

**INFLUENCE OF RURAL ROADS ON THE PATRONAGE OF RURAL MARKETS
IN KUDAN LOCAL GOVERNMENT AREA, KADUNA STATE**

BY

AMINU ABDULLAHI ABUBAKAR

**DEPARTMENT OF GEOGRAPHY
AHMADU BELLO UNIVERSITY, ZARIA
NIGERIA**

DECEMBER , 2015

Title Page

**INFLUENCE OF RURAL ROADS ON THE PATRONAGE OF RURAL MARKETS
IN KUDAN LOCAL GOVERNMENT AREA, KADUNA STATE**

**Aminu Abdullahi ABUBAKAR. B.urp. (ABU) 2010
MSC/SCI/38609/2012-2013**

**A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE
STUDIES, AHMADU BELLO UNIVERSITY, ZARIA IN PARTIAL FULFILLMENT
FOR THE REQUIREMENT FOR THE AWARD OF MASTER OF SCIENCE
DEGREE IN TRANSPORTATION MANAGEMENT.**

**DEPARTMENT OF GEOGRAPHY FACULTY OF SCIENCE, AHMADU BELLO
UNIVERSITY, ZARIA NIGERIA.**

DECEMBER, 2015

Declaration

I declare that the work in this Dissertation entitled “Influence of Rural Roads on the Patronage of Rural Markets in Kudan Local Government Area, Kaduna State” was performed by me in the Department of Geography under the supervision of Dr. I.J.Musa and Mr. Femi Jemerin. The information derived from the literature has been duly acknowledged in the text and a list of references is provided. No part of this work has been presented for another degree or diploma in any university.

Aminu Abdullahi ABUBAKAR

Signature

Date

Certification

This Dissertation entitled "INFLUENCE OF RURAL ROADS ON THE PATRONAGE OF RURAL MARKETS IN KUDAN LOCAL GOVERNMENT AREA, KADUNA STATE" meets the regulations governing the award of degree of Masters in science of Ahmadu Bello University, and is approved for its contribution to knowledge and literary presentation.

Dr. I.J Musa
Chairman, Supervisory Committee
Department of Geography
Ahmadu Bello University, Zaria

Signature

Date

Mr. F. Jemirin
Member, Supervisory committee
Nigerian Institute for Transport Technology, Zaria.

Signature

Date

Dr. I.J Musa
Head of Department
Department of Geography
Ahmadu Bello University, Zaria

Signature

Date

Prof. K. Bala
Dean School of Postgraduate Studies
Ahmadu Bello University, Zaria

Signature

Date

Dedication

I dedicate this piece of work to my parents Alhaji Abubakar Abdul and Malama Aishatu Abdulkareem; my loving children Muhammad Auwal and Abdulrahman and also to my caring wife Sagira Yahaya.

Acknowledgements

All thanks are to Allah the most high, for giving me the courage to undergo this programme against all odds. I am indebted to many people for their contribution and support. My gratitude and appreciation also goes to my Father and Mother Alhaji Abubakar Abdul and Malama Aishatu Abdulkareem for their parental, financial, supports and cooperation during the course of the work. It is with great pleasure and gratitude; I express my appreciation to my supervisors in persons of Dr. I.J Musa the Head of Geography Department and Mr. Femi Jemirin, they corrected and commented constructively until the work becomes a success. My thanks also go to Dr. A. K. Usman for chairing the presentation of the work during proposal and internal defense.

My appreciation goes to my brothers and sisters for their word of courage, love and cooperation that helped me in many ways to make my study and this work a reality. I'm also mindful of the patient, encouragement and understanding I received from my wife in person of Malama Sagira Yahaya, the same thanks goes to my children Muhammad Auwal and Abdulrahman.

My gratitude also goes to all the staff of Geography Department, A.B.U. Zaria. I am very grateful to my lecturers for the invaluable knowledge they have imparted on to me. I also thank my colleagues in the person of Isah Sani, Alhaji Bala K/kudu, Sheyi Akinola and Hervard for their help in terms of explanation and coaching either is directly or indirectly during my study. I cannot forget my well meaning friends especially Murtala Dahiru Abdullahi, Muhammed Yakubu Umar, Yusuf Yahaya, Abubakar Alhaji Adamu, Auwal Ibrahim and Alhaji Tukur Robotics for their excellent contribution and advice. I also appreciate the effort and cooperation given to me by Hamza Abdullahi and Adamu Salanke for digitizing and editing of my work.

Finally, despite all the excellent supervision rendered by Dr. I.J. Musa and Mr. Femi Jemirin and numerous assistance received from different individuals, I should be held responsible for any error that might have crept into the study.

Abstract

Human settlements are made up of parts, which work together as a system. A major part of the system is the 'market,' whose functionality is found to be influenced by some factors such as mode and means of transport, sex, age, occupation, transport fare, markets distance, market patronage, and item(s) on sales among others. This research covers the influence of rural roads on the patronage of rural markets in Kudan local government area of Kaduna state. Kudan LGA being a rural environment, the influence of rural road on the patronage of rural markets is quite bewildering because of the conditions of the existing rural roads. Most of these roads become almost impassable, markets not holding on market days simply because of the poor nature of roads some of these roads are Garu to Sundu, Garu to Doka and Taban sani road among others. These have hindered the patronage of rural markets and also transportation of inputs and output necessary for effective cultivation and marketing of agricultural produce in the study area. The poor state of the rural road within the study area, apart of having undesired influence on the rural markets patronage, results in substantial loss of perishable agricultural goods, high cost of moving agricultural produce to markets and even low income and unemployment among others. The aim of the study is to examine the influence of rural roads on the patronage of rural markets in Kudan local government area of Kaduna state. The following objectives are: to map out the types and characteristics rural markets patronage Kudan LGA, to assess the types and characteristics of rural roads hierarchies in Kudan LGA, to examine the influence of rural roads on the patronage of rural markets in Kudan LGA and finally to examine the problems of rural roads that affect the patronage of rural markets in Kudan LGA. Essentially, emphasis is on how the rural roads development has influenced on the patronage of rural market. The spatial extent of the study covers the ten (10) wards which are the sampled communities namely: Kudan, Hunkuyi, Likoro, Doka, Kauran wali A, Kauran wali B, Zabin Kudan, Taban sani, Garu and Maraban

danja. The study covers the rural roads and the entire markets in the sampled communities, in terms of their spatial location, accessibility, functions and the conditions of roads as well as the management/maintenance of the identified markets in the study area. The study made use of primary and secondary data. A multi-stage sampling technique was used to obtain a representative sample of the respondents in the study area. The first stage involves the clustering of the whole LGA with respect to political boundaries which forms the wards or cluster. The second stage, the purposive selection of respondents in each ward depending on the number of questionnaire allocated. To achieve the aim of the study 400 questionnaires were administered to respondents in the ten (10) wards of the local government area, but only 360 copies of the respondents were available at the time of the field survey. Because the population size of the wards was not uniform, the questionnaire for each ward was administered in proportion to the population size of the ward using the Stat Trek formula (2012). Descriptive statistical techniques involving frequency, percentages and tables and charts were adopted to summarize the data collected. The findings for the study include; poor drainage, pot holes, poor road and market management among others. The study also recommended that regular maintenance of roads, good drainages, culverts and more roads should be developed in Garu, Taban-Sani, Doka and Kauran Wali A. In conclusion adequate rural roads have desirable influence not only on patronage of rural markets and agricultural production but also on the entire socio-economic development of Kudan local government area. Since Kudan local government area depends largely on farming activities there is need to ensure regular and adequate provision of rural roads in order to facilitate marketing activities as well as socio-economic transformation so as to promote the living standard of people in the study area.

Table of Content

| | |
|------------------------|------|
| Title Page | ii |
| Declaration..... | iii |
| Certification | iv |
| Dedication..... | v |
| Acknowledgements..... | vi |
| Abstract | viii |
| Table of Content | x |
| List of Tables | xv |
| List of Figures..... | xvi |
| List of Plate..... | xvii |

CHAPTER ONE: INTRODUCTION

| | | |
|-----|-----------------------------------------|---|
| 1.1 | BACKGROUND TO THE STUDY | 1 |
| 1.2 | STATEMENT OF THE RESEARCH PROBLEM | 4 |
| 1.3 | AIM AND OBJECTIVES | 7 |
| 1.4 | SCOPE OF THE STUDY | 7 |
| 1.5 | SIGNIFICANCE OF THE STUDY | 8 |

CHAPTER TWO: LITERATURE REVIEW

| | | |
|-------|--------------------------------------|----|
| 2.1 | CONCEPTUAL FRAMEWORK | 10 |
| 2.1.1 | Concept of Road Transportation | 10 |

| | | |
|--------------------------------------------------------|-----------------------------------------------------------------------------|----|
| 2.1.1.1 | Mobility..... | 11 |
| 2.1.1.2 | Accessibility..... | 12 |
| 2.1.2 | Rural Road Transport..... | 12 |
| 2.1.3 | Approaches to Rural Roads Network..... | 12 |
| 2.1.3.1 | Village and Road Information System..... | 12 |
| 2.1.3.2 | Development of Data Base..... | 13 |
| 2.1.3.3 | GIS Based Approach..... | 13 |
| 2.1.4 | Principles of Rural Roads..... | 14 |
| 2.1.5 | Rural Areas or Rurality..... | 14 |
| 2.1.6 | Concept of Markets..... | 15 |
| 2.2 | LITERATURE REVIEW..... | 17 |
| 2.2.1 | Impact of Rural Road on Market Patronage..... | 17 |
| 2.2.2 | Significance of Market Patronage in the Developmental Process of Towns..... | 19 |
| 2.2.3 | Rural Road Transportation in Nigeria..... | 23 |
| 2.2.4 | Rural Road Transportation Problem in Nigeria..... | 26 |
| CHAPTER THREE: <u>S</u>TDY AREA AND METHODOLOGY | | |
| 3.1 | THE STUDY AREA..... | 28 |
| 3.1.1 | Physical Setting of the Study Area..... | 28 |
| 3.1.1.1 | Location..... | 28 |
| 3.1.1.2 | Topography..... | 28 |
| 3.1.1.3 | Climate and Vegetation..... | 29 |

| | |
|------------------------------------------------|----|
| 3.1.2 Human Setting of the study Area..... | 29 |
| 3.1.2.1 Brief History of the Area | 29 |
| 3.1.2.2 Population | 31 |
| 3.2 METHODOLOGY..... | 31 |
| 3.2.1 Reconnaissance survey..... | 31 |
| 3.2.2 Data Utilized for the Study..... | 31 |
| 3.2.3 Sources of Data | 32 |
| 3.2.3.1 Primary Source..... | 32 |
| 3.2.3.2 Secondary Source..... | 32 |
| 3.2.4 Sample Size and Sampling Technique | 32 |
| 3.2.4.1 Sampling Techniques | 35 |
| 3.3 METHOD OF DATA ANALYSIS..... | 36 |

CHAPTER FOUR: RESULTS AND DISCUSSION

| | |
|--------------------------------------------------------------------------------------------------|----|
| 4.1 INTRODUCTION..... | 38 |
| 4.2 THE SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS..... | 38 |
| 4.2.1: Gender Distribution of the Respondents | 39 |
| 4.2.2: Age of Distribution of the Respondents | 40 |
| 4.2.3: Distribution of Respondent by Educational Qualification | 41 |
| 4.2.4: Major Occupation of the Respondents | 42 |
| 4.3: TYPES AND CHARACTERISTICS OF RURAL MARKETS PATRONAGE IN KUDAN LOCAL GOVERNMENT AREA..... | 44 |
| 4.3.1: Market Patronage by the Respondents..... | 44 |

| | |
|-----------------------------------------------------------------------------------------------------|----|
| 4.3.2: Market Road Connectivity | 46 |
| 4.3.3: Scale of Trading and Type of Services Engage | 47 |
| 4.3.4: Providers of Road in the Study Area | 49 |
| 4.3.5 Provision of Market | 50 |
| 4.4 CHARACTERISTICS OF RURAL ROADS HIERARCHIES IN KUDAN LOCAL GOVERNMENT AREA..... | 51 |
| 4.4.1 Road Hierarchies in Kudan Local Government Area | 51 |
| 4.4.2: Nature of Roads..... | 54 |
| 4.4.3: Conditions of Roads in the Rainy Reason..... | 56 |
| 4.4.4: Mode of Transport Owned..... | 58 |
| 4.4.5: Means of Transport Used in Accessing Market..... | 59 |
| 4.5: INFLUENCE OF RURAL ROADS ON THE PATRONAGE OF MARKETS IN KUDAN LOAL GOVERNMENT AREA..... | 61 |
| 4.5.1: Ways that Rural Road Influence Market Patronage | 61 |
| 4.5.2: Roads Connecting the Villages..... | 63 |
| 4.5.3: Time spent to reach the market..... | 64 |
| 4.5.4: Transport Fare Spent to Market | 65 |
| 4.5.5: Type of Road connected to the market | 65 |
| 4.5.6: Proximity to Motorable Road the Respondents..... | 67 |
| 4.6 PROBLEM FACING RURAL ROADS ON THE PATRONAGE OF RURAL MARKET IN KUDAN LOCAL GOVERNMENT AREA..... | 69 |
| 4.6.1: Management of Market..... | 69 |

| | |
|--------------------------------------------------------------------------------|----|
| 4.6.2: Strategies for Maintenance of Market | 70 |
| 4.6.3: Present Condition of Existing Road..... | 71 |
| 4.6.4: Road Maintenance..... | 72 |
| 4.6.5: Type of Rural Road Transportation Problem Encounter to the Market | 73 |
| 4.6.6: Influence of Rural Road on Market Patronage | 74 |
| 4.6.7: Appropriate Measure in Solving Rural Road Transport Problems..... | 75 |
| 4.6.7: Socio-economic Impact of Market | 76 |

CHAPTER FIVE: SUMMARY, RECOMMENDATION AND CONCLUSION

| | |
|-------------------------------|----|
| 5.1 SUMMARY OF FINDINGS | 77 |
| 5.2 RECOMMENDATION | 79 |
| 5.3 CONCLUSION | 82 |
| Reference | 83 |
| Appendix: I..... | 89 |

List of Tables

| | | | | | | |
|--------------------------------------------------------------------------|---|---|---|---|---|----|
| Table 3.1: Projected Population for the Sample Communities in Kudan LGA- | - | - | - | - | - | 33 |
| Table 3.2: Sample Size for the Selected Communities in Kudan LGA- | - | - | - | - | - | 36 |
| Table 4.1: Gender Distribution of the Respondents- | - | - | - | - | - | 39 |
| Table 4.2: Distribution of Respondent by Educational Qualification- | - | - | - | - | - | 41 |
| Table 4.3: Major Occupation of the Respondents- | - | - | - | - | - | 42 |
| Table 4.4: Market Patronage by the Respondents- | - | - | - | - | - | 44 |
| Table 4.5: Market Road Connectivity- | - | - | - | - | - | 46 |
| Table 4.6: Provision of Market- | - | - | - | - | - | 50 |
| Table 4.7: Road Hierarchies in Kudan LGA-- | - | - | - | - | - | 51 |
| Table 4.8: Conditions of Roads in the Rainy Reason- | - | - | - | - | - | 56 |
| Table 4.9: Means of Transport Owned- | - | - | - | - | - | 58 |
| Table 4.10: Means of Transport Used in Accessing Market-- | - | - | - | - | - | 59 |
| Table 4.11: Ways that Road Transport Affect Market Patronage- | - | - | - | - | - | 61 |
| Table 4.12: Transportation Fare Spent to Market- | - | - | - | - | - | 65 |
| Table 4.13: Proximity to Motorable Road- | - | - | - | - | - | 67 |
| Table 4.14: Strategies for Maintenance of Market- | - | - | - | - | - | 70 |
| Table 4.15: Present Condition of Existing Road- | - | - | - | - | - | 71 |
| Table 4.16: Effect of Road Transport Development on Market- | - | - | - | - | - | 74 |
| Table 4.17: Impact of Market Infrastructure-- | - | - | - | - | - | 76 |

List of Figures

| | | | | | |
|---------------------------------------------------------------------------|---|---|---|---|----|
| Figure 3.1. Map of Kaduna State Showing the Study Area- | - | - | - | - | 30 |
| Figure 3.2: Map of Kudan Showing Sampled Communities-- | - | - | - | - | 34 |
| Figure 4.1: Age of Distribution of the Respondents- | - | - | - | - | 40 |
| Figure 4.2: Scale of Trading Engage- | - | - | - | - | 47 |
| Figure 4.3: Map of Kudan Showing Road and Market Connectivity- | - | - | - | - | 48 |
| Figure 4.4: Provision of Road- | - | - | - | - | 49 |
| Figure 4.5: Map of Kudan Showing Hierarchies- | - | - | - | - | 53 |
| Figure 4.6: Nature of Roads- | - | - | - | - | 54 |
| Figure 4.7: Map of Kudan Showing the Nature of Roads- | - | - | - | - | 55 |
| Figure 4.8: Roads Connecting into and Out of the Village- | - | - | - | - | 63 |
| Figure 4.9: Time spent to the market-- | - | - | - | - | 64 |
| Figure 4.10: Type of Road connected to the market- | - | - | - | - | 66 |
| Figure 4.11: Management of Market-- | - | - | - | - | 69 |
| Figure 4.12: Road Maintenance- | - | - | - | - | 72 |
| Figure 4.13: Type of Road Transportation Problem Encounter to the Market- | - | - | - | - | 73 |
| Figure 4.14: Appropriate Measure in Solving Road Transport Problems- | - | - | - | - | 75 |

List of Plate

| | | | | | | | | |
|---------------------------------------------------------------|---|---|---|---|---|---|---|----|
| Plate I: Trunk A Road- | - | - | - | - | - | - | - | 52 |
| Plate II: Trunk B Road- | - | - | - | - | - | - | - | 52 |
| Plate III: Condition of Untared Road during the Rainy Season- | - | - | | | | | | 57 |

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Societal interaction depends on the ability to move people and goods. Efficient rural road systems are essential facilitators of economic development. Rural areas can not exist and global trade can not grow without rural road systems to transport people and goods cheaply and efficiently. Ademiluyi and Solanke (2002), also defined road or transport as that part of economic activity which is concerned with increasing human satisfaction by changing the geographical position of goods, people and services. Similarly, Beenhakker (1987) defined transportation as the movement of people, goods or services between an origin and a destination for a predetermined purpose.

Ele (2006), defined rural area as the opposite of an urban area, refers to the country side whose population engages mainly in primary production activities like agriculture, fishing, and rearing of livestock. According to Hilling (1996) defined rural in two ways: first, for highway functional classification and outdoor advertising regulations, rural is considered anything outside an area with a population of 5,000; second, for planning purposes, rural is considered to be areas outside metropolitan areas 50,000 or greater in population. Moreover, these rural areas refer to the geographical areas that lie outside the densely built-up environment of towns, cities and the sub-urban villages and whose inhabitants engaged primarily in agriculture as well as the most basic of rudimentary form of secondary and tertiary activities (Ezeah, 2005). John (1997), defined rural roads as roads that serve primarily a rural community, rather than thorough traffic in many countries, the majorities of such roads have natural earth or at best gravel surface. Similarly, United Nation Center for Human Settlement (1985), defined rural roads as those roads that

connect path through settlements in rural areas and which carry light traffic of not more than 120 vehicles per day.

Generally, rural areas served as the base for the production of food and fibre, the major sources of capital formation for a country, and a principal market for domestic manufactures (Olayiwola and Adeleye, 2005). In general terms, the rural areas engage in primary activities which form the foundation for any economic development. Despite this level of contribution to economic development, rural areas have been neglected in terms of development which has made it non-attractive to live in and also increase poverty level in the rural areas. This is justified by the high correlation that exists between rural living and poverty with this situation particularly exacerbated in developing countries (World Bank, 1994).

In Ghana, as in other countries of sub-Saharan Africa, rural road constitutes a major sub-set of rural infrastructural system and constitute in no small measures to the overall development of the rural areas. In addition to the provision of access to the social and basic infrastructural facilities such as health, education, markets etc that are bound in urban centres, rural roads connect rural settlements to urban market centres. It is therefore axiomatic to state that the deplorable nature of rural roads is a sinister canker worm to rural markets, agricultural production and poverty alleviation in rural areas (Adarkwa and Tamakloe, 2004). Aguma, (2005) conducted a recent study in Uganda and concluded that; the government expenditure on rural roads was the most powerful determinant of the reduction of poverty in rural areas. The study finally revealed that, poverty reduction elasticity of rural road investment was quoted by the study is -0.1 that is, a one percent increase in government expenditure on rural roads decreases the poverty index by 0.1 percent.

Similarly, in village level surveys carried out in Burkina Faso, Uganda and Zambia by Bawell, (1996) observed positive relationship between level of access to roads and household

income. The author concluded that access to good roads raises the economic opportunities for people in rural Africa. Also improvement in transport stimulates economic development in rural areas through the expansion of opportunities for income and employment. According to World Bank (1989) rural road improvements in Nigeria has been associated with increased productivity and improvement in quality of life. This is by encouraging the movement of agricultural and non-agricultural consumption commodities and ensuring the personal mobility of rural dwellers. Increased connectivity network cheapens the cost of transport to the market and there by brings additional buyers and sellers into contact with one another with the consequence increase in elasticities of demand and supply. It helps to haul surplus agricultural commodities from productive village thereby helping to minimize shortages of food products and raw materials.

