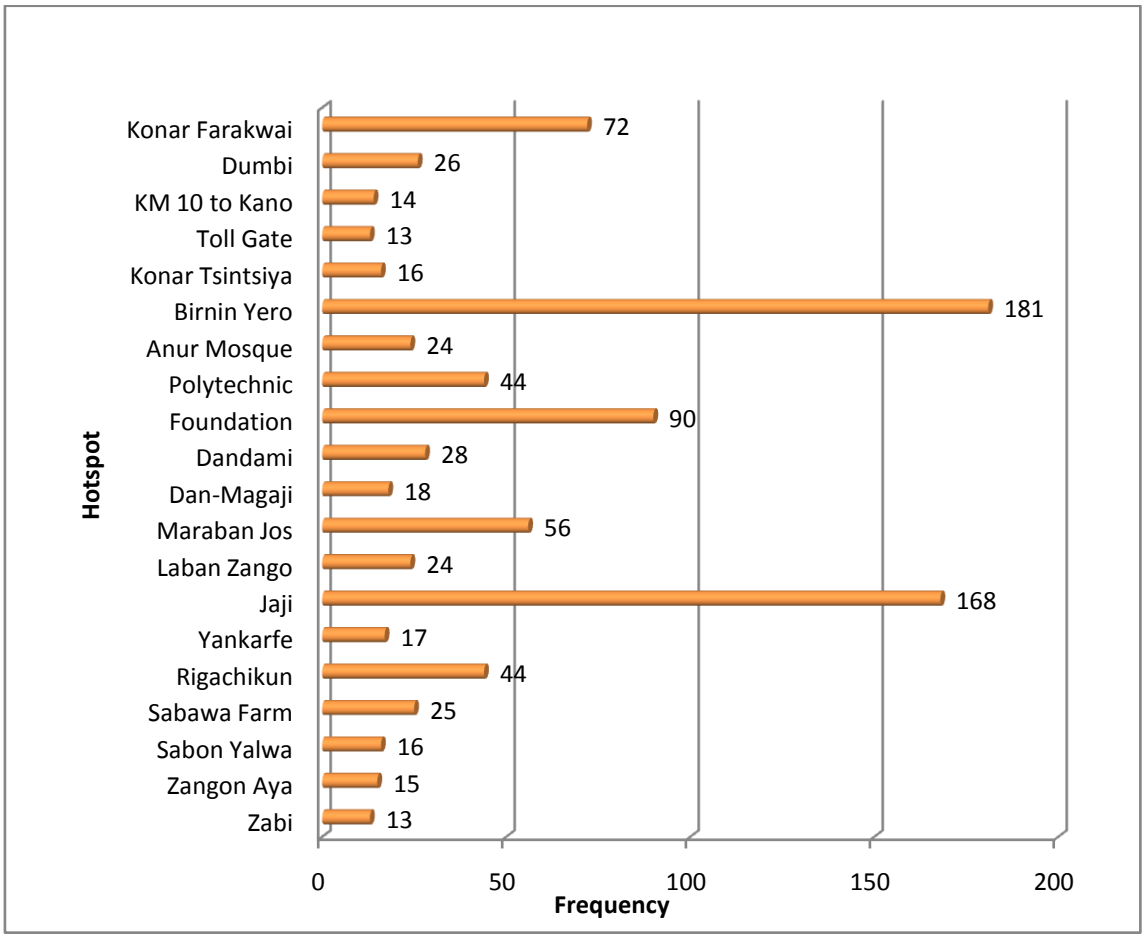


Figure 4.7: Hotspots and frequency of accidents along the route from 2010-2013
Source: Source: Author's Analysis, 2015

The combined report of the four years revealed that Birnin-Yero has the highest number of accident with 181 recorded cases, followed by Jaji with 168 cases. Other accidents prone locations are Foundation, Konar Farakwai, Maraban Jos, and Rigachikun with 90, 72, 56 and 44 number of cases recoded respectively.

The possible explanation as to why these areas had high frequency of road traffic accident is that there are located in small townships with high population density where vehicles stop for refueling or passengers' recreations. Therefore, many accidents occur when careless drivers enter the highway from these settlements or pedestrians doing petty businesses cross the road carelessly. Also intoxicated drivers and pedestrians might influence this.

4.5 RANKING OF ROAD TRAFFIC ACCIDENT HOTSPOTS IN THE STUDY AREA

The ranking of accident hotspots was determined by using the Accident Point Weightage (APW) formula. In the weightage formula, all types of accidents had their own coefficient determined from Analytical Hierarchy Process (AHP). For fatal, it was multiplied by 0.7, serious injury multiplied by 0.25, and slight injury multiplied by 0.05.

The data of road accident occurrence on Zaria-Kaduna Expressway was analyzed to find the ranking of the accident hotspot area. Hotspot refers to a section of road that is regarded as a high-risk location for vehicles crashes (Kowtanapanich, 2010). Table 4.3 showed the ranking of accident along the route based on APW.

Table 4.3: Ranking of the Hotspots.

S/No	Location	Fatal (X_1)	Serious Injury (X_2)	Minor Injury (X_3)	Total	APW	Rank
1	Jaji	50	108	10	168	62.5	1
2	Birnin-Yero	41	125	15	181	60.7	2
3	Foundation	19	66	5	90	30.05	3
4	KonarFarakwai	16	53	3	72	24.6	4
5	Maraban Jos	17	38	1	56	21.45	5
6	Rigachikun	11	30	3	44	15.35	6
7	Polytechnic	8	35	1	44	14.4	7
8	Laban Zango	9	15	0	24	10.05	8
9	Anur Mosque	8	14	2	24	9.2	9
10	Dumbi	6	20	0	26	9.2	9
11	Sabawa Farm	7	17	1	25	9.2	9
12	Dandami	5	20	3	28	8.65	10
13	KonarTsintsiya	6	10	0	16	6.7	11
14	SabonYalwa	6	8	2	16	6.3	12
15	Dan-Magaji	4	13	1	18	6.1	13
16	ZangonAya	5	10	0	15	6	14
17	Yankarfe	3	13	1	17	5.4	15
18	KM 10 to Kano	4	10	0	14	5.3	16
19	Zabi	4	9	0	13	5.05	17
20	Toll Gate	2	10	1	13	3.95	18

Source: Author's Analysis, 2015.

From Table 4.3 Jaji was calculated to have the highest Accident Point Weighting value with 62.5, followed by Birnin-Yero with a value of 60.7, Foundation is ranked 3rd with 30.05. Anur Mosque, Dumbi and Sambawa Farm were ranked as the 9th hotspot because they all had the same APW value of 9.2. KM 10 to Kano, Zabi and Toll Gate were

ranked the least in terms of deadly accidents placed in 16th, 17th and 18th position respectively. The areas, which had high number of accidents, were not necessarily having high Accident Point Weightage. For example, Birnin Yero has 181 cases recorded and Jaji have 168 recorded cases but Jaji is more deadly than Birnin Yero. Some of the dangerous locations along the study route are presented on Plates I to Plate IV.



Plate I: Market at Lamba Zango showing people crossing the road



Plate II: Sharp Bend at Konar Farakwai. Overspeeding driver will it difficult to control the vehicle at this point



Plate III: Bridge at Jaji. Too narrow and cannot accommodate more than two vehicles at time.



Plate IV Stationary Vehicles at Maraban Jos showing wrong parking

4.6 CHARACTERISTICS OF THE ROAD TRAFFIC ACCIDENT HOTSPOTS

Road accident hotspots as identified were characterized into (3) different classes and to determine the role of each variable in the occurrence of road traffic accidents along the route. It was observed that some of these hotspots are due to components of the road design, condition of the road and the roadside.

i. Road Design: Sharp Bend, U-turn and Bridges

ii. Road Condition: Pothole, Slope and Stationary Vehicle

iii. Road Side Features: Intersection of other roads, Market and Built-up Areas.

This study revealed that the concentration of the accident hotspot are not evenly distributed along the route as more of the occurrences appear to be at some flash points

such as where there are sharp bends, slopes, U-turns, intersections built-up, bridges and potholes of the expressway. Also, the study depicts other major crash occurrence within the settlements of Rigachuku, BirninYero, Founadtion, Jaji and Danmgaji among others. The characteristics of the accident hotspots are presented in Table 4.4

Table 4.4: Characteristics of Hotspots

Hotspot	Characteristics of Roadway/Roadside	Frequency	%
Zabi, Jaji, Polytechnic	Bridge	225	24.9
Rigachikun, BirninYero	Settlement	225	24.9
Laban Zango	Market	24	2.7
Toll Gate	Pothole	13	1.4
ZangonAya, Sabon Yelwa, Sambawa Farm, Dandami, Konar Tsintsiya, Dumbi, KonarFarakwai	Sharp Bend	198	21.9
Anur Mosque, Anur Mosque	Slope	38	4.2
Maraban Jos	Stationary Vehicle	56	6.2
Yankarfe, Danmagaji, Foundation	U-Turn/Intersection	125	13.8

Source: Author's Analysis, 2015.

Table 4.4 shows that the concentration of RTA are more at the built-up areas, sharp bends and U-turns/Intersection and bridges than slopes, while the potholes that constitute other bad sections of the road form part of the places of high frequency.

The outcome of this research is similar to the findings of Lee and Fred (1999), which showed agreed that roadway characteristics, roadside characteristics and road design among others are the principal causes of road traffic accidents in some developing and developed countries across the world.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter highlights the summary of findings, conclusion and the recommendation made in other to reduce accidents on Zaria-Kaduna expressway.

5.2 SUMMARY OF FINDINGS

This study analyzed road traffic accident hotspots along Zaria-Kaduna expressway from 2010 to 2013. The study was carried out in other to identify the causal factors of road traffic accidents in the area. The spatial distribution of the traffic accident frequency and casualties along the study route were analyzed as well as mapping of the hotspots (death traps) using the Kernel Density Estimation (KDE). Furthermore places with high concentration of road traffic accidents were ranked using Accident Point Weightage (APW) formula and Analytical Hierarchy Process (AHP). Finally, the accident hotspots were characterized based on the roadway characteristics, the design and the roadside characteristics.

The possible major causes of accidents identified are: Over Speeding, Dangerous Driving, Tyre Burst, Brake Failure, Dangerous Overtaking, Loss of Control, Stationary Vehicle/Obstruction, Sleeping on Steering, Route Violation, Light Sign Violation, Driving under Alcohol/Drug, Poor Weather, Mechanical Deficient Vehicle, Bad Road, Overloading, Use of GSM while Driving were the other causes of accidents among others.

It was observed from the study that over speeding (27.72%), tyre burst (17.61%), loss of control (15.5%) and dangerous driving (13.57%) were the major cause of accident

along the route. There are more occurrences of road traffic accidents on Kaduna-Zaria (Lane B) than on Zaria-Kaduna (Lane A). Road accident was observed to have increased from 2010-2011 to about 9%, but decreased by 12% from 2011-2012. It was also observed that a decrease of 1% accident was also recorded from 2012 to 2013.

The study identified the places prone to accidents (death traps) at Jaji, Birnin-Yero, Foundation, Konar Farakwai, Maraban Jos, Rigachikun, Polytechnic, Laban Zango, Anur Mosque, Dumbi, Sabawa Farm, Dandami, Konar Tsintsiya, Sabon Yalwa, Dan-Magaji, Zangon Aya, Yankarfe, KM 10 to Kano, Zabi, and Toll Gate. It was also observed that Bridge, U-Turn/Intersection, Market, Stationary Vehicles, Slope, Built-up Areas, Potholes and Sharp Bend were cause of accidents along the road with built-up areas and bridges contributing about 24.9% respectively.

5.3 CONCLUSION

Accidents are result of critical combination of several factors and it is usually difficult to single out one main cause. It may be better and more appropriate to analyse the areas of high concentrations of accidents (hotspots) when determining why and how the accident took place. The integration of Geographic Information System (GIS) and remotely sensed satellite imagery has provided an effective technique for the analyses of road traffic accident hotspots in the study area.

From the results of the study, it can be concluded that combination of over speeding was the major cause of accidents along the route. The study also discovered that Jaji, Birnin Yero, Foundation and Konar Farakwai as the most dangerous along the study route. Finally, the design of the road, the roadway characteristics and roadside such as Bridge, U-

turn/intersection, market, stationary vehicles, slope, built-up areas, potholes and sharp bend contributes significantly to accidents on the route.

5.4 RECOMMENDATIONS

In order to reduce traffic accidents in along Zaria-Kaduna expressway, will recommend based on the study the following measures to rectify the problem:

i. Installation of speed reduction devices as a traffic calming measure should be developed across the country.

ii. Road infrastructure such as road signs, bridges, street light etc. should be adequately maintained, and if possible, improved upon along the entire route. Above all, infrastructure such as road sign, pedestrian bridge etc. that are lacking along the study route should be provided, all aiming at free accident drive.

iii. There is a need to establish a Vehicle examination unit for regular inspection of all vehicles at least once a year and certificate of approval should be provided to the qualified vehicles. All vehicles to be used in the country, should meet safety standards such as proper brakes, lights, seat belts, and good tyres.

iv. Road safety education should be organized within a framework of lifetime, that is, by using aggressive public information campaigns.

v. The use of seat belts, safety helmet, and child restraints should be introduced and enforced strictly.

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APPENDIX

Id	Long	Lat	Location	Year	Time	Route	Category	Type	Cause	Injured	Killed	Involved	Nature
1	7.5123	10.717	Foundation	2010	1145	Zar-Kad	Comercial	Peogeout	Spv	0	0	4	Minor
2	7.5741	10.83	Jaji	2010	1545	Zar-Kad	Comercial	Volkswagen	Spv	2	0	2	Severe
3	7.5199	10.772	B/Yero	2010	1545	Kad-Zar	Comercial	Honda	Spv	0	1	2	Fatal
4	7.5474	10.798	Sambawa	2010	1630	Kad-Zar	Comercial	Jincheng	Mdv	1	0	1	Severe
5	7.5123	10.717	Foundation	2010	1630	Kad-Zar	Comercial	Jincheng	Spv	2	0	2	Severe
6	7.5741	10.83	Jaji	2010	1730	Kad-Zar	Comercial	Daf	Tbt	0	0	4	Minor
7	7.5123	10.746	Dandami	2010	1130	Zar-Kad	Comercial	Jincheng	Spv	1	0	3	Severe
8	7.5123	10.717	Foundation	2010	1330	Kad-Zar	Comercial	Toyota	Mdv	0	0	8	Minor
9	7.5123	10.717	Foundation	2010	1800	Kad-Zar	Comercial	Toyota	Spv	1	0	2	Severe
10	7.6489	10.913	Z/Aya	2010	1930	Kad-Zar	Comercial	Toyota	Tbt	3	0	10	Severe
11	7.5741	10.83	Jaji	2010	1430	Zar-Kad	Private	Peogeout	Spv	0	1	3	Fatal
12	7.4694	10.639	Rigachikun	2010	1000	Kad-Zar	Comercial	Toyota	Dad	1	0	2	Severe
13	7.5123	10.746	Dandami	2010	220	Zar-Kad	Private	Daf	Tbt	11	7	22	Fatal
14	7.6358	10.88	K/Farakwai	2010	1130	Kad-Zar	Private	Peogeout	Spv	0	1	2	Fatal
15	7.5199	10.772	B/Yero	2010	1840	Kad-Zar	Private	Volkswagen	Others	1	2	7	Fatal
16	7.5122	10.717	Foundation	2010	1750	Zar-Kad	Private	Honda	Spv	4	0	4	Severe
17	7.6489	10.913	Z/Aya	2010	1140	Kad-Zar	Comercial	Honda	Spv	1	0	2	Severe
18	7.6511	10.99	D/Abba	2010	1130	Zar-Kad	Comercial	Honda	Spv	2	2	4	Fatal
19	7.5123	10.746	Dandami	2010	1145	Kad-Zar	Private	Volkswagen	Spv	1	0	6	Severe
20	7.5061	10.69	M/Jos	2010	1545	Zar-Kad	Private	Toyota	Spv	5	0	3	Severe
21	7.5199	10.772	B/Yero	2010	1545	Zar-Kad	Private	Volkswagen	Dgd	3	0	1	Severe
22	7.5199	10.772	B/Yero	2010	1630	Zar-Kad	Comercial	Volkswagen	Dgd	1	0	3	Severe
23	7.5199	10.772	B/Yero	2010	1630	Zar-Kad	Private	Toyota	Spv	0	1	11	Fatal
24	7.5474	10.798	Sambawa	2010	1730	Zar-Kad	Comercial	Toyota	Spv	0	1	21	Fatal
25	7.5123	10.746	Dandami	2010	1130	Kad-Zar	Comercial	Toyota	Tbt	10	0	18	Severe

26	7.5199	10.772	B/Yero	2010	1330	Zar-Kad	Comercial	Toyota	Tbt	8	0	13	Severe
27	7.5122	10.717	Foundation	2010	1800	Kad-Zar	Comercial	Toyota	Tbt	5	0	3	Severe
28	7.6358	10.88	K/Farakwai	2010	1930	Zar-Kad	Comercial	Toyota	Dot	9	0	9	Severe
29	7.6358	10.88	K/Farakwai	2010	1430	Kad-Zar	Comercial	Peogeout	Loc	3	0	5	Severe
30	7.5918	10.862	K/Tsintsiya	2010	1000	Kad-Zar	Private	Volkswagen	Tbt	2	0	4	Severe
31	7.5122	10.717	Foundation	2010	220	Kad-Zar	Comercial	Jincheng	Tbt	3	0	6	Severe
32	7.5199	10.772	B/Yero	2010	1130	Kad-Zar	Comercial	Peogeout	Dad	4	0	5	Severe
33	7.6195	10.873	Sabon Yalwa	2010	1840	Zar-Kad	Private	Volkswagen	Tbt	1	1	3	Fatal
34	7.6358	10.88	K/Farakwai	2010	1750	Kad-Zar	Comercial	Volkswagen	Ovl	6	1	7	Fatal
35	7.5199	10.772	B/Yero	2010	1140	Kad-Zar	Comercial	Jincheng	Spv	3	0	4	Severe
36	7.5199	10.772	B/Yero	2010	1130	Kad-Zar	Private	Jincheng	Spv	2	0	2	Severe
37	7.5199	10.772	B/Yero	2010	1200	Zar-Kad	Private	Volkswagen	Spv	2	0	6	Severe
38	7.6448	10.98	Dumbi	2010	1830	Zar-Kad	Private	Honda	Spv	9	0	12	Severe
39	7.6441	10.935	L/Zango	2010	1800	Kad-Zar	Comercial	Daf/Toyota	Spv	3	0	5	Severe
40	7.5199	10.772	B/Yero	2010	1930	Kad-Zar	Comercial	Toyota	Dad	2	0	17	Severe
41	7.5741	10.83	Jaji	2010	1430	Kad-Zar	Private	Toyota	Spv	3	0	1	Severe
42	7.6441	10.935	L/Zango	2010	1145	Zar-Kad	Comercial	Mecedeze	Tbt	4	0	4	Severe
43	7.5741	10.83	Jaji	2010	1545	Zar-Kad	Comercial	Jincheng	Spv	3	2	18	Fatal
44	7.5199	10.772	B/Yero	2010	1545	Zar-Kad	Comercial	Toyota	Rtv	13	0	9	Severe
45	7.5199	10.772	B/Yero	2010	1630	Kad-Zar	Comercial	Nanfang/Volkswagen	Mdv	3	1	1	Fatal
46	7.6448	10.98	Dumbi	2010	1630	Kad-Zar	Comercial	Jincheng	Rtv	1	0	27	Severe
47	7.5054	10.689	M/Jos	2010	1730	Zar-Kad	Private	Peogeout	Dgd	19	1	8	Fatal
48	7.5122	10.717	Foundation	2010	1130	Kad-Zar	Comercial	Jincheng	Dgd	2	2	2	Fatal
49	7.5054	10.689	M/Jos	2010	1330	Zar-Kad	Comercial	Mazda, Peigeout	Spv	2	2	1	Fatal
50	7.5199	10.772	B/Yero	2010	1800	Zar-Kad	Comercial	Honda	Spv	2	0	7	Severe
51	7.5199	10.772	B/Yero	2010	1930	Kad-Zar	Comercial	Toyota	Spv	0	1	2	Fatal
52	7.5123	10.746	Dandami	2010	1430	Zar-Kad	Private	Toyota	Spv	1	0	3	Severe
53	7.6441	10.935	L/Zango	2010	1000	Kad-Zar	Private	Daf	Spv	5	0	1	Severe

