

**STRUCTURE, CONDUCT AND PERFORMANCE OF PALM
OIL MARKETING IN ABIA AND KADUNA STATES, NIGERIA**

BY

**Joyce IWUJI
M.Sc/AGRIC/0600/2009-2010**

**A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES,
AHMADU BELLO UNIVERSITY, ZARIA, IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE IN
AGRICULTURAL ECONOMICS**

**DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL
SOCIOLOGY, FACULTY OF AGRICULTURE, AHMADU BELLO
UNIVERSITY, ZARIA**

DECEMBER, 2014

DECLARATION

I hereby declare that this thesis titled “**Structure, Conduct and Performance of Palm Oil Marketing in Abia and Kaduna States, Nigeria**” has been written by me and it is a record of my research work. No part of this work has been presented in any previous application for another degree or diploma at any institution. All borrowed ideas have been acknowledged in the text and a list of references provided.

Joyce IWUJI
Student

Date

CERTIFICATION

This thesis titled “**Structure, Conduct and Performance of Palm Oil Marketing in Abia and Kaduna States, Nigeria**” by Joyce **IWUJI** meets the regulation governing the award of the Degree of Master of Science of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

Prof. Ben Ahmed
Chairman, Supervisory Committee

Date

Dr. M. A. Damisa
Member, Supervisory Committee

Date

Prof. Z. Abdulsalam
Head of Department

Date

Prof. Zoaka A. Hassan
Dean, School of Postgraduate Studies,
Ahmadu Bello University, Zaria

Date

DEDICATION

This research project is dedicated first to the Lord God Almighty, the author and finisher of man's faith and secondly to members of my family.

ACKNOWLEDGEMENT

For whatever success I have achieved through this study, I am exceedingly thankful to the Almighty God for his protection, guidance and success accorded to me up to this level.

My profound gratitude goes to my supervisors, Prof. Ben Ahmed and Dr. M. A. Damisa for the support rendered to me, thanking them also for their advice and encouragement which yielded to the success of this thesis.

My deeply appreciation goes to my ever-cherished parents Mr. & Mrs. Anthony Iwuji whose sacrifice has made my dream come through, to my only beloved brother who prayed and helped my work, I love you all. I appreciate my loving husband and wonderful kids for their patience, support and love.

My appreciation goes to Mr. Shola for providing me with every support which led to the success of this thesis.

And finally, I am thankful to my good friends Margret, Dayo and Jamila who at one-time or other offered constructive suggestions that made my study a success. May Almighty God bless you all.

TABLE OF CONTENTS

Title page	i
Declaration	ii
Certification	iii
Dedication	iv
Acknowledgement	v
Table of content	vi
List of Tables	viii
List of Figures	ix
Abstract	x
Chapter One	1
Introduction	1
1.1 Background to the Study	1
1.2 Problem Statement	4
1.3 Objectives of the study	5
1.4 Justification for the study	5
Chapter Two	8
Literature Review	8
2.1 The Origin of Palm Oil	9
2.2 Oil Palm Production in Nigeria	12
2.3 Palm Oil Marketing and its Future prospect	12
2.4 The Role of Marketing in Agriculture and Economic Development	15
2.5 Roles and function of Market stakeholders	16
2.6 Theoretical Framework for Studying Marketing	18
2.6.1 Functional approach	19
2.6.2 The institutional approach	20
2.6.3 Structure-conduct-performance approach	20
2.7 Market Structure	21
2.8 Market Conduct	21
2.9 Market Performance	22
2.9.1 Variables	23
2.9.2 Physical measure	24
2.9.3 Fixed-price value	24
2.9.4 Nominal price value	25
2.10 Marketing Margin	25
2.11 Marketing channel	26
2.12 Empirical Studies on palm oil marketing in Nigeria	27
2.13 Review of Analytical Tools	29
2.13.1 Marketing efficiency	29
2.13.2 The gini coefficient	29
2.13.3 Concentration ratio	30
2.13.4 Multiple regression	31
Chapter Three	33
Methodology	33
3.1 The Study Area	33
3.2 Sampling and Data Collection Methods	36

3.3	Analytical Tools.....	37
3.3.1	Descriptive statistics.....	37
3.3.2	Market structure analysis.....	38
3.3.4	Multiple regression analysis.....	39
Chapter Four	41
	Results and Discussion.....	41
4.1	Socio-economic Characteristics of Palm oil Marketers.....	41
4.1.1	Age distribution of the palm oil marketers.....	41
4.1.2	Gender of the respondents.....	43
4.1.3	Educational Qualification of palm oil marketers.....	43
4.1.4	Marketing experience of palm oil marketers.....	43
4.2	Market Structure and Conduct.....	44
4.2.1	Barriers to entry.....	45
4.2.2	Nature of the product.....	45
4.2.3	Market information.....	46
4.2.4	Marketing channel.....	47
4.2.5	Market integration.....	48
4.2.6	Number and size of market participants.....	48
4.2.7	Concentration ratio.....	50
4.3	Market Performance of Palm oil marketing.....	51
4.3.1	Marketing margin.....	51
4.3.2	Marketing efficiency.....	52
4.4	Factors Influencing Performance of Palm Oil Marketing in Abia and Kaduna States.....	53
4.5	Problems Associated with Palm Oil Marketing in Abia and Kaduna States.....	55
Chapter Five	58
	Summary, Conclusion and Recommendations.....	58
5.1	Summary.....	58
5.2	Conclusion.....	59
5.3	Recommendations.....	60
	References.....	62
	Appendix I: wholesaler's Research Questionnaire	66
	Appendix II: Retailer's Research Questionnaire	70