In Nigeria, the issue of rural transportation development has continued to be of national importance. For instance, most of the rural roads are in poor condition, and this has imposed significant cost on the national economy especially to the agricultural activities due to increased vehicle operating costs and travel times (Akinola, 2007). The Federal Government of Nigeria (FGN) has embarked on various programmes at one time or the other to ensure the provision of adequate transport facilities to meet the needs of the rural population but these programmes have not been able to achieve hundred percent successes.

The importance of transport facilities in rural areas can be justified from both social and economic perspectives. Socially, a significant proportion of Nigeria population lives in the rural areas and demands various forms of transport to facilitate socio-political interactions. Secondly, the rural areas are indispensable in the supply of food, raw materials to urban centres and the country's economic growth as a whole. In any rural society, influence of rural road on the patronage of rural markets plays a pivotal and often a decisive role in determining the overall productivity and development of a rural economy as well as

the quality of life of its dwellers. The insensitivity of the government to provide adequate roads may impose additional stress on the available ones which are not regularly maintained, leading to eventual breakdown in many instances. This has accounted for substantial loss of productive time, low productivity and poverty in Nigeria. Apart from the general rural road problem experienced nationwide, the entire rural areas are specifically worse-off, and this has accounted for poverty differentials between the rural and urban Nigeria (Fakayode, Omotesho, Tsoho and Ajayi, 2008).

The role played in economic development has motivated government to spend a lot on transport development with huge amount of money budgeted to roads development in transport sector (National Development Plan, 1975-1980). Moreover, it was observed by Fakayode *et al.* (2008) that, rural roads assist in the provision of facilities where none existed before, create provincial and regional markets and even integrate local economy into regional and National economies. Hence, the absence of roads in rural areas frequently necessitate the practice of “head loading” of fire wood, water and crops. The establishment of roads can reduce this burden and free up time to engage in more productive income earning activities, to the extent that women are often responsible for these transport duties, rural roads can be expected to free up their time for employment opportunities and improved child care.

1.2 STATEMENT OF THE RESEARCH PROBLEM

Sustainable rural development is a function of a number of factors in which rural road transportation is of importance. Efficient and effective rural road transportation serves as one of the channels for the collection and exchange of goods and services, movement of people, dissemination of information and the promotion of rural economy. Along this line, Owen (1968) stated that “Immobility perpetrates poverty”, effective transportation eases accessibility to inherent potentials of rural areas which could be harnessed for the development of its economy. In other words, rural road transportation provision forms an

intrinsic part of rural development strategies, serving as a mechanism and catalyst for rural market patronage and transformation through the reinforcement of rural development and contributes to poverty reduction by enhancing both equity and efficiency outcomes. Despite the enormous contribution of rural roads to economic development, in Nigeria, rural areas are more deprived of transport and other infrastructural facilities when compared to the urban areas in spite the fact that majority of Nigerians reside in rural areas (Abumere, Okafor, and Oluwasola, 2002; Olomola, 2003 and Akinola, 2007).

Foin (2002), examined the effects of road network connectivity on development of markets with a view to understand the level to which these network components affected agricultural produce marketing in Giwa Local Government Area. The outcome of the research was that, development of market depends on road network, which synchronized the needs and objectives of the rural produce/services and emphasize on the need to a substantial improvement of the system.

Musa, Abdulhamid, Kibon and Sani (2012), carried out a study on the role of Katsina-Maradi trans-border road development on the commerce and growth of the surrounding settlement. The authors concluded that, development of road transport result to the evolution of new settlements, commerce and trade along the road corridor.

Omole (2009) used questionnaire, inventory survey and documentary analysis to examined some factors affecting market patronage in Osun state. The study revealed that some factors such as mode of transport, consumers' income, sex, age, occupation, markets distance, location and item(s) on sales among others influence rural market functionality and patronage. The author therefore recommended opening up of market roads for the free flow of goods and services, conduct of market survey to determine among other things shop needs and requirements so as to encourage patronage, expansion and general development of the state.

Omole, Owoeye and Ogundiran (2012) examined how the transport situation in Osun State has affected the market patronage of farm products. The use of sample technique, observation method and road inventory survey were employed. Major findings reveal the existence of large range of goods and services in the market centres which are in their hierarchy of specialization. Other findings include poor road net-work and bad condition of roads which compelled market patrons to use motorcycle as their major mode of transport. A large numbers of market centres and even towns were found 'unconnected' by Direct Motor-able Routes (DMR). Recommendation include imploring government to open-up more roads, supplying more commercial buses, introduction of empowering programmed and lastly adoption of public-private-participation in road construction and management.

Kudan LGA being a rural environment, the influence of rural road on the patronage of rural markets is quite bewildering because of the conditions of the existing roads. For instance, the roads become almost impassable, especially during rainy seasons, and markets not holding on market days simply because of the poor nature of roads some of these roads are Garu to Sundu, Garu to Doka and Taban sani road etc. These have hindered the patronage of markets and also transportation of inputs and output necessary for effective cultivation and marketing of agricultural produce in the study area. The poor state of the rural road within the study area, apart from having undesired influence on the rural markets patronage, results in substantial loss of perishable agricultural goods, high cost of moving agricultural produce to markets and even the exorbitant cost of produce.

This study therefore, seeks to fill the gap in terms of looking at the influence of rural roads on the patronage of rural markets in Kudan LGA of Kaduna State specifically. In order to achieve the study objective, the following research questions were formulated:

- i. What are the types and characteristics of rural markets patronage in Kudan LGA?
- ii. What are the characteristics of rural roads hierarchies in the study area?

- iii. What is the influence of rural roads on the patronage of rural market in the study area?
- iv. What are the problems of rural roads associated with the patronage of rural markets in the study area?

1.3 AIM AND OBJECTIVES

The aim of this study is to examine the influence of rural roads on the patronage of rural markets in Kudan local government area of Kaduna state. This will be achieved through the following objectives, which are to:

- i. assess the types and characteristics of rural markets patronage in Kudan Local Government Area of Kaduna state.
- ii. assess the types and characteristics of rural roads hierarchies on the patronage of rural markets in Kudan local government area of Kaduna state.
- iii. examine the influence of rural roads that affect the patronage of rural markets in Kudan local government area of Kaduna state.
- iv. examine the problem of rural roads on the patronage of rural markets in Kudan local government area of Kaduna state.

1.4 SCOPE OF THE STUDY

This research will cover the influence of rural road on the patronage of rural markets in Kudan local government area of Kaduna state. Essentially, emphasis is on how the rural road has influence on the market patronage. The spatial extent of the study will cover the ten (10) wards which are the sampled communities namely: Kudan, Hunkuyi, Likoro, Doka, Kauran wali A, Kauran wali B, Zabin Kudan, Taban sani, Garu and Maraban Danja (Kudan satellite imagery, 2014). The study covers the rural roads and the entire markets provided in the sampled communities, in terms of their spatial location, accessibility, functions and the conditions of roads as well as the management/maintenance of the identified markets in the study area. Therefore, there is a need to establish information about the influence of rural

roads on the patronage of markets which is lacking in the study area. The temporal scope of the study will cover the period of rainy season.

1.5 SIGNIFICANCE OF THE STUDY

In Nigeria rural areas are more deprived of transport and other infrastructural facilities compared to the urban areas. In spite of the fact that, majority of Nigerians lives in rural areas (Abumere *et al*; 2002; Olomola, 2003). Generally, for a nation to develop there is need to provide and maintain roads both in urban and rural areas. Rural road however, remains a very important component of rural accessibility. Influence of rural road on the patronage of rural markets in the study area will provide information related to rural road problems by improving efficient accessibility for movement of people and goods to the markets as well as spatial distribution of infrastructures which can lead to increase in the overall rural development, with particular respects to roads development and markets in the study area. The significance of transport to the development of any area lies on the fact that improved transport facilitates the introduction of new ideas and movement of people into the place which were relatively isolated before (Hodder and Ukwus 1965).

Kudan has been a centre for colonial administration since 1915 and later became a district headquarters in 1921. It was also one of the three cotton market centres in Northern Nigeria during the 1950s. In 1983 Kudan local government area was created but was later dissolved following a military takeover in 1984. It was re-created in 1996 with Hunkuyi as the Headquarters of the local government. The development of roads in the study area began during the colonial era being among the three cotton market centres in Northern Nigeria.

The study would be significant to policy makers such as Kudan LGA, in particular, Kaduna state and the country at large. The research recommendation, when implemented would benefit the entire people of Kudan LGA by improving their socio-economic and

marketing activities through an improved rural road network, which in turn would improve the markets patronage as well as the general living standards of the populace.

CHAPTER TWO

LITERATURE REVIEW

2.1 CONCEPTUAL FRAMEWORK

2.1.1 Concept of Road Transportation

Since creation, man has always needed mobility to survive in his environment. During the earliest days, the extent of wandering determined their survival in a hunting and gathering system. This means that, man must start from a specific origin in his geographical space to a specific destination in order to carry out his hunting and gathering activities for survival. There is always a path with a distance connecting two specific points (Lowe, Hammer, Carpman and Slaymaker,1975).

This idea of points of differential location in space and the need of the connectivity between was later emphasized by Blank (1979) using one word “Transportation”. According to Blank (1979), “the fact that all human activities are distributed in space makes transportation which is the bridging of space necessary”. In essence, road is a connecting facility and any connecting facility joint two or more places, stimulates growth and development. It must also be noted that this growth and development starts with the location of basic infrastructure which further speeds up growth both in terms of economy and physically.

Aluko (2000), defined road transport as the ability to overcome space whereby passengers and goods could be moved or transported from one place to another for attainment of some elements of social, economic, and political aspirations. Also transportation is sees as a bridge between demand and supply by means of motorized or non-motorized, aided by space or earth surface. It then means that for transportation to take place there must first of all be a driving force in conjunction with adequate supply and provisions of suitable access to transport facilities (Eubomien, 2005).

Whetham (1972) defines network as a system of communication which man created. He adds that there are three important elements to any network or graph; its nodes or vertices, its linkages or routes or edges and its sub-graphs or independent or unconnected parts. The nodes and linkages represent the settlement and roads respectively. The network is reduced into its simplest form by transforming it into a typological graph or map defined as a form of geometry which is connected with the position and relationships between points and lines.

Aluko, (1980) showed that, road network as a transportation system is a system of communication which affects the demand and supply curve for a market greatly. The construction of roads in Nigeria started when the discovery of substances of economic value were made. Amongst them were the coal deposits in Enugu, groundnut production in Kano, cotton production in Zaria and Bauchi province and other farm produce (Udo, 1975). Despite this motivating factor for the construction of roads, most rural areas in Nigeria have only feeder roads as the main connecting roads and in many instances are not tarred and can only be used during the dry season (Olatubosun, 1975).

2.1.1.1 Mobility

Mobility refers to physical movement, measured by trips, distance and speed, such as person-miles or kilometers for personal travel, and ton-miles or ton-kilometers for freight travel. All else being equal, increased mobility increases accessibility; the more and faster people can travel the more destination they can reach (Aluko, 2000).

Mobility in Nigeria with particular reference to rural transportation system is pathetic. Studies have shown that lack of an efficient and adequate transportation facility is partly responsible for rural poverty (Ogundana, 1972). Also in the same vein, rural mobility problem really affects the development of market s in Nigeria, as these rural settlements serve as the sources of these market s goods or products. Access has no meaning without resources to utilize.

This implies that development of transportation infrastructure should occur only where there are resources to be developed (Oladipo, 2012).

2.1.1.2 Accessibility

Accessibility refers to the ease of reaching goods, services, activities and destination (together called opportunities). It can be defined as the potential for interaction and exchange (Howe and Peter 1984).

2.1.2 Rural Road Transport

John (1997), defined rural roads as roads that serve primarily a rural community, rather than thorough traffic in many countries, the majorities of such roads have natural earth or at best gravel surface. Similarly, United Nation Center for Human Settlement (1985), defined rural roads as those roads that connect path through settlements in rural areas and which carry light traffic of not more than 120 vehicles per day.

2.1.3 Approaches to Rural Roads Network

There is a need for a new planning approach, serving interests of both accessibility and a sustainable environment. Rural roads are integral part of rural development and it stimulates overall development by providing access to economic and social infrastructure and facilities. In order to avoid the problems associated with rural road development, the United Nation Centre for Human settlement (UNCHS 1985) started the following approaches of rural road network.

2.1.3.1 Village and Road Information System

Information system plays vital role in planning and development of rural areas. The invention of high-tech in the field of telecommunication, remote sensing and computers would lend a valuable support to spatial planning process. The most advanced computer based information technology tool for spatial planning is the Geographic Information System, which would become indispensable in planning and management of database. GIS can be used as an effective tool for village and road information system, which will help the planners and

administrators to identify the problems associated with rural road development activities, location and provision of appropriate facilities, monitoring and maintenance management of the assets created in rural areas. In these cases the information generated from the villages as well as the decision taken at the official level will flow faster to the official involved in development activities. Therefore, there is an urgent need to develop a simple method for collection and collation of data of village and roads, which will help in planning and provision of various facilities.

2.1.3.2 Development of Data Base

In order to prepare a scientific rural road Master Plan it is necessary to build a strong database, preferably in computer environment. The most important aspect of the database development process is the clear understanding about the micro level data, which should be collected from various organizations at the grass root level and then collated at the block/district level for preparation of the rural road network planning.

2.1.3.3 GIS Based Approach

The various data items required for the development of a comprehensive rural road planning and development can be broadly categorized under three categories:

a. *Village Data*

The Village level data will have three main components such as reference data (the name and code number), demographic data (population) and Infrastructure data (socio-economic functions or facilities available in habitation/ settlement).

b. *Rural Road Inventory*

It is an integrated system for collection and storage of rural road related data in a format compatible to the requirement of various user groups. For each road the following types of information have to be collected.

i. Road reference data

- ii. Road geometric details
- iii. Road pavement condition
- iv. Terrain and soil type

c. *Map Data*

The map at block level should be prepared at 1:50,000 scale. If available, the Aerial photos and satellite imageries etc. can also be used. The map data should contain the following items: Location of habitation/settlements Boundaries road Network, Water bodies (ponds, lakes, etc) Rivers and Irrigation Canals.

2.1.4 Principles of Rural Roads

The principles of rural road network as contained in United Nations Center for Human Settlement (UNCHS 1985), on rural road are as follows:

- i. Road hierarchy should linked settlements of about the same hierarchy.
- ii. Areas of most pressing mobility and accessibility need should be provided first.
- iii. Road must avoid high and swampy terrains as much as possible.
- iv. Road network should encourage vertical and horizontal linkage between various hierarchies of settlement within the region. That is, the first hierarchy roads should link the second hierarchy road and the third hierarchy road respectively.
- v. Road network should be laid to enhance relationship between the region and the neighbouring regions.
- vi. In applying these criteria, cognizance should be talking of equating proposal and development (UNHCS 1985).

2.1.5 Rural Areas or Rurality

In economic terms, the word “rural” is used for settlement which are inhabited by people whose occupation are mostly primary activities such as mining, agriculture, petty trading, among others. This settlement often lack basic infrastructure such as electricity,

schools, health centre, markets, and pipe borne water and goods roads when compared with the urban centres. Evbomien (2005) believes that, a rural area is also characterized by socially backward people and outdated technological base. The demographic definition uses minimum population threshold and it is the commonest indicator worldwide. There are several figures accepted in different geographical regions. However, a place is termed “rural” when it has population of less than 2,500 people (United Nations Population, 2007). Although in Nigeria, a place is termed “rural” when it has a population of less than 5000 people (National Population commission, 2006).

In essence, the definition of a rural area is considered in terms of economic sociological, physiological, ethical, racial and numerous dimensions. Rural areas are generally characterized by low traffic due to small population, abject poverty and deprivation, dominated by farming population size of built up area as generally very small and means of transport commonly used is inefficient (Makinwa, 1981).

Udo (1975), described rural area as an area dominated by extensive land uses such as agriculture and forestry or large space of underdeveloped land. The spatial nature of resources made the provision of rural road network a necessary factor for development. As a result of neglect of the rural basic infrastructure, the rural areas have always been associated with under development as well as zone of high propensity for out migration (Makiwa, 1981).

2.1.6 Concept of Markets

The term “market” and the equivalent term *Kasuwa* in Hausa has many connotations. Therefore, authors from various disciplines have different meaning for the word Blank, (1979) has defined market as institutions for the exchange of goods and services. That is, it is a place where people meet at regular times to buy and sell commodities. Hodden and Uku (1969) stated that, “a market is an authorized public concourse of buyers and sellers of commodities meeting at an appointed time”.

In many developing countries, periodic markets are as important for the national economy as exports and international trade (Rizet and Hine 1993). Furthermore, for some of the poorer people in Africa, they provide essential opportunities for the exchange and barter of locally produced goods. Sieber (1999), suggested that the barter system was a possible origin of periodic markets, but nowadays barter is being replaced by cash transactions. The price of goods in such places is generally cheaper than in larger settlements with permanent trading facilities. Daily and periodic are the two types of rural markets that can be identified (Briggs, 2007). Spatial and temporal patterns of markets are of fundamental importance in Africa. Skinner's model (1964) based upon experience in China is used with modifications made by (Sieber 1997) from north-east Ghana. This identified five major types of market which increase in importance up the marketing hierarchy.

- i. Minor (incipient) markets:** these are the smallest markets in the hierarchy and are often organized on an informal, if not irregular, basis. Locally produced goods are usually bartered and exchanged between people of neighboring villages, and only rarely are goods of any value transferred. Transactions are "horizontal" in that the goods are of roughly equal value. The main role of this category of market is to "even out" local regional imbalances in production, especially of agricultural goods.
- ii. Standard markets:** These are of slightly more importance than minor markets in that they tend to serve a larger market threshold and often allow for the exchange of higher order goods. Quite often these markets act as a starting-point for the flow of locally produced agricultural and craft goods into higher levels of the marketing hierarchy and also the termination of downward flows of goods which are intended for the rural population (Sieber, 1997). In effect, therefore, although

these markets retain the “horizontal” functions of minor markets, they also show some degree of “vertical” activity.

- iii. **Intermediate markets:** These are one stage up the market hierarchy from standard markets (Briggs, 2007). They are similar, but the intermediate markets serve a much larger threshold and has a larger “vertical” flow of higher order goods. Quite often these markets are associated with the larger villages and small towns, which usually have permanent trading facilities incorporated within them.
 - iv. **Central markets:** These are usually located at a strategic site on the transport network. They usually serve a large market threshold and often have important wholesaling functions attached to them.
 - v. **Regional markets:** These are associated with the larger central places and are often in urban areas. In many cases, such markets operate daily and may function both in the mornings and evenings.
 - vi. **Standard, intermediate, and central markets:** These tend to function predominantly on a periodic basis, whereas the two extreme categories are different. Minor markets are often haphazardly organized and have too small a threshold to attract traders on a periodic cycle, whereas regional markets are often large enough to support permanent establishments operating on a daily basis.
- Each of these five types can be identified in the study area.

2.2 LITERATURE REVIEW

2.2.1 Impact of Rural Road on Market Patronage

Nigeria has one of the least rural road densities for a nation with high rural population (World Bank, 1996). It went further and stated that 70% of the rural network was in poor or very poor conditions coupled with the recent massive road construction project being carried out by the Petroleum Special Trust Fund; a considerable change has

not been achieved since a greater impact is felt within the urban centre. Rural roads are important features to the location and patronage of rural markets especially in rural areas be it primary, secondary or tertiary.

Leman (1985) categorized the transport demand in the rural areas into five categories:

- i. Trips to and from farm to perform operations.
- ii. Trips for acquiring farm inputs
- iii. Trips to and from markets to sell crops or purchase food items needed to supplement self-produced crops.
- iv. Trips to meet other domestic needs such as collection of fire wood and building materials for processing agricultural products.
- v. Trips for social, recreational and religious activities.

Kottler (1999), is convinced that cheapening transport fuses markets, bring additional buyers thereby increasing demand and supply. Adefolalu (1980) added that, transport availability allows the free exchange of goods between rural areas and urban centres whereby it becomes position of the farmer to rise above subsistence level. This possibility of rising above poverty, unemployment and inequality can be nothing else but development. This explains why Owen (1968) regards immobility as a barrier to development.

Modern development is not possible without exchange i.e. trade. Trading activities on any scale involves transport. The penetration of transport facilities into rural areas will widen trading activities and at the same time local inhabitants can take advantage of transport availability to diversify their income earning activities. Transportation helps to increase food production through modernization of agricultural activities and delivery of agricultural inputs. It has helped to intensify agricultural product in and also encouraged geographical specialization in production between areas thereby minimizing wasteful duplication.

Provision of transport in rural areas will provide employment opportunities through new markets centres and small business which are encouraged by improved accessibility as well as the operation of transport services and associated services. It will also facilitate the promotion and development of tourism in areas of picturesque scenery, historic cultural and economic advantage (Leman, 1985).