54	7.5741	10.83	Jaji	2010	220	Zar-Kad	Private	Nanfang	Spv	0	1	7	Fatal
55	7.5741	10.83	Jaji	2010	1130	Zar-Kad	Comercial	Peogeout	Tbt	8	0	2	Severe
56	7.5474	10.798	Sambawa	2010	1840	Kad-Zar	Private	Toyota	Tbt	2	0	3	Severe
57	7.6195	10.873	Sabon Yalwa	2010	1750	Kad-Zar	Comercial	Daf	Tbt	3	0	3	Severe
58	7.5199	10.772	B/Yero	2010	1140	Zar-Kad	Comercial	Honda	Spv	1	0	5	Severe
59	7.6358	10.88	K/Farakwai	2010	1130	Kad-Zar	Comercial	Jincheng	Spv	1	0	1	Severe
60	7.5054	10.689	M/Jos	2010	1200	Zar-Kad	Comercial	Hnda, Toyota	Others	1	0	19	Severe
61	7.5054	10.689	M/Jos	2010	1830	Kad-Zar	Comercial	Toyota	Mdv	0	1	3	Fatal
62	7.5199	10.772	B/Yero	2010	1700	Kad-Zar	Comercial	Tipper	Spv	2	0	2	Severe
63	7.5199	10.772	B/Yero	2010	1330	Kad-Zar	Private	Honda	Tbt	2	0	2	Severe
64	7.6195	10.873	Sabon Yalwa	2010	1000	Zar-Kad	Private	M/Bishi	Rtv	4	0	5	Severe
65	7.5199	10.772	B/Yero	2010	1750	Kad-Zar	Private	Toyota	Rtv	1	0	4	Severe
66	7.5741	10.83	Jaji	2010	1000	Kad-Zar	Private	Toyota	Mdv	4	1	1	Fatal
67	7.5606	10.814	Jaji	2010	1430	Zar-Kad	Comercial	Volkswagen	Tbt	14	0	14	Severe
68	7.5741	10.83	Jaji	2010	1500	Kad-Zar	Comercial	Daf, Man	Spv	1	0	18	Severe
69	7.5741	10.83	Jaji	2010	1900	Kad-Zar	Comercial	Volkswagen	Dad	2	0	2	Severe
70	7.5741	10.83	Jaji	2010	2230	Kad-Zar	Comercial	Jincheng	Dad	2	0	2	Severe
71	7.5741	10.83	Jaji	2010	1730	Kad-Zar	Private	Toyota	Tbt	2	0	3	Severe
72	7.6358	10.88	K/Farakwai	2010	1500	Kad-Zar	Private	Daf	Spv	0	0	2	Minor
73	7.6358	10.88	K/Farakwai	2010	215	Kad-Zar	Comercial	Toyota	Spv	0	0	1	Minor
74	7.472	10.647	Nti	2010	1030	Zar-Kad	Comercial	Man	Mdv	4	0	4	Severe
75	7.5122	10.717	Foundation	2010	1300	Kad-Zar	Comercial	Toyota	Spv	0	0	2	Minor
76	7.4694	10.639	Rigachikun	2010	645	Kad-Zar	Private	Volkswagen	Obs	2	0	17	Severe
77	7.5741	10.83	Jaji	2010	115	Kad-Zar	Comercial	Volkswagen	Spv	14	3	1	Fatal
78	7.5741	10.83	Jaji	2010	800	Kad-Zar	Private	Volkswagen	Mdv	0	1	6	Fatal
79	7.5741	10.83	Jaji	2010	1445	Kad-Zar	Comercial	Jincheng	Spv	5	1	2	Fatal
80	7.5741	10.83	Jaji	2010	1625	Kad-Zar	Private	Toyota	Spv	6	1	3	Fatal
81	7.5122	10.717	Foundation	2010	1830	Kad-Zar	Comercial	Toyota	Dgd	1	0	3	Severe

82	7.5741	10.83	Jaji	2010	1500	Kad-Zar	Private	Mecedeze	Rtv	2	1	4	Fatal
83	7.5741	10.83	Jaji	2010	1230	Zar-Kad	Private	Honda	Dgd	1	0	3	Severe
84	7.5741	10.83	Jaji	2010	1630	Kad-Zar	Comercial	Mazda, Mitsubishi	Dgd	8	0	8	Severe
85	7.5606	10.814	Jaji	2010	1705	Kad-Zar	Comercial	Jincheng	Dad	2	0	2	Severe
86	7.5122	10.717	Foundation	2010	1700	Zar-Kad	Comercial	Toyota	Dgd	4	0	15	Severe
87	7.5122	10.717	Foundation	2010	800	Kad-Zar	Comercial	Honda	Loc	2	0	2	Severe
88	7.5606	10.814	Jaji	2010	1150	Zar-Kad	Private	Jincheng	Spv	2	0	2	Severe
89	7.5741	10.83	Jaji	2010	1400	Kad-Zar	Comercial	Honda	Dgd	14	0	14	Severe
90	7.6358	10.88	K/Farakwai	2010	1715	Kad-Zar	Comercial	Nissan	Loc	1	0	1	Severe
91	7.5199	10.772	B/Yero	2010	1610	Kad-Zar	Private	.Toyota, Chinceng	Rtv	2	0	5	Severe
92	7.5741	10.83	Jaji	2010	1630	Kad-Zar	Private	Jincheng	Loc	1	0	1	Severe
93	7.5122	10.717	Foundation	2010	1800	Kad-Zar	Priv/Comm	.Honda,Toyota	Spv	5	0	5	Severe
94	7.5741	10.83	Jaji	2010	2030	Zar-Kad	Comercial	Peogeout	Dad	0	0	11	Severe
95	7.5199	10.772	B/Yero	2010	2015	Zar-Kad	Comercial	Honda	Loc	1	0	2	Severe
96	7.5199	10.772	B/Yero	2010	1030	Zar-Kad	Comercial	Nanfang	Spv	2	0	2	Severe
97	7.5022	10.687	M/Jos	2010	2030	Zar-Kad	Comercial	Mecedeze	Spv	3	0	3	Severe
98	7.5022	10.687	M/Jos	2010	600	Kad-Zar	Comercial	.Pgt,Daf	Sos	1	1	3	Fatal
99	7.5199	10.772	B/Yero	2010	1500	Kad-Zar	Comercial	Na	Tbt	8	1	8	Fatal
100	7.5741	10.83	Jaji	2010	1145	Kad-Zar	Comercial	Toyota	Others	0	0	5	Severe
101	7.509	10.692	M/Jos	2010	600	Zar-Kad	Comercial	Toyota	Dgd	12	0	72	Severe
102	7.5199	10.772	B/Yero	2010	1215	Zar-Kad	Comercial	Peogeout	Dot	1	1	4	Fatal
103	7.472	10.647	T/Mosque	2010	1900	Zar-Kad	Comercial	Trl,Pgt	Spv	0	0	4	Severe
104	7.5122	10.717	Foundation	2010	746	Kad-Zar	Comercial	Daf	Mdv	10	0	5	Severe
105	7.6441	10.935	L/Zango	2010	800	Kad-Zar	Comercial	Peogeout	Dgd	0	1	7	Fatal
106	7.6441	10.935	L/Zango	2010	830	Kad-Zar	Comercial	Toyota	Obs	2	0	3	Severe
107	7.6358	10.88	K/Farakwai	2010	2125	Kad-Zar	Private	Toyota	Loc	2	0	5	Severe
108	7.6358	10.88	K/Farakwai	2010	1100	Kad-Zar	Private	.Daf,Honda	Dgd	1	3	3	Fatal
109	7.6358	10.88	K/Farakwai	2010	1330	Kad-Zar	Priv/Comm	.Honda,Jincheng	Brd	2	0	9	Severe

110	7.6358	10.88	K/Farakwai	2010	1750	Kad-Zar	Private	Peogeout	Brd	2	0	2	Severe
111	7.5741	10.83	Jaji	2010	800	Kad-Zar	Private	Peogeout	Brd	0	1	2	Fatal
112	7.4695	10.639	Rigachikun	2010	910	Kad-Zar	Private	Toyota	Spv	1	0	1	Severe
113	7.509	10.692	M/Jos	2010	1200	Kad-Zar	Comercial	Na	Spv	3	0	7	Severe
114	7.5123	10.746	Dandami	2010	815	Kad-Zar	Comercial	Toyota	Loc	1	0	12	Severe
115	7.5474	10.798	Sambawa	2010	1830	Kad-Zar	Comercial	Volkswagen	Spv	4	0	13	Severe
116	7.5199	10.772	B/Yero	2010	1436	Zar-Kad	Comercial	Peogeout	Spv	1	2	6	Fatal
117	7.5741	10.83	Jaji	2010	2145	Kad-Zar	Privt/Comm	Toyota,Volswagen	Ovl	3	1	14	Fatal
118	7.5741	10.83	Jaji	2010	1630	Kad-Zar	Private	Toyota	Tbt	2	1	4	Fatal
119	7.5741	10.83	Jaji	2010	930	Zar-Kad	Comercial	Volkswagen	Spv	3	0	8	Severe
120	7.5123	10.746	Dandami	2010	1625	Zar-Kad	Comercial	Toyota	Spv	2	0	3	Severe
121	7.5122	10.717	Foundation	2010	1120	Zar-Kad	Comercial	Daf	Dgd	3	0	3	Severe
122	7.5122	10.717	Foundation	2010	1600	Zar-Kad	Comercial	Volkswagen	Spv	1	0	3	Severe
123	7.509	10.692	M/Jos	2010	1150	Zar-Kad	Comercial	Honda	Tbt	1	0	1	Severe
124	7.5741	10.83	Jaji	2010	1300	Kad-Zar	Priv/Comm	Jincheng	Dgd	1	2	3	Fatal
125	7.5741	10.83	Jaji	2010	1400	Kad-Zar	Comercial	Volkswagen	Loc	1	0	7	Severe
126	7.4694	10.639	Rigachikun	2010	1825	Zar-Kad	Priv/Comm	.Volkswagen,Jincheng	Dgd	2	1	6	Fatal
127	7.5199	10.772	B/Yero	2010	1300	Kad-Zar	Private	Honda	Spv	0	2	6	Fatal
128	7.5199	10.772	B/Yero	2010	1900	Zar-Kad	Private	Volkswagen	Spv	0	1	9	Fatal
129	7.5199	10.772	B/Yero	2010	2000	Zar-Kad	Priv/Comm	Jincheng	Rtv	0	2	9	Fatal
130	7.5951	10.864	Z/Aya	2010	930	Kad-Zar	Private	Mazda	Spv	1	0	6	Severe
131	7.5199	10.772	B/Yero	2010	2000	Kad-Zar	Priv/Comm	.Benz, Trailer	Lsv	2	1	6	Fatal
132	7.5741	10.83	Jaji	2010	1630	Kad-Zar	Comercial	Jincheng	Spv	2	0	4	Fatal
133	7.5474	10.798	Sambawa	2010	900	Kad-Zar	Comercial	Volkswagen	Tbt	1	0	2	Severe
134	7.5122	10.717	Foundation	2010	900	Kad-Zar	Private	Honda	Tbt	4	0	2	Severe
135	7.5741	10.83	Jaji	2010	1708	Zar-Kad	Private	Volkswagen	Spv	2	0	4	Severe
136	7.4872	10.673	T/Gate	2010	700	Kad-Zar	Comercial	Toyota	Loc	8	0	2	Severe
137	7.5741	10.83	Jaji	2010	1415	Kad-Zar	Comercial	Toyota	Dgd	19	0	19	Severe

138	7.5122	10.717	Foundation	2010	1420	Kad-Zar	Comercial	Toyota	Tbt	1	0	1	Severe
139	7.5741	10.83	Jaji	2010	1000	Kad-Zar	Comercial	Toyota	Spv	7	0	18	Severe
140	7.472	10.647	T/Mosque	2010	1800	Kad-Zar	Private	.Pgt,B/Shi	Tbt	2	2	0	Fatal
141	7.5741	10.83	Jaji	2010	2300	Kad-Zar	Priv/Comm	.Toyota,Jincheng	Lsv	2	0	4	Severe
142	7.5741	10.83	Jaji	2010	1600	Kad-Zar	Comercial	Peogeout	Tbt	0	0	5	Severe
143	7.5199	10.772	B/Yero	2010	1650	Zar-Kad	Private	Toyota	Spv	1	0	2	Severe
144	7.5474	10.798	Sambawa	2010	1600	Zar-Kad	Private	Toyota	Spv	0	1	3	Fatal
145	7.5474	10.798	Sambawa	2010	1610	Zar-Kad	Private	Volkswagen	Tbt	1	2	1	Fatal
146	7.5122	10.717	Foundation	2010	830	Kad-Zar	Comercial	Toyota	Tbt	5	0	7	Severe
147	7.5199	10.772	B/Yero	2010	1710	Zar-Kad	Comercial	Volkswagen	Spv	1	0	5	Severe
148	7.4695	10.639	Rigachikun	2010	1215	Kad-Zar	Private	Honda	Dot	2	0	2	Severe
149	7.5199	10.772	B/Yero	2010	1117	Zar-Kad	Comercial	Jincheng	Tbt	1	0	6	Severe
150	7.5122	10.717	Foundation	2010	1200	Kad-Zar	Comercial	Volkswagen	Tbt	6	1	2	Fatal
151	7.5741	10.83	Jaji	2010	810	Kad-Zar	Comercial	Toyota	Tbt	5	0	7	Severe
152	7.472	10.647	T/Mosque	2010	930	Zar-Kad	Comercial	Toyota	Spv	5	2	6	Fatal
153	7.6358	10.88	K/Farakwai	2010	1530	Zar-Kad	Comercial	.Volkswagen, Honda	Rtv	2	0	9	Severe
154	7.5918	10.862	K/Tsintsiya	2010	1420	Zar-Kad	Private	Toyota	Spv	2	0	6	Severe
155	7.4695	10.639	Rigachikun	2010	700	Zar-Kad	Privt/Comm	.Pgt,Honda	Upd	3	6	4	Fatal
156	7.4695	10.639	Rigachikun	2010	1400	Zar-Kad	Comercial	Nissan	Loc	3	0	12	Severe
157	7.5741	10.83	Jaji	2010	930	Zar-Kad	Private	Toyota	Loc	6	1	12	Fatal
158	7.5199	10.772	B/Yero	2010	1750	Zar-Kad	Comercial	Volkswagen	Loc	7	0	9	Severe
159	7.5741	10.83	Jaji	2010	730	Zar-Kad	Private	Volkswagen	Spv	3	0	4	Severe
160	7.5741	10.83	Jaji	2010	455	Zar-Kad	Private	Man	Sos	2	0	20	Severe
161	7.5122	10.717	Foundation	2010	800	Kad-Zar	Comercial	Volkswagen	Spv	0	1	3	Fatal
162	7.509	10.692	M/Jos	2010	1610	Kad-Zar	Private	Toyota	Spv	2	0	2	Severe
163	7.6441	10.935	L/Zango	2010	900	Kad-Zar	Comercial	Mecedeze	Spv	3	0	3	Severe
164	7.5199	10.772	B/Yero	2010	1830	Kad-Zar	Comercial	Toyota	Spv	4	0	17	Severe
165	7.5741	10.83	Jaji	2010	1845	Kad-Zar	Comercial	Jincheng	Spv	1	0	2	Severe

166	7.509	10.692	M/Jos	2010	1230	Zar-Kad	Priv/Comm	.Volkswagen, Jincheng	Dgd	2	1	6	Fatal
167	7.6195	10.873	Sabon Yalwa	2010	1420	Kad-Zar	Priv/Comm	.Honda,Toyota	Spv	9	0	18	Severe
168	7.5199	10.772	B/Yero	2010	1100	Kad-Zar	Private	.Volskwagen,Honda	Loc	8	0	7	Severe
169	7.509	10.692	M/Jos	2010	1030	Kad-Zar	Private	Mitsibishi	Spv	2	0	6	Severe
170	7.6358	10.88	K/Farakwai	2010	1040	Zar-Kad	Private	Honda	Spv	1	0	1	Severe
171	7.5199	10.772	B/Yero	2010	1530	Kad-Zar	Private	Toyota	Spv	1	0	7	Severe
172	7.5741	10.83	Jaji	2010	1030	Kad-Zar	Comercial	.Pegeout,Volkswagen	Dgd	7	0	7	Severe
173	7.5741	10.83	Jaji	2010	1012	Zar-Kad	Priv/Comm	.Man,Honda	Dgd	4	0	5	Severe
174	7.4695	10.639	Rigachikun	2010	1430	Kad-Zar	Private	Honda	Spv	2	0	5	Severe
175	7.5199	10.772	B/Yero	2010	1725	Kad-Zar	Private	Jincheng	Dgd	2	0	2	Severe
176	7.509	10.692	M/Jos	2010	1300	Zar-Kad	Private	Toyota	Tbt	2	8	12	Fatal
177	7.5122	10.717	Foundation	2010	630	Zar-Kad	Priv/Comm	.Jincheng, Rover	Spv	1	1	2	Fatal
178	7.6358	10.88	K/Farakwai	2010	1700	Zar-Kad	Private	M/Bishi	Tbt	7	0	2	Severe
179	7.5674	10.824	Jaji	2010	300	Zar-Kad	Comercial	Man	Spv	0	1	7	Fatal
180	7.5199	10.772	B/Yero	2010	1300	Kad-Zar	Private	Mecedeze	Spv	0	1	2	Fatal
181	7.5741	10.83	Jaji	2010	330	Zar-Kad	Comercial	Man	Sos	4	2	25	Fatal
182	7.5741	10.83	Jaji	2010	345	Zar-Kad	Comercial	Renault	Spv	0	0	0	Severe
183	7.6358	10.88	K/Farakwai	2010	2230	Zar-Kad	Comercial	Peogeout	Tbt	2	1	5	Fatal
184	7.5474	10.798	Sambawa	2010	1030	Kad-Zar	Private	Honda	Loc	0	1	1	Fatal
185	7.5741	10.83	Jaji	2010	1600	Zar-Kad	Comercial	Man	Tbt	0	0	2	Severe
186	7.5918	10.862	K/Tsintsiya	2010	130	Zar-Kad	Comercial	Toyota	Spv	11	10	24	Fatal
187	7.6358	10.88	K/Farakwai	2010	1600	Zar-Kad	Private	.Jincheng, Trailer	Tbt	6	0	7	Severe
188	7.509	10.692	M/Jos	2010	1230	Kad-Zar	Comercial	Lifan	Dgd	0	1	2	Fatal
189	7.5741	10.83	Jaji	2010	1730	Kad-Zar	Private	Golf	Loc	1	0	2	Severe
190	7.5122	10.717	Foundation	2010	1810	Kad-Zar	Priv/Comm	.Volkswagen, Toyota	Loc	3	0	6	Severe
191	7.472	10.647	T/Mosque	2010	1406	Kad-Zar	Private	Honda	Dgd	5	0	1	Severe
192	7.6195	10.873	Sabon Yalwa	2010	700	Kad-Zar	Private	Honda	Loc	1	0	1	Severe
193	7.6441	10.935	L/Zango	2010	1415	Zar-Kad	Comercial	Daf	Tbt	2	0	3	Severe

194	7.6195	10.873	Sabon Yalwa	2010	1455	Kad-Zar	Comercial	Jincheng	Loc	0	0	4	Minor
195	7.5741	10.83	Jaji	2010	1315	Zar-Kad	Comercial	Toyota	Tbt	15	3	21	Fatal
196	7.5199	10.772	B/Yero	2010	700	Zar-Kad	Priv/Comm	.Volkswagen, Jincheng	Spv	0	1	2	Fatal
197	7.5741	10.83	Jaji	2010	1350	Kad-Zar	Private	Peogeout	Spv	0	1	3	Fatal
198	7.5199	10.772	B/Yero	2010	930	Kad-Zar	Comercial	Peogeout	Loc	3	0	4	Severe
199	7.5199	10.772	B/Yero	2010	1050	Kad-Zar	Comercial	Toyota	Loc	2	0	2	Severe
200	7.4695	10.639	Rigachikun	2010	1415	Zar-Kad	Private	Honda	Spv	1	0	4	Severe
201	7.5122	10.717	Foundation	2010	800	Kad-Zar	Private	Honda	Spv	2	0	2	Severe
202	7.5199	10.772	B/Yero	2010	1605	Kad-Zar	Private	Honda	Spv	1	0	1	Severe
203	7.5123	10.746	Dandami	2010	1625	Zar-Kad	Private	Volkswagen	Tbt	0	0	6	Minor
204	7.6441	10.935	L/Zango	2010	1654	Zar-Kad	Private	Toyota	Tbt	3	1	4	Fatal
205	7.5474	10.798	Sambawa	2011	700	Kad-Zar	Comercial	Jinch (2)	Rtv	2	0	2	Severe
206	7.6358	10.88	K/Farakwai	2011	1435	Kad-Zar	Private	V/W Golf	Upd	5	0	7	Severe
207	7.5741	10.83	Jaji	2011	1110	Kad-Zar	Comm	Opel Omega	Loc	4	0	6	Severe
208	7.5741	10.83	Jaji	2011	106	Kad-Zar	Comm	Tyt Hiace	Loc	10	2	15	Fatal
209	7.5198	10.772	B/Yero	2011	1030	Zar-Kad	Private	Honda Civic	Tbt	1	0	1	Severe
210	7.5199	10.772	B/Yero	2011	1920	Zar-Kad	Priv/Comm	M/Bz Honda,Tipper	Rtv	1	0	4	Severe
211	7.5741	10.83	Jaji	2011	0	Zar-Kad	Private	Audi	Loc	4	2	6	Fatal
212	7.5741	10.83	Jaji	2011	0	Kad-Zar	Comercial	Pgt505, Tyt Corolla	Spv	7	1	15	Fatal
213	7.5199	10.772	B/Yero	2011	0	Kad-Zar	Private	Pgt206,V/W Golf	Spv	1	0	2	Severe
214	7.5741	10.83	Jaji	2011	0	Kad-Zar	Private	Mazda, Pedetrant 2	Spv	1	2	3	Fatal
215	7.4695	10.639	Rigachikun	2011	0	Zar-Kad	Private	V/W Golf, Kago M/C	Spv	1	0	2	Severe
216	7.5741	10.83	Jaji	2011	0	Zar-Kad	Private	Honda/Ac, Tyt Camry	Dgd	0	0	2	Minor
217	7.5474	10.798	Sambawa	2011	0	Kad-Zar	Private	Tyt Carina Ii	Loc	1	0	1	Severe
218	7.6358	10.88	K/Farakwai	2011	0	Kad-Zar	Comercial	V/W Golf	Tbt	5	0	5	Severe
219	7.4695	10.639	Rigachikun	2011	0	Kad-Zar	Priv/Comm	Tyt Camry, 911 Lorry	Dgd	3	0	3	Severe
220	7.5741	10.83	Jaji	2011	0	Zar-Kad	Private	M/Benz	Tbt	4	0	4	Severe
221	7.6195	10.873	Sabon Yalwa	2011	0	Zar-Kad	Private	M/Benz V Boot	Tbt	2	0	2	Severe

222	7.5122	10.717	Foundation	2011	0	Kad-Zar	Comercial	V/W Golf	Dgd	3	1	4	Fatal
223	7.5199	10.772	B/Yero	2011	0	Kad-Zar	Comercial	Pgt J5	Ovl	4	0	4	Severe
224	7.5741	10.83	Jaji	2011	0	Kad-Zar	Comercial	Pgt J5	Spv	0	1	3	Fatal
225	7.5199	10.772	B/Yero	2011	0	Kad-Zar	Comercial	Pgt J5	Spv	1	0	2	Severe
226	7.509	10.692	M/Jos	2011	0	Kad-Zar	Private	H/Crv	Tbt	4	1	5	Fatal
227	7.5122	10.717	Foundation	2011	0	Kad-Zar	Private	Jincheng	Loc	1	0	1	Severe
228	7.6489	10.913	Z/Aya	2011	0	Kad-Zar	Private	H/Civic	Loc	2	0	6	Severe
229	7.5741	10.83	Jaji	2011	0	Kad-Zar	Priv/Comm	Golf, Golf	Dgd	0	0	11	Severe
230	7.472	10.647	T/Mosque	2011	0	Kad-Zar	Private	Jincheng	Spv	1	0	1	Severe
231	7.4695	10.639	Rigachikun	2011	0	Kad-Zar	Priv/Comm	Szk,Tyt	Loc	1	0	3	Severe
232	7.5741	10.83	Jaji	2011	0	Kad-Zar	Private	H/Civic	Tbt	6	0	6	Severe
233	7.6358	10.88	K/Farakwai	2011	0	Zar-Kad	Comercial	Pgt J5/Lorry	Dgd	1	0	6	Severe
234	7.5123	10.746	Dandami	2011	0	Zar-Kad	Comercial	Tyt Hiace	Tbt	13	5	18	Fatal
235	7.5123	10.746	Dandami	2011	0	Zar-Kad	Private	Opel	Ovl	7	2	10	Fatal
236	7.5122	10.717	Foundation	2011	0	Zar-Kad	Private	Golf, Tyt	Spv	8	0	8	Severe
237	7.5122	10.717	Foundation	2011	0	Zar-Kad	Private	Golf	Tbt	5	0	5	Severe
238	7.509	10.692	M/Jos	2011	0	Zar-Kad	Private	Jetta, Tyt, Canter	Spv	2	0	9	Severe
239	7.5199	10.772	B/Yero	2011	0	Zar-Kad	Private	H/Civic, Jincheng	Spv	1	1	7	Fatal
240	7.5741	10.83	Jaji	2011	0	Zar-Kad	Private	Tyt L, Tyt L	Spv	1	0	10	Severe
241	7.509	10.692	M/Jos	2011	0	Zar-Kad	Private	H/Civic	Spv	1	0	2	Severe
242	7.5199	10.772	B/Yero	2011	0	Kad-Zar	Private	V/W Golf	Tbt	6	0	7	Severe
243	7.5199	10.772	B/Yero	2011	0	Kad-Zar	Priv/Comm	H/Civic, Pgt J5	Dot	2	0	2	Severe
244	7.4872	10.673	T/Gate	2011	0	Zar-Kad	Comercial	Szk Bus, H/Acrd	Tbt	9	0	14	Severe
245	7.5122	10.717	Foundation	2011	0	Zar-Kad	Comercial	Frd J5, Pgt J5, Trl	Spv	2	2	9	Fatal
246	7.509	10.692	M/Jos	2011	0	Zar-Kad	Comercial	V/W Golf	Spv	5	0	5	Severe
247	7.5918	10.862	K/Tsintsiya	2011	0	Kad-Zar	Private	M/Benz	Loc	0	1	6	Fatal
248	7.509	10.692	M/Jos	2011	0	Zar-Kad	Private	Pgt J5, H/Civic	Loc	1	0	2	Severe
249	7.5199	10.772	B/Yero	2011	0	Kad-Zar	Private	H/Civic, V/W Golf	Loc	3	0	3	Severe

250	7.509	10.692	M/Jos	2011	0	Kad-Zar	Comercial	Pgt J5, Daf Trl	Dot	0	0	5	Severe
251	7.5199	10.772	B/Yero	2011	0	Kad-Zar	Private	Jincheng	Dot	1	0	2	Severe
252	7.5741	10.83	Jaji	2011	0	Kad-Zar	Private	Tyt Camry, Jincheng	Dgd	4	0	4	Severe
253	7.6358	10.88	K/Farakwai	2011	0	Zar-Kad	Private	V/W Golf, Jincheng	Tbt	3	0	7	Severe
254	7.509	10.692	M/Jos	2011	0	Zar-Kad	Comercial	Trl	Loc	0	0	0	Severe
255	7.6441	10.935	L/Zango	2011	0	Zar-Kad	Private	H/Civic	Tbt	1	0	1	Severe
256	7.5741	10.83	Jaji	2011	0	Zar-Kad	Private	V/W Golf	Spv	3	0	7	Severe
257	7.5741	10.83	Jaji	2011	0	Zar-Kad	Priv/Comm	Tyt Corll, Jincheng	Dgd	3	0	3	Severe
258	7.509	10.692	M/Jos	2011	0	Zar-Kad	Private	V/W Golf	Spv	0	1	2	Fatal
259	7.509	10.692	M/Jos	2011	0	Kad-Zar	Comercial	Tyt Hiace,Daf	Lsv	0	0	20	Severe
260	7.509	10.692	M/Jos	2011	0	Kad-Zar	Comercial	Tyt Hiace	Loc	4	1	11	Fatal
261	7.6358	10.88	K/Farakwai	2011	0	Kad-Zar	Comercial	Pgt J5	Tbt	4	0	4	Severe
262	7.5741	10.83	Jaji	2011	0	Kad-Zar	Comercial	Tyt Cmpct	Ovl	4	0	4	Severe
263	7.5122	10.717	Foundation	2011	0	Kad-Zar	Private	V/W Golf	Tbt	3	0	6	Severe
264	7.5741	10.83	Jaji	2011	0	Kad-Zar	Comercial	Daf, Jincheng	Dgd	1	1	5	Fatal
265	7.5123	10.746	Dandami	2011	0	Zar-Kad	Comercial	Ford Bus	Spv	20	0	20	Severe
266	7.5741	10.83	Jaji	2011	0	Zar-Kad	Private	H/Civic	Loc	0	2	3	Fatal
267	7.5741	10.83	Jaji	2011	0	Zar-Kad	Comercial	Tyt Hiace, H/Accord	Dgd	18	0	19	Severe
268	7.4769	10.656	D/Kande	2011	0	Zar-Kad	Private	Pgt 504, H/Accord	Dgd	2	0	8	Severe
269	7.6358	10.88	K/Farakwai	2011	0	Zar-Kad	Comercial	Trl, Pgt J5	Spv	4	2	6	Fatal
270	7.5122	10.717	Foundation	2011	0	Kad-Zar	Private	Jincheng	Dot	2	0	2	Severe
271	7.5741	10.83	Jaji	2011	0	Kad-Zar	Comercial	Tyt Crna, Loncin, Lifan	Dgd	5	0	6	Severe
272	7.5474	10.798	Sambawa	2011	0	Zar-Kad	Comercial	Tyt, Loncin, Jincheng	Dot	3	0	16	Severe
273	7.4769	10.656	D/Kande	2011	0	Kad-Zar	Private	Honda Hnsy	Loc	1	0	2	Severe
274	7.4695	10.639	Rigachikun	2011	0	Kad-Zar	Private	H/Accord	Dgd	3	0	5	Severe
275	7.5741	10.83	Jaji	2011	0	Zar-Kad	Priv/Comm	Tyt, Jincheng	Dgd	1	0	7	Severe
276	7.5741	10.83	Jaji	2011	0	Kad-Zar	Comercial	Keke Napep	Loc	2	0	3	Severe
277	7.5741	10.83	Jaji	2011	0	Kad-Zar	Comercial	Pgt J5	Tbt	4	0	10	Severe

278	7.5199	10.772	B/Yero	2011	0	Zar-Kad	Private	Golf, Jincheng	Rtv	2	1	3	Fatal
279	7.5199	10.772	B/Yero	2011	0	Zar-Kad	Comercial	Pgt J5	Mdv	2	0	2	Severe
280	7.5741	10.83	Jaji	2011	0	Zar-Kad	Comercial	Daf, Ford	Lsv	4	0	5	Severe
281	7.5741	10.83	Jaji	2011	0	Kad-Zar	Priv/Comm	H/Prdld, Bus	Spv	0	0	2	Severe
282	7.6489	10.913	Z/Aya	2011	0	Kad-Zar	Priv/Comm	M/Benz, Honda	Spv	5	0	5	Severe
283	7.509	10.692	M/Jos	2011	0	Zar-Kad	Priv/Comm	Sunny, Jincheng	Tbt	2	0	6	Severe
284	7.5199	10.772	B/Yero	2011	0	Kad-Zar	Private	Tyt Cmry	Tbt	3	0	6	Severe
285	7.509	10.692	M/Jos	2011	0	Zar-Kad	Private	Na	Others	0	1	2	Fatal
286	7.5199	10.772	B/Yero	2011	0	Zar-Kad	Private	Golf	Spv	0	0	8	Severe
287	7.5199	10.772	B/Yero	2011	0	Zar-Kad	Private	Honda Henesy	Tbt	1	0	2	Severe
288	7.509	10.692	M/Jos	2011	0	Zar-Kad	Private	Golf	Loc	0	1	1	Fatal
289	7.5199	10.772	B/Yero	2011	0	Kad-Zar	Private	Volvo	Tbt	1	1	4	Fatal
290	7.6195	10.873	Sabon Yalwa	2011	0	Zar-Kad	Comercial	Ford/J5	Tbt	2	1	3	Fatal
291	7.5741	10.83	Jaji	2011	0	Kad-Zar	Private	V/W Golf, Jincheng	Spv	4	1	7	Fatal
292	7.5741	10.83	Jaji	2011	0	Zar-Kad	Private	V/W Golf 3	Tbt	1	0	1	Severe
293	7.5741	10.83	Jaji	2011	0	Kad-Zar	Comercial	Pgt J5	Tbt	0	0	3	Minor
294	7.6195	10.873	Sabon Yalwa	2011	0	Zar-Kad	Private	V/W Car	Rtv	3	0	5	Severe
295	7.5122	10.717	Foundation	2011	0	Kad-Zar	Private	Mazda	Rtv	1	0	2	Severe
296	7.4872	10.673	T/Gate	2011	0	Kad-Zar	Private	Boxer M/C	Others	1	0	3	Severe
297	7.4872	10.673	T/Gate	2011	0	Zar-Kad	Comercial	Ford	Dgd	2	0	4	Severe
298	7.6441	10.935	L/Zango	2011	0	Zar-Kad	Private	Datsun	Loc	6	0	7	Severe
299	7.5122	10.717	Foundation	2011	0	Zar-Kad	Comercial	Tyt	Spv	2	2	4	Fatal
300	7.5741	10.83	Jaji	2011	0	Zar-Kad	Comercial	Bus	Tbt	10	0	10	Severe
301	7.509	10.692	M/Jos	2011	0	Kad-Zar	Priv/Comm	Car, Trl	Dgd	3	0	3	Severe
302	7.6489	10.913	Z/Aya	2011	0	Zar-Kad	Priv/Comm	Car, Trl	Lsv	1	0	2	Severe
303	7.4872	10.673	T/Gate	2011	0	Kad-Zar	Comercial	Trl/J5	Spv	4	0	6	Severe
304	7.4872	10.673	T/Gate	2011	0	Kad-Zar	Comercial	Bus	Spv	4	0	15	Severe
305	7.6489	10.913	Z/Aya	2011	0	Kad-Zar	Comercial	V/Golf	Spv	8	1	9	Fatal