Leman (1985) believed that provision of roads in the rural areas will enable rural dwellers to identify and exploit rural resources as well as opening up hitherto remote resources area. It will attract rural settlers and farmers closer to the roads which will now make it possible for the creation of markets for productive activities as well as extending the size of such markets. The availability of closer roads to the settlements will make it possible to transport surplus farm produce from productive village to the markets thereby helping to minimize shortages of food products and raw materials for industries.

2.2.2 Significance of Market Patronage in the Developmental Process of Towns

Market, as used in this study, connotes an authorized public concourse of buyers and sellers of commodities meeting at a place more or less strictly limited or defined at an appointed time (Omole, 2002; Holder and Ukwu, 1969). Market centres are fundamental to the economic, social, cultural, religious and political life of people. This has been unequivocally presented by Onyemeluke, 1974; Adalemo, 1979; Sada and McNulty 1978 among others.

It is believed in many quarters that markets grow anywhere, there are goods to sell and where buyers are available for such goods (Omole, 2002). Markets are man-made features established for the use of man (Omole, 2002). The work of scholars particularly that of Filani and Richard 1976; Nwafor, 1982; Sada and McNulty 1978; Eben-Saleh (1999) among others agree with this assertion. They went further to identify two basic classes of market places as daily and periodic market which were further sub-classified as; morning, full-day, night,

periodic, provincial and inter kingdom markets. Nwafor (1982) emphasized that a daily market requires the existence of many full-time traders and that it is a more convenient type of market in that it provides daily needs to the people on daily basis.

Holder *et al*, (1969); Hill, (1966); and Iloeje, (1976) noted that it is perhaps because of the importance and significance of daily markets that very large towns in Nigeria have at least one large daily market. Iloeje (1976); Sada and McNulty (1978) as at the time of their studies observed that Lagos had at least seven daily markets; Ibadan had ten, while each in Kano, Aba and Onitsha had two. Majority of the villages on the other hand had periodic markets, which usually hold at four or eight day's intervals.

Besides the issue of classification of markets, the significance of market centres as a man-made feature in the development of towns and man in general deserves an intensive study. For instance, the role of markets as observed by Mellassoux (1971) noted that, especially in Yoruba land, particularly as it relates to the study area (Osun State) where they used markets as meeting places for the perpetuation of lineage rights and obligations were noted.

Similarly, Browley (1971) saw the market place as a place, which provides opportunity to meet one's friends and kinsmen for the exchange of news and gossip. Belshaw (1965) argued convincingly on the political roles and relevance of market places. The author stressed that the political weight of political parties are tested in market places. Olorunfemi (1999) re-echoed the work of Belshaw (1965) by saying that market places serve as avenue for political competition in search of political power. This was apparent according to the author, among the Arewa people of Niger Republic, where competition for political power, for authority and legitimacy of a ruler is affirmed. The argument according to the author is that, market places afford a physical regrouping of social entity that has formally dispersed.

Onyemelukwe (1974) was of the view that the growth of Onitsha (a Nigerian Commercial Centre) was influenced by the trading activities. Along this line, Adalemo (1979) amplified the fact that market places are fundamental points of economic life and that traditional market system in Nigeria represents an articulation of spatial linkages which had been neglected in the post independence development, such as the building of transport routes to link settlements. The author argued that despite the lack of recognition given to the development of market centres in the post-independence period, market centres still strive to perform integrative functions by providing the link between the production and consumption centres of the economies within which they are located. The author agreed that not all the market centres are in urban centres, yet, they act as centres for the diffusion of information to the surrounding areas and regions.

Browley (1971) pointed out that market centres due to their centrality and volume of human population are used for dissemination of information which could be announced by the town crier from the kingship to the communities. The belief is that once such information is announced at the market centres, it would be disseminated to every part of the town by the population in the market without pains. The author went further to say that, the spread of knowledge about health matters, vaccination against small pox and other diseases are done most of the times in the market centres.

Moreso, the author however disagreed with the view that growth pole idea as conceived in the developed world would not be best suited to the developing countries, because according to the author, the growth pole idea superimposes largely alien ideals on urban places and on the indigenous socio-economy. Therefore, held to the view that the system of market centres as an approach would be better suited for developmental purposes, because of its articulation and intricate ties with the people. Apart from the diffusion of information by market centres, Anthonie (1973) emphasized that market places are social

centres. According to him, a market place is an avenue for courtship, visits, exchange of ideas and other social activities; for dancing, drumming, reuniting and other festivities. The author argued that a market day is generally regarded as a social gathering day, apart from the economic activities taking place in the markets. Therefore the author advised that, the social function of market places should be utilized through the provision of organized recreation facilities near the market centres. According to him, this would be of tremendous advantage for the overall social cohesion for the development of the youth physically and mentally, and would probably be a good forum for the enlightenment of the populace at large.

Religious roles have been also ascribed to the market centres especially in Yoruba land. This role can be vividly looked at from traditional, Islamic and Christian viewpoints. Most markets according to Holder and Ukwu (1969) have for some time served as places for sacrifice or ritual centres. The purpose for this according to him is to maintain peace at the market and in the town in general. In some cases, town spirits are still believed to meet and live in trees in and around the market places. Just as the Yoruba markets are associated with one ritual or the other, so the early Christian and Islam missionaries recognized the value of the market as a place for the propagation of the gospel. For instance, market places are found to be useful for preaching of gospel messages. In the present day, many churches and mosques are located or established close to or adjacent to the market place (Olorunfemi, 1999). The author cited the examples of Badagry in Nigeria where the first church was built between two public markets and also in Akure where the central mosque is located opposite the king's market popularly called Oja-Oba.

Segal (1977) in his study of city planning in ancient times noted that the holiness and sacredness of the town is in the market places. The author claimed that persons who had been accused of criminal acts were not allowed to enter into "Agora" which is an equivalent of market places in Greek cities and were prevented from entering into 'Forum' in Roman cities

which is also an equivalent of market places. This according to him shows the holiness of the market centres. Similarly, in Ibo land in Nigeria, a person who had sworn an oath of innocence at a shrine and had survived a year without dying or becoming seriously ill had the right to parade himself through the market to celebrate his freedom (Olorufemi, 1999).

The discussion above shows the important roles and significance of market places in the developmental process of towns and the nation in general.

2.2.3 Rural Road Transportation in Nigeria

The evolution of rural road transportation in Nigeria has spatial and temporal dimensions. For example, Aloba (1983) observed that, spatial development of rural road closely followed the evolution of rural settlement in South-Western Nigeria, while the temporal growth of rural roads take place in distinct stages coinciding with the three phases of the diffusion process; primary, secondary and saturated stages. While the spatial expansion of rural roads can be illustrated cartographically, temporal development may be demonstrated in Sigmund curve(s) in which the rate of road evolution was initially slow, then grew more rapidly, then fell or ceased altogether as soon as the geographical space was fully settled.

The emerging pattern from Aloba's study is that, when there were fewer rural settlements in Nigeria, correspondingly there were fewer linkages as well as increase in the number of rural settlement. Following an end to civil war and establishment of an effective central administration, there was an increase in the number of rural footpaths. An important development is the upgrading of footpaths into untarred roads, which could be used by automobiles much of the time.

Rural transportation development in Nigeria is not a function of increase in the number of villages alone; other important factors are the nature and structural changes in the level of socio-economic characteristics of the country side. For example, the discovery and exploitation of mineral and forest resources such as timber motivated the construction of

more rural roads which were initially maintained and used exclusively by those companies which built them and later made available to the general public. (Such rural roads can be taken over by local communities or councils through whom they pass). The introduction of cocoa and other cash crops was substantially responsible for the evolution of rural transportation in different parts of the country (Adedeji, 2010). Consequently, rural roads and mechanized forms of traffic emerged to cater for the increased demand for rural freight and movement, especially between rural and urban centres.

Considering the transport sector as one of the key elements of the country's needs, there has been series of effort on the provision of rural transportation and rural development in Nigeria. Successive government have come forth with various rural development strategies, for example, the establishment of the Nigeria Agricultural Cooperative and Rural Development Bank, the various State Agricultural Development Projects, River Basin Development Authority, Development of Local Government administrative systems among similar rural development initiatives has been embarked upon by government to facilitate the development of rural economy. The transport sector contributed about 2.4 % to real GDP in 2004; with road transport alone accounting for nearly 86 % of the transport sector output (World Bank, 2007). Nigeria's transport system consists of some 195,000 km of roads; this network comprises a combination of Federal, State and Local Government roads. The Federal trunk roads are the principal vectors of the system and have a total length of 32,100 km (16%) of which the majority is paved. State roads account for 30,900 km (16%) while the Local Government road system comprises approximately 132,000 km (68%). Out of the 195,000km roads, about 60,000 km are paved, 3,775 km of railways, 3 international and 78 domestic airports as well as 13 sea and river ports. Roads are the country's dominant mode of transport carrying more than 90% of cargo and passenger traffic (RAMP, 2007). Rural roads constitute the major percentage of Nigerian road system.

Realizing the importance of the rural transport, in early 2004 the Government launched a policy blueprint through the “National Economic Empowerment and Development Strategy” (NEEDS). The development strategy aims at interventions in the rural infrastructure, health, housing and employment sectors. Its two key objectives are to improve the transport infrastructure and promote agricultural development. In the road sub-sector, its focus is on the construction and maintenance of road infrastructure to improve accessibility and to facilitate movement of agricultural commodities.

As a follow-up of the NEEDS, the “State Economic Empowerment and Development Strategy” (SEEDS) was developed at the State level. Furthermore, through the Rural Travel and Transport Programme (RTTP), a National Policy on Rural Travel and Transport (NPRTT) was prepared by the Federal Government. This programme is aimed at improving rural access and mobility. Currently, different institutions are responsible for the management and financing of rural roads in the country, through the National Planning Commission (NPC) in charge of planning, the Federal Ministry of Transport (FMT) and the Federal Ministry of Agriculture and Water Resources (FMAWR) responsible for rehabilitation and construction, the Federal Ministry of Finance (FMOF) for budgeting and financing and Federal Road Maintenance Agency (FERMA) for maintenance, apart from State Ministries of Works responsible for the State network and Local Government Councils for the Local Government network. Apparently a lot has been done by successive government to address rural transportation problem yet, little has been achieved due to frequency of policy variation and government instability (Fayinka 2004). At individual and community based level, some communities have taken it upon themselves to provide accessibility in their area through self-help approach; this community-driven approach according to (Musa, 2010) is as a result of Nigerians concern to foster rural economic development that is sustainable over a long term and the achievement of the national goal of sustainable development.

2.2.4 Rural Road Transportation Problem in Nigeria

The condition of rural transportation has frustrated rural development efforts in the country and this has resulted into series of challenges such as the cutting off of many rural areas in the country from neighbouring larger settlements from which they could access higher order socio-economic services, low productivity, low income and a fall in the standard of living of rural residents and high rate of poverty (Aderamo and Magaji ,2010).

Rural transportation problem in Nigeria relates generally to the provision of access to natural resources like minerals, agriculture, forestry and the provision of access for the rural population so that they can access services at affordable rate. Findings by (Ovubude, 2000) have shown that the movement of passengers and freight in rural areas of Nigeria are comparatively smaller than those of intra-urban movement. People in rural areas travel less than their urban counterparts and this is not independent of the absence of reliable and easily affordable means of motorized public transport in those areas. The distance over which motorized transport is required within the rural areas is relatively shorter because of the small and compact nature of the rural settlements generally. Rural transportation problem is accentuated by the dispersed spatial derivation of traffic, this is conditioned by the nature of rural environment and economy, bulkiness and perishable nature of rural product, imbalance in inflow and outflow, and marked variability in demand for transport.

Demand for rural transport is subject to three dimensions of traffic variation and fluctuations and these are diurnal, short term, and seasonal (Ovubude, 2000). The volume and direction of rural transport is influenced by the cyclic market system in rural areas. Hence, in most cases, traffic between main urban centre and dependent villages varies in volume depending on the cycle of the periodic markets in the area concerned. The cycle of rural transport demand also appears to correspond with the seasonal pattern of local agricultural and forest products availability.

The condition of most rural roads in the country is very poor compared to inter-urban and intra-urban roads in the country. During raining season, most rural roads deteriorate and become impassable; this poses a threat to sustainability of rural socio-economic development. Apart from the networks and few terminals which are government property, almost all other aspects of rural transport in Nigeria belong to private sector. Some of the vehicles plying rural roads are not road-worthy, this makes their services to be slow, irregular, unreliable, inefficient, and even constitute risk to rural travelers.

Motorized transport cost become very high during rainy season as public transport operator hike up their fares because of the increased vehicle running cost often occasioned by the prevalent very bad road conditions. Adesanya, Philips and Titilayo, (2000) had observed that, rural travel and transport in most rural areas in Nigeria still take place with great difficulties thereby compounding and worsening the problem of rural productivity and rural poverty. The ability of agricultural and forest freight to absorb motorized transport cost varies according to the purpose and type of agricultural production. On the whole, only large-scale or commercial agricultural forestry concerns and mining firms are found to be more able to absorb public transport costs than the subsistence primary producers who predominates the country's rural area(Adedeji, 2010). As a result of the foregoing reasons, head portage moves substantial part of the country's rural agricultural commodities. Bicycles, hand drawn/push carts, pick-up van and adapted vehicles (Bolekaja and Mammy Wagons) are the dominant modes of public transport in the rural areas. Beasts of burden (mules, donkeys and camels) are used widely in the Northern Nigeria while canoes and boats are used in riverine and navigable inland water ways throughout the country.

CHAPTER THREE

STUDY AREA AND METHODOLOGY

3.1 THE STUDY AREA

3.1.1 Physical Setting of the Study Area

3.1.1.1 Location

Kudan local government area of Kaduna State is located between latitudes $11^{\circ}18'27.57''\text{N}$ and $11^{\circ}18'34.13''\text{N}$ of the equator and longitudes $07^{\circ}43'53.82''\text{E}$ and $07^{\circ}43'57.09''\text{E}$ of the Greenwich meridian and is presently one of the most important rural area in Kaduna State. Kudan is located in the central plains of the northern Nigeria highland standing at an average height of 670 metres above sea level and is about 83km North of Kaduna town. It shares boundaries with Makarfi local government to the east, Giwa and Sabon-gari local governments to the west, Soba local government to the south-east. The local government also shares boundaries with some part of Kano and Katsina States to the north-east and north respectively (Satellite Imagery, 2014). See figure 3.1.

3.1.1.2 Topography

Kudan local government area is characterized by gently rolling land interrupted by river valleys, streams and a few rock outcrops. The land is generally higher in the north-eastern parts of the area and is suitable for up land cultivation. Two river valleys pass through the area; river Shika flowing from north to south and river Kubani which flows from east to the west. The 2 river valleys meet at a point in the central part of the area and flows south wards outside the local government area. The greater part of the fadama cultivation in the area is done along these 2 river valleys. The study area has the same soil characteristics as that of Zaria-generally alluvial, which is suitable for a wide range of crops.

3.1.1.3 Climate and Vegetation

The climate of the study area is marked by an alternating wet and dry seasons. The area experiences a tropical continental climate, which is characterized by distinct wet and dry season. Analysis of the long term records of rain fall from the Institute of Agricultural Research and the meteorological station Zaria, shows that the area enjoys mean annual rainfall of about 1060mm. The seasonality in climate is largely determined by the movement of inter-tropical convergent zone (ITDZ) across the country. This ITDZ is the zone where the two dominant air masses the Tropical continental (CT) from the North-East and the tropical maritime (MT) from the South-West meets (Ayoade, 1987). Also the high mean daily maximum temperature rises gradually from a low temperature of about 26.6 degrees Celsius in January to a major peak of 39 degree Celsius in April or October the dry season starts from November to February. The relative e humidity falls from 69% to 36% whilst the harmattan wind becomes steady and particles with poor visibility. Natural vegetation of the study area is of the northern Guinea Savannah. Its characteristic vegetation cover is preserved due to poor management practice like fuel wood harvesting, annual bush burning, cultivation and intensive grazing.

3.1.2 Human Setting of the study Area

3.1.2.1 Brief History of the Area

Kudan has been a senior colonial administration since 1915 and later became a district headquarters in 1921. It was also one of the three cotton market centers in Northern Nigeria during the 1950s. In 1983 Kudan local government was created but was later dissolved following a military takeover in 1984. It was re-created in 1996 with Hunkuyi as the Headquarter of the local government. The local government comprises of five (5) district, ten (10) wards and over 27 major towns and villages. (Satellite Imagery, 2014). See figure 3.1.

3.1.2.2 Population

The 2006 population census put the population of Kudan LGA at 129,721 which was projected to 2015 to be 169,256. Although the local government are more of rural settings, the study focused on ten (10) wards which served as the sampled communities namely; Kudan, Zabi-Kudan, Hunkuyi, Kauran wali A, Doka, Likoro, Kauran-wali B, Taban-sani, Garu and Maraban-Danja.

3.2 METHODOLOGY

3.2.1 Reconnaissance survey

This involves visiting the study area to observe the physical characteristics of the area, the settlement pattern, road hierarchy, function and the road types and also the types and number of markets and their influence and location in the study area. Nine (9) markets were identified from the sampled communities whereby three (3) were periodic markets while six (6) were daily markets. The purpose was to get the researcher familiarized with the environment. Other activities that were carried out during the preliminary field survey which include physical inspection or observation so as to see the object and subject of the research in order to observe the existing situation and see the influence of rural roads on patronage of rural market.

3.2.2 Data Utilized for the Study

- i. Information on road hierarchies, types and condition of roads in the study area.
- ii. The population figures of the settlements in the study area.
- iii. The population figures of the study area.
- iv. Type and nature of transport services in the study area.
- v. The number of markets and their locations in the study area.
- vi. Market type and pattern in the study area.

- vii. Data on socio-economic characteristics of people in the selected districts and their perception toward the influence of rural roads on market patronage.
- viii. Information on rural road transport problems in the study area.

3.2.3 Sources of Data

The data for the study were collected from both primary and secondary sources.

3.2.3.1 Primary Source

The primary data provides firsthand information derived through field observations, questionnaire administration and oral interview. The questionnaire was used to obtain data on socio-economic characteristics of the people, their perception on the nature of roads linking their villages to other areas, road type and the transportation problems they encounter. The questionnaire was also used to obtain data on the location and conditions of markets available, distance covered to use market.

3.2.3.2 Secondary Source

The secondary data were obtained from relevant government ministries and agencies. The ministries concerned are the Ministry of Works and Transport and Ministry of Rural Development. Other Government agencies include Kaduna state National Population Commission and the secretariats of the sampled local governments. Other relevant information was sourced from published and unpublished texts, articles, journals and other documentary materials, publications of the World Bank etc.

3.2.4 Sample Size and Sampling Technique

In an attempt to conduct the research without bias, the preliminary field survey conducted by the National Population Commission in 2006 the study area has the population of 129,721.

Furthermore, the 2006 population figures were projected to 2015 for the research. This projection is based on the average population growth rate of Kaduna state, which is 3%, using the formular:

$$P_o = P_1(r+)^n$$

Where:

P_o = Projected population P_1 = Existing population

r = Growth rate

n = Time interval between future population and base year population (2015-2006= 9).

The study area consists of ten (10) wards which serve as the sampled communities namely; Kudan, Zabi-Kudan, Hunkuyi, Kauran-wali A, Doka, Likoro, Kauran-wali B, Taban-sani, Garu and Maraban-Danja. See Table 3.1 and Figure 3.2.