306	7.5741	10.83	Jaji	2011	0	Kad-Zar	Private	Honda	Dgd	1	0	2	Severe
307	7.6358	10.88	K/Farakwai	2011	0	Zar-Kad	Priv/Comm	Nissan, M/Benz	Dgd	5	1	7	Fatal
308	7.5122	10.717	Foundation	2011	0	Kad-Zar	Comercial	Toyota	Tbt	4	0	13	Severe
309	7.5122	10.717	Foundation	2011	0	Kad-Zar	Priv/Comm	Honda, Pick P	Dot	2	0	4	Severe
310	7.5122	10.717	Foundation	2011	0	Kad-Zar	Priv/Comm	Bus, Honda	Loc	2	0	11	Severe
311	7.5199	10.772	B/Yero	2011	0	Kad-Zar	Comercial	Tyt Bus	Tbt	2	0	4	Severe
312	7.5741	10.83	Jaji	2011	0	Kad-Zar	Comercial	V/Wagen, M/Cycle	Loc	1	0	3	Severe
313	7.5199	10.772	B/Yero	2011	0	Zar-Kad	Priv/Comm	Tyt Bus	Dgd	2	0	2	Severe
314	7.5121	10.716	Foundation	2011	0	Zar-Kad	Comercial	Tyt Bus	Dgd	1	0	4	Severe
315	7.5816	10.844	New Barracks Jaji	2011	0	Zar-Kad	Private	Tyt Camry, Honda	Dgd	7	1	13	Fatal
316	7.5474	10.798	Sambawa	2011	0	Kad-Zar	Private	Honda, Golf	Loc	6	0	6	Severe
317	7.5741	10.83	Jaji	2011	0	Zar-Kad	Priv/Comm	Ford, Bus	Dot	7	2	10	Fatal
318	7.5199	10.772	B/Yero	2011	0	Zar-Kad	Priv/Comm	Tyt Hiace	Loc	0	1	2	Fatal
319	7.5199	10.772	B/Yero	2011	0	Zar-Kad	Private	Tyt	Dgd	0	0	2	Minor
320	7.5199	10.772	B/Yero	2011	0	Zar-Kad	Comercial	Lifan	Dgd	2	0	2	Severe
321	7.5741	10.83	Jaji	2011	0	Zar-Kad	Private	Pgt 406, Jincheng	Dgd	5	1	7	Fatal
322	7.472	10.647	Nti	2011	1000	Kad-Zar	Comercial	Pgt, Tyt Bus	Dgd	2	0	7	Severe
323	7.5918	10.862	K/Tsintsiya	2011	1650	Kad-Zar	Private	L/Cruseer Jeep	Dot	1	0	2	Severe
324	7.4695	10.639	Rigachikun	2011	1500	Zar-Kad	Private	M/Benz	Dgd	3	0	3	Severe
325	7.4695	10.639	Rigachikun	2011	2112	Kad-Zar	Private	Tyt Car	Brd	0	0	3	Minor
326	7.5741	10.83	Jaji	2011	1000	Kad-Zar	Comercial	Leyland 911	Tbt	0	0	2	Minor
327	7.4872	10.673	T/Gate	2011	1200	Zar-Kad	Priv/Comm	Honda Acdmy, Tyt Hiace	Spv	0	0	16	Minor
328	7.5741	10.83	Jaji	2011	1508	Kad-Zar	Pri	Honda Accord	Dgd	4	0	6	Severe
329	7.4695	10.639	Rigachikun	2011	1700	Kad-Zar	Comm	Daf Tnk, Jincheng	Dgd	1	1	3	Fatal
330	7.5199	10.772	B/Yero	2011	2100	Kad-Zar	Comm	V/W Golf	Loc	4	0	11	Severe
331	7.5121	10.716	Foundation	2011	1630	Zar-Kad	Comm	Tyt Hiace	Loc	1	0	11	Severe
332	7.5121	10.716	Foundation	2011	1130	Kad-Zar	Comm	V/W Golf	Spv	0	1	2	Fatal
333	7.5121	10.716	Foundation	2011	1430	Kad-Zar	Comm, Pri	Honda Car, Daf Trl	Dgd	1	0	2	Severe

334	7.4872	10.673	T/Gate	2011	1235	Kad-Zar	Pri	Honda Civic	Tbt	2	0	2	Severe
335	7.5199	10.772	B/Yero	2011	1000	Kad-Zar	Comm	V/W Golf, Tyt Car	Rtv	4	0	5	Severe
336	7.6195	10.873	Sabon Yalwa	2011	2000	Zar-Kad	Comm	Tyt Starlet, Tyt Bus, Tyt Car	Obs	9	4	13	Fatal
337	7.6441	10.935	L/Zango	2011	1630	Kad-Zar	Comm	Mark Trl	Loc	2	1	4	Fatal
338	7.5199	10.772	B/Yero	2011	1630	Kad-Zar	Comm	Pgt J5	Loc	2	0	2	Severe
339	7.472	10.647	Nti	2011	1745	Kad-Zar	Private	Jincheng	Spv	1	0	1	Severe
340	7.5199	10.772	B/Yero	2011	545	Zar-Kad	Private	Tyt Prm	Spv	2	0	2	Severe
341	7.5199	10.772	B/Yero	2011	1750	Zar-Kad	Private	Nanfang	Brd	2	0	2	Severe
342	7.5199	10.772	B/Yero	2011	1440	Zar-Kad	Private	Honda Henesy	Sos	2	0	6	Severe
343	7.5121	10.716	Foundation	2011	1730	Zar-Kad	Private	V/W Golf	Tbt	2	0	6	Severe
344	7.5121	10.716	Foundation	2011	1400	Zar-Kad	Priv/Comm	Tyt Hiace, Pgt 206	Spv	2	0	2	Severe
345	7.509	10.692	M/Jos	2011	630	Kad-Zar	Comercial	Iveco	Obs	1	0	4	Severe
346	7.5199	10.772	B/Yero	2011	1630	Zar-Kad	Private	Tyt Camry, Jincheng	Spv	1	0	3	Severe
347	7.6358	10.88	K/Farakwai	2011	2230	Zar-Kad	Comercial	Ford, Pedestrant	Spv	1	0	4	Severe
348	7.5918	10.862	K/Tsintsiya	2011	1630	Zar-Kad	Comercial	V/W Golf	Spv	6	1	8	Fatal
349	7.5918	10.862	K/Tsintsiya	2011	2230	Zar-Kad	Comercial	V/W Golf	Spv	5	0	5	Severe
350	7.5918	10.862	K/Tsintsiya	2011	110	Zar-Kad	Comercial	Iveco, Jincheng	Spv	0	1	2	Fatal
351	7.509	10.692	M/Jos	2011	1420	Kad-Zar	Private	Daf, Kawasaki	Obs	0	1	2	Fatal
352	7.5199	10.772	B/Yero	2011	1945	Zar-Kad	Private	Pgt 406	Loc	3	0	5	Severe
353	7.5199	10.772	B/Yero	2011	1549	Kad-Zar	Private	Mitsubishi	Tbt	7	0	7	Severe
354	7.509	10.692	M/Jos	2011	1620	Kad-Zar	Priv/Comm	Mazda, Mark, Jincheng	Obs	4	0	4	Severe
355	7.6511	10.99	D/Abba	2011	2047	Zar-Kad	Comercial	Toyota	Spv	2	1	4	Fatal
356	7.5741	10.83	Jaji	2011	1315	Zar-Kad	Comercial	Daf 900	Spv	3	0	7	Severe
357	7.5199	10.772	B/Yero	2011	1630	Zar-Kad	Private	Carina Ii	Spv	2	0	4	Severe
358	7.5199	10.772	B/Yero	2011	1745	Kad-Zar	Private	Zongshen	Spv	1	0	2	Severe
359	7.6195	10.873	Sabon Yalwa	2011	1130	Kad-Zar	Private	V/W Golf	Spv	3	1	6	Fatal
360	7.6195	10.873	Sabon Yalwa	2011	900	Kad-Zar	Private	Tyt Crick	Dgd	4	0	4	Severe
361	7.4695	10.639	Rigachikun	2011	1823	Kad-Zar	Priv/Comm	Tyt Hiace, Jincheng (4)	Bfl	0	2	6	Fatal

362	7.6358	10.88	K/Farakwai	2011	1322	Kad-Zar	Private	Honda Crv	Tbt	3	3	6	Fatal
363	7.5741	10.83	Jaji	2011	730	Zar-Kad	Private	Honda Accord	Loc	1	0	1	Severe
364	7.5199	10.772	B/Yero	2011	1852	Zar-Kad	Comercial	Tyt Hiace	Tbt	0	0	3	Minor
365	7.5121	10.716	Foundation	2011	1630	Kad-Zar	Priv/Comm	V/W Golf, M/C	Spv	2	0	2	Severe
366	7.5741	10.83	Jaji	2011	915	Kad-Zar	Comercial	Tyt, Jetta	Dgd	4	1	5	Fatal
367	7.5121	10.716	Foundation	2011	1105	Kad-Zar	Comercial	Tyt Hiace	Tbt	6	0	9	Severe
368	7.5121	10.716	Foundation	2011	810	Kad-Zar	Private	Honda Civic	Brd	0	0	3	Severe
369	7.6441	10.935	L/Zango	2011	1245	Kad-Zar	Priv/Comm	Tyt, M/Benz, Iveco	Spv	2	1	7	Fatal
370	7.5199	10.772	B/Yero	2011	845	Zar-Kad	Private	Jincheng	Spv	1	0	4	Severe
371	7.5121	10.716	Foundation	2011	1830	Kad-Zar	Private	Honda	Spv	1	0	1	Severe
372	7.5199	10.772	B/Yero	2011	1000	Kad-Zar	Private	Daf, Bird	Mdv	0	0	5	Minor
373	7.4695	10.639	Rigachikun	2011	1335	Zar-Kad	Private	Tractor, V/W Golf	Dgd	5	0	8	Severe
374	7.6441	10.935	L/Zango	2011	1630	Kad-Zar	Priv/Comm	Tyt Hiace, M/C	Lsv	1	0	6	Severe
375	7.6441	10.935	L/Zango	2011	530	Zar-Kad	Comercial	V/W Golf, M/Benz 011	Lsv	4	1	7	Fatal
376	7.5741	10.83	Jaji	2011	1000	Kad-Zar	Comercial	J5 Bus	Tbt	0	0	2	Minor
377	7.4695	10.639	Rigachikun	2011	915	Kad-Zar	Private	Tyt Sienna, Jincheng	Spv	1	0	9	Severe
378	7.6358	10.88	K/Farakwai	2011	1534	Kad-Zar	Private	Tyt Crl, V/W Golf	Spv	3	0	7	Severe
379	7.5741	10.83	Jaji	2011	730	Kad-Zar	Priv/Comm	9tyt Hiace, Tyt Crl	Dgd	11	10	22	Severe
380	7.5741	10.83	Jaji	2011	857	Zar-Kad	Private	Jincheng	Spv	2	0	3	Severe
381	7.5121	10.716	Foundation	2011	1630	Zar-Kad	Priv/Comm	Tyt Cmry, Macopolo	Dgd	1	0	8	Severe
382	7.5741	10.83	Jaji	2011	2100	Kad-Zar	Priv/Comm	Tyt, Jincheng	Spv	1	1	4	Fatal
383	7.5741	10.83	Jaji	2011	1030	Kad-Zar	Priv/Comm	Truck, V/W Golf, Tyt	Obs	3	0	6	Severe
384	7.5199	10.772	B/Yero	2011	1415	Kad-Zar	Priv/Comm	Tanker, Jincheng, Jincheng	Rtv	2	0	5	Severe
385	7.6358	10.88	K/Farakwai	2011	1400	Zar-Kad	Comercial	Tyt Hiace	Tbt	1	0	5	Severe
386	7.6489	10.913	Z/Aya	2011	1415	Kad-Zar	Private	Honda	Spv	4	1	7	Fatal
387	7.509	10.692	M/Jos	2011	1315	Zar-Kad	Comercial	Tyt Hiace	Tbt	2	0	3	Severe
388	7.5121	10.716	Foundation	2011	1700	Kad-Zar	Comercial	Toyota	Tbt	3	1	17	Fatal
389	7.6441	10.935	L/Zango	2011	1630	Kad-Zar	Priv/Comm	Tyt Hiace, M/C	Lsv	1	0	6	Severe

390	7.5199	10.772	B/Yero	2011	1945	Zar-Kad	Private	Pgt 406	Spv	0	2	2	Fatal
391	7.5199	10.772	B/Yero	2011	800	Zar-Kad	Private	Pgt 505	Tbt	1	0	2	Severe
392	7.6195	10.873	Sabon Yalwa	2011	1440	Kad-Zar	Govt	Nissan Bus	Brd	8	0	18	Severe
393	7.5199	10.772	B/Yero	2011	1100	Zar-Kad	Comercial	Tyt Car, Tyt Bus	Spv	0	0	4	Minor
394	7.6358	10.88	K/Farakwai	2011	1745	Kad-Zar	Comercial	Tyt Car	Brd	4	0	4	Severe
395	7.5199	10.772	B/Yero	2011	1610	Zar-Kad	Private	Tyt Hilux	Loc	4	0	8	Severe
396	7.509	10.692	M/Jos	2011	830	Zar-Kad	Private	Opel Vectra	Mdv	3	0	1	Severe
397	7.6358	10.88	K/Farakwai	2011	1130	Zar-Kad	Private	Tyt Hilux, Tyt Jeep	Dot	2	0	8	Severe
398	7.5741	10.83	Jaji	2011	300	Kad-Zar	Comercial	Macopolo	Spv	0	1	43	Fatal
399	7.5121	10.716	Foundation	2011	1500	Zar-Kad	Private	Honda Henesy, Citren	Dot	0	0	4	Minor
400	7.5121	10.716	Foundation	2011	1530	Zar-Kad	Private	Tyt Camry	Mdv	0	0	2	Minor
401	7.6195	10.873	Sabon Yalwa	2011	2100	Kad-Zar	Comercial	Daf Tanker, Man Truck	Brd	0	0	7	Minor
402	7.6358	10.88	K/Farakwai	2011	840	Zar-Kad	Private	Honda Hala	Tbt	3	1	5	Fatal
403	7.5199	10.772	B/Yero	2011	1435	Kad-Zar	Priv/Comm	V/W Golf	Tbt	4	2	6	Fatal
404	7.6358	10.88	K/Farakwai	2011	700	Kad-Zar	Private	V/W Golf	Dot	3	0	3	Severe
405	7.6489	10.913	Z/Aya	2011	1200	Zar-Kad	Private	Tyt Corolla	Tbt	2	2	4	Fatal
406	7.5121	10.716	Foundation	2011	1830	Zar-Kad	Private	V/W Passat, Na	Pwr	0	1	4	Fatal
407	7.6358	10.88	K/Farakwai	2011	1600	Zar-Kad	Comercial	V/W Golf	Spv	0	0	6	Minor
408	7.6358	10.88	K/Farakwai	2011	1045	Zar-Kad	Private	Bmw M3, Jincheng	Spv	2	0	3	Severe
409	7.5121	10.716	Foundation	2011	1645	Zar-Kad	Comercial	Nissan	Dgd	4	0	4	Severe
410	7.5199	10.772	B/Yero	2011	1100	Zar-Kad	Comercial	Tyt Hiace	Mdv	0	0	2	Minor
411	7.509	10.692	M/Jos	2011	1340	Zar-Kad	Comercial	Tyt Hiace	Loc	8	1	11	Fatal
412	7.5199	10.772	B/Yero	2011	1030	Kad-Zar	Comercial	Tyt Hiace	Mdv	1	0	2	Severe
413	7.5199	10.772	B/Yero	2011	1455	Zar-Kad	Private	Bmw	Mdv	0	0	1	Minor
414	7.509	10.692	M/Jos	2011	1500	Zar-Kad	Comercial	Opel Astra	Tbt	0	0	6	Minor
415	7.5741	10.83	Jaji	2011	1430	Kad-Zar	Comercial	V/W Golf	Loc	1	0	12	Severe
416	7.6358	10.88	K/Farakwai	2011	1110	Kad-Zar	Comercial	V/W Golf	Ovl	2	0	2	Severe
417	7.5199	10.772	B/Yero	2011	1812	Kad-Zar	Comercial	Jincheng	Loc	2	1	2	Fatal

418	7.5741	10.83	Jaji	2011	2330	Zar-Kad	Comercial	Iveco Truck	Mdv	0	0	2	Minor
419	7.4695	10.639	Rigachikun	2011	830	Zar-Kad	Private	H/Acad, Pgt, Jincheng	Loc	2	0	4	Severe
420	7.6448	10.98	Dumbi	2011	910	Kad-Zar	Priv/Comm	Honda, Jincheng	Loc	1	0	3	Severe
421	7.5199	10.772	B/Yero	2011	1100	Zar-Kad	Private	Tyt Starlet	Spv	1	0	4	Severe
422	7.5741	10.83	Jaji	2011	1200	Zar-Kad	Private	Tyt Car, Honda	Tbt	7	1	10	Fatal
423	7.5199	10.772	B/Yero	2011	1520	Kad-Zar	Private	V/W Golf	Loc	1	0	6	Severe
424	7.5199	10.772	B/Yero	2011	1830	Zar-Kad	Comercial	Jincheng	Spv	2	0	2	Severe
425	7.5741	10.83	Jaji	2011	2030	Zar-Kad	Private	Jincheng	Spv	2	0	3	Severe
426	7.5199	10.772	B/Yero	2011	530	Kad-Zar	Private	Honda	Dgd	1	0	1	Severe
427	7.5199	10.772	B/Yero	2011	1645	Kad-Zar	Comercial	Tyt Hiace, Jincheng	Obs	1	0	7	Severe
428	7.5741	10.83	Jaji	2011	2000	Kad-Zar	Priv/Comm	V/W Golf, Lifang	Rtv	0	1	3	Fatal
429	7.5741	10.83	Jaji	2011	1402	Kad-Zar	Priv/Comm	Tyt Hiace, Jincheng	Spv	1	1	12	Fatal
430	7.5741	10.83	Jaji	2011	1200	Zar-Kad	Private	Honda Hala, Pedestrant	Obs	0	1	2	Fatal
431	7.5123	10.746	Dandami	2011	1515	Zar-Kad	Private	Acura	Mdv	1	0	4	Severe
432	7.5123	10.746	Dandami	2011	1250	Zar-Kad	Private	Bajaj	Spv	2	0	2	Severe
433	7.509	10.692	M/Jos	2011	1250	Zar-Kad	Priv/Comm		Spv	4	0	26	Severe
434	7.5199	10.772	B/Yero	2011	1540	Zar-Kad	Private	Jincheng	Spv	1	0	1	Severe
435	7.5199	10.772	B/Yero	2011	1100	Kad-Zar	Private	Honda, Jincheng	Dgd	2	0	3	Severe
436	7.5119	10.719	Foundation	2011	2200	Zar-Kad	Comercial	Mitsibishi, Man	Spv	8	5	24	Fatal
437	7.5119	10.719	Foundation	2011	1340	Zar-Kad	Comercial	Peogeout	Tbt	1	1	2	Fatal
438	7.5474	10.798	Sambawa	2011	1430	Zar-Kad	Private	Toyota	Tbt	1	0	1	Severe
439	7.5119	10.719	Foundation	2011	1201	Zar-Kad	Private	Jincheng	Spv	1	0	3	Severe
440	7.5199	10.772	B/Yero	2011	900	Kad-Zar	Comercial	Volkswagen	Tbt	2	1	6	Fatal
441	7.5741	10.83	Jaji	2011	1705	Zar-Kad	Comercial	Volkswagen	Loc	2	0	5	Severe
442	7.5741	10.83	Jaji	2011	223	Zar-Kad	Comercial	Mecedeze	Tbt	2	0	3	Severe
443	7.5199	10.772	B/Yero	2011	230	Kad-Zar	Comercial	Nissan	Mdv	0	0	3	Fatal
444	7.5199	10.772	B/Yero	2011	1200	Zar-Kad	Private	Jincheng	Dgd	2	0	3	Severe
445	7.5741	10.83	Jaji	2011	2030	Zar-Kad	Private	Jincheng	Spv	2	0	2	Severe