Table 3.1: Projected Population for the Sampled Communities in Kudan LGA

| Wards | Sampled Communities | 2006 Population | 2015 Projection |
|---------------|---------------------|-----------------|-----------------|
| Kudan | Kudan | 21,950 | 28,640 |
| Zabin Kudan | Zabin Kudan | 10,260 | 13,387 |
| Hunkuyi | Hunkuyi | 22,915 | 29,899 |
| Maraban Danja | Maraban Danja | 7,317 | 9,547 |
| Doka | Doka | 14,261 | 18,607 |
| Kauran Wali A | Kauran Wali A | 11,760 | 15,345 |
| Kauran Wali B | Kauran Wali B | 9,816 | 12,807 |
| Taban Sani | Taban Sani | 5,654 | 7,377 |
| Garu | Garu | 7,876 | 10,276 |
| Likoro | Likoro | 17,912 | 23,371 |
| Total | 10 | 129,721 | 169,256 |

Source: field survey, 2015

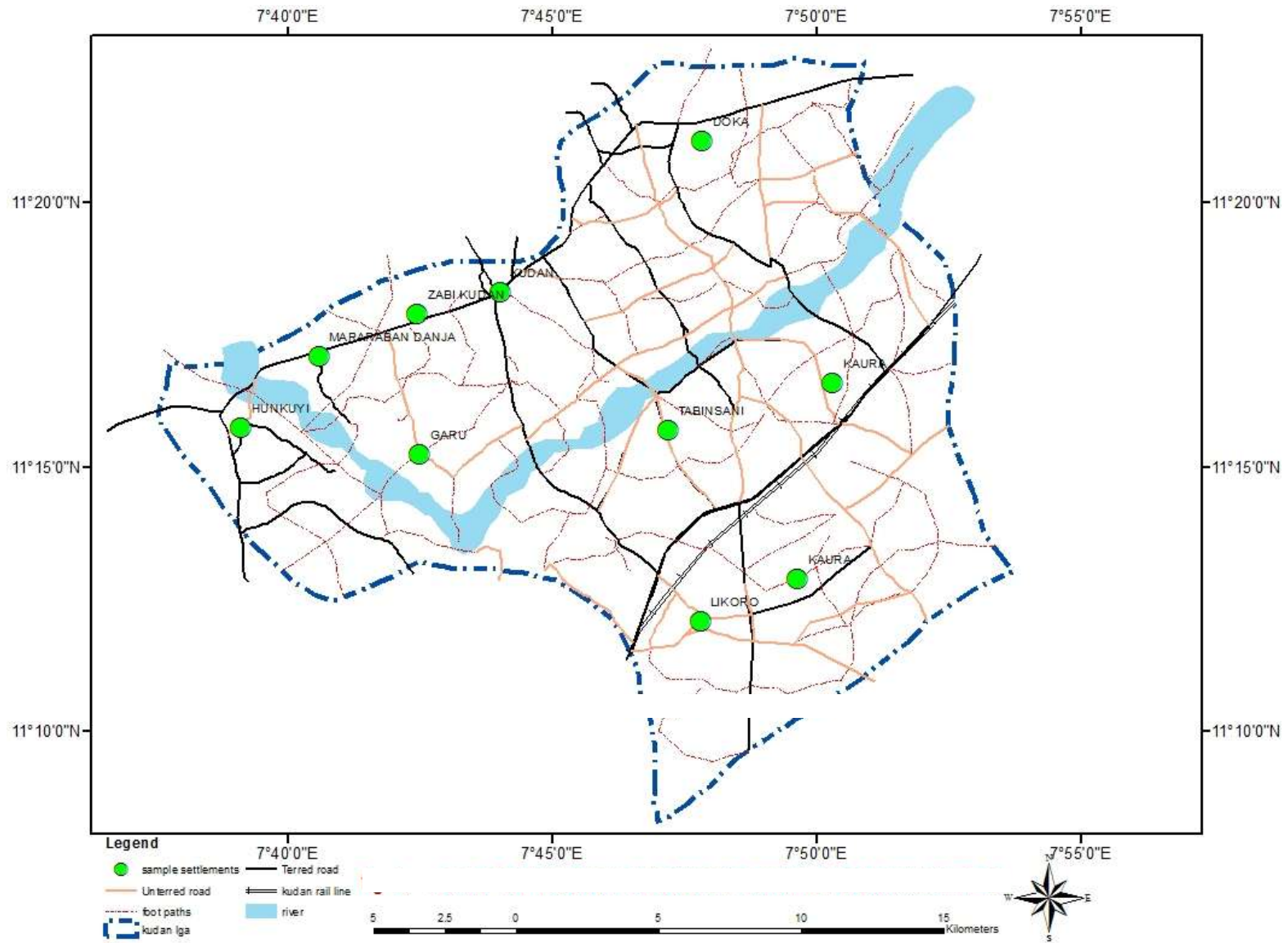


Fig. 3.2: MAP OF KUDAN SHOWING SAMPLED COMMUNITIES

Source: Satellite Imagery, 2014

3.2.4.1 Sampling Techniques

A multi-stage sampling technique was used to obtain a representative sample of the respondents in the study area. The first stage involves the use of cluster sampling of the whole LGA with respect to political boundaries which forms the wards.

The second stage, the purposive selection of the respondents in each ward depending on the number of questionnaire allocated. The purposive technique was preferred in this work because it enabled the researcher to choose respondents who have lived long enough from 10-15years in the LGA and who are willing to respond appropriately and quickly to the questionnaire.

To determine the sample size for this research. Yamane (1967), formula were used for the known population.

Using Yamane (1967), formula to determine sample size for known population:

$$\frac{N}{1 + N(e)^2} = n$$

$$n = 399.77$$

Based on the above, the researcher adopted 400 as the sample size for the study.

In determining the sample size for each community or ward in the study area, Stat Trek formula (2012), was used to calculate the size for each sampled community. See table 3.2.

$$nh = \left(\frac{Nh}{N}\right) X n$$

Table 3.2: Sample Size for the Selected Communities in Kudan LGA

| Sampled Communities | 2015 Projection | Sampled Size |
|----------------------------|------------------------|---------------------|
| Kudan | 28,640 | 67 |
| Zabin Kudan | 13,387 | 32 |
| Hunkuyi | 29,899 | 71 |
| Maraban Danja | 9,547 | 23 |
| Doka | 18,607 | 44 |
| Kauran wali A | 15,345 | 36 |
| Kauran wali B | 12,807 | 30 |
| Taban sani | 7,377 | 17 |
| Garu | 10,276 | 24 |
| Likoro | 23,371 | 56 |
| 10 | 169,256 | 400 |

Source: field survey, 2014

3.3 METHOD OF DATA ANALYSIS

The descriptive statistics were used to describe the socio-demographic characteristics using frequency distribution and presentation of results in percentages.

Objective I: To assess the types and characteristics of rural markets in Kudan Local Government Area of Kaduna state.

Descriptive statistics were use to explain the types and characteristics of rural markets in the study area and data were analyzed and presented using charts, tables and plates etc.

Objective II: To examine the types and characteristics of rural roads hierarchies in Kudan local government area of Kaduna state.

Also Satellite imagery (2014) was used to map out the types and characteristics of rural roads in the study area. The satellite imagery of the study area was digitized using ArcGIS 10.0 software. Data generated were presented using maps. Descriptive statistics were use to explain the types and characteristics of rural roads on the patronage of rural markets in the study area and data were presented using charts, tables and plates etc.

Objective III: To assess the influence of rural roads on the patronage of rural markets in Kudan local government area of Kaduna state.

Data generated by means of self-administered questionnaire, oral interview and photographs.

Also data collected were analyzed and presented using tables, charts and plates etc.

Objective IV: To examine the problem of rural roads on the patronage of rural markets in Kudan local government area of Kaduna state.

Data also generated by means of self-administered questionnaire, oral interview and photographs. Also data collected were analyzed and presented using tables, charts and plates etc.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 INTRODUCTION

This chapter four focuses on data analysis and discussion of the results. It covers the result on respondent demographic characteristics, types of rural road and markets available, their spatial distribution, functions and conditions as well as their provision and utilization of the markets and rural road infrastructure.

In this study, 400 samples were taken, but only 360 of the respondents were available at the time of the Field survey. The results of this research work are presented below.

4.2 THE SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS

In this section the background of the respondents which include gender, age, educational qualification, and occupation were discuss to provide a better understanding of access, provision, utilization and how rural roads influence rural markets patronage in the study area. The summary of gender, age, educational qualification and occupation are presented in Table 4.1, 4.2, 4.3 and Figure 4.1.

4.2.1: Gender Distribution of the Respondents

The Table 4.1 presents the gender distribution of the respondents in the study area. This is because gender plays role in market attendance and also visibility and feasibility to researcher.

Table 4.1: Gender Distribution of the Respondents

| Wards | Male | % | Female | % | Total |
|--------------|-------------|----------|---------------|----------|--------------|
| Kudan | 35 | 14.5 | 27 | 23.4 | 62 |
| Hunkuyi | 42 | 17 | 26 | 22.6 | 68 |
| Likoro | 32 | 13 | 18 | 16 | 50 |
| M/Danja | 10 | 4 | 7 | 6 | 17 |
| Doka | 30 | 12 | 12 | 10.4 | 42 |
| Garu | 15 | 6 | 5 | 4.2 | 20 |
| T/Sani | 11 | 4.5 | 3 | 2.6 | 14 |
| Z/Kudan | 20 | 8 | 8 | 7 | 28 |
| K/Wali A | 27 | 11 | 3 | 2.6 | 30 |
| K/Wali B | 23 | 10 | 6 | 5.2 | 29 |
| Total | 245 | | 116 | | 360 |
| | 68% | | 32% | | 100% |

Sources: Field survey, 2015

The gender distribution of the respondents as shown in Table 4.1 revealed that male are represented by 68% while the female constitutes only 32% of the respondents interviewed. Result on the table show number of males is greater than that of females in all the wards. This reveals that, most of the females do not engaged in market activities compared to the males this is because they are mostly house wives and always indoors.

4.2.2: Age of Distribution of the Respondents

The Figure 4.1 described the Age distribution of the respondents in the study area. This is because age of respondents plays a vital role to the researcher especially during the questionnaire administration and also interms of trading activities.

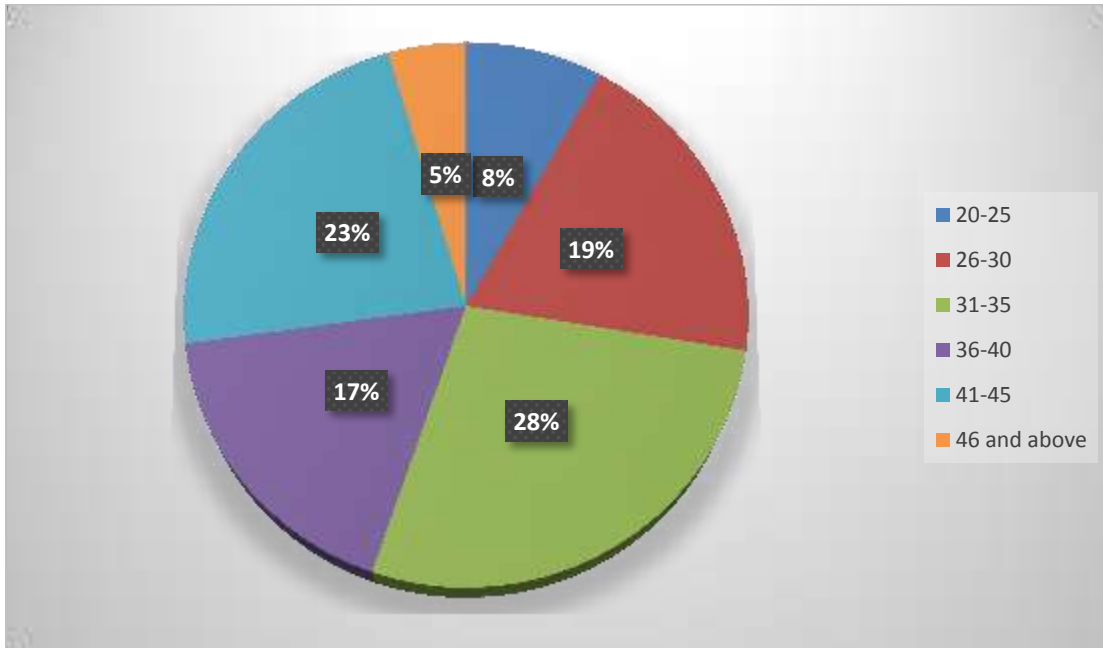


Figure 4.1: Age of Distribution of the Respondents
Sources: Field survey, 2015

Figure 4.1 shows that, about 87% of the respondents were between 25 and 40 years of age, and the modal age group constitutes of 54% of the sampled respondents which are those between 31-40 years of age. It can said that, most of the respondents in this stage fall within the active working class indicating the active age when individuals can carry out the physical challenge either construction, marketing or even farming activities in order to increase their effectiveness and productivity as described in the pie chart.

4.2.3: Distribution of Respondent by Educational Qualification

The Table 4.2 describes the educational qualification of the respondents in the study area. This is done in order to know the level of education of the respondents that engage in trading activities in study area.

Table 4.2: Distribution of Respondent by Educational Qualification

| Wards | None | % | Secondary | % | Primary | % | Tertiary | % | Total |
|--------------|---------------|----------|------------------|----------|----------------|----------|-----------------|----------|--------------|
| | Formal | | | | | | | | |
| Kudan | 12 | 14 | 15 | 17.8 | 21 | 17.5 | 14 | 19 | 62 |
| Hunkuyi | 18 | 21 | 6 | 7 | 25 | 20.5 | 19 | 25.6 | 68 |
| Likoro | 13 | 15 | 10 | 12 | 17 | 15 | 10 | 13.5 | 50 |
| M/Danja | 5 | 5.8 | 4 | 4.7 | 5 | 4.3 | 3 | 4 | 17 |
| Doka | 10 | 11.7 | 13 | 15.4 | 12 | 10.2 | 7 | 9.4 | 42 |
| Garu | 3 | 3.5 | 7 | 8 | 6 | 5.1 | 4 | 5.4 | 20 |
| T/Sani | 2 | 2.3 | 4 | 4.7 | 5 | 4.3 | 3 | 4 | 14 |
| Z/Kudan | 7 | 8.2 | 6 | 7 | 10 | 9 | 5 | 6.7 | 28 |
| K/Wali A | 9 | 10.5 | 11 | 13 | 6 | 5.1 | 4 | 5.4 | 30 |
| K/Wali B | 6 | 8 | 8 | 10.4 | 10 | 9 | 5 | 6.7 | 29 |
| Total | 85 | | 84 | | 117 | | 74 | | 360 |
| | 24% | | 23.3% | | 32.5% | | 20.2% | | 100% |

Source: Field survey, 2015

Education improves the level of marketer's technical know-how as well as their commercial conditions. Thus, educational qualification can determine the level of socio-economic development of a community. Table 4.2 present the educational qualification of the respondents at both lower and higher levels. It can be inferred from the above result that, slightly about 76% have had one form of formal educational or the other, whereby 32.5% of the respondents have primary school education which carries the majority of the respondents,

while the tertiary education has 20.2% of the respondents. The reason could be as a result of readily available primary schools in most of the village in the study area. Education could aspire a higher ethical behavior, refine taste, cultural awareness, patriotic devotion and social responsibility.

4.2.4: Major Occupation of the Respondents

The occupational characteristics of the respondents in the study area are shown in Table 4.3.

Table 4.3: Major Occupation of the Respondents

| Wards | Farming | % | Trading | % | Civil Servant | % | Driving | % | Total |
|--------------|------------|------|--------------|------|------------------|------|--------------|------|-------------|
| Kudan | 29 | 16.8 | 16 | 14.5 | 8 | 21 | 9 | 21.9 | 62 |
| Hunkuyi | 31 | 18 | 22 | 20 | 10 | 27 | 5 | 12.1 | 68 |
| Likoro | 21 | 12.2 | 18 | 16.3 | 6 | 16.2 | 5 | 12.1 | 50 |
| M/Danja | 8 | 4.6 | 5 | 4.5 | 1 | 2.7 | 3 | 7.3 | 17 |
| Doka | 25 | 14.5 | 12 | 10.9 | 3 | 8.1 | 2 | 4.9 | 42 |
| Garu | 10 | 5.8 | 6 | 5.4 | 1 | 2.7 | 3 | 7.3 | 20 |
| T/Sani | 8 | 4.6 | 4 | 3.6 | - | - | 2 | 4.9 | 14 |
| Z/Kudan | 12 | 6.9 | 10 | 9 | 2 | 5.4 | 4 | 9.8 | 28 |
| K/Wali A | 13 | 7.5 | 8 | 7.2 | 4 | 10.8 | 5 | 12.1 | 30 |
| K/Wali B | 15 | 9.1 | 9 | 8 | 2 | 5.4 | 3 | 7.3 | 29 |
| Total | 172 | | 110 | | 37 | | 41 | | 360 |
| | 48% | | 30.5% | | 10.2 | | 11.3% | | 100% |

Source: Field survey, 2015

The Table 4.3 shows the major occupation as well as other sources of income for the respondents. Farming has the highest number of respondents with 48% followed by trading with 30.5%, driving 11.3% and finally civil servant with 10.2%. Among the wards, Kudan and Hunkuyi have the highest number due to the development of the wards. This is because, Kudan serves as the local government while Hunkuyi is the headquarters of the local

government area. Farming remains the biggest alternative source of income in the study area, while civil servant and driving also play an important role as alternative sources of income in the study area.

Therefore, majority of the respondents were engaged in agriculture and this indicates that farming is the main occupation in the study area as in the other rural areas particularly the developing countries. The results shows that apart from farming which is the main occupation of the study area, and also the result revealed that, most of the farmers also engaged in secondary occupation particularly trading and driving with about 41.8% due to the presence of daily and periodic market s in the study so as to have alternative source of income which guarantee their livelihood.

In summary, the Table shows that a very significant percentage of the respondents are farmers (48%) producing goods for both consumption and commerce. Trader occupy 30.5% directly involved as their primary occupation, 10.2% were occupy by the civil servant and 11.3% are drivers. These are the people who transport goods and people to different destinations both within and outside the study areas.

4.3: TYPES AND CHARACTERISTICS OF RURAL MARKETS PATRONAGE IN KUDAN LOCAL GOVERNMENT AREA

This section present information on types and characteristics of rural markets in Kudan LGA.

Data obtained was summarized in Tables and Figures.

4.3.1: Market Patronage by the Respondents

The Table 4.4 presents the periodicity of patronage by the respondents in the study area.

Table 4.4: Market Patronage by the Respondents

| Wards | I | % | II | % | III | % | IV | % | V | % |
|--------------|-----------|------------|------------|--------------|-----------|--------------|-----------|-------------|-----------|-------------|
| Kudan | 14 | 15.5 | 36 | 17.1 | 11 | 17 | 8 | 23.5 | 3 | 15 |
| Hunkuyi | 17 | 18.8 | 30 | 19.7 | 14 | 21.8 | 3 | 8.8 | 4 | 20 |
| Likoro | 8 | 8.8 | 27 | 18 | 10 | 15.6 | 5 | 14.7 | - | - |
| M/Danja | 7 | 7.7 | 4 | 2.6 | 6 | 9.3 | - | - | - | - |
| Doka | 12 | 13.3 | 20 | 13 | 5 | 7.8 | 3 | 8.8 | 2 | 10 |
| Garu | 4 | 4.4 | 8 | 5.2 | 3 | 4.6 | 1 | 2.9 | 4 | 20 |
| T/Sani | 3 | 3.3 | 6 | 3.9 | - | - | 4 | 11.7 | 1 | 5 |
| Z/Kudan | 5 | 5.5 | 7 | 4.6 | 10 | 15.6 | 2 | 5.8 | 4 | 20 |
| K/Wali A | 11 | 12.2 | 14 | 9.2 | - | - | 5 | 14.7 | - | - |
| K/Wali B | 9 | 10 | 10 | 6.5 | 5 | 7.8 | 3 | 8.8 | 2 | 10 |
| Total | 90 | 25% | 152 | 42.2% | 64 | 17.7% | 34 | 9.4% | 20 | 5.7% |

Source: Field survey, 2015

NB: I: Daily II: Weekly III: Every 2 week
IV: Monthly V: No response

Table 4.4 shows that most of the respondents patronized the market on weekly basis with about 42.2%, and Daily market with 25%. Also those patronized the market every two weeks constitutes 17.7% and on monthly basis 9.4% while 5.7% percentage have no response.

In Hunkuyi ward about 18.8% of the respondents visit the market every day while in Taban Sani ward only 3.3% of the respondents patronized the market on daily basis. This shows that majority of people in Hunkuyi ward have higher level of income than those of Taban Sani wards, since they do visit the market on daily basis than that of Taban Sani ward.

Also Kudan ward has the highest number of respondents that patronized markets on weekly basis with about 36%, followed by Hunkuyi, with 30% and then Likoro with about 27%, while the least ward is Maraban Danja with 2.6%. This shows that the level of marketing activities that is taking place in Kudan, Hunkuyi, and Likoro is much higher than that of Maraban Danja wards.

In Zabin Kudan and Likoro about 15.6% of the respondents visit the market every two weeks. And also Garu ward has least among the wards with 4.6% and Hunkuyi, ward has the highest number of people that visit the markets every 2 weeks with about 21.8%. This is because Hunkuyi ward is the local government headquarters. On the monthly basis, majority of the respondents that visit or patronized the market were from Kudan ward with about 23.5% followed by Likoro and Kauran Wali A with about 14.7% while the least among the wards was Garu with 2.9%. This means that very few people from Garu patronized market on monthly basis while majority of the respondents from Kudan, Likoro and Kaura Wali A visit the market on monthly basis. Finally, about 60% of the respondents in Hunkuyi, Garu and Zabin Kudan wards have no response while 40% also from Doka, Kudan, Taban Sani and Kauran Wali B have no response.

4.3.2: Market Road Connectivity

The Table 4.5 presents the opinion of respondents on the level of market connectivity in the study area.

Table 4.5: Market Road Connectivity

| Connection | Respondents | Percentage (%) |
|---------------|-------------|----------------|
| Connected | 281 | 78 |
| Not connected | 45 | 12.5 |
| No response | 34 | 9.5 |
| Total | 360 | 100 |

Source: Field survey, 2015

The Table 4.5 shows that most of the markets were connected by roads with about 78% and only 12.5% of the respondents stated otherwise while only 9.5% of the respondents interviewed have no response. This means that majority of the markets in the study area were located in an accessible location with about 78%. And this is due to the effort made by the state and local government in terms of rural road development in the state. See figure 4.3.

Level of Connectivity Index

The connectivity index was used in this study to determine the level of connectivity of road network in the study area.

The connectivity index is given by beta (β) as the ratio of the edges to the vertices on the network. $\beta = e/v$.

According to UNCHS standards for rural road, road network with a beta index of at least 1.50 is capable of supporting consistent development.

Existing vertices (v) = 16, therefore: edges = 45.

$$\beta = 16/45 = 0.35$$

The existing connectivity in the study area is not enough to promote any significant role

in terms of rural markets patronage as well as rural development of the area. That is, 0.35 is below 1.50 as required by the UNCHS standard thus; there is the need to improve on the existing situation of rural roads throughout the study area in order to promote marketing activities in Kudan LGA area.

4.3.3: Scale of Trading and Type of Services Engage

The Figure 4.2 describes the scale of trading and type of service engage by the respondents in the study area.



Figure 4.3: Scale of Trading and Type of Services Engage
Source: Field Survey, 2015

The Figure 4.3 shows the scale of business activities taken place in the study area. About 28% of the respondents engaged in wholesales and 21% of the respondents engaged in retail sales. Another 16% of the respondents specialized in professional service while only 23% of the respondents engaged in distribution activities and lastly about 12% of the respondents do not response. This means that majority of the respondents engaged in wholesales activities in the study area that is most of the respondents in the study have high capital investment.

4.3.4: Providers of Road in the Study Area

The Figure 4.4 shows the opinion of respondents on the agencies or authorities responsible for the provision of roads in the study area.

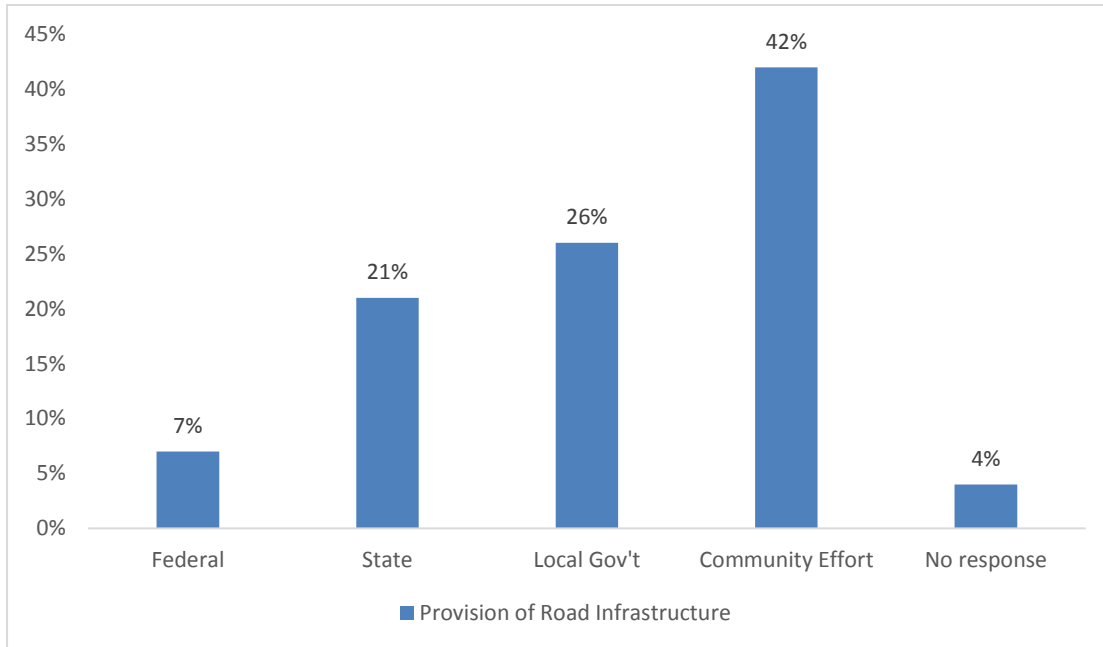


Figure 4.4: Providers of Road in the Study Area
Source: field survey, 2015

The figure 4.4 shows that most of the road constructed in the study area were provided through the community effort with about 42%, followed by the local government with about 26%. While the state efforts in provision of road constitute only 21%, that of the federal road is just 7%.

This means that provision of road by the federal government in the study area is low when compared with the state government. And also the figure shows that community participation is very active since majority of the roads were constructed by the rural dwellers, but most of these community roads were not tarred but they are fair and motorable.

4.3.5 Provision of Market

The Table 4.4 describes the body responsible for the provision of market in the study area.

Table 4.6: Provision of Market

| Providers | No. of Respondents | Percentage (%) |
|------------------|---------------------------|-----------------------|
| Federal | - | - |
| State | 21 | 6 |
| Local Government | 125 | 35 |
| Community Effort | 153 | 43 |
| No Response | 61 | 16 |
| Total | 360 | 100 |

Source: Field Survey, 2015

From the Table 4.6, most of the markets were provided through community effort with about 43% followed by the local government with about 35% while 16% of the respondents do not response and 6% were provided by the state. This means that, most of the market s in the study area where provided through the community effort which later, turns under local government control due to increase in size and rate of involvement of traders both within and outside of the study area.

4.4 CHARACTERISTICS OF RURAL ROADS HIERARCHIES IN KUDAN

LOCAL GOVERNMENT AREA

This section presents information on the characteristics of rural roads hierarchies in Kudan LGA. Data obtained were summarized using descriptive techniques.

4.4.1 Road Hierarchies in Kudan Local Government Area

The Table describes the level of hierarchies of roads in the study area.

Table 4.7: Road Hierarchies in Kudan LGA

| Ward | Trunk A | % | Trunk B | % | Trunk C | % | Total |
|--------------|------------|------|--------------|------|--------------|------|-------------|
| Kudan | 1 | 14.2 | 2 | 37.5 | 2 | 22.2 | 6 |
| Hunkuyi | 1 | 14.2 | 2 | 25 | 3 | 33.3 | 6 |
| Likoro | 1 | 14.2 | - | - | 2 | 22.2 | 3 |
| M/Danja | 2 | 28.5 | - | - | - | - | 2 |
| Doka | 1 | 14.2 | 1 | 12.5 | - | - | 2 |
| Garu | - | - | - | - | - | - | - |
| T/Sani | - | - | - | - | - | - | - |
| Z/Kudan | 1 | 14.2 | - | - | 2 | 2 | 3 |
| K/Wali A | - | - | 1 | 12.5 | - | - | 1 |
| K/Wali B | - | - | 1 | 12.5 | - | - | 1 |
| Total | 7 | | 8 | | 9 | | 24 |
| | 29% | | 33.5% | | 37.5% | | 100% |

Source: Field survey, 2015

The Table 4.7 shows that both Kudan and Hunkuyi, have 25% of the total road network in the study being the local government headquarters. While Likoro and Z/Kudan have 12.5%, Maraban Danja, Doka with 8.3%, followed by K/Wali A and K/Wali B with 4.2% while Garu and T/Sani have no road.

The Table also revealed that 37.5% of the roads in the study area were trunk C road, constructed by the local government. About 33.5% of the roads were trunk B road which are constructed and maintained by the state government and about 29% which were trunk A road, under the care of federal government.

This means that, most of the roads in the study area were trunk C roads and most of the roads were located in Kudan, Hunkuyi, Likoro, Z/Kudan, and Maraban Danja were the major market activities takes place in the study area. Majority of the respondents (marketers make use of the trunk C roads which is closer to them to move their goods to market.



Plate I: Trunk A Road Kano-Zaria Road



Plate II: Trunk C Road Doka-Likoro road

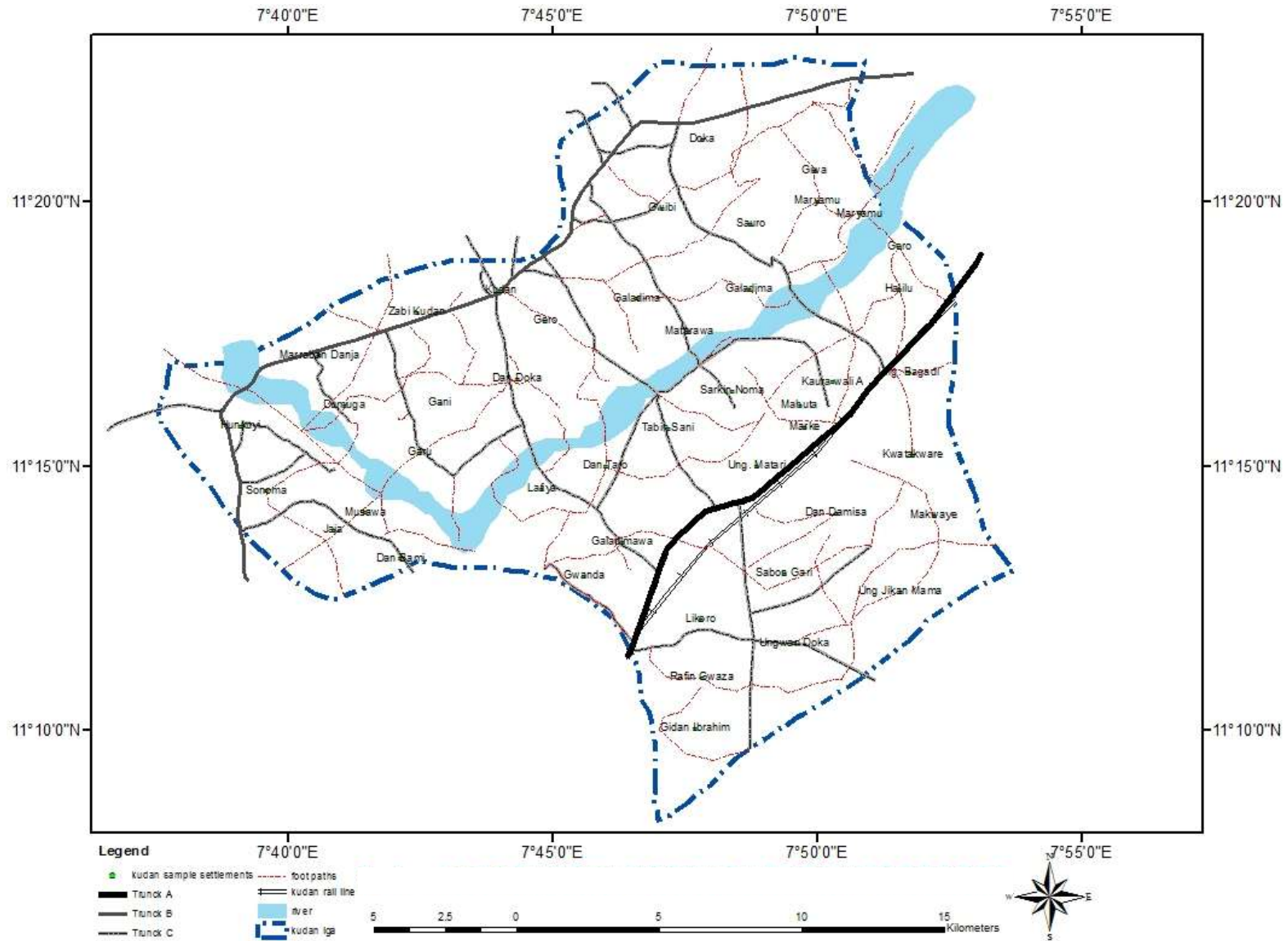


Fig. 4.5: MAP OF KUDAN SHOWING HIERACHIES OF ROAD

Source: satellite Imagery, 20114

4.4.2: Nature of Roads

The Figure 4.6 shows the nature of roads in the study area. The natures of road whether tarred or otherwise have significant effects on the patronage of markets in rural communities.

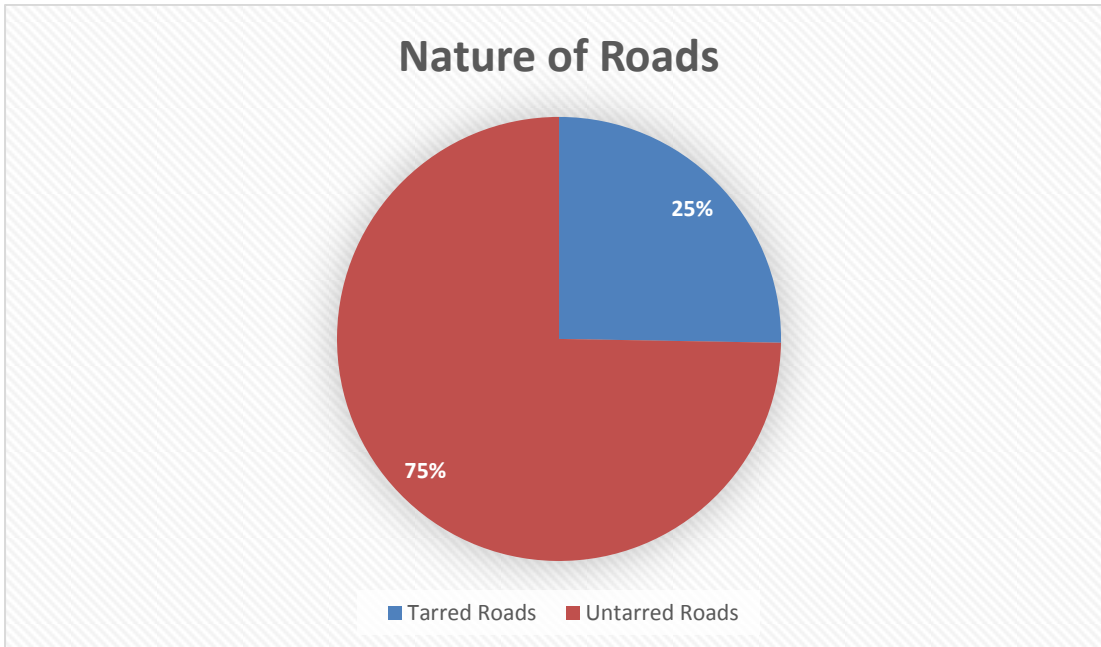


Figure 4.6: Nature of Roads
Source: Field survey, 2015

The Figure 4.6 shows that majority of the roads in the study area were not tarred with about 75% while only 25% were tarred. The findings revealed that, most of the respondents find it difficult in transporting their goods or farm produce since farming is the major source of income or major occupation in the study area from home to market, from farm to market or from market to home due to the nature of the roads in the study area. See figure 4.7 for the road that are tarred and untarred in the study area.

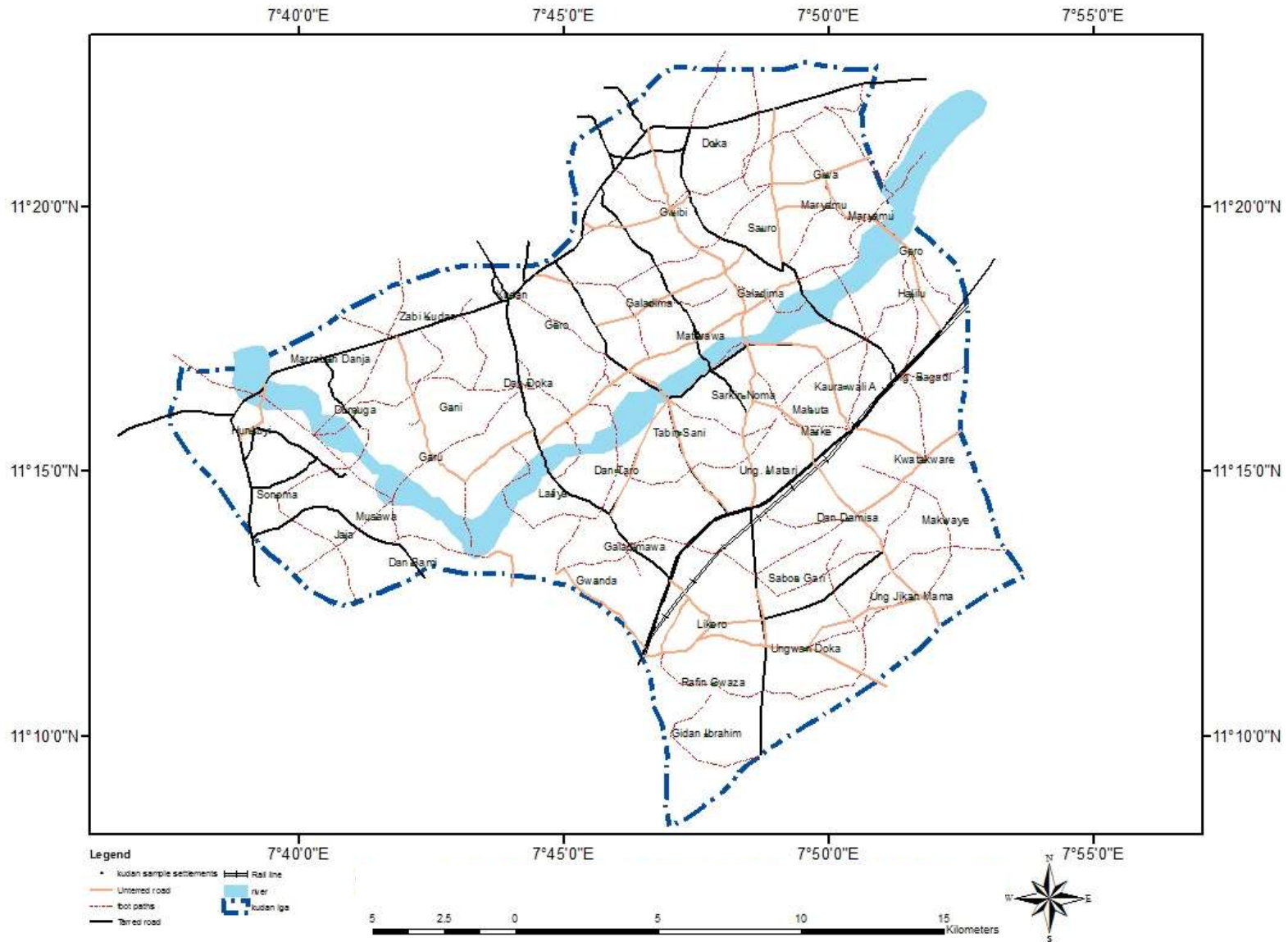


FIG. 4.7: MAP OF KUDAN SHOWING THE NATURE OF ROADS

Source: Satellite Imagery, 20114

4.4.3: Conditions of Roads in the Rainy Reason

Table 4.8: Conditions of Roads in the Rainy Reason

The Table 4.8 shows the conditions of roads in study area during the rainy season.

| Wards | Good | % | Fair | % | Poor | % | No response | % |
|--------------|-------------|----------|--------------|----------|--------------|----------|--------------------|----------|
| Kudan | 6 | 30 | 5 | 11.1 | 34 | 17.3 | 17 | 17.1 |
| Hunkuyi | 4 | 20 | 7 | 15.5 | 44 | 22.4 | 13 | 13.1 |
| Likoro | 2 | 10 | 4 | 8.8 | 29 | 14.7 | 15 | 15.1 |
| M/Danja | 2 | 10 | 3 | 6.6 | 7 | 3.5 | 5 | 5.0 |
| Doka | 2 | 10 | 6 | 13.3 | 25 | 12.7 | 9 | 9.0 |
| Garu | - | - | 3 | 6.6 | 12 | 6.1 | 5 | 5.0 |
| T/Sani | - | - | 2 | 4.4 | 5 | 2.5 | 7 | 7.0 |
| Z/Kudan | 2 | 10 | 4 | 8.8 | 14 | 7.1 | 8 | 8 |
| K/Wali A | 1 | 5 | 6 | 13.3 | 12 | 6.1 | 11 | 11.1 |
| K/Wali B | 1 | 5 | 5 | 11.1 | 14 | 7.1 | 9 | 9 |
| Total | 20 | | 45 | | 196 | | 99 | |
| | 6% | | 12.5% | | 53.5% | | 28% | |

Source: field survey, 2015

The Table 4.8 shows that most of the roads during the rainy season with about 53.5% are poor in condition. About 6% of the respondents said their roads are good during the rainy season while 12.5% said their roads are fair. This means that most of the roads are highly seasonal and are used mostly in the dry season and become bad in the rainy season.

This reveals that majority of the traders/famers who are the majority of the respondents find it difficult while transporting their farm produce or goods to the market. This is because most of the roads are not motorable during rainy seasons especially in Garu and Taban Sani

wards were they do not have good road to transport their farm produce or goods to the nearest market (see plate III for an example of patch untarred road).



Plate III: Condition of untarred road during the rainy season along Garu to Doka
Source: Authors Field survey, 2014

4.4.4: Means of Transport Owned

The Table 4.9 shows the mode of transport owned by the respondents in the study area.

Table 4.9: Means of Transport Owned by the Respondents

| Modes | No of respondents | Percentage (%) |
|---------------|-------------------|----------------|
| Motor car/bus | 33 | 9.2 |
| Motor cycle | 89 | 24.6 |
| Bicycle | 115 | 32 |
| Donkey | 51 | 14.2 |
| No response | 72 | 20 |
| Total | 360 | 100 |

Source: field survey, 2015

The Table 4.9 indicates that, majority of the respondents owned bicycle with about 32% followed by motor cycle with about 24.6%, while about 20% of the respondents have no mode/means of transport and also the study reveals that 14.2% of the respondents owned donkey while very few of them owned motor car or bus with about 9.2%.