446	7.5199	10.772	B/Yero	2011	1800	Kad-Zar	Private	Jincheng	Rtv	2	0	2	Severe
447	7.4871	10.673	T/Gate	2011	1630	Zar-Kad	Private	Toyota	Mdv	2	0	10	Severe
448	7.509	10.692	M/Jos	2011	1330	Kad-Zar	Comercial	Disel	Dgd	1	0	10	Severe
449	7.5474	10.798	Sambawa	2011	1215	Zar-Kad	Private	Peogeout	Tbt	2	0	2	Severe
450	7.509	10.692	M/Jos	2011	1610	Zar-Kad	Comercial	Toyota, Pgt	Spv	4	0	7	Severe
451	7.5741	10.83	Jaji	2011	1358	Kad-Zar	Comercial	Volkswagen, Man	Spv	0	1	2	Fatal
452	7.5199	10.772	B/Yero	2011	1230	Kad-Zar	Comercial	Jincheng	Dgd	1	0	5	Severe
453	7.5199	10.772	B/Yero	2011	930	Zar-Kad	Priv/Comm	Toyota, Jincheng	Tbt	2	0	6	Severe
454	7.4871	10.673	T/Gate	2011	820	Zar-Kad	Private	Peogeout	Spv	2	1	5	Fatal
455	7.5199	10.772	B/Yero	2011	430	Kad-Zar	Priv/Comm	Honda, Benz	Pwr	1	1	3	Fatal
456	7.4459	10.585	Kawo	2011	1530	Zar-Kad	Comercial	Toyota	Dgd	0	1	7	Fatal
457	7.5741	10.83	Jaji	2011	2200	Zar-Kad	Comercial	Toyota	Mdv	3	0	1	Severe
458	7.509	10.692	M/Jos	2011	400	Kad-Zar	Comercial	Volkswagen	Dgd	0	0	1	Severe
459	7.6448	10.98	Dumbi	2011	712	Kad-Zar	Comercial	Man	Sos	5	0	73	Severe
460	7.4871	10.673	T/Gate	2011	1645	Zar-Kad	Comercial		Dot	1	0	7	Severe
461	7.5199	10.772	B/Yero	2011	1630	Zar-Kad	Comercial	Toyota	Dgd	1	1	5	Fatal
462	7.4769	10.656	D/Kande	2011	1630	Zar-Kad	Comercial	Volkswagen	Tbt	0	0	7	Minor
463	7.5199	10.772	B/Yero	2011	1630	Kad-Zar	Private	V/W Golf, Jincheng	Obs	1	0	2	Severe
464	7.5119	10.719	Foundation	2011	1700	Kad-Zar	Comercial	Jincheng	Spv	1	0	1	Severe
465	7.5741	10.83	Jaji	2012	1830	Kad-Zar	Private	Honda, Jincheng	Spv	2	0	4	Severe
466	7.6358	10.88	K/Farakwai	2012	1515	Kad-Zar	Private	Honda	Tbt	7	0	7	Severe
467	7.5119	10.719	Foundation	2012	1615	Kad-Zar	Private	Pgt 406	Loc	2	1	5	Fatal
468	7.5199	10.772	B/Yero	2012	1830	Kad-Zar	Private	Jincheng	Loc	0	1	1	Fatal
469	7.5741	10.83	Jaji	2012	800	Zar-Kad	Comercial	Fiat J5	Spv	0	1	16	Fatal
470	7.4695	10.639	Rigachikun	2012	1315	Kad-Zar	Priv/Comm	Honda Pgt Car	Dad	6	0	6	Severe
471	7.5741	10.83	Jaji	2012	1330	Zar-Kad	Priv/Comm	Jincheng,Golf,Jeep	Spv	7	1	11	Fatal
472	7.5918	10.862	K/Tsintsiya	2012	1520	Zar-Kad	Private	Golf	Loc	5	0	7	Severe
473	7.5199	10.772	B/Yero	2012	930	Kad-Zar	Private	Cg 150	Rtv	1	0	2	Severe

474	7.5741	10.83	Jaji	2012	1605	Zar-Kad	Priv/Comm	V/W Golf, Tyt Cmry	Dgd	5	0	9	Severe
475	7.5119	10.719	Foundation	2012	1100	Zar-Kad	Comercial	Pgt J5, Vectra	Dgd	2	0	8	Severe
476	7.5741	10.83	Jaji	2012	900	Kad-Zar	Comercial	Tyt Bus	Dgd	4	0	4	Severe
477	7.6441	10.935	L/Zango	2012	1350	Kad-Zar	Private	V/W Golf, V/W Vectra	Tbt	3	0	15	Severe
478	7.5741	10.83	Jaji	2012	1930	Zar-Kad	Private	Tyt Hiace, Jincheng	Rtv	3	0	15	Severe
479	7.5199	10.772	B/Yero	2012	1730	Zar-Kad	Private	M/C Ladies, Jincheng	Dgd	2	0	3	Severe
480	7.5918	10.862	K/Tsintsiya	2012	1300	Zar-Kad	Private	Vectra	Others	3	0	3	Severe
481	7.6358	10.88	K/Farakwai	2012	1600	Zar-Kad	Comercial	M/ Bishi	Tbt	14	0	19	Severe
482	7.5199	10.772	B/Yero	2012	1630	Kad-Zar	Comercial		Loc	2	0	2	Severe
483	7.472	10.647	Nti	2012	1745	Kad-Zar	Private		Spv	1	0	1	Severe
484	7.5199	10.772	B/Yero	2012	1530	Kad-Zar	Private	Qlink	Spv	2	1	3	Fatal
485	7.5119	10.719	Foundation	2012	1620	Kad-Zar	Priv/Comm	Jincheng, Jincheng	Spv	2	0	3	Severe
486	7.5199	10.772	B/Yero	2012	1200	Zar-Kad	Comercial	Tyt L/Ace	Loc	4	0	8	Severe
487	7.6489	10.913	Z/Aya	2012	1330	Zar-Kad	Comercial	Tyt Haice	Tbt	17	3	25	Fatal
488	7.509	10.692	M/Jos	2012	830	Zar-Kad	Private	Honda Henesy	Spv	1	2	3	Fatal
489	7.5199	10.772	B/Yero	2012	1830	Zar-Kad	Private	Dats8n	Loc	1	0	1	Fatal
490	7.509	10.692	M/Jos	2012	1920	Kad-Zar	Comercial	Ford Bus	Loc	11	0	11	Severe
491	7.5199	10.772	B/Yero	2012	930	Zar-Kad	Comercial	V/W Golf	Loc	5	0	7	Severe
492	7.6358	10.88	K/Farakwai	2012	30	Zar-Kad	Comercial	Daf (Trl)	Loc	15	7	40	Fatal
493	7.5119	10.719	Foundation	2012	530	Zar-Kad	Priv/Comm	Honda Acord, Ford J5	Loc	2	0	4	Severe
494	7.509	10.692	M/Jos	2012	745	Kad-Zar	Private	Cerano Jeef	Spv	1	0	1	Severe
495	7.5199	10.772	B/Yero	2012	1700	Kad-Zar	Private	Tyt Jeff	Tbt	3	0	3	Severe
496	7.5199	10.772	B/Yero	2012	1800	Zar-Kad	Comercial	V/W Golf, Tyt Crola	Spv	3	0	3	Severe
497	7.6489	10.913	Z/Aya	2012	1200	Kad-Zar	Comercial	V/W Golf	Tbt	4	0	4	Severe
498	7.509	10.692	M/Jos	2012	600	Kad-Zar	Comercial	Tyt Hiace,	Tbt	5	0	12	Severe
499	7.5119	10.719	Foundation	2012	558	Zar-Kad	Comercial	Daf Truck	Tbt	0	0	5	Severe
500	7.6358	10.88	K/Farakwai	2012	2020	Zar-Kad	Private	Honda Civic, Tyt Crola	Spv	3	0	6	Severe
501	7.6489	10.913	Z/Aya	2012	2030	Zar-Kad	Private	V/W Golf, Pgt 406	Upd	4	0	6	Severe

502	7.5199	10.772	B/Yero	2012	1200	Zar-Kad	Private	V/W Golf	Tbt	8	0	4	Severe
503	7.5199	10.772	B/Yero	2012	1210	Zar-Kad	Comercial	Tyt Hiace	Tbt	3	0	12	Severe
504	7.509	10.692	M/Jos	2012	1030	Kad-Zar	Private	Pgt 406	Spv	4	0	7	Severe
505	7.5119	10.719	Foundation	2012	1135	Zar-Kad	Comercial	Pgt	Spv	14	2	17	Fatal
506	7.5918	10.862	K/Tsintsiya	2012	1745	Kad-Zar	Comercial	Opel	Spv	4	3	12	Fatal
507	7.6358	10.88	K/Farakwai	2012	1650	Kad-Zar	Comercial	Ford	Tbt	2	1	4	Fatal
508	7.5741	10.83	Jaji	2012	1400	Kad-Zar	Private	Camry	Dgd	4	1	13	Fatal
509	7.5119	10.719	Foundation	2012	1645	Zar-Kad	Comercial	Ford	Mdv	5	0	5	Severe
510	7.5119	10.719	Foundation	2012	2130	Zar-Kad	Private	V/W Golf	Spv	1	0	2	Severe
511	7.5199	10.772	B/Yero	2012	1500	Zar-Kad	Private	Honda Civic	Tbt	1	0	9	Severe
512	7.6489	10.913	Z/Aya	2012	830	Zar-Kad	Comercial	Pgt J5	Mdv	1	0	1	Severe
513	7.509	10.692	M/Jos	2012	1230	Kad-Zar	Comercial	V/W Golf, Lifan	Spv	0	1	8	Fatal
514	7.5119	10.719	Foundation	2012	1530	Zar-Kad	Priv/Comm	Pgt J5, Tyt	Spv	1	0	7	Severe
515	7.5199	10.772	B/Yero	2012	1040	Zar-Kad	Comercial	Jincheng Bajaj	Spv	2	0	2	Severe
516	7.509	10.692	M/Jos	2012	2100	Zar-Kad	Private	Dawud	Tbt	1	0	1	Severe
517	7.6358	10.88	K/Farakwai	2012	1600	Zar-Kad	Private	Honda	Tbt	4	0	6	Severe
518	7.5199	10.772	B/Yero	2012	1130	Kad-Zar	Private	Nanfang	Spv	1	0	1	Severe
519	7.5199	10.772	B/Yero	2012	1315	Kad-Zar	Private	Skodafabi	Dot	2	0	3	Severe
520	7.5199	10.772	B/Yero	2012	2010	Zar-Kad	Comercial	Jincheng	Obs	1	0	1	Severe
521	7.5199	10.772	B/Yero	2012	1625	Zar-Kad	Private	V/W Golf	Spv	6	0	6	Severe
522	7.6441	10.935	L/Zango	2012	1430	Kad-Zar	Private	V/W Golf	Spv	6	1	4	Fatal
523	7.4695	10.639	Rigachikun	2012	1645	Zar-Kad	Private	Pgt	Spv	2	0	4	Severe
524	7.5199	10.772	B/Yero	2012	1330	Zar-Kad	Private	V/W Golf	Loc	5	0	8	Severe
525	7.5199	10.772	B/Yero	2012	1330	Kad-Zar	Private	Tyt Hiace	Mdv	0	0	6	Minor
526	7.6441	10.935	L/Zango	2012	845	Kad-Zar	Comercial	S/Wagon, Daf Trailer	Spv	3	3	16	Fatal
527	7.5199	10.772	B/Yero	2012	1800	Kad-Zar	Priv/Comm	Pgt 406, Trailer,	Spv	2	0	2	Severe
528	7.5741	10.83	Jaji	2012	1500	Kad-Zar	Private	Tyt Car	Dot	2	0	2	Severe
529	7.5119	10.719	Foundation	2012	740	Zar-Kad	Comercial	V/W Golf	Pwr	6	0	6	Severe

530	7.5199	10.772	B/Yero	2012	740	Zar-Kad	Private	J5 Bus,	Spv	0	1	2	Fatal
531	7.5741	10.83	Jaji	2012	800	Zar-Kad	Comercial	Tyt Car, Daf Trk	Spv	0	0	2	Minor
532	7.5741	10.83	Jaji	2012	1030	Kad-Zar	Comercial	Tyt Hiace	Obs	0	0	5	Minor
533	7.4695	10.639	Rigachikun	2012	1700	Kad-Zar	Priv/Comm	Tyt Hiace, Tyt Crll,V/W Golf	Tbt	5	0	22	Severe
534	7.6358	10.88	K/Farakwai	2012	915	Zar-Kad	Comercial	Tyt Crn	Spv	2	0	2	Severe
535	7.6441	10.935	L/Zango	2012	1320	Kad-Zar	Private	Honda Accord	Spv	3	1	4	Fatal
536	7.6441	10.935	L/Zango	2012	1545	Zar-Kad	Comercial	V/W Golf	Tbt	5	0	5	Severe
537	7.5199	10.772	B/Yero	2012	1800	Zar-Kad	Private	V/W Vento	Spv	0	1	6	Fatal
538	7.5199	10.772	B/Yero	2012	1000	Zar-Kad	Private	Jincheng	Rtv	1	0	2	Severe
539	7.5199	10.772	B/Yero	2012	1248	Kad-Zar	Private	Supra	Dgd	1	0	2	Severe
540	7.5741	10.83	Jaji	2012	800	Zar-Kad	Private	Honda, Honda Civic	Spv	1	0	3	Severe
541	7.5119	10.719	Foundation	2012	1645	Zar-Kad	Comercial	Tyt Hiace	Dgd	18	0	22	Severe
542	7.5199	10.772	B/Yero	2012	930	Zar-Kad	Priv/Comm	.Toyota, Jincheng	Tbt	2	0	6	Severe
543	7.4872	10.673	T/Gate	2012	820	Zar-Kad	Private	Peogeout	Spv	2	1	5	Fatal
544	7.5199	10.772	B/Yero	2012	430	Kad-Zar	Priv/Comm	.Honda, Benz	Pwr	1	1	3	Fatal
545	7.4483	10.589	Kawo	2012	1530	Zar-Kad	Comercial	Toyota	Dgd	0	1	7	Fatal
546	7.5741	10.83	Jaji	2012	2200	Zar-Kad	Comercial	Toyota	Mdv	3	0	1	Severe
547	7.6358	10.88	K/Farakwai	2012	1130	Zar-Kad	Comercial	V/W Golf	Loc	4	0	4	Severe
548	7.5918	10.862	K/Tsintsiya	2012	1330	Zar-Kad	Priv/Comm	V/W Golf, Honda,Honda Civic	Tbt	4	0	7	Severe
549	7.5119	10.719	Foundation	2012	720	Kad-Zar	Private	V/W Golf	Spv	6	3	10	Fatal
550	7.5741	10.83	Jaji	2012	730	Kad-Zar	Comercial	Vectra	Spv	4	1	8	Fatal
551	7.6358	10.88	K/Farakwai	2012	1350	Kad-Zar	Priv/Comm	Chevrolet	Spv	0	2	3	Fatal
552	7.5741	10.83	Jaji	2012	1530	Kad-Zar	Comercial	Nissan, L/Hiace	Dgd	2	0	3	Severe
553	7.5474	10.798	Sambawa	2012	808	Kad-Zar	Priv/Comm	Honda, Daf	Loc	0	0	6	Minor
554	7.5199	10.772	B/Yero	2012	1620	Kad-Zar	Private	Honda	Dgd	2	0	2	Severe
555	7.6358	10.88	K/Farakwai	2012	1600	Kad-Zar	Private	Tyt/Hillux	Spv	2	0	2	Severe
556	7.5199	10.772	B/Yero	2012	1110	Kad-Zar	Comercial	Boxer	Dot	1	0	1	Severe
557	7.6358	10.88	K/Farakwai	2012	1030	Zar-Kad	Priv/Comm	Tyt, Previa, Mazda, Tyt Camry	Mdv	3	0	11	Severe

558	7.6358	10.88	K/Farakwai	2012	1448	Kad-Zar	Comercial	Pgt P/Up	Tbt	4	0	4	Severe
559	7.5741	10.83	Jaji	2012	830	Zar-Kad	Priv/Comm	Pgt, Mbenz 911	Dgd	8	0	9	Severe
560	7.4695	10.639	Rigachikun	2012	1400	Zar-Kad	Priv/Comm	Honda, V/Wagen	Loc	7	0	7	Severe
561	7.5741	10.83	Jaji	2012	1420	Zar-Kad	Comercial	Boxer	Tbt	2	0	2	Severe
562	7.5199	10.772	B/Yero	2012	1500	Kad-Zar	Comercial	Tyt	Spv	1	2	1	Minor
563	7.5119	10.719	Foundation	2012	1235	Zar-Kad	Comercial	Jincheng	Loc	4	0	4	Severe
564	7.6456	10.899	K/Farakwai	2012	1230	Kad-Zar	Comercial	Nonda 86	Loc	5	0	7	Severe
565	7.6358	10.88	K/Farakwai	2012	1100	Kad-Zar	Comercial	Opel Astra/ Tyt Hica	Spv	1	0	16	Severe
566	7.509	10.692	M/Jos	2012	1000	Kad-Zar	Comercial	Tyt Bus, Iveco Truck	Dgd	6	2	7	Fatal
567	7.5123	10.746	Dandami	2012	1130	Kad-Zar	Comercial	Jincheng	Spv	3	1	4	Fatal
568	7.6358	10.88	K/Farakwai	2012	1200	Kad-Zar	Private	V/W Golf	Ovl	3	0	4	Severe
569	7.5119	10.719	Foundation	2012	1320	Zar-Kad	Private	V/W Jetta, Pgt 508	Spv	7	0	7	Severe
570	7.5741	10.83	Jaji	2012	1035	Kad-Zar	Priv/Comm	V/W Golf, Tanker	Ovl	3	0	3	Severe
571	7.5741	10.83	Jaji	2012	1700	Kad-Zar	Comercial	Trailer, Tanker	Spv	4	0	4	Severe
572	7.5741	10.83	Jaji	2012	1245	Kad-Zar	Private	Tyt Corolla,	Dgd	3	0	8	Severe
573	7.5199	10.772	B/Yero	2012	1110	Kad-Zar	Private	V/W Golf	Spv	5	1	6	Fatal
574	7.6358	10.88	K/Farakwai	2012	1615	Kad-Zar	Comercial	Tyt Bus, Trailer	Spv	6	0	9	Severe
575	7.5199	10.772	B/Yero	2012	2048	Zar-Kad	Comercial	Tyt Hiace	Mdv	9	0	9	Severe
576	7.6358	10.88	K/Farakwai	2012	1427	Zar-Kad	Private	V/Golf	Mdv	5	0	6	Severe
577	7.5199	10.772	B/Yero	2012	1923	Zar-Kad	Comercial	Baja/Tyt	Spv	3	0	3	Severe
578	7.5918	10.862	K/Tsintsiya	2012	1210	Kad-Zar	Priv/Comm	M Benz	Spv	1	0	2	Severe
579	7.4695	10.639	Rigachikun	2012	930	Zar-Kad	Comercial	Honda	Tbt	0	1	1	Fatal
580	7.5119	10.719	Foundation	2012	1745	Zar-Kad	Private	Pgt	Dot	2	0	2	Severe
581	7.6456	10.899	K/Farakwai	2012	1435	Kad-Zar	Comercial	Golf	Spv	1	0	6	Severe
582	7.5194	10.758	Frsc Gate	2012	1715	Zar-Kad	Private	Golf	Tbt	4	1	5	Fatal
583	7.5741	10.83	Jaji	2012	1430	Zar-Kad	Comercial	Pgt S/W, V/W Golf	Spv	1	0	12	Severe
584	7.5199	10.772	B/Yero	2012	2120	Kad-Zar	Private	Honda Accd, Honda Prelude	Spv	0	0	2	Severe
585	7.5199	10.772	B/Yero	2012	800	Zar-Kad	Priv/Comm	Pilot Hilender Ford	Dgd	3	0	6	Severe