This means that most of the respondents owned bicycle as their means of transport and very few of the owned car or bus. This shows that, majority of the respondents interviewed were poor because almost 90.8% of the respondents owned intermediate means of transport (IMT) in the study area.

4.4.5: Means of Transport Used in Accessing Market

Table describes the means of transport used in accessing the market in the study area.

Table 4.10: Means of Transport Used in Accessing Market

| Wards | A | % | B | % | C | % | D | % | E | % | F | % |
|--------------|--------------|------|--------------|------|--------------|------|------------|------|-------------|----|-------------|------|
| Kudan | 8 | 16.3 | 27 | 17.1 | 7 | 13.4 | 13 | 22 | 2 | 20 | 5 | 17.8 |
| Hunkuyi | 6 | 12.2 | 30 | 19.1 | 11 | 21 | 15 | 25.4 | 1 | 10 | 3 | 10.7 |
| Likoro | 9 | 8.2 | 18 | 11.5 | 4 | 7.6 | 18 | 31 | 2 | 20 | 4 | 14.2 |
| M/Danja | 4 | 8.2 | 6 | 3.8 | 2 | 3.8 | 3 | 5.1 | - | - | 2 | 7.1 |
| Doka | 2 | 4.1 | 22 | 14 | 5 | 9.6 | 7 | 11.8 | 2 | 20 | 4 | 14.2 |
| Garu | 3 | 6.1 | 10 | 6.4 | 4 | 7.6 | - | - | - | - | 3 | 10.7 |
| T/Sani | 4 | 18.3 | 7 | 4.4 | 2 | 3.8 | - | - | 3 | 30 | - | - |
| Z/Kudan | 5 | 10.2 | 10 | 6.4 | 5 | 9.6 | 4 | 6.8 | - | - | 4 | 14.2 |
| K/Wali A | 4 | 8.2 | 16 | 10.1 | 5 | 9.6 | 3 | 5.1 | - | - | 2 | 7.1 |
| K/Wali B | 4 | 8.2 | 11 | 7.2 | 7 | 13.4 | 6 | 10.2 | - | - | 1 | 3.5 |
| Total | 49 | | 157 | | 52 | | 59 | | 10 | | 28 | |
| | 13.6% | | 43.6% | | 14.4% | | 19% | | 2.7% | | 6.7% | |

Source: field survey, 2015

NB: A: Bicycle
D: Car/Bus
B: Motor cycle
F: None
C: Truck
E: Donkey

The means of transportation used by the respondents as indicated in table 4.10 above, where by majority of the respondents used motorcycle with about 43.6%, followed by car/bus with 19%, truck with 14.4%. And also used of bicycle constitutes about 13.6% while very few of them used donkey with 2.7% and finally 6.7% do not response or have no means of transport. Use of bicycle is high in T/sani ward with 18.3% because of the nature of the roads while Doka

has the least of 4.1% of those using bicycle due to the distance to market and also the nature of their road.

In Hunkuyi, only 19.1% of the respondents used motorcycle to move their goods to market while 25.4% used car/bus. Also in Maraban Danja only 3.8% of the respondents used motorcycle while 21% of the respondents in Hunkuyi used truck to move their goods to the nearest markets, Taban Sani about 3.8% of the respondents used truck to move their goods to the market. In Taban Sani about 30% of the respondents used donkey to move their goods to the nearest market which is Kudan or Likoro due to the proximity they have to Kudan or Likoro market while 10% of the respondents in Hunkuyi used donkey in transporting their goods to the market. Trucks in Hunkuyi ward were used to convey goods and people to the market with about 21% for sale or purchase while in Kauran Wali A ward, M/Danja ward used 5.1% to moves people and goods to markets for sale and purchase of goods.

4.5: INFLUENCE OF RURAL ROADS ON THE PATRONAGE OF MARKETS IN KUDAN LOAL GOVERNMENT AREA

4.5.1: Ways that Rural Road Influence Market Patronage

The Table 4.11 describes ways that rural roads influence market patronage in the study area.

Table 4.11: Ways that Rural Road Influence Market Patronage

| Wards | I | % | II | % | III | % | IV | % | V | % | VI | % |
|--------------|------------|------|--------------|------|--------------|------|-------------|------|-------------|------|-------------|----|
| Kudan | 15 | 15 | 25 | 19.5 | 17 | 21.2 | 3 | 9.6 | 4 | 23.5 | - | - |
| Hunkuyi | 20 | 20.4 | 23 | 17.9 | 12 | 15 | 7 | 22.5 | 3 | 17.6 | 1 | 17 |
| Likoro | 14 | 14.2 | 20 | 15.6 | 9 | 11.2 | 6 | 19.3 | 1 | 5.8 | - | - |
| M/Danja | 6 | 6.2 | 5 | 3.9 | 4 | 5 | 2 | 6.4 | - | - | - | - |
| Doka | 11 | 11.2 | 18 | 14 | 9 | 11.2 | 4 | 12.9 | - | - | - | - |
| Garu | 4 | 4 | 7 | 5.4 | 3 | 3.7 | 2 | 6.4 | 1 | 5.8 | 3 | 50 |
| T/Sani | 3 | 3 | 5 | 3.9 | 6 | 7.5 | - | - | - | - | - | - |
| Z/Kudan | 7 | 7.2 | 10 | 7.8 | 9 | 11.2 | - | - | 2 | 11.7 | - | - |
| K/Wali A | 10 | 10.2 | 8 | 6.2 | 6 | 7.5 | 4 | 12.9 | 2 | 11.7 | - | - |
| K/Wali B | 8 | 8.2 | 7 | 5.4 | 5 | 6.2 | 3 | 9.6 | 4 | 23.5 | 2 | 33 |
| Total | 98 | | 128 | | 80 | | 31 | | 17 | | 6 | |
| | 27% | | 35.5% | | 22.2% | | 8.6% | | 4.7% | | 1.6% | |

Source: Field survey, 2015

N:B: I: Increase speed
IV: Convenience

II: Save time
V: Increase mobility

III: Reduce cost
VI: No response

Table 4.11 shows, the impact of road development on market patronage, whereby about 35.5% of the respondents said it save time, followed by increase speed with about 27%. Also reduce cost of transportation constitute about 22.2% and 8.6% believed that road development

provides convenience and 4.7% of respondent falls under increase mobility and finally about 1.6% has no response to the question. This means that, majority of the respondents believed that road development save time when transporting their goods or farm product from home to market or from farm to market. Like in Kudan, Hunkuy, Likoro and Doka most of the respondents believed that road transport development increase their speed when moving their goods either into or out of their wards while Garu and Taban Sani has the least percentage of people that said transport development increase their speed when accessing market or farm.

In Maraban Danja, Garu and Taban Sani ward only 13.2% of the respondents believed that road development save time when moving their goods to the market , and also about 19.5% of the respondents in Kudan said it saves time while only 17.9% in Hunkuyi, said it save their time to the market. Most of respondents in Kudan, Zabin Kudan, Hunkuy, Doka and Likoro also agreed that road transport development reduce cost of movement and this is due to the presence of good roads in such wards which facilitates their movement to either from home to market or from farm to market while Garu ward has the least with about 3.7% and this is due to the presence of poor roads that connect the wards to the major roads, or lack of accessibility in the wards. Also the Table shows that only Hunkuyi, Kudan and Likoro has the highest percentage of respondents that believes road transport development leads to increase in convenience in their wards. This is because of presence of good roads in their wards followed by kauran Wali A, Doka, with about 12.9% each, while T/sani and Kauran Wali B has 9.6% each and finally Garu and Maraban Danja with 6.4% each.

Interms of increase in mobility Kudan and kauran Wali B has the highest number of respondents with 23.5% each, followed by Hunkuyi with 17.6%, while Zabin Kudan and Kauran Wali A with 11.7% each and Likoro and Garu with about 5.8%. Finally Maraban Danja, Doka,

Taban Sani have no response. In summary, respondents viewed on the impact of road development on market patronage as reflected on the Table 4.11, where it can be seen that about 3.5% of the respondents are of the view that road transport saves time to them, likewise 27.2% of the respondents admitted that it increase speed to them. Road development no doubt reduce cost of transportation with about 22.2% and also transport provide convenient interms of movement of good to the market which constitute about 8.6%. Finally, 4.6% of the respondents said it increase mobility and only 1.6% have no response.

4.5.2: Roads Connecting the Villages

The Figure 4.8 shows the number of roads that connect the village base on percentage.

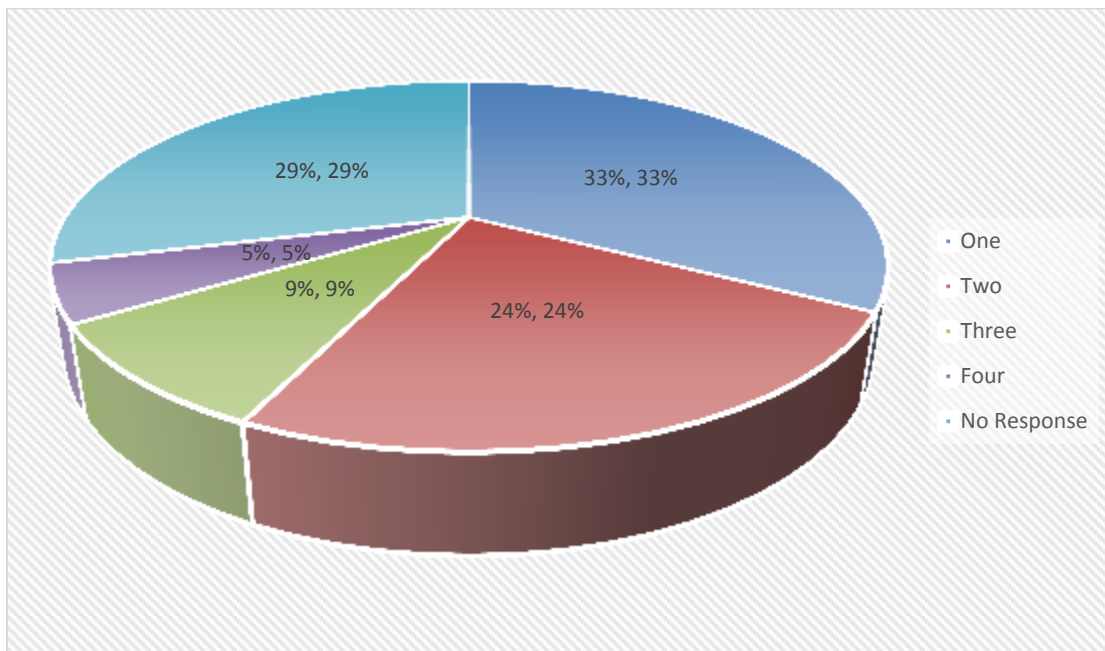


Figure 4.8: Roads Connecting the Villages
Source: Field survey, 2015

Figure 4.8 shows that most of the villages have few roads connecting into the town. Few villages have more than one road connecting into the town. About 33% of the villages have one (1) road connecting into the town, 24% have two (2) roads. 9% of the villages have three (3) roads while about 4.7% of the villages have four (4) roads that connect into the town.

Base on the survey conducted the study reveals that, majority of the villages have one (1) or two (2) roads that connect into the village with about 57%. This means that the rural road in the study area is fair and also facilitate the movement of goods and farm produce from home or farm to market which later the quality of marketing activities of the rural dwellers in the study area.

4.5.3: Time spent to reach the market

The Figure 4.9 presents time spent in accessing the markets in the study area.

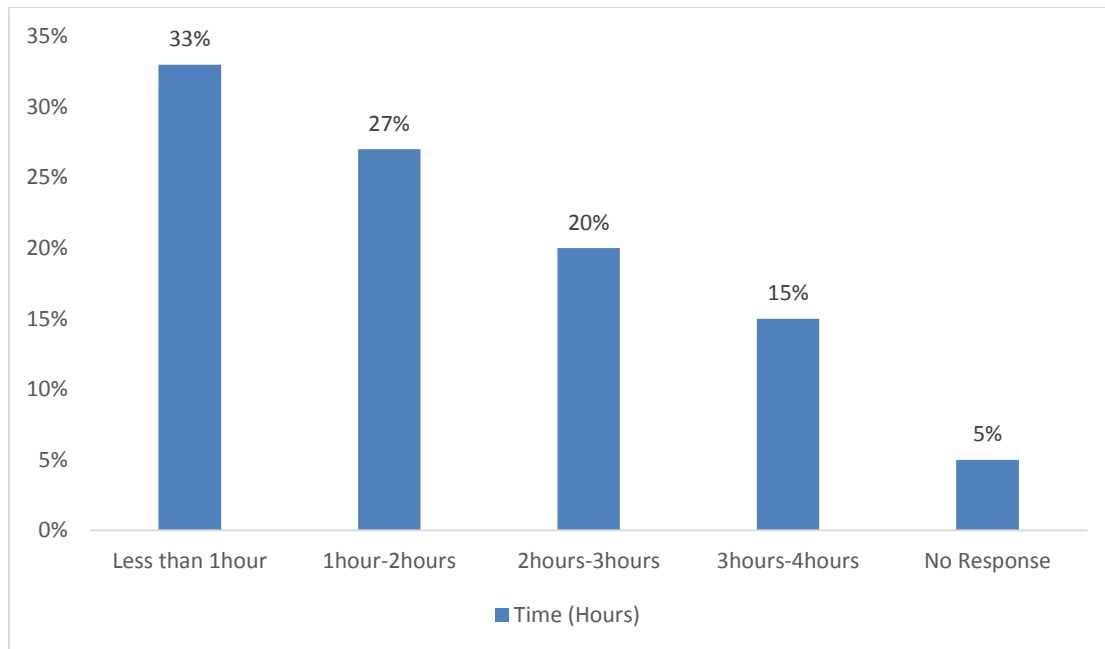


Figure 4.9: Time spent to the market
Source: field survey, 2015

Figure 4.9 shows that about 33% of the respondents spent less than one hour to reach market while only 27% spends between one to two hours, and those who spend two to three hour were 20% while about 15% of the respondents spent three to four hours before reaching the market. Finally very few numbers of the respondents with about 5% do not response to the question. This means that, majority of the respondents know how much time they spent in reaching or accessing the market from their origin.

4.5.4: Transport Fare Spent to Market

The Table 4.12 presents the amount of transport fare respondents spent in accessing the market in the study area.

Table 4.12: Transport Fare Spend to Market

| Amount (₦) | No. of Respondents | Percentage (%) |
|-------------------|---------------------------|-----------------------|
| 200-300 | 99 | 27 |
| 300-500 | 72 | 20 |
| 500-700 | 47 | 13 |
| 700-1,000 | 65 | 18 |
| No response | 77 | 22 |
| Total | 360 | 100 |

Source: Field survey, 2015

The Table 4.12 indicates that majority of the respondents spent between 200-300 naira to access market with about 27% followed by those who did not respond constituting about 22%, while 20% of the respondents paid between 300-500 naira to reach the markets, then 18% of the respondents paid between 700-1,000 naira and lastly only 13% of the respondents paid between 500-700 naira.

This shows that most of the respondents interviewed during the field survey, were nearby settlement dwellers who's paid a very little amount to transport themselves and goods to the market with about 27%.

4.5.5: Type of Road connected to the market

The Figure 4.10 describes the road types that connect the markets in the study area.

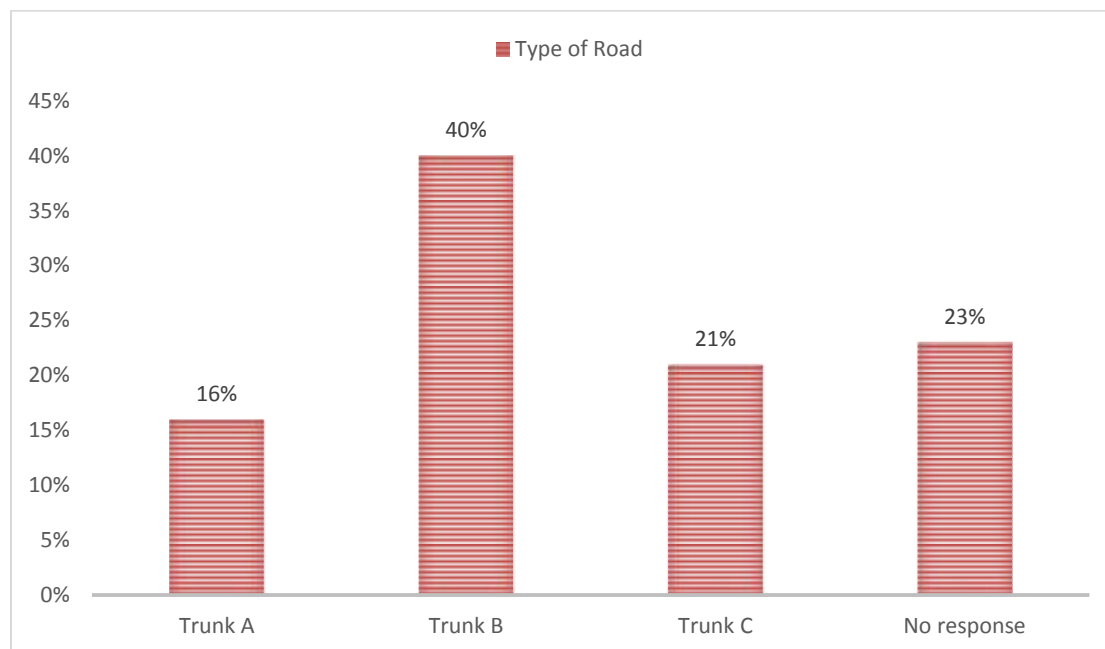


Figure 4.10: Type of Road connected to the market

Source: Field survey, 2015

Figure 4.10 shows that about 40% of the markets were connected by trunk B road, 21% where connected by trunk C road while trunk A road constitute of 16% and lastly 23% of the respondents did not response to the question. This means that, majority of the markets in the study area were connected by trunk B roads which is provided by the state government then followed by trunk C roads and lastly the trunk A road which is provided by the federal government.

4.5.6: Proximity to Motorable Road the Respondents

The Table 4.13 presents the level of proximity to motorable road by the respondents in the study area.

Table 4.13: Proximity to Motorable Road by the Respondents

| Ward | Less than 1km | % | 1-3km | % | More than 3km | % |
|--------------|---------------|------------|------------|------------|---------------|------------|
| Kudan | 24 | 18.4 | 32 | 19.5 | 6 | 9 |
| Hunkuyi | 35 | 26.9 | 23 | 14 | 10 | 15 |
| Likoro | 18 | 13.8 | 27 | 16.4 | 5 | 7.5 |
| M/Danja | 8 | 6 | 4 | 2.4 | 5 | 7.5 |
| Doka | 12 | 9.2 | 20 | 12 | 10 | 15 |
| Garu | 5 | 3.8 | 11 | 6.7 | 4 | 6 |
| T/Sani | 3 | 2.3 | 7 | 4.2 | 4 | 6 |
| Z/Kudan | 9 | 6.9 | 13 | 7.9 | 6 | 9 |
| K/Wali A | 10 | 7.6 | 15 | 9 | 5 | 7.5 |
| K/Wali B | 5 | 4.6 | 12 | 7.3 | 11 | 16.6 |
| Total | 130 | 100 | 164 | 100 | 66 | 100 |
| | 36% | | 46% | | 18% | |

Source: Field survey, 2015

The availability of good road network enhances free movement of both people and goods and without doubt people tends to reside close to or where there is easier access to roads in order to derived maximum benefit. Table 4.13 shows the proximity of respondents to motorable roads in different wards of the study area. About 26.9% of the respondents in Hunkuyi wards reside less than one kilometer to motorable road, followed by Kudan, Doka and Likoro ward.

Kudan also have the highest number of people that resided one to three kilometer to motorable road with about 19.5% followed by Kauran Wali B with the highest number of

respondents that resided more than three kilometer to motorable road with about 16.6%. About 2.4% of the respondents in Maraban Danja resided one to three kilometer to motorable road, while Taban Sani and Garu wards have the low number of respondents that resided for more than three kilometer to motorable road with about 6% each.

In summary, 36% of the respondents traveled for less than one kilometer to motorable roads, and 46% of the respondents traveled for one to three kilometer to motorable roads. While 18% of the respondent traveled for more than three kilometers to motorable roads. This means majority of the respondents indicate that, they traveled for more than one to three kilometers to motorable roads with about 46% of the total sampled population in the study area.

4.6 PROBLEM FACING RURAL ROADS ON THE PATRONAGE OF RURAL MARKET IN KUDAN LOCAL GOVERNMENT AREA

This section provides information on problems of rural roads on the patronage of rural markets in the study area. Data obtained were analyzed and presented on Tables and Figures.

4.6.1: Management of Market

The Figure 4.11 presents information on management of markets in the study area.