586	7.5741	10.83	Jaji	2012	1747	Zar-Kad	Priv/Comm	Jincheng, Jincheng	Spv	1	0	4	Severe
587	7.5741	10.83	Jaji	2012	1453	Kad-Zar	Priv/Comm	Yty Hiace	Spv	4	1	5	Fatal
588	7.5474	10.798	Sambawa	2012	700	Zar-Kad	Private	Pgt 406	Tbt	1	0	1	Severe
589	7.6456	10.899	K/Farakwai	2012	1400	Kad-Zar	Private	V/W Golf	Loc	5	0	5	Severe
590	7.5741	10.83	Jaji	2012	940	Zar-Kad	Priv/Comm	Honda Civic, Tyt Bus	Spv	0	0	13	Severe
591	7.5199	10.772	B/Yero	2012	1100	Kad-Zar	Priv/Comm	Tyt Crllr, V/W Golf	Spv	0	0	2	Severe
592	7.5122	10.716	Foundation	2012	900	Kad-Zar	Private	Honda Civic	Brd	0	0	4	Severe
593	7.5741	10.83	Jaji	2012	1635	Zar-Kad	Comercial	Opel Vectra	Spv	2	1	4	Fatal
594	7.5123	10.746	Dandami	2012	1910	Zar-Kad	Private	Honda Civic	Spv	1	1	2	Fatal
595	7.5741	10.83	Jaji	2012	1250	Zar-Kad	Private	Bmw	Loc	3	0	3	Severe
596	7.5474	10.798	Sambawa	2012	814	Zar-Kad	Comercial	Tyt Bus	Tbt	2	1	4	Fatal
597	7.6358	10.88	K/Farakwai	2012	1255	Zar-Kad	Private	V/W Golf	Spv	2	0	2	Severe
598	7.6358	10.88	K/Farakwai	2012	1274	Zar-Kad	Comercial	Kasea M/C	Spv	2	0	2	Severe
599	7.6358	10.88	K/Farakwai	2012	1254	Zar-Kad	Comercial	J5 Bus	Tbt	0	1	1	Fatal
600	7.5741	10.83	Jaji	2012	900	Kad-Zar	Private	Honda	Tbt	0	0	5	Minor
601	7.5123	10.746	Dandami	2012	1123	Kad-Zar	Comercial	Daf, Iveco	Rtv	2	0	5	Severe
602	7.5123	10.746	Dandami	2012	765	Zar-Kad	Private	Toyota, Tyt Bus	Dgd	4	0	9	Severe
603	7.509	10.692	D/Dutse	2012	2134	Kad-Zar	Comercial	Tyt Car, Honda	Spv	6	0	6	Severe
604	7.5199	10.772	B/Yero	2012	543	Kad-Zar	Comercial	Qlink M/C	Spv	2	1	3	Fatal
605	7.5741	10.83	Jaji	2012	1345	Kad-Zar	Comercial	Jincheng	Loc	3	0	3	Severe
606	7.509	10.692	M/Jos	2012	1234	Zar-Kad	Private	V/W Bus Canter	Dgd	2	0	4	Severe
607	7.6489	10.913	Z/Aya	2012	954	Kad-Zar	Comercial	Honda	Loc	1	1	5	Fatal
608	7.5199	10.772	B/Yero	2012	1254	Zar-Kad	Comercial	Daf	Dot	2	0	4	Severe
609	7.5741	10.83	Jaji	2012	1235	Kad-Zar	Priv/Comm	Bajaj M/C, Tyt Siena	Dot	2	0	7	Severe
610	7.5474	10.798	Sambawa	2012	2000	Zar-Kad	Comercial	Opel	Loc	7	0	7	Severe
611	7.5741	10.83	Jaji	2012	1500	Zar-Kad	Private	V/W Golf	Loc	8	0	10	Severe
612	7.5199	10.772	B/Yero	2012	1800	Kad-Zar	Priv/Comm	Golf, Tyt Hiace	Spv	9	0	12	Severe
613	7.5122	10.716	Foundation	2012	1327	Kad-Zar	Private	Tyt Saloon	Spv	2	0	6	Severe

614	7.6358	10.88	K/Farakwai	2012	1816	Zar-Kad	Comercial	Tyt Saloon	Tbt	13	0	10	Severe
615	7.5123	10.746	Dandami	2012	1125	Kad-Zar	Comercial	Jincheng	Loc	2	0	2	Severe
616	7.5199	10.772	B/Yero	2012	1235	Kad-Zar	Comercial	Nanfang	Spv	3	0	3	Severe
617	7.5199	10.772	B/Yero	2012	1045	Zar-Kad	Priv/Comm	Honda, Golf	Loc	1	0	8	Severe
618	7.6358	10.88	K/Farakwai	2012	1140	Zar-Kad	Private	Honda	Loc	3	0	4	Severe
619	7.5122	10.716	Foundation	2012	1255	Zar-Kad	Private	Tyt Saloon, V/W Golf	Loc	2	0	5	Severe
620	7.5918	10.862	K/Tsintsiya	2012	1625	Kad-Zar	Private	V/W Golf, Honda,Honda Civic	Spv	10	0	11	Severe
621	7.5123	10.746	Dandami	2012	610	Zar-Kad	Private	Honda Civic	Loc	1	0	1	Severe
622	7.6441	10.935	L/Zango	2012	1445	Zar-Kad	Comercial	V/W Golf	Loc	7	1	8	Fatal
623	7.5741	10.83	Jaji	2012	1500	Zar-Kad	Priv/Comm	Isuzu Bus	Tbt	8	2	11	Fatal
624	7.5741	10.83	Jaji	2012	1320	Zar-Kad	Priv/Comm	Tyt Bus, V/W Golf	Loc	11	0	11	Severe
625	7.5474	10.798	Sambawa	2012	1730	Zar-Kad	Priv/Comm	Nissan Bus, Chevrolet	Spv	2	0	2	Severe
626	7.5741	10.83	Jaji	2012	1545	Zar-Kad	Comercial	Jincheng	Spv	1	0	1	Severe
627	7.5474	10.798	Sambawa	2012	1750	Zar-Kad	Comercial	Pgt J5	Ovl	2	0	3	Severe
628	7.6358	10.88	K/Farakwai	2012	1540	Zar-Kad	Private	Pgt 406	Spv	2	0	2	Severe
629	7.5199	10.772	B/Yero	2013	610	Zar-Kad	Comercial	Man	Mdv	4	0	4	Severe
630	7.472	10.647	Nti	2013	1445	Kad-Zar	Comercial	Ford	Tbt	3	0	3	Severe
631	7.6358	10.88	K/Farakwai	2013	1500	Kad-Zar	Comercial	Toyota	Tbt	18	0	18	Severe
632	7.509	10.692	M/Jos	2013	1320	Kad-Zar	Private	V/W	Ovl	4	0	4	Severe
633	7.5741	10.83	Jaji	2013	1730	Kad-Zar	Commercial	V/W	Spv	4	2	7	Fatal
634	7.5199	10.772	B/Yero	2013	1545	Kad-Zar	Private	V/W	Loc	6	1	7	Fatal
635	7.4695	10.639	Rigachikun	2013	1750	Zar-Kad	Private	V/W	Spv	6	0	6	Severe
636	7.5199	10.772	B/Yero	2013	1540	Zar-Kad	Comercial	Toyota	Tbt	3	1	5	Fatal
637	7.5123	10.746	Dandami	2013	1740	Zar-Kad	Comercial	Toyota	Rtv	1	0	1	Severe
638	7.5199	10.772	B/Yero	2013	1600	Zar-Kad	Comercial	V/W	Spv	0	1	8	Fatal
639	7.509	10.692	M/Jos	2013	1215	Zar-Kad	Comercial	Toyota	Others	22	2	32	Fatal
640	7.4872	10.673	T/Gate	2013	1145	Zar-Kad	Private	Honda	Dot	4	0	1	Severe
641	7.5199	10.772	B/Yero	2013	1030	Zar-Kad	Comercial	V/W	Spv	1	0	1	Severe

642	7.5199	10.772	B/Yero	2013	1350	Zar-Kad	Comercial	Toyota	Bfl	15	0	30	Severe
643	7.472	10.647	Nti	2013	1030	Zar-Kad	Comercial	Mitsubishi	Tbt	4	0	10	Severe
644	7.6358	10.88	K/Farakwai	2013	1800	Kad-Zar	Comercial	Mitsubishi	Dot	3	0	4	Severe
645	7.5123	10.746	Dandami	2013	1722	Kad-Zar	Private	V/W	Dgd	5	0	5	Severe
646	7.4695	10.639	Rigachikun	2013	1700	Zar-Kad	Comercial	Nissan	Loc	0	0	1	Minor
647	7.5122	10.716	Foundation	2013	508	Zar-Kad	Private	V/W	Dad	2	0	2	Severe
648	7.5813	10.844	New Barracks Jaji	2013	530	Kad-Zar	Private	V/W	Tbt	2	0	3	Severe
649	7.5199	10.772	B/Yero	2013	1400	Zar-Kad	Private	Toyota	Spv	2	2	4	Fatal
650	7.5741	10.83	Jaji	2013	2000	Zar-Kad	Private	V/W	Dot	6	0	8	Severe
651	7.5199	10.77	B/Yero	2013	1500	Kad-Zar	Private	V/W	Rtv	1	0	1	Severe
652	7.5741	10.83	Jaji	2013	1800	Zar-Kad	Comercial	M/C	Spv	0	2	2	Fatal
653	7.5741	10.83	Jaji	2013	1327	Kad-Zar	Comercial	Pgt	Tbt	6	0	6	Severe
654	7.5122	10.716	Foundation	2013	1816	Kad-Zar	Private	Toyota	Loc	1	0	2	Severe
655	7.509	10.692	M/Jos	2013	1235	Kad-Zar	Comercial	V/W	Bfl	6	0	6	Severe
656	7.5199	10.772	B/Yero	2013	1045	Zar-Kad	Private	Honda	Loc	1	0	2	Severe
657	7.5741	10.83	Jaji	2013	1140	Kad-Zar	Comercial	M/C	Loc	1	0	1	Severe
658	7.6358	10.88	K/Farakwai	2013	1255	Kad-Zar	Private	Bmw	Tbt	4	0	4	Severe
659	7.5741	10.83	Jaji	2013	1625	Kad-Zar	Comercial	V/W	Spv	1	0	3	Severe
660	7.5193	10.759	Frsc Gate	2013	1002	Zar-Kad	Private	V/W	Tbt	1	0	1	Severe
661	7.5199	10.772	B/Yero	2013	1000	Kad-Zar	Private	V/W	Loc	10	0	11	Severe
662	7.5474	10.798	Sambawa	2013	1810	Kad-Zar	Private	Honda	Loc	8	0	8	Severe
663	7.5741	10.83	Jaji	2013	1918	Zar-Kad	Private	Opel	Spv	6	0	6	Severe
664	7.4695	10.639	Rigachikun	2013	1130	Kad-Zar	Comercial	Daf	Loc	0	0	4	Minor
665	7.5122	10.716	Foundation	2013	918	Kad-Zar	Private	M/Benz	Loc	2	0	2	Severe
666	7.5741	10.83	Jaji	2013	1940	Kad-Zar	Private	Honda	Spv	1	0	1	Severe
667	7.5122	10.716	Foundation	2013	1600	Kad-Zar	Comercial	Toyota	Spv	1	0	1	Severe
668	7.5199	10.772	B/Yero	2013	1445	Kad-Zar	Comercial	M/C	Dgd	2	0	2	Severe
669	7.6358	10.88	K/Farakwai	2013	630	Kad-Zar	Comercial	Toyota	Tbt	2	0	4	Severe

670	7.5741	10.83	Jaji	2013	650	Zar-Kad	Private	V/W	Others	3	0	3	Severe
671	7.5199	10.772	B/Yero	2013	1640	Zar-Kad	Comercial	Pgt	Others	4	0	7	Severe
672	7.5122	10.716	Foundation	2013	1110	Zar-Kad	Private	V/W	Tbt	2	1	5	Fatal
673	7.6441	10.935	L/Zango	2013	910	Kad-Zar	Private	Toyota	Loc	1	0	7	Severe
674	7.5199	10.772	B/Yero	2013	845	Kad-Zar	Private	Toyota	Spv	2	0	2	Severe
675	7.6358	10.88	K/Farakwai	2013	1618	Kad-Zar	Comercial	Ford	Tbt	2	0	2	Severe
676	7.5123	10.746	Dandami	2013	700	Kad-Zar	Comercial	Toyota	Sos	2	0	15	Severe
677	7.4695	10.639	Rigachikun	2013	1220	Kad-Zar	Private	V/W	Tbt	4	1	4	Fatal
678	7.5741	10.83	Jaji	2013	1500	Kad-Zar	Comercial	V/W	Dgd	2	0	5	Severe
679	7.4695	10.639	Rigachikun	2013	1655	Zar-Kad	Private	Toyota	Dgd	1	0	11	Severe
680	7.5815	10.844	New Barracks Jaji	2013	745	Kad-Zar	Private	Cherry	Tbt	1	0	1	Severe
681	7.5199	10.772	B/Yero	2013	1630	Kad-Zar	Comercial	Pgt	Spv	7	0	11	Severe
682	7.5199	10.772	B/Yero	2013	1153	Zar-Kad	Private	Honda	Tbt	0	0	1	Minor
683	7.5199	10.772	B/Yero	2013	2056	Zar-Kad	Comercial	Pgt	Spv	0	1	3	Fatal
684	7.4695	10.639	Rigachikun	2013	1430	Kad-Zar	Comercial	Mazda	Ovl	8	0	10	Severe
685	7.5741	10.83	Jaji	2013	1320	Kad-Zar	Private	M/C	Rtv	1	0	1	Severe
686	7.5741	10.83	Jaji	2013	1515	Kad-Zar	Private	Tata	Spv	4	0	4	Severe
687	7.5474	10.798	Sambawa	2013	1610	Kad-Zar	Private	Honda	Spv	5	1	6	Fatal
688	7.5474	10.798	Sambawa	2013	1714	Zar-Kad	Private	V/W	Spv	8	0	11	Severe
689	7.6358	10.88	K/Farakwai	2013	720	Zar-Kad	Comercial	Nissan	Tbt	5	1	6	Fatal
690	7.5741	10.83	Jaji	2013	100	Kad-Zar	Private	Toyota	Spv	3	2	5	Fatal
691	7.5741	10.83	Jaji	2013	1250	Kad-Zar	Private	Honda	Loc	2	0	2	Severe
692	7.6195	10.873	Sabon Yalwa	2013	1510	Zar-Kad	Private	Pgt	Tbt	4	1	5	Fatal
693	7.5122	10.716	Foundation	2013	1200	Zar-Kad	Comercial	Mazda	Dgd	9	0	19	Severe
694	7.5741	10.83	Jaji	2013	1539	Kad-Zar	Comercial	Daf	Loc	1	0	1	Severe
695	7.4695	10.639	Rigachikun	2013	2045	Kad-Zar	Private	M/C	Rtv	3	0	3	Severe
696	7.5122	10.716	Foundation	2013	935	Kad-Zar	Comercial	Aston	Ovl	2	0	4	Severe
697	7.5199	10.772	B/Yero	2013	1210	Kad-Zar	Private	Bmw	Tbt	3	0	4	Severe

698	7.5199	10.772	B/Yero	2013	2200	Zar-Kad	Private	Toyota	Dot	5	0	15	Severe
699	7.5918	10.862	K/Tsintsiya	2013	1139	Kad-Zar	Comercial	M/A	Spv	1	0	2	Severe
700	7.5814	10.844	New Barracks Jaji	2013	2130	Kad-Zar	Comercial	V/W	Spv	7	1	8	Fatal
701	7.5199	10.772	B/Yero	2013	1410	Kad-Zar	Private	Honda	Dgd	0	2	3	Fatal
702	7.5122	10.716	Foundation	2013	1422	Kad-Zar	Comercial	Daf	Dot	4	0	8	Severe
703	7.5199	10.772	B/Yero	2013	1251	Kad-Zar	Private	V/W	Spv	9	1	10	Fatal
704	7.5199	10.772	B/Yero	2013	1600	Kad-Zar	Private	M/C	Spv	2	0	2	Severe
705	7.5199	10.772	B/Yero	2013	1932	Kad-Zar	Comercial	Mitsubishi	Spv	0	1	3	Fatal
706	7.5199	10.772	B/Yero	2013	1410	Kad-Zar	Private	Honda	Rtv	6	0	6	Severe
707	7.4695	10.639	Rigachikun	2013	815	Zar-Kad	N/Army	Toyota	Ovl	20	2	20	Fatal
708	7.5199	10.772	B/Yero	2013	1745	Kad-Zar	N/Army	Toyota	Dgd	15	0	15	Severe
709	7.5199	10.772	B/Yero	2013	1745	Kad-Zar	N/Army	Ford	Dgd	15	0	15	Severe
710	7.5122	10.716	Foundation	2013	1105	Zar-Kad	N/Army	Toyota	Dgd	7	1	8	Fatal
711	7.4695	10.639	Rigachikun	2013	630	Kad-Zar	Comercial	Toyota	Loc	6	0	12	Severe
712	7.5199	10.772	B/Yero	2013	1515	Zar-Kad	Comercial	V/W	Spv	7	0	12	Severe
713	7.5741	10.83	Jaji	2013	1710	Kad-Zar	Private	Honda	Spv	7	0	13	Severe
714	7.5741	10.83	Jaji	2013	1710	Kad-Zar	Private	V/W	Spv	7	0	13	Severe
715	7.4695	10.639	Rigachikun	2013	1640	Kad-Zar	Comercial	Daf	Dot	8	6	10	Fatal
716	7.4695	10.639	Rigachikun	2013	1640	Kad-Zar	Comercial	Pgt504, St/W	Dot	8	6	10	Fatal
717	7.5116	10.743	Km02	2013	713	Kad-Zar	Comercial	V/W	Dgd	1	0	7	Severe
718	7.5116	10.743	Km02	2013	713	Kad-Zar	Private	Jincheng	Dgd	1	0	7	Severe
719	7.5123	10.746	Dandami	2013	1445	Kad-Zar	Private	Jincheng	Dgd	2	0	2	Severe
720	7.5123	10.746	Dandami	2013	1445	Kad-Zar	Private	Jincheng	Dgd	2	0	2	Severe
721	7.4695	10.639	Rigachikun	2013	1915	Zar-Kad	Comercial	Tanker	Spv	0	0	4	Severe
722	7.4695	10.639	Rigachikun	2013	1915	Zar-Kad	Comercial	Tanker	Spv	0	0	0	Severe
723	7.5123	10.746	Dandami	2013	2005	Kad-Zar	Comercial	Daf	Spv	2	0	4	Severe
724	7.5123	10.746	Dandami	2013	2005	Kad-Zar	Private	V6 Wagon	Spv	2	0	4	Severe
725	7.6195	10.873	Sabon Yalwa	2013	1300	Kad-Zar	Comercial	Toyota	Loc	8	1	9	Fatal