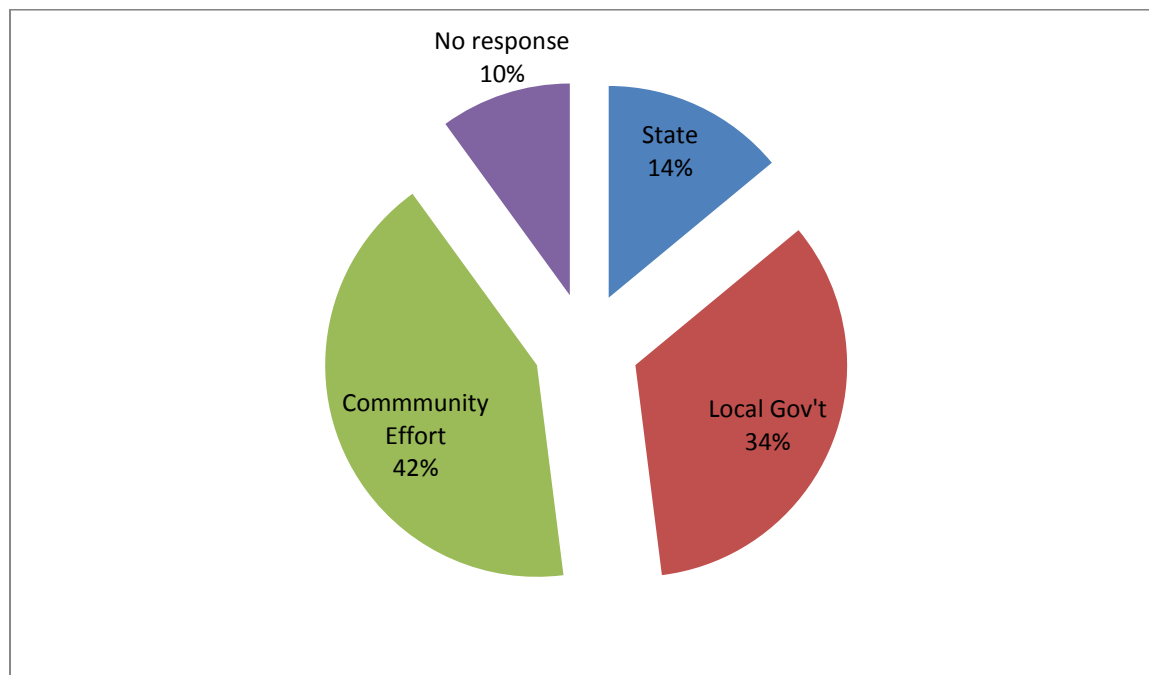


Figure 4.11: Management of Market
Source: Field Survey, 2015

Figure 4.11 shows agencies responsible for management of market in the study area. About 14% of the market were managed or maintained by the state government, and 34% were maintained by the local government area. Also about 42% of the market were managed through the community effort while only 10% of the respondent have no response.

This means that, majority of the respondents said that, most of the market were managed through the community effort followed by the local government and lastly the state government.

This shows level of involvement of community interms of market management is higher than that of state and local government in ensuring proper management of markets in the study area.

4.6.2: Strategies for Maintenance of Market

The Table 4.14 shows the different strategies that can use in maintaining the markets in the study area.

Table 4.14: Strategies for Maintenance of Market

| Strategies | No. of Respondents | Percentage (%) |
|-------------------|---------------------------|-----------------------|
| Levyng | 43 | 12 |
| Launching | 27 | 7.5 |
| Taxing | 161 | 44.5 |
| Contribution | 52 | 14.4 |
| Donation | 37 | 10.2 |
| No response | 40 | 11.4 |
| Total | 360 | 100 |

Source: Field Survey, 2015

Table 4.14 shows the strategies for maintenance of market in the study area. Whereby about 12% of the respondents goes for levyng and taxation with about 44.5%. Also contribution constitutes 14.4%, donation 10.2% while about 11.4% of the respondents do not response. This indicates that, majority of the respondents believes that taxing will be the best strategies for maintenance of markets followed by contribution while the least of them said donation is the best strategies for maintenance of the market.

4.6.3: Present Condition of Existing Road

The Table describes the present conditions of the existing roads in the study area.

Table 4.15: Present Condition of Existing Road

| Wards | Good | % | Fair | % | Poor | % | No Response | % |
|--------------|--------------|----------|--------------|----------|--------------|----------|--------------------|----------|
| Kudan | 18 | 20.2 | 27 | 20 | 7 | 7.5 | 10 | 22.7 |
| Hunkuyi | 15 | 16.8 | 32 | 23.8 | 6 | 6.5 | 15 | 34 |
| Likoro | 10 | 11.2 | 16 | 11.9 | 7 | 7.5 | 7 | 15.9 |
| M/Danja | 7 | 7.8 | 4 | 2.9 | 5 | 5.3 | 1 | 2.2 |
| Doka | 13 | 14.6 | 16 | 11.9 | 10 | 10.6 | 3 | 6.8 |
| Garu | 3 | 3.3 | 6 | 4.4 | 17 | 18.2 | 4 | 9 |
| T/Sani | 2 | 2.2 | 4 | 2.9 | 7 | 7.5 | 1 | 2.2 |
| Z/Kudan | 7 | 7.8 | 10 | 7.4 | 11 | 11.8 | - | - |
| K/Wali A | 9 | 10 | 8 | 5.9 | 13 | 13.9 | - | - |
| K/Wali B | 5 | 5.6 | 11 | 8.2 | 10 | 10.6 | 3 | 6.8 |
| Total | 89 | | 134 | | 93 | | 44 | |
| | 24.7% | | 37.2% | | 25.8% | | 12.2% | |

Source: Field survey, 2015

Table 4.15 shows the present conditions of roads whereby about 24.7% of the roads are in good conditions, 37.2% are fair, while 25.8% are poor and about 12.2% have no response. In Kudan about 20.2% of their present road condition were good followed by Hunkuyi with 16.8%, and then Doka with 14.6% while Taban Sani and Garu have least with 2.2% and 3.3%.

Also interms of fairness, Hunkuyi, has the highest percentage with about 23.8% while still Garu and Taban Sani has the lowest with 2.9% and 4.4.%. For the poor condition of roads Garu has the highest percentage with about 18.2% and this is because, most of the settlement

surrounding the Garu were disperse settlement and access to such settlement were not in good conditions. While Likoro, Taban Sani and Kudan have 7.5%, and Maraban Danja has the lowest with 5.3%.

4.6.4: Road Maintenance

The Figure 4.12 presents the agencies responsible for road maintenance within the study area.

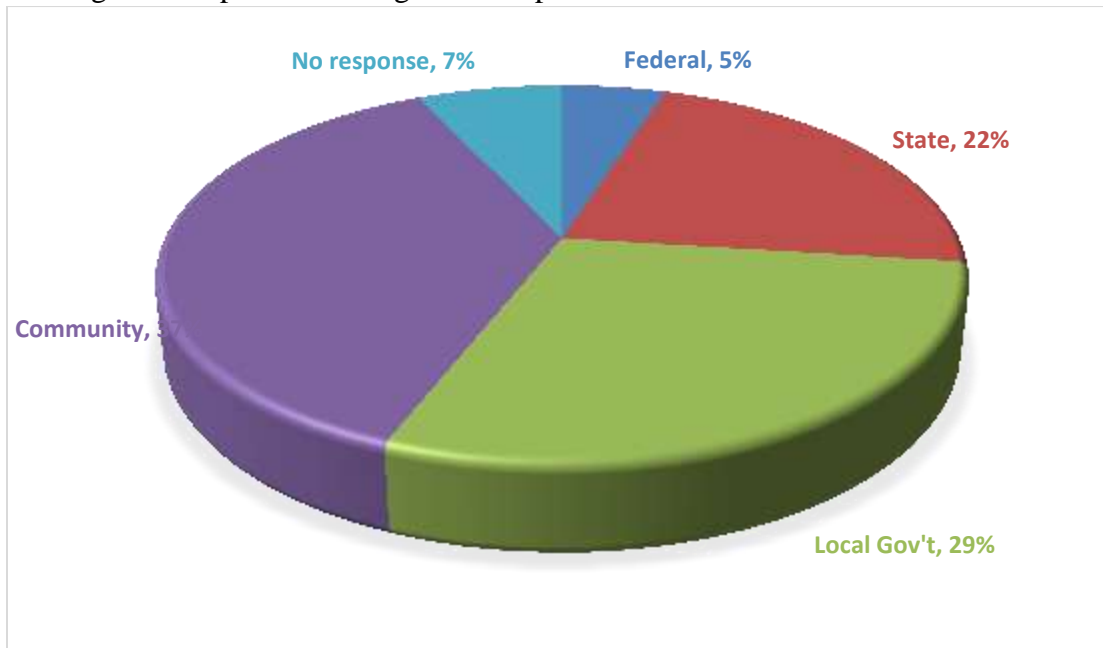


Figure 4.12: Road Maintenance
Source: Field survey, 2015

The study reveals that majority of road were managed by the community with about 37%, followed by the local government which constitute about 29% while state government with 22% and federal government with 5% and finally about 7% of the respondents have no option or do not response during the field survey. In case of the community effort, based on the people interviewed within the sampled wards most of the road maintenance is through the effort of the people in the villages especially during the rainy season. While the local government used the works department from time to time to maintained the roads. The state government used Kaduna state public works agency (KAPWA) in terms of road maintenance while the federal government

also uses FERMA for road maintenance which they hardly come such areas. But they participate along the Zaria-Kano expressway and Maraban Danja to Katsina some time.

4.6.5: Type of Rural Road Transportation Problem Encounter to the Market

The Figure 4.13 describes the rural roads problems faced by the respondents in patronizing markets in the study area.

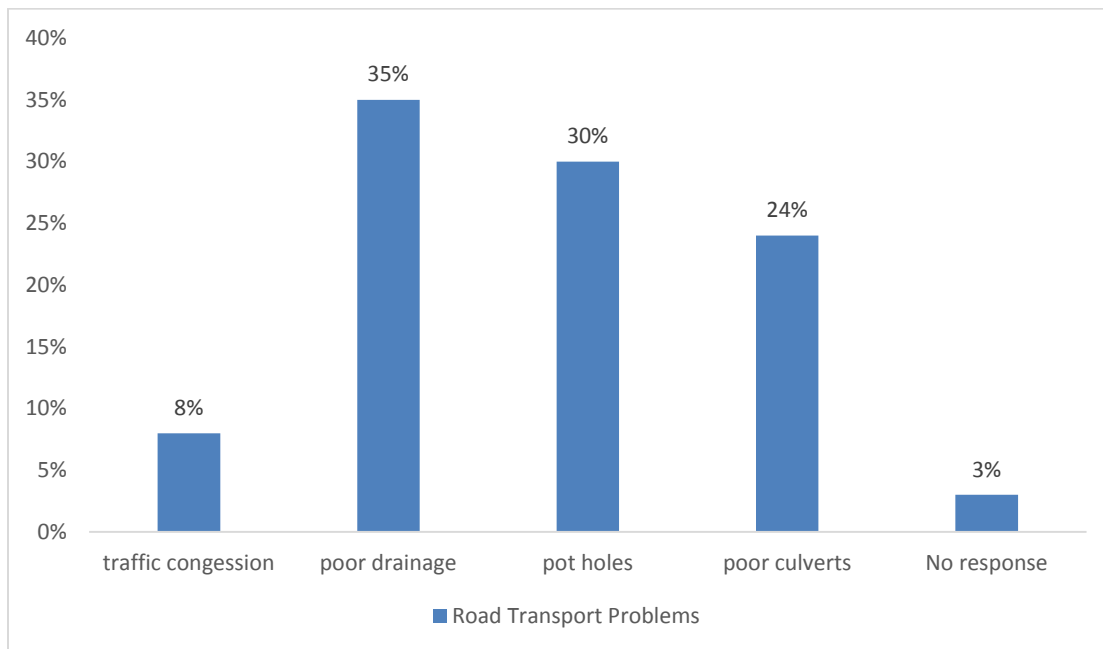


Figure 4.13: Type of Road Transportation Problem Encounter to the Market
Source: Field survey, 2015

The Figure 4.13 shows that, about 35% have poor drainage problem when moving their goods either from farm to market or from market to home and 30% of them are complaining of pot holes on the roads which makes their movement very slow and very expensive to move their goods. About 24% of the respondents said poor culverts are their problem while traffic congestion constitutes about 8%. Finally about 3% of the respondents have no response.

4.6.6: Influence of Rural Road on Market Patronage

The Table 4.16 describes the influence of rural road on market patronage in the study area.

Table 4.16: Influence of Rural Road on Market Patronage

| Effects | No of respondents | Percentage |
|------------------|-------------------|------------|
| Very effective | 87 | 24 |
| Effective | 127 | 35.2 |
| Fairly effective | 106 | 29.4 |
| Not effective | 25 | 7 |
| No response | 15 | 4.4 |
| Total | 360 | 100 |

Source: Field survey, 2015

The Table 4.16 shows the influence of rural road on markets patronage, whereby about 24% of the respondent believed that rural road play a very effective role in markets patronage. And 35.2% said rural road is effective in terms of market patronage while 29.4% of the respondents also believed that rural road is fairly effective. But very few of the respondents with 7% said is not effective and 4.4% of the respondents have no response.

This means that, majority of the respondents believed that rural road plays an important role interns of market patronage, it helps them to move their goods or farm product from home or farm to the market with ease cost and convenient.

4.6.7: Appropriate Measure in Solving Rural Road Transport Problems

The Figure 4.14 describes the appropriate measures in solving rural road transport problem in the study area. This is basically the perceptual opinions of the respondents.

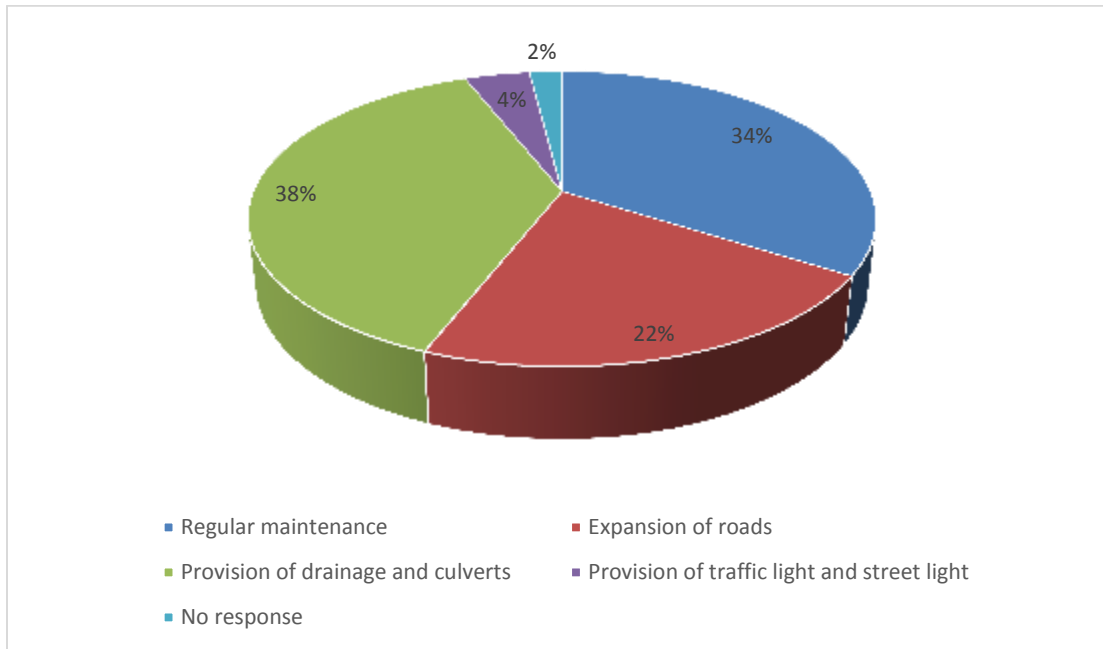


Figure 4.14: Appropriate Measure in Solving Road Transport Problems
Source: Field survey, 2015

The Figure 4.14 indicates the appropriate measure in solving road transport problem in the study area. About 34% of the respondents believed that regular maintenance of roads should be adopted from time to time and 22% shows that expansion of road will be the solution for road transport problem. Also majority of the respondents with about 38% believes that provision of good drainages and culvert is the solution while very few with about 4% said provision of traffic light and street light is the solutions for road transport problem and finally, only 2% have no response to such question. This means that, majority of the respondents agreed that to solve rural road transport problem is by making provision of good drainage and culvert, following by regular maintenance of the road.

4.6.7: Socio-economic Impact of Market

The Table 4.17 presents the socio-economic impact of markets in the study area.

Table 4.17: Impact of Market

| Wards | A | % | B | % | C | % | D | % | E | % |
|--------------|------------|------------|------------|------------|------------|------------|-----------|------------|-----------|------------|
| Kudan | 21 | 14 | 27 | 18.7 | 9 | 22.5 | 5 | 29.4 | - | - |
| Hunkuyi | 30 | 20 | 24 | 16.6 | 7 | 12.5 | 3 | 17.6 | 4 | 44.4 |
| Likoro | 19 | 12.6 | 26 | 18 | 4 | 10 | 1 | 5.8 | - | - |
| M/Danja | 8 | 5.3 | 6 | 4 | 3 | 7.5 | - | - | - | - |
| Doka | 16 | 10.6 | 13 | 9 | 5 | 12.5 | 6 | 35.2 | 2 | 22.2 |
| Garu | 11 | 7.3 | 7 | 4.8 | 2 | 5 | - | - | - | - |
| T/Sani | 7 | 4.6 | 5 | 3.4 | 1 | 2.5 | 1 | 5.8 | - | - |
| Z/Kudan | 9 | 6 | 11 | 7.6 | 4 | 10 | 1 | 5.8 | 3 | 33.3 |
| K/WaliA | 12 | 8 | 15 | 10.4 | 3 | 7.5 | - | - | - | - |
| K/Wali B | 17 | 11.3 | 10 | 6.9 | 2 | 5 | - | - | - | - |
| Total | 150 | 100 | 144 | 100 | 40 | 100 | 17 | 100 | 9 | 100 |
| | 42% | | 40% | | 11% | | 5% | | 2% | |

Source: Field survey, 2015

NB: A: Major source of income B: Provide employment opportunities
 C: Create more social contact D: Acts as agent of innovation
 E: No response

Respondent views on the contribution of markets to rural development are reflected in Table 4.17. It can be seen that 42% of the respondents were of the view that market serves as a major source of income to them, likewise 40% of the respondents admitted that it provides them with employment. Also 11% of the respondent are of the views that market serves as a social contact to them, while about 5% of the respondent agreed that market act as an agent of innovation and finally only 2% of the respondents do not response to such question.

CHAPTER FIVE

SUMMARY, RECOMMENDATION AND CONCLUSION

5.1 SUMMARY OF FINDINGS

The study was carried out to examine the influence of rural roads on the patronage of rural markets in Kudan local government area, Kaduna state. It highlights the vital role which rural roads development plays in integrating development as well as sustaining any economy. Moreso, the study focus on how rural road transport development influence the patronage of markets in the study area, interms of accessibility, connectivity, distribution and movement of people, goods and services into and outward of the study area.

The importance of rural road development in the normal life of the rural dwellers lies basically on the fact that, mobility and accessibility are essential to the achievement of economic, social and political growth. The problem of roads in Kudan local government area have been highlighted which includes seasonal nature of the roads resulted to the development of potholes, plunge holes, inadequate mode of transport especially motor vehicles, poor drainage and culverts etc.

About 48% of the respondents in the study area engaged in farming activities as a primary source using traditional method of farming such as hoes, cutlass, axes, which is insufficient for large scale farming whose farm for domestic consumption and sell amount left in order to generate revenue for expansion of their production as well as to meet other basic needs. Followed by trading activities with about 30.5% while civil servant and driving constitute only 21.5%.

Also the formal literary level of the traders is very low. The use of the indigenous language Hausa which is common helps the trader/farmers to market their goods and services

especially during the market days. The marketing activities in the study area include whole sales, retail sales, professional services and distributor. The means of road transport owned and used in Kudan local government area are mostly cars, truck, motor cycles, bicycles and donkey. Which therefore promote the movement of goods and services from either home to market or from farm to market.

Money spent in accessing market were also highlighted. The nature of roads in the study area were characterized into trunk A, trunk B, trunk C etc. Majority of the roads were trunk B and C in the study area. Also the nature of market patronage were identified such as daily, weekly, monthly and lastly every two weeks. Due to the development of roads in the study area the markets accommodate and patronized various people both within and outside the study area for the purpose of buying and selling of goods and services which inturns act as a source of income to the government as well as creating job opportunities to the people of the study area.

The nature of marketing activities in the study area were daily, periodic, both daily and periodic. About 70.5% of the markets were both daily and periodic while only 29.5% of the market were daily. Consequently, these markets were provided or established by the state, local government and lastly the community, managed by either state, local government or community efforts. Moreso for maintenance, most of the respondents believed that, for proper maintenance of the markets, taxation will be better, followed by contribution, levying, while some said donation will be the best option for the maintenance of the markets. And some of the respondents have no option for the maintenance.

The present conditions of the existing roads in the study area were somehow fair which promote the movement of goods and services to the market both within and outside the study area. Also the roads were provided largely by the community efforts, followed by local

government area, state and lastly the federal government. Most of these roads were maintained through the community effort, then the local government, followed by the state and federal government.