726	7.5741	10.83	Jaji	2013	1500	Kad-Zar	Comercial	V/W	Spv	7	0	7	Severe
727	7.4695	10.639	Rigachikun	2013	1145	Kad-Zar	Comercial	Nil	Spv	20	1	21	Fatal
728	7.5199	10.772	Trade Fair	2013	845	Kad-Zar	Private	Ultima	Dgd	2	0	6	Severe
729	7.5199	10.772	Trade Fair	2013	845	Zar-Kad	Private	Golf	Dgd	2	0	6	Severe
730	7.4695	10.639	Rigachikun	2013	1340	Zar-Kad	Private	Toyota	Spv	2	0	3	Severe
731	7.5474	10.798	Sambawa	2013	1630	Kad-Zar	Private	Nil	Spv	1	0	1	Severe
732	7.5122	10.716	Foundation	2013	2330	Kad-Zar	Private	V/W	Rtv	5	0	5	Severe
733	7.5741	10.83	Jaji	2013	1300	Kad-Zar	Comercial	Toyota	Dot	2	0	2	Severe
734	7.5741	10.83	Jaji	2013	930	Kad-Zar	Comercial	Ford	Dgd	12	3	21	Fatal
735	7.5122	10.716	Foundation	2013	1135	Zar-Kad	Comercial	Toyota	Loc	1	0	16	Severe
736	7.5122	10.716	Foundation	2013	1140	Zar-Kad	Comercial	Toyota	Dgd	1	1	30	Fatal
737	7.5741	10.83	Jaji	2013	1540	Kad-Zar	Private	V/W	Loc	2	2	11	Fatal
738	7.5122	10.716	Foundation	2013	1800	Zar-Kad	Private	Jincheng	Dgd	1	0	1	Severe
739	7.5122	10.716	Foundation	2013	1212	Zar-Kad	Comercial	Citroen	Dgd	5	2	9	Fatal
740	7.5741	10.83	Jaji	2013	2020	Kad-Zar	Private	V/W	Loc	2	0	4	Severe
741	7.5741	10.83	Jaji	2013	1148	Kad-Zar	Comercial	V/W	Loc	2	0	9	Severe
742	7.4695	10.639	Rigachikun	2013	1115	Kad-Zar	Comercial	M/Benz	Spv	6	0	13	Severe
743	7.4695	10.639	Rigachikun	2013	1605	Zar-Kad	Comercial	Toyota	Dgd	2	0	4	Severe
744	7.5122	10.716	Foundation	2013	1200	Kad-Zar	Private	V/W	Spv	4	0	6	Severe
745	7.5199	10.772	B/Yero	2013	1700	Zar-Kad	Comercial	V/W	Tbt	4	0	6	Severe
746	7.5199	10.772	B/Yero	2013	1230	Zar-Kad	Private	Honda	Spv	5	0	7	Severe
747	7.4695	10.639	Rigachikun	2013	1200	Zar-Kad	Private	V/W	Tbt	4	0	4	Severe
748	7.5741	10.83	Jaji	2013	1110	Kad-Zar	Comercial	Toyota	Tbt	5	0	5	Severe
749	7.5741	10.83	Jaji	2013	845	Zar-Kad	Private	Toyota	Tbt	1	0	1	Severe
750	7.5122	10.716	Foundation	2013	1215	Zar-Kad	Comercial	Daf	Spv	4	0	7	Severe
751	7.5122	10.716	Foundation	2013	2015	Zar-Kad	Private	V/W	Spv	7	0	12	Severe
752	7.5199	10.772	B/Yero	2013	1706	Zar-Kad	Comercial	Toyota	Dgd	6	0	20	Severe
753	7.5741	10.83	Jaji	2013	1815	Kad-Zar	Private	Opel	Dgd	4	0	8	Severe

754	7.5741	10.83	Jaji	2013	1920	Kad-Zar	Private	V/W	Rtv	0	1	6	Fatal
755	7.5199	10.772	B/Yero	2013	1440	Kad-Zar	Priv/Comm	Bajaj	Tbt	0	0	3	Minor
756	7.5199	10.772	B/Yero	2013	1400	Zar-Kad	Private	V/W Golf	Loc	3	1	4	Fatal
757	7.509	10.692	M/Jos	2013	1400	Kad-Zar	Private	Jincheng Frajend	Dad	0	1	2	Fatal
758	7.509	10.692	M/Jos	2013	1433	Zar-Kad	Comercial	V/W Golf, C.G Boxer	Loc	3	0	3	Severe
759	7.5199	10.772	B/Yero	2013	1359	Kad-Zar	Comercial	Bajaj	Mdv	0	0	6	Minor
760	7.5199	10.772	B/Yero	2013	806	Zar-Kad	Comercial	V/W Golf	Loc	2	0	3	Severe
761	7.5199	10.772	B/Yero	2013	1430	Zar-Kad	Comercial	V/W Golf	Loc	0	0	2	Minor
762	7.5123	10.746	Dandami	2013	1005	Zar-Kad	Comercial	Tyt Hiace	Tbt	0	0	4	Minor
763	7.5741	10.83	Jaji	2013	930	Zar-Kad	Comercial	V/W Sharon,Hnda Halla,Honda	Loc	1	0	2	Severe
764	7.591	10.861	Jaji	2013	1000	Zar-Kad	Priv/Comm	Nissan	Spv	0	0	3	Minor
765	7.5814	10.844	Jaji	2013	830	Zar-Kad	Comercial	Pgt 806	Spv	2	0	2	Severe
766	7.6358	10.88	K/Farakwai	2013	1847	Zar-Kad	Private	Tyt Hiace	Dgd	0	1	2	Fatal
767	7.5123	10.746	Dandami	2013	858	Zar-Kad	Comm	V/W Golf	Obs	0	0	4	Minor
768	7.6358	10.88	K/Farakwai	2013	1240	Zar-Kad	Private	Pgt 806	Rtv	2	0	3	Severe
769	7.6358	10.88	K/Farakwai	2013	350	Kad-Zar	Comercial	Daf Trailer	Spv	0	0	5	Severe
770	7.509	10.692	M/Jos	2013	218	Kad-Zar	Comercial	Daf Tanker, Daf Tanker	Obs	1	1	3	Fatal
771	7.5199	10.772	B/Yero	2013	600	Kad-Zar	Comercial	Chiroke Jeef	Spv	0	0	2	Minor
772	7.5199	10.772	B/Yero	2013	818	Kad-Zar	Private	Tyt Crolla	Dgd	0	0	9	Minor
773	7.5199	10.772	B/Yero	2013	1930	Zar-Kad	Comercial	V/W Golf	Obs	0	0	5	Minor
774	7.5122	10.716	Foundation	2013	1615	Zar-Kad	Private	Tyt Crolla	Rtv	0	0	4	Minor
775	7.6358	10.88	K/Farakwai	2013	800	Kad-Zar	Private	Honda Accord	Spv	0	0	8	Severe
776	7.4695	10.639	Rigachikun	2013	930	Zar-Kad	Comercial	Honda	Tbt	0	1	1	Fatal
777	7.5122	10.716	Foundation	2013	1745	Zar-Kad	Private	Pgt	Dot	2	0	2	Severe
778	7.509	10.692	M/Jos	2013	920	Zar-Kad	Comercial	V/W	Dot	5	0	5	Severe
779	7.5918	10.862	K/Tsintsiya	2013	1115	Kad-Zar	Private		Others	4	1	8	Fatal
780	7.4623	10.612	Trade Fair	2013	900	Kad-Zar	Private	Corolla	Spv	1	0	3	Severe
781	7.6358	10.88	K/Farakwai	2013	1100	Kad-Zar	Private	Honda	Loc	3	1	4	Fatal

782	7.5474	10.798	Sambawa	2013	1500	Kad-Zar	Private	V/W	Spv	2	1	3	Fatal
783	7.7172	11.138	Dogarawa	2010	0	Zar-Kad	Honda	Private	Loc	4	1	5	Fatal
784	7.677	11.033	Poly	2010	0	Zar-Kad	Toyota	Comm	Obs	5	0	5	Severe
785	7.6448	10.98	Dumbi	2010	0	Zar-Kad	Fiat	Comm	Tbt	1	0	1	Severe
786	7.6448	10.98	Dumbi	2010	0	Zar-Kad	Golf	Comm	Spv	5	0	5	Severe
787	7.7037	11.13	Flyover	2010	0	Zar-Kad	Tyt	Comm	Tbt	5	0	5	Severe
788	7.6876	11.08	D/Magaji	2010	0	Zar-Kad	Tyt Citeate	Comm	Rtv	7	0	7	Severe
789	7.6876	11.08	D/Magaji	2010	0	Zar-Kad	Jincg	Comm	Loc	5	1	6	Fatal
790	7.7421	11.151	Zabi	2010	0	Zar-Kad	Mazda	Comm	Dgd	0	7	7	Fatal
791	7.7421	11.151	Zabi	2010	0	Zar-Kad	Honda	Pri	Tbt	0	6	6	Fatal
792	7.7421	11.151	Zabi	2010	0	Zar-Kad	M/Benz	Pri	Rtv	3	0	3	Severe
793	7.7548	11.166	A/Mosque	2010	0	Zar-Kad	Daf Trailer	Comm	Tbt	4	0	4	Severe
794	7.677	11.033	Poly	2010	0	Zar-Kad	Ford	Comm	Loc	5	0	5	Severe
795	7.6876	11.08	D/Magaji	2010	0	Zar-Kad	Golf	Comm	Dot	1	0	1	Severe
796	7.677	11.033	Poly	2010	0	Zar-Kad	Golf	Comm	Loc	3	1	4	Fatal
797	7.7421	11.151	Zabi	2010	0	Kad-Zar	Tyt Haice	Comm	Loc	6	0	6	Severe
798	7.7034	11.129	Jim Harrison	2010	0	Zar-Kad	Tyt Haice	Comm	Loc	2	0	2	Severe
799	7.6876	11.08	D/Magaji	2010	0	Zar-Kad	Honda	Pri	Rtv	1	0	1	Severe
800	7.7421	11.151	Zabi	2010	0	Kad-Zar	Golf V/W	Comm	Tbt	12	3	12	Fatal
801	7.7172	11.138	Dogarawa	2010	0	Kad-Zar	Honda Tytbus	Pri, Comm	Rtv	2	0	2	Severe
802	7.6448	10.98	Dumbi	2010	0	Zar-Kad	Tyt Carina E	Pri	Loc	1	0	1	Severe
803	7.6489	10.913	Z/Aya	2010	0	Zar-Kad	Pgt & Mitsubishi	Pri	Mdv	2	0	2	Severe
804	7.6448	10.98	Dumbi	2010	0	Zar-Kad	Honda Civic, Jincg M/C	Pri,Comm	Loc	6	0	6	Severe
805	7.6717	11.017	Panmadina	2010	0	Zar-Kad	Tyt Bus	Comm	Spv	2	2	2	Fatal
806	7.7172	11.138	Dogarawa	2010	0	Kad-Zar	Tyt Bus	Comm	Rtv	3	0	3	Severe
807	7.7459	11.16	5km	2010	0	Kad-Zar	Golf	Comm	Dgd	1	0	1	Severe
808	7.7459	11.16	5km	2010	0	Kad-Zar	Honda,Ford	Pri,Comm	Dgd	3	0	3	Severe
809	7.7068	11.133	2km	2010	0	Kad-Zar	Golf	Comm	Brd	3	3	3	Fatal

810	7.7459	11.16	5km	2010	0	Kad-Zar	Honda,Trailer	Pri,Comm	Mdv	2	0	2	Severe
811	7.7371	11.145	4km	2010	0	Kad-Zar	Golf,Ash	Pri,Comm	Dgd	4	0	4	Severe
812	7.7692	11.178	7km	2010	0	Kad-Zar	Toyota	Comm	Dgd	5	1	6	Fatal
813	7.7793	11.205	10km	2010	0	Kad-Zar	Fiat	Comm	Tbt	3	0	3	Severe
814	7.7793	11.205	10km	2010	0	Zar-Kad	Nissan	Pri	Tbt	6	0	6	Severe
815	7.7793	11.205	10km	2010	0	Zar-Kad	Nissan	Comm	Tbt	6	0	6	Severe
816	7.7459	11.16	5km	2010	0	Zar-Kad	Toyota	Pri	Loc	4	0	4	Severe
817	7.7726	11.186	8km	2010	0	Zar-Kad	Golf	Comm	Ovl	2	0	2	Severe
818	7.7371	11.145	4km	2010	0	Zar-Kad	Tyt, Nissan Bus	Comm	Dgd	7	0	7	Severe
819	7.7371	11.145	4km	2010	0	Zar-Kad	Tyt, Jincg	Comm	Mdv	0	0	0	Minor
820	7.7692	11.178	7km	2010	0	Zar-Kad	Daf	Comm	Tbt	1	0	1	Severe
821	7.7759	11.195	9km	2010	0	Zar-Kad	Tyt Carrola	Pr	Loc	9	0	9	Severe
822	7.7759	11.195	9km	2010	0	Zar-Kad	Golf, Tyt Bus	Comm	Ovl	18	0	18	Severe
823	7.7793	11.205	10km	2010	0	Zar-Kad	Honda Civic	Pri	Ovl	2	0	2	Severe
824	7.6876	11.08	D/Magaji	2010	0	Zar-Kad	Golf	Comm	Spv	6	1	7	Fatal
825	7.7548	11.166	A/Mosque	2010	0	Kad-Zar	Tytbus	Comm	Spv	2	0	2	Severe
826	7.6816	11.055	Gwargwaje	2010	0	Zar-Kad	Golf	Pri	Dgd	7	0	7	Severe
827	7.7726	11.186	8km	2010	0	Zar-Kad	Nissan, Golf	Comm	Dot	6	0	15	Severe
828	7.7459	11.16	5km	2010	0	Kad-Zar	Daf & Benz	Pri	Dgd	1	0	5	Severe
829	7.7421	11.151	8km	2010	0	Zar-Kad	Jja M/C	Comm	Dgd	1	1	2	Severe
830	7.7726	11.186	8km	2010	0	Zar-Kad	Tyt Starlet & Daf	Pri,Comm	Tbt	6	0	6	Severe
831	7.7621	11.17	6km	2010	0	Zar-Kad	Golf	Comm	Spv	2	0	2	Severe
832	7.6876	11.08	D/Magaji	2011	0	Zar-Kad	N/A	N/A	Tbt	1	0	1	Severe
833	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Ovl	1	0	1	Severe
834	7.6876	11.08	D/Magaji	2011	0	Zar-Kad	N/A	N/A	Dgd	2	0	2	Severe
835	7.6816	11.055	Gwargwaje	2011	0	Zar-Kad	N/A	N/A	Others	7	0	7	Severe
836	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Ovl	2	0	2	Severe
837	7.7172	11.138	Dogarawa	2011	0	Kad-Zar	N/A	N/A	Mdv	1	1	2	Fatal

838	7.7034	11.129	Jim Harrison	2011	0	Zar-Kad	N/A	N/A	Loc	1	0	1	Severe
839	7.7421	11.151	Zabi	2011	0	Kad-Zar	N/A	N/A	Dot	1	0	1	Severe
840	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Loc	1	0	1	Severe
841	7.7172	11.138	Dogarawa	2011	0	Kad-Zar	N/A	N/A	Tbt	1	0	1	Severe
842	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Dgd	1	0	1	Severe
843	7.6993	11.122	Yankarfe	2011	0	Zar-Kad	N/A	N/A	Dgd	9	0	9	Severe
844	7.7012	11.125	Ppmc Depot	2011	0	Zar-Kad	N/A	N/A	Dgd	2	0	2	Severe
845	7.7012	11.125	Ppmc Depot	2011	0	Zar-Kad	N/A	N/A	Loc	7	0	7	Severe
846	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Loc	2	0	2	Fatal
847	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Tbt	1	1	2	Severe
848	7.6876	11.08	D/Magaji	2011	0	Zar-Kad	N/A	N/A	Others	3	1	4	Fatal
849	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Loc	2	4	6	Fatal
850	7.6754	11.026	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Loc	1	1	2	Fatal
851	7.6754	11.026	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Dgd	4	0	4	Severe
852	7.5191	10.757	Frsc Gate	2011	0	Kad-Zar	N/A	N/A	Dgd	2	0	2	Severe
853	7.6754	11.026	Poly	2011	0	Zar-Kad	N/A	N/A	Others	5	0	5	Severe
854	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Tbt	4	2	6	Fatal
855	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Loc	1	0	1	Severe
856	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Dgd	14	0	14	Severe
857	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Loc	1	0	1	Severe
858	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Tbt	14	0	14	Severe
859	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Mdv	17	1	18	Fatal
860	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Dgd	0	0	0	Minor
861	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Mdv	1	0	1	Severe
862	7.6809	11.05	Fasada	2011	0	Kad-Zar	N/A	N/A	Others	1	0	1	Severe
863	7.6876	11.08	D/Magaji	2011	0	Zar-Kad	N/A	N/A	Tbt	3	0	3	Severe
864	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Others	13	0	13	Severe
865	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Tbt	1	0	1	Severe

866	7.6816	11.055	Gwargwaje	2011	0	Zar-Kad	N/A	N/A	Bfl	2	0	2	Severe
867	7.6876	11.08	D/Magaji	2011	0	Zar-Kad	N/A	N/A	Loc	2	0	2	Severe
868	7.6876	11.08	D/Magaji	2011	0	Zar-Kad	N/A	N/A	Tbt	7	0	7	Severe
869	7.6489	10.913	D/Dutse	2011	0	Zar-Kad	N/A	N/A	Loc	7	0	7	Severe
870	7.7421	11.151	Zabi	2011	0	Kad-Zar	N/A	N/A	Loc	1	0	1	Severe
871	7.6993	11.122	Yankarfe	2011	0	Zar-Kad	N/A	N/A	Loc	1	0	1	Severe
872	7.7421	11.151	Zabi	2011	0	Zar-Kad	N/A	N/A	Tbt	1	0	1	Severe
873	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Spv	2	0	2	Severe
874	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Tbt	2	0	2	Severe
875	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Mdv	1	0	1	Severe
876	7.6816	11.055	Gwargwaje	2011	0	Zar-Kad	N/A	N/A	Obs	3	1	4	Fatal
877	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Loc	6	4	10	Fatal
878	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Dgd	6	4	10	Fatal
879	7.7037	11.13	Flyover	2011	0	Kad-Zar	N/A	N/A	Rtv	3	0	3	Severe
880	7.6754	11.026	Poly	2011	0	Zar-Kad	N/A	N/A	Loc	3	0	3	Severe
881	7.6689	11.014	Ndlea	2011	0	Zar-Kad	N/A	N/A	Loc	4	0	4	Severe
882	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Loc	5	1	6	Fatal
883	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Ovl	3	3	6	Fatal
884	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Loc	0	0	0	Minor
885	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Loc	3	3	6	Fatal
886	7.6489	10.913	Poly	2011	0	Zar-Kad	N/A	N/A	Ovl	3	3	6	Fatal
887	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Bfl	8	4	12	Fatal
888	7.7172	11.138	Dogarawa	2011	0	Zar-Kad	N/A	N/A	Others	1	1	2	Fatal
889	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Spv	2	0	2	Severe
890	7.7548	11.166	A/Mosque	2011	0	Zar-Kad	N/A	N/A	Rtv	1	1	2	Fatal
891	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Mdv	4	0	4	Severe
892	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Tbt	19	0	19	Severe
893	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Loc	2	0	2	Severe

894	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Loc	7	0	7	Severe
895	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Tbt	14	0	14	Severe
896	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Tbt	2	0	2	Severe
897	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Tbt	1	0	1	Severe
898	7.6489	10.913	Dumbi	2011	0	Zar-Kad	N/A	N/A	Mdv	4	2	6	Fatal
899	7.6876	11.08	D/Magaji	2011	0	Zar-Kad	N/A	N/A	Rtv	7	0	7	Severe
900	7.6993	11.122	Yankarfe	2011	0	Zar-Kad	N/A	N/A	Loc	7	1	8	Fatal
901	7.6809	11.05	Fasada	2011	0	Kad-Zar	N/A	N/A	Dgd	0	1	1	Fatal
902	7.7172	11.138	Dogarawa	2011	0	Kad-Zar	N/A	N/A	Spv	5	0	5	Severe
903	7.7172	11.138	Dogarawa	2011	0	Kad-Zar	N/A	N/A	Dgd	2	0	2	Severe
904	7.6876	11.08	D/Magaji	2011	0	Zar-Kad	N/A	N/A	Dot	2	0	2	Severe
905	7.6816	11.055	Gwargwaje	2011	0	Zar-Kad	N/A	N/A	Dgd	3	0	3	Severe
906	7.7012	11.125	Ppmc Depot	2011	0	Zar-Kad	N/A	N/A	Dgd	3	0	3	Severe
907	7.6358	10.88	K/Farakwai	2011	0	Zar-Kad	N/A	N/A	Tbt	6	1	7	Fatal
908	7.6754	11.026	Poly	2011	0	Zar-Kad	N/A	N/A	Dgd	6	0	6	Severe
909	7.6816	11.055	Gwargwaje	2011	0	Zar-Kad	N/A	N/A	Spv	12	0	12	Severe
910	7.6754	11.026	Poly	2011	0	Zar-Kad	N/A	N/A	Tbt	1	0	1	Severe
911	7.6816	11.055	Gwargwaje	2011	0	Zar-Kad	N/A	N/A	Spv	10	0	10	Severe
912	7.6441	10.935	L/Zango	2011	0	Zar-Kad	N/A	N/A	Spv	1	0	1	Severe
913	7.7421	11.151	Zabi	2011	0	Kad-Zar	N/A	N/A	Dgd	7	10	17	Fatal
914	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Spv	3	0	3	Severe
915	7.7012	11.125	Ppmc Depot	2011	0	Zar-Kad	N/A	N/A	Spv	15	1	16	Fatal
916	7.677	11.033	Poly	2011	0	Zar-Kad	N/A	N/A	Spv	0	1	1	Fatal
917	7.6876	11.08	D/Magaji	2011	0	Zar-Kad	N/A	N/A	Loc	2	1	3	Fatal
918	7.7548	11.166	A/Mosque	2011	0	Kad-Zar	N/A	N/A	Others	1	0	1	Severe
919	7.7421	11.151	Zabi	2011	0	Kad-Zar	N/A	N/A	Loc	1	0	1	Severe
920	7.6844	11.071	Shagalinku	2012	0	Zar-Kad	N/A	N/A	Dgd	1	0	1	Severe
921	7.7548	11.166	A/Mosque	2012	0	Kad-Zar	N/A	N/A	Tbt	3	0	3	Severe

922	7.6689	11.014	Ndlea	2012	0	Zar-Kad	N/A	N/A	Spv	10	2	12	Fatal
923	7.6809	11.05	Fasada	2012	0	Kad-Zar	N/A	N/A	Dgd	4	0	4	Severe
924	7.677	11.033	Poly	2012	0	Zar-Kad	N/A	N/A	Spv	2	0	2	Severe
925	7.6993	11.122	Yankarfe	2012	0	Zar-Kad	N/A	N/A	Spv	6	0	6	Severe
926	7.7421	11.151	Zabi	2012	0	Kad-Zar	N/A	N/A	Spv	12	0	12	Severe
927	7.6489	10.913	Dumbi	2012	0	Zar-Kad	N/A	N/A	Dot	11	0	11	Severe
928	7.7034	11.129	Jim Harrison	2012	0	Zar-Kad	N/A	N/A	Loc	2	0	2	Severe
929	7.6844	11.071	Shagalinku	2012	0	Zar-Kad	N/A	N/A	Loc	5	0	5	Severe
930	7.6511	10.99	D/Abba	2012	0	Zar-Kad	N/A	N/A	Tbt	4	0	4	Severe
931	7.6876	11.08	D/Magaji	2012	0	Zar-Kad	N/A	N/A	Tbt	5	0	5	Severe
932	7.7548	11.166	A/Mosque	2012	0	Kad-Zar	N/A	N/A	Tbt	2	5	7	Fatal
933	7.6489	10.913	Dumbi	2012	0	Zar-Kad	N/A	N/A	Obs	2	0	2	Severe
934	7.6816	11.055	Gwargwaje	2012	0	Zar-Kad	N/A	N/A	Obs	7	1	8	Fatal
935	7.7548	11.166	A/Mosque	2012	0	Kad-Zar	N/A	N/A	Mdv	2	0	2	Severe
936	7.677	11.033	Poly	2012	0	Zar-Kad	N/A	N/A	Loc	1	0	1	Severe
937	7.7172	11.138	Dogarawa	2012	0	Kad-Zar	N/A	N/A	Dgd	2	1	3	Fatal
938	7.677	11.033	Poly	2012	0	Zar-Kad	N/A	N/A	Spv	3	0	3	Severe
939	7.677	11.033	Poly	2012	0	Zar-Kad	N/A	N/A	Tbt	3	0	3	Severe
940	7.7548	11.166	A/Mosque	2012	0	Kad-Zar	N/A	N/A	Tbt	3	0	3	Severe
941	7.7548	11.166	A/Mosque	2012	0	Kad-Zar	N/A	N/A	Spv	0	1	1	Fatal
942	7.7117	11.137	Stadium	2012	0	Kad-Zar	N/A	N/A	Tbt	3	0	3	Severe
943	7.677	11.033	Poly	2012	0	Zar-Kad	N/A	N/A	Obs	0	0	0	Minor
944	7.7459	11.16	5km	2012	0	Kad-Zar	N/A	N/A	Ovl	0	0	0	Minor
945	7.7068	11.133	2km	2012	0	Zar-Kad	N/A	N/A	Spv	4	0	4	Severe
946	7.7459	11.16	5km	2012	0	Zar-Kad	N/A	N/A	Mdv	3	0	3	Severe
947	7.7793	11.205	10km	2012	0	Zar-Kad	N/A	N/A	Ovl	3	0	3	Severe
948	7.7621	11.17	6km	2012	0	Zar-Kad	N/A	N/A	Rtv	10	0	10	Severe
949	7.7793	11.205	10km	2012	0	Zar-Kad	N/A	N/A	Rtv	3	0	3	Severe

950	7.7793	11.205	10km	2012	0	Zar-Kad	N/A	N/A	Ovl	1	0	1	Severe
951	7.7371	11.145	4km	2012	0	Kad-Zar	N/A	N/A	Ovl	11	1	12	Fatal
952	7.7621	11.17	6km	2012	0	Kad-Zar	N/A	N/A	Rtv	2	0	2	Severe
953	7.7094	11.136	3km	2012	0	Kad-Zar	N/A	N/A	Loc	0	0	0	Minor
954	7.7068	11.133	2km	2012	0	Zar-Kad	N/A	N/A	Loc	6	0	6	Severe
955	7.7759	11.195	9km	2012	0	Zar-Kad	N/A	N/A	Ovl	9	0	9	Severe
956	7.7459	11.16	5km	2012	0	Kad-Zar	N/A	N/A	Ovl	6	0	6	Severe
957	7.7371	11.145	4km	2012	0	Kad-Zar	N/A	N/A	Mdv	2	0	2	Severe
958	7.7692	11.178	7km	2012	0	Kad-Zar	N/A	N/A	Rtv	3	1	4	Fatal
959	7.7621	11.17	6km	2012	0	Kad-Zar	N/A	N/A	Loc	2	0	2	Severe
960	7.7692	11.178	7km	2012	0	Kad-Zar	N/A	N/A	Ovl	4	0	4	Severe
961	7.7759	11.195	9km	2012	0	Kad-Zar	N/A	N/A	Mdv	3	0	3	Severe
962	7.7793	11.205	10km	2012	0	Zar-Kad	N/A	N/A	Dgd	13	2	15	Fatal
963	7.7793	11.205	10km	2012	0	Kad-Zar	N/A	N/A	Mdv	1	1	2	Fatal
964	7.7793	11.205	10km	2012	0	Kad-Zar	N/A	N/A	Tbt	3	0	3	Severe
965	7.7759	11.195	9km	2012	0	Zar-Kad	N/A	N/A	Tbt	0	0	0	Minor
966	7.7621	11.17	6km	2012	0	Kad-Zar	N/A	N/A	Mdv	3	0	3	Severe
967	7.7621	11.17	6km	2012	0	Kad-Zar	N/A	N/A	Spv	4	2	6	Fatal
968	7.7371	11.145	4km	2012	0	Kad-Zar	N/A	N/A	Tbt	1	0	1	Severe
969	7.7726	11.186	8km	2012	0	Kad-Zar	N/A	N/A	Mdv	6	0	6	Severe
970	7.7621	11.17	6km	2012	0	Kad-Zar	N/A	N/A	Rtv	5	0	5	Severe
971	7.7793	11.205	10km	2012	0	Kad-Zar	N/A	N/A	Mdv	3	1	4	Fatal
972	7.7726	11.186	8km	2012	0	Kad-Zar	N/A	N/A	Brd	1	0	1	Severe
973	7.7793	11.205	10km	2012	0	Kad-Zar	N/A	N/A	Tbt	1	1	2	Fatal
974	7.7071	11.134	Ikm	2012	0	Kad-Zar	N/A	N/A	Bfl	5	1	6	Fatal
975	7.7621	11.17	6km	2012	0	Zar-Kad	N/A	N/A	Dgd	2	0	2	Severe
976	7.6809	11.05	Fasada	2012	0	Kad-Zar	N/A	N/A	Spv	1	0	1	Severe
977	7.7548	11.166	A/Mosque	2012	0	Kad-Zar	N/A	N/A	Dgd	5	2	7	Fatal

978	7.6993	11.122	Yankarfe	2012	0	Kad-Zar	N/A	N/A	Spv	6	0	6	Severe
979	7.6441	10.935	L/Zango	2012	0	Zar-Kad	N/A	N/A	Dgd	4	0	4	Severe
980	7.683	11.065	Mamu Oil	2012	0	Zar-Kad	N/A	N/A	Dgd	5	5	10	Fatal
981	7.6816	11.055	Gwargwaje	2012	0	Zar-Kad	N/A	N/A	Mdv	2	0	2	Severe
982	7.6875	11.076	Wusasa Junction	2013	0	Zar-Kad	Nil	Pri	Loc	1	0	5	Severe
983	7.6754	11.026	Poly	2013	0	Zar-Kad	Honda Accord	Pri	Dot	1	0	7	Severe
984	7.6489	10.913	Dumbi	2013	0	Zar-Kad	Nissan, Honda	Pri,Comm	Gdg	8	0	2	Severe
985	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	Tyt	Comm	Spv	2	0	2	Severe
986	7.7793	11.205	10km	2013	0	Zar-Kad	Golf,Pgt,M/C	Pri	Others	3	0	6	Severe
987	7.7094	11.136	3km	2013	0	Zar-Kad	2 M/C	Comm	Tbt	1	0	1	Severe
988	7.6489	10.913	Jim Harrison	2013	0	Zar-Kad	Tyt Corolla	Pri	Mdv	4	0	4	Severe
989	7.6489	10.913	Dumbi	2013	0	Zar-Kad	Pgt 806, Tyt Corolla	Pri	Loc	5	0	7	Severe
990	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	Jincheng M/C	Comm	Spv	15	1	18	Fatal
991	7.677	11.033	Poly	2013	0	Zar-Kad	Tyt Bus	Comm	Tbt	7	0	7	Severe
992	7.7793	11.205	10km	2013	0	Zar-Kad	Nil	Comm	Spv	2	0	2	Severe
993	7.6816	11.055	Gwargwaje	2013	0	Zar-Kad	Honda	Pri	Others	3	0	3	Severe
994	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	Golf	Pri	Lsv	3	0	3	Severe
995	7.6754	11.026	Poly	2013	0	Zar-Kad	Golf	Pri	Tbt	2	0	6	Severe
996	7.6489	10.913	Jim Harrison	2013	0	Zar-Kad	Honda, Pgt,Tyt	Pri,Comm	Loc	3	4	3	Fatal
997	7.6894	11.097	D/Magaji	2013	0	Zar-Kad	Daf Truck	Trailer	Rtv	1	0	3	Severe
998	7.6489	10.913	Jim Harrison	2013	0	Zar-Kad	Ford	Pri	Ovl	1	2	1	Fatal
999	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	Honda	Pri	Loc	1	0	1	Severe
1000	7.6754	11.026	Poly	2013	0	Zar-Kad	Tyt,Benz	Comm	Dgd	1	0	4	Severe
1001	7.6754	11.026	Poly	2013	0	Zar-Kad	Nissan	Comm	Loc	8	0	15	Severe
1002	7.6489	10.913	Jim Harrison	2013	0	Zar-Kad	Tyt	Comm	Tbt	2	1	2	Severe
1003	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	Golf	Comm	Tbt	1	0	2	Severe
1004	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	Golf	Comm	Mdv	0	1	1	Fatal
1005	7.6844	11.071	Shagalinku	2013	0	Zar-Kad	Royal M/C	Comm	Others	1	1	2	Fatal

1006	7.677	11.033	Poly	2013	0	Zar-Kad	Bajaj M/C	Comm	Tbt	1	0	1	Severe
1007	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	Honda Pilot, M/C	Pri	Spv	0	0	2	Severe
1008	7.6816	11.055	Gwargwaje	2013	0	Zar-Kad	Hyuadai	Pri	Loc	1	1	8	Fatal
1009	7.6689	11.014	Ndlea	2013	0	Zar-Kad	M/Benz & Daf	Pri	Loc	31	0	2	Severe
1010	7.6754	11.026	Poly	2013	0	Zar-Kad	Mitsubishi Canter	Comm	Dot	3	3	1	Fatal
1011	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	2m/Benz Canter	Pri	Mdv	0	0	2	Minor
1012	7.6754	11.026	Poly	2013	0	Zar-Kad	M/Benz & Gelma M/C	Comm	Dot	0	1	2	Fatal
1013	7.6511	10.99	D/Abba	2013	0	Zar-Kad	Golf	Comm	Loc	3	8	5	Fatal
1014	7.677	11.033	Poly	2013	0	Zar-Kad	Mazda	Pri,Comm	Dot	11	0	14	Severe
1015	7.6489	10.913	Jim Harrison	2013	0	Zar-Kad	M/Benz	Pri,Comm	Dgd	1	1	1	Fatal
1016	7.677	11.033	Poly	2013	0	Zar-Kad	3cycle	Comm	Dgd	5	0	5	Severe
1017	7.6754	11.026	Poly	2013	0	Zar-Kad	Golf	Comm	Loc	2	0	6	Severe
1018	7.677	11.033	Poly	2013	0	Zar-Kad	Trailer & M/C	Comm	Dgd	2	2	2	Fatal
1019	7.6754	11.026	Poly	2013	0	Zar-Kad	Trailer & M/C	Comm	Dot	2	0	3	Severe
1020	7.6816	11.055	Kofan Kibo	2013	0	Zar-Kad	Iveco(Trailer,Boxer	Pri	Ovl	1	1	2	Fatal
1021	7.6876	11.08	D/Magaji	2013	0	Zar-Kad	Pgt 505, V/W Sharon	Pri	Ovl	5	1	7	Fatal
1022	7.6489	10.913	Jim Harrison	2013	0	Zar-Kad	Tyt Corolla	Pri	Dot	0	1	9	Fatal
1023	7.6489	10.913	Dumbi	2013	0	Zar-Kad	Pgt 806, Tyt Corolla	Pri	Loc	1	0	7	Severe
1024	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	Jincheng M/C	Comm	Spv	1	0	2	Severe
1025	7.677	11.033	Poly	2013	0	Zar-Kad	V/W&Hono Sinori	Pri	Ovl	5	0	8	Severe
1026	7.6754	11.026	Poly	2013	0	Zar-Kad	Tyt Camry,Tyt Corolla	Comm	Loc	5	0	5	Severe
1027	7.6489	10.913	Dumbi	2013	0	Zar-Kad	Y/W	Comm	Ovl	3	0	4	Severe
1028	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	2m/C	Comm	Loc	2	0	2	Severe
1029	7.677	11.033	Poly	2013	0	Zar-Kad	Tyt Bus	Comm	Tbt	4	0	10	Severe
1030	7.7012	11.125	Ppmc Depot	2013	0	Zar-Kad	806,Pgtbus	Comm	Loc	6	0	9	Severe
1031	7.7172	11.138	Dogarawa	2013	0	Kad-Zar	Car	Pri	Ovl	1	3	2	Fatal
1032	7.7421	11.151	Zabi	2013	0	Kad-Zar	Car	Comm	Dgd	3	0	5	Severe
1033	7.6816	11.055	Gwargwaje	2013	0	Zar-Kad	Car	Comm	Loc	7	0	8	Severe

1034	7.6489	10.913	Jim Harrison	2013	0	Zar-Kad	Car	Pri	Mdv	7	0	8	Severe
1035	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	Bajaj, Cheroke	Comm	Rtv	1	0	2	Severe
1036	7.7421	11.151	Zabi	2013	0	Kad-Zar	Toyota	Comm	Ovl	4	0	6	Severe
1037	7.6993	11.122	Yankarfe	2013	0	Zar-Kad	V/Wagen, Jincheng	Pri	Ovl	2	0	9	Severe
1038	7.6876	11.08	D/Magaji	2013	0	Zar-Kad	Tythiace Bus	Comm	Ovl	0	0	19	Minor
1039	7.6754	11.026	Poly	2013	0	Zar-Kad	Bajaj Boxer	Comm	Others	11	0	11	Severe