On the influence of rural roads transport on market patronage, majority of the respondents believed that rural road has positive impact on market patronage in terms of speed increase, save time, reduce cost, convenience and mobility. On the appropriate measures in solving rural road transport problem in the study area, most of the respondents believed that, provision of good drainage and culverts makes the road to last longer, followed by those believed that regular maintenance of the roads from time to time also keep the road good. Some said expansion of roads in the study area will also solve the problem of road transport by creating alternative roads in the study area.

On the issue of socio-economic impact of market in the study area, the marketing activities play a vital role in the development of the study area. Consequently, majority of the respondents believed that, marketing activities act as an avenue for employment as well as source of income to both the government and individuals. While some added that marketing activities serve as an agent of innovation and create more social contact to them.

5.2 RECOMMENDATION

The information gathered on the influence of rural roads on the patronage of rural markets in Kudan local government area brought to highlight some important limitations which influence rural roads on the patronage of rural markets in Kudan local government area. Based on the findings of this research the following recommendations were suggested in order to stimulate market patronage in the study area.

- i.** The seasonal nature of the roads can be overcome by constructing a good tarred roads and ensuring regular maintenance of the roads from time to time. This will reduce cost of transportation, increase mobility, reduce pothole as a result of regular maintenance, and lastly reduce cost of price of goods and services in the market.
- ii.** Community effort should be encouraged through public awareness campaign by the government and the traditional rulers on the importance of such activities interms of provision and maintenance of both the markets and roads in the study area.
- iii.** Market problem also arise from inadequate transport facilities, which relates to feeder roads and inadequate means of transport especially motor vehicle to transport goods and people from home to market or farm to market and from market to homes. Government at various levels should therefore provide enough vehicles (transits) and also provide loans to individuals through the use of micro finance banks to encourage them have their owned vehicles.
- iv.** It is vital also to note that, transportation of goods and people from home to market or from market to home and from farm to market is still the major problem that needs to be improved upon. Since rural road development has been identified as key factors that promotes market patronage or ease the movement of goods from home to market and from market to home. Therefore, road transport must be developed and improved. This calls for a concerted effort or agreement on both individuals and three ties of government to invest heavily in the development of more roads as well as improving them and ensure good maintenance of the existing once.

- v. More market should be provided or developed in some areas like Taban Sani, Garu, kauran Wali A, and Kauran Wali B so as to make marketing patronage more profitable for them interms of moving their goods to the market.

These call on both private and public sector to provide such market in such area in order to have more access or proximity to the market. Since most of the respondents believed that market patronage act as an agent of employment opportunity as well as sources of income to both the government and individuals.

- vi. Regular maintenance of road should be done regularly so as to ensure effective and efficient transport network in the study area. Therefore, there is need to call on both the community and the three ties of government upon the maintenance of existing roads so as to promote convenient, comfort, and save time interms of patronizing markets or moving goods to the market .
- vii. Good drainage and culverts should be provided along the road side so as to prevent the road from water washout which may result to potholes. Therefore, there is need to call on both the community and government to take note of such infrastructure before and after construction.
- viii. More roads should be development especially in Garu, Taban Sani, Doka, K/wali A, K/wali B and Likoro etc. This is because, based on the findings majority of the respondents believed that, road transport has positive effect on the patronage of markets. This call for the three ties of government especially the local government and state government to join together in order to provide such road in such areas. Finally, there should be adequate provision of road transportation facilities. This will entail the construction, expansion and maintenance of Trunk A road, Trunk B, and Trunk C road.

Government should create a conducive environment that would encourage private vehicle owners to set up a commercial transportation services. Duties on new vehicles and spare parts should be reduced to make them affordable to intending transporters. Traders should also form a market associations and cooperative societies so that they can put resources together and obtain credit from the micro finance banks and other financial institutions for their bulk purchase and marketing activities. Moreover, the drivers also through their union, which can serves as their guarantor can obtain loan from any financial institution such as micro finance bank to purchase a vehicle and pay sequentially.

5.3 CONCLUSION

The result shows that rural road encourages marketing activities in Kudan local government area, through the provision of access road to more markets. The relationship that exists between the road network system and market should be seen as a functional relationship. Provision of markets alone without good and adequate road transport, development cannot bring any good output in trading activities within and outside the Kudan local government. Therefore, the efficiency and quality of road is very important factor for any marketing activities in Kudan local government area. In conclusion, rural road on the patronage of rural markets has a very vital role to socio-economic development of Kudan local government area. Therefore adequate rural roads have desirable influence not only on the patronage of rural markets and agricultural production but also on the entire socio-economic development of Kudan local government area. Since Kudan LGA depends largely on farming activities, there is need to ensure regular and adequate provision of rural road in order to facilitate the marketing activities as well as socio-economic transformation so as to promote the living standard of the people in the study area.

Reference

- Abumere, S.I., Okafor, S.I. and Oluwasola, O. (2002). Rural Infrastructure and Development Process in Rural Nigeria. *Research report*, No. 36 Development policy centre, Ibadan
- Adalemo, A.I., (1979). Small Urban Centres in Nigeria's Development Strategy; *The role of rural market centres, small urban centres in Rural development in Africa*. Africa Studies, 1(3): 128-130.
- Adarkwa, K.K. and Tamakloe, E.K., (2004). *National Rural Transport Policy and Strategy Document* 1(3):161-179.
- Adefolaju A.H. (1977). "The Significant of Transportation in Rural Development in Environmental and Spatial Factors in Rural Development in Nigeria (ed) Adejeyiebe and G. Heileiner, 1977".
- Adefolalu, A.H., (1980). "Transport and Rural Integrated Development" *Proceedings of NGA Conference on Rural development*. 1(2):19-24.
- Ademiluyi, I. A. and Solanke, M. O. (2002). "An Appraisal of Rural Transport Situation for Sustainable Development in Nigeria". In Ibitoye, O. A. (Ed.) *Rural Environment and Sustainable Development*. Ado-Ekiti: Petoa Educational Publishers, pp: 174-180.
- Aderamo, A.J., and Magaji, S.A. (2010). Rural Transportation and Distribution of Public Facilities in Nigeria: A Case Study of Edu Local government Area of Kwara State. *Journal of Human Ecology* 29(3):171-179.
- Adesanya, A., Philips, A.O, Titilayo, S.T (2000) Transportation Development in Nigeria in 2010 Ibadan: *Nigerian Institute of Social and Economic Research (NISER)*.
- Aguma, J.B., (2005). *Transport Investments and Poverty Reduction in Developing Countries; A Case Study of Investment in the Rural Roads in Uganda* (Unpublished MA Transport Economic Thesis). University of Leeds, Leeds.
- Akinola, S.R (2007). "Coping with Infrastructural Deprivation through Collective Action among Rural People in Nigeria". *Nordic Journal of African Studies*. 16(1): 30-46
- Aloba, O. (1983). Evolution of rural roads in the Nigeria Cocoa Belt, in *Journal of Tropical Geography*, 4 (1) pp: 1-10.
- Aluko, A.A (1980). "Transport and Integral Rural Development" in Omu and Makunwa (eds). *Proceedings of the Conference on Integrated Rural Development CENSER*; University of Benin.

- Aluko, A.A. (2000). *“Rural Transportation and Development Planning in Nigeria”*. Kins-book Publications Series Buchanan and Pugh (1976). Land and People of Nigeria Heinemann, London.
- Anthonie, Q.O.B., (1973). The Supply and distribution of yams in Ibadan market. *The Nigeria Journal of Economic Social Studies*, 9(1): 33-49.
- Barwell, I. (1996). Transport and the Village: *Findings from African Village Level Travel and Transport Surveys and Related Studies*. World Bank Discussion Paper, No. 344. The World Bank. Washington, DC.
- Beenhakker, H. L. (1987). *Rural Transport Services: A Guide to their Planning and Implementation*. London: Intermediate Technology Publications.
- Belshaw, S.C., (1965). Traditional Exchange and Modern Market, Prentice Hall, Eagle Wood Cliffs 1971. Browley, R.J. (Ed.). *Market in the Developing Countries: A Review* Geography 1146: 124-132.
- Blank, R. (1979). *“The role of Marketing”*: A paper presented at the Conference of River Basin Development Authority, Congress Hall Transcorp Hilton Hotel, Abuja 23rd May, 2007.
- Briggs, N. (2007). Nigeria-Mainstreaming Trade Policy into National Development Strategies. *Report of Economic Commission for Africa (ECA)*.
- Eben-Saleh, M.A., (1999). Alkalaf: the evolution of the urban built form of a traditional settlement in South-Western Saud-Arabia. *The International Journal of Building Science Applied*, 34(6): 549-669.
- Ele, C. (2006). *Evangelization through Rural Development*. Nsukka: Great AP Publishers Ltd.
- Eubomien, J.A. (2005). *“The Problem of Transportation in the Agricultural Development of Owon-west L.G.A of Edo State”*. J.I.A. Printing Press, Edo.
- Ezeah, P. (2005) *Rural Sociology and Rural Development with Focus on Nigeria*. Enugu: John publisher.
- Fakayode, B. S., Omotesho, O.A, Tsoho, A. B. and P. .D Ajayi (2008): An Economic Survey of Rural Infrastructures and Agricultural Productivity Profiles in Nigeria, *European Journal of Social Sciences* – 7(2), pp: 158-171.
- Fayinka, F.A. (2004). Food security in Nigeria: Challenges under democratic dispensation. Federal Offices of Statistics (FOS), Nigeria.
- Federal Republic of Nigeria (2007). Report on Rural Access and Mobility Project (RAMP) Cross River State Ministry of Works Civil Engineering Department Calabar, Cross River State, Nigeria.

- Federal Republic of Nigeria (FRN) (2009). Official Gazette- Legal Notice on Publication of 2006, Census Final Results. S.I.No.1 Pages B1-42. Gazette No.2, Abuja, 2nd February, vol. 96.Report on rural access and mobility project
- Filani, M.O. and Richard P.R., (1976). Period Market Systems and Rural Development. The Ibarapa case study, Nigeria Savanna. 3: 149-162
- Foin, D.N. (2002). *The Effect of Road Transportation Network on Agricultural Product Marketing in Giwa L.G.A. Kudan State.* (Unpublished M.Sc Thesis) Geography Department, AB.U, Zaria.
- Hill, P., (1966). Notes on traditional market authority and market periodicity in West Africa. *Journal of Africa History*, 7(1): 195-311.
- Hillings, D.(1996). *Transport and Developing Countries.* Routledge. London. Jacob Classic Publishers.
- Hodder, B.W. and Ukwu, U.K. (1969).*Market in West Africa.* Ibadan University Press Nigeria. Ltd., pp: 14-141.
- Howe, J, and Peter, R. (1984): *Rural Roads and Poverty Alleviation.* Published by Intermediate Technology Ltd. 9 king Street London.
- Iloeje, N.P., (1976). A New Geography of Nigeria (Metricated Edn.). Longman, Nigeria. Chapter 13. pp: 114-147 ISBN 0582655102
- John, R. (1997). *Rural Roads in Sub-Sahara Africa: Lessons from World Bank Experience.*
- Kottler, P. (1999). *Market Management Analysis, Planning and Control.* 9th Edition, Prentice Hall of Indian Press Ltd, New Delhi, India.
- Leman, L.S (1985). *Rural Feeder Roads and Spatial Development: The Current State of Art and the need for Research: University of Port Harcourt.*
- Lowe, J.H, Hammer, L., Carpman .R., and Slaymaker, T.(1975). “*Poverty and Transportation*”: Report Prepared for the World Bank in Collaboration with DFID, June, 2000.
- Makinwa, P.K., (1981). “*Internal Migration and Rural Development Lessons of Bendel State*”. Heinemann Educational Books Ibadan.
- Meillassoux, C., (1971). The Development of Indigenous Trade and Markets in West Africa, London pp: 46-151.

- Musa, I.J., Abdulhamid, A.I., Kibon. A.U and Sani Y. (2012). “The Role of Katsina-Maradi Trans-Border Road Development on the Commerce and Growth of the Surrounding Settlement”. *Research Paper on Business and Management* 1(2), pp: 36-43, August.
- Musa, J. J (2010). Nigeria’s rural economic development strategy: Community Driven Development Approach. *AU J.T.* 13(4): 233-241.
- National Population commission, (NPC) (2009). 2006 population and Housing Census of the Federal Republic of Nigeria: Kaduna State Priority Tables. Abuja-Nigeria.
- Nwafor, J.C., (1982). Marketing System and Periodic Market Nigeria. In: Maps. pp: 114. ISBN0340184256
- Ogundana, B., (1972). “*The Transport Constraints on Rural Development in Nigeria*”. Proceedings of 1972 Annual Conference of the Nigerian Economic Society, University of Ibadan, 1973, pp: 77-91.
- Oladipo, O. Olubomehin, (2012). Road Transport as Lifeline of the Economy in Western Nigeria, 1920-1952. *African Journal of History and Culture* 4 (3) pp: 37-45.
- Olatubosun, D. (1975). *Nigeria Neglected Rural Majority*: Ibadan Oxford University Press.
- Olayiwola, L.M., and Adeleye, O.A. (2005) Rural infrastructural development in Nigeria between 1960-1990- problems and challenges. *Journal of Social Science*, 11 (2): 91-96.
- Olayiwolu, L.M. and Adeleye, O.A. (2005). Rural Infrastructural Development in Nigeria between 1960-1990. Problems and Challenges. *Journal of Social Sciences* 11(2):91-96.
- Olomola, A.S (2003). Understanding Poverty in Nigeria: Highlights from NISER Review of Nigerian Development. In *NISEREEL, the Magazine of Nigerian Institute of Economic and Social Research*, No. 4-5, December, 2003. Ibadan.
- Olorunfemi, A.O., (1999). *Problems and Prospects of Commercial Markets in Akure*, B. Tech. Thesis, URP, FUT, Akure, Nigeria.
- Omole F.K, Owoeye J.O and Ogundiran A.O (2012). Towards Efficient Transport Connectivity for Sustainable Market Patronage in Nigeria: *International Journal of Developing Societies* 1(2): 88-96
- Omole F.K. (2009). Analysis of Some Factors Affecting Market Patronage in Osun State, Nigeria: *Asian Journal of Business Management* 1(1):24-31, ISSN: 2041-8752
- Onyemeluke J.O.C., (1974). *Some factors in the growth of West Africa Market Town: The example of pre-civil war Onitsha, Nigeria.* *Urban Studies.* 2(1): 47-59.

- Ovubude, N.N. (2000). *The role of transport in rural development: A case study of Badagry Local Government Area of Lagos State*” Unpublished M.Sc. Thesis, Centre for Transport Studies, Ogun State University, Ago-Iwoye, Nigeria.
- Owen, W. (1968). *Distance and development*. The Brooking Institution, Washington D.C.
- Rizet, C. and Hine, J. (1993). A Comparison of the Costs and Productivity of Road Freight Transportation in Africa and Pakistan. *Transport Reviews*, 13(2):11-15.
- Sada, P.O. and McNulty, (1978). *The Market Traders in the City of Lagos*. Urbanization and Problems in Nigeria. Ibadan University Press. ISBN 9781211016 pp: 63-80.
- Segal, A., (1977). *City Planning in Ancient Times*. The Lerner Archaeology Series. Lerner Publications Company, Minneapolis. ISBN 0-8225-0836-2
- Sieber .N. (1997). “*Economics of Appropriate Agricultural Transport- A Broader Approach Towards on-farm and Market transport*”. Paper Presented at an East Africa Regional Project Planning Workshop (2-8 November, 1997) in Thika/Kenya, as part of Agricultural Rural Transport Research Project, Sponsored by DFID.
- Sieber, N. (1999). “Transporting the Yield: Appropriate Transport for Agricultural Production and Market ing in Sub-saharan Africa”. *Transport Reviews*, 19(3):4-7.
- Stat, T. (2012). Sample Size Calculations. Accessed from <http://www.stattrek.com/sample-size/stratified-sample.aspx> on 17/07/2014
- Udo, R.K. (1975). *Geographical Regions of Nigeria*: Heinemann, London.
- UNCHS (1985). *Guide Lines for the planning of Rural settlement and Infrastructure -Road Networks Nairobi*. United Nation publication. Nairobi, Kenya
- Whetham, E.H. (1972). *Agricultural Market ing in Africa*. London: Oxford University Press.
- World Bank (1989). *The Rural Road Question and Nigeria’s Agricultural Development: Managing Agricultural Development in Africa (MADIA)*, Discussion Paper No. 10. World Bank Washington, DC.
- World Bank (1994). *Adjustment in Africa: Reforms, Results and the Road Ahead*. A World Bank Policy Research Report, Oxford University Press.
- World Bank (1994). *Infrastructure for Development, World Development Report, New York*: Oxford University Press.
- World Bank (1996). *The Assault on World Poverty: Problems of Rural Development, Education and Health*: World Bank Publication.

World Bank (2007). *Turkey-Transport Sector Expenditure Review: Synthesis Report*. Washington DC.

Yamane, Y. (1967) *An Introductory Statistical Analysis*, Mcmillan Press.

Appendix: I

Department of Geography,
Faculty of Science,
Ahmadu Bello University,
Zaria.

Dear Respondent,

Request to complete Questionnaire

I am a postgraduate student of the above mentioned university conducting research on “**Effects of Rural Road Development on the Location of Markets Kudan Local Government Area of Kaduna State**”. Kindly assist by providing honest response to the questionnaire items. Be assured that all information supplied will be treated as confidential.

Section A: Demographic Data of the Respondents

Please tick (√) or fill in the corresponding space appropriate to your responses.

Ward Name:----- **Village Name:**-----

1. Gender: a. Male b. Female
2. Age:
a. 20-30yrs b. 31-40yrs c. 41-50yrs d. 51-60yrs e. Others:-----
3. Marital status
4. Educational Qualification:
a. Qur’anic b. Primary c. Secondary d. Tertiary e. Others:-----
5. Occupation:
a. Farming b. Trader c. Civil Servant d. Driving e. Others:-----

Section B: Road and Market infrastructure

1. What type of road do you have in your village?
a. Truck A road b. Trunk B road c. Trunk C road d. Footpath e. Others:-----
2. What are the nature of the roads?
a. Tarred b. Untarred c. Others:-----
3. What are the conditions of the roads?
a. Motorable b. Non-motorable
4. Are the road motorable throughout their year?
a. Yes b. No

5. How many roads connect into/out of your village to other villages?
 - a. One b. Two c. Three d. None e. Others:-----
6. What mode of transport do you own?
 - a. Car/bus b. Motorcycle c. Bicycle d. Donkey e. Others:-----
7. What mode of transport do you use in accessing the market infrastructure?
 - a. Car/Bus b. Footpath c. Motorcycle d. Bicycle e. Others:-----
8. with this mode, how long does it take you reach the location of the market infrastructure?
 - a. Less than 1 hour b. 1-2 hour c. 2-3 hours d. 3-4 hours and above e. Others:-----
9. What is the distance to motorable road?
 - a. Less than 1kmb. b. 1-3kmc. c. more than 3km d. Others:-----
10. Are these market s infrastructure located in an accessible location?
 - a. Yes b. No
- 11.If No why?-----
12. How much do you pay to transport your goods to the market ?
 - a. ₦ 200-300 b. ₦ 300-500 c. ₦ 500-700 d. ₦ 700-1000 e. ₦ 1,000 and above
13. What type of market infrastructure do you have in your area?
 - a. Regional b. Periodic c. Daily d. Both daily and periodic
14. How often do you visit or make use of the market infrastructure?
 - a. Daily b. Weekly c. Every 2weeks d. Monthly e. Others:-----
15. What type of business activity do you engage in?
 - a. Whole sales b. Retail sales c. Distributor d. Professional service e. Others:-----
16. Who provide these market s infrastructure?
 - a. Federal b. State c. LGA d. Community effort e. Others:-----
17. How are these market maintained?
 - a. Federal b. State c. LGA d. Community effort e. Others:-----
18. What is the impact of the market in your area?
 - a. Major source of income b. create more social contact c. provide employment opportunities
 - d. Act as agent of innovation
19. Are the market s connected by road?
 - a. Yes b. No
20. What strategies should be adopted to ensure good maintenance of the market ?

a. Levying b. Launching c. Taxing d. Contribution e. Donation

21. What are the present conditions of the existing road infrastructure in your area?

a. Excellent b. Good c. Fair d. poor e. Others:-----

22. Who provide these roads infrastructure?

a. Federal b. State c. LGA d. Community effort e. Others:-----

23. How are these roads maintained?

a. Federal b. State c. LGA d. Community effort e. Others:-----

24. Do rural road transport have any effect on market patronage?

a. Yes b. No

25. In what ways does the road transport affect market patronage?

a. Increase speed b. save time c. Reduces cost d. Conveniences

26. What type of road transport problem do you normally encounter in reaching the market infrastructure in your area? a. Traffic congestion b. Poor drainage and culvert c.

Pot holes d. Others:-----

27. What are the major effects of rural road transport in your area?

a. Very effective b. Effective c. fairly effective d. Not effective

24. What measures will you suggest as most appropriate in solving rural road problem?

a. Regular maintenance b. Expansion of the road c. providing good drainage system d. Provision of traffic light and street light e. All of the above

Thank you.