LIST OF TABLES

4.1: Distribution of participants based on their socio economic factors.....	42
4.2: Distribution of palm oil marketers in palm oil marketers' union.....	45
4.3: Nature of the product.....	46
4.4: Respondents based on their access to market information.....	46
4.5: Respondents based on their ownership of palm oil farm.....	52
4.6: Marketing margin.....	53
4.7: Market efficiency of palm oil in the study area.....	54
4.8: Factors influencing the performance of palm oil marketing.....	57

LIST OF FIGURES

3.1	Map of Nigeria showing Abia and Kaduna States.....	34
3.2	Map of Kaduna state showing the selected Local Government Areas.....	35
3.3	Map Indicating the selected Local Government Areas of Abia State.....	36
4.1	Marketing Channel of Palm Oil Marketers in Abia State.....	47
4.2	Marketing Channel of Palm Oil Marketers in Kaduna State.....	47
4.3	Lorenz curve for palm oil marketers in Abia State.....	49
4.4	Lorenz curve for palm oil marketers in Kaduna State.....	50

ABSTRACT

This study analysed marketing system of the palm oil in Abia and Kaduna states by describing the socio- economic characteristics, structure and conduct, performance, the factors that influence the performance and identifying the problems that faced palm oil marketing in the two States. Multi-stage sampling technique was employed in selecting the respondents. Primary data for the study were collected using structured questionnaire, administered to 180 respondents, these included the middlemen between the villagers that produce the oil and the wholesalers that gathers them in cans, drums and then sell to marketers (wholesalers) from the north which in turn sell to the retailers was used for the study. Data were analyzed using descriptive statistics, structure analysis, marketing margin, marketing efficiency and regression analyses. The results showed that the average ages of palm oil marketers in Abia and Kaduna were 38 and 36 years respectively. In Abia State, the male marketers were 72.5% and the female marketers constitute 27.5. In Kaduna State, 75% were male while 25% were female. Abia state, 45 % of the respondents had secondary education while in Kaduna state, 46.7% of the respondents had a secondary education. Majority of the respondents had experience in palm oil business. The value of gini coefficient (0.65) for oil palm trader in Abia State is tending towards unity indicating that there is an equality or high level of seller concentration at this level. From the Lorenz curve, the extent of deviation of the curve from the line of equality shows an imperfect market competition (65% gini). In the case of oil palm marketers in Kaduna state, for the wholesalers, the market was found to be purely competitive (gini 48%) as indicated in the Lorenz curve. The calculated gini coefficient (0.47) pointed towards a low level of seller concentration. The results further revealed that in Abia state, the middlemen had a marketing margin of 1.29% which signifies their profit making. The wholesalers had a marketing margin of 1.25% and the retailers had a marketing margin of 1.43%. In Kaduna state, the retailers had a marketing margin of 1.25% and the wholesalers had theirs as 1.21%. For the marketers in Abia State, the marketing efficiencies of the middlemen was 13%, wholesalers was 45% and the retailers was 43% while in Kaduna State the efficiency of wholesalers were 20% and retailers was 32%. Factors influencing marketing efficiency were age, education and years of marketing experience. The major constraints to palm oil marketing in the study area were Lack of efficient and affordable technology, lack of effective marketing research and dirty environment/poor hygienic state.

STRUCTURE, CONDUCT AND PERFORMANCE OF PALM OIL

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Palm oil is usually one of the products produced from the oil palm tree which is a perennial crop that originates from the tropical rain forest of West Africa. In Nigeria, palm oil tree grows in the coastal belt of Nigeria which varies in depth from 100 to 150 miles and a riverine belt which follows the valleys of the Niger and Benue for a distance of about 450miles from the sea and naturally, production of palm oil usually occur along these locations (FOA, 1999). The main palm oil producing states in Nigeria include Cross River, Abia, Akwa Ibom, Imo, Rivers, Anambra, Enugu, Ogun, Delta, Edo, Oyo and Ekiti.

Agricultural marketing is a driving force for economic growth and development and has a guiding and stimulating impact on production and distribution of agricultural produce. The increasing proportion of the population living in urban areas and rising level of income require more organized channels for processing and distributing agricultural products. Agricultural marketing acts as an agent of rural development. Moreover, agricultural marketing will play a coordinating role, steering supply and demand with respect to place, time and form utilities. A properly functioning market (such as pricing system) for agricultural products is generally perceived at the best organizational structure to achieve more efficient production, in terms of type, quantity, quality and consumption decisions (Bradhan, 1990).

Improved information and marketing facilities enable farmers to plan their production more in line with demand, schedule their harvests at the most profitable times, to decide which market to send their produce to and negotiate on a more even footing with traders and also it enables traders to move produce profitably from a surplus to a deficit market and to make decisions about the economics of storage, where technically possible. The possible increment in output resulting from the introduction of improved technology could not be exploited in the absence of convenient marketing conditions. As efficient, integrated and responsive market mechanism is of critical importance for optimal area of resources in agriculture and in stimulating farmers to increase their output (Jones 1972 and cited in Andargachew, 1990).

Farris(1997) stated that there are three(3) categories of agricultural market analysis; the application of structure/conduct/performance analysis(the idea of effective competition), the analysis of marketing margins and the analysis of supply and demand relation which includes the explanation for price movement overtime and space. Market structure can be defined as the characteristics of the organization of a market, which strategically influence the nature of competition and pricing behavior within the market (Bain,1987 cited in Girma 2002). Kotler (1999), opined that the three theoretical market models often used in analyzing market structure are the perfectly competitive market, oligopolistic market and the monopolistic market. Farris (1997), argued that a market structure has implications for its price and output levels everywhere a single seller dominates a market and output can be restricted and prices forced up. Some market structures result in highly competitive and efficient markets, but others tends to be less satisfactory. The structure of a market is in turn, an important indicator of the conduct and economic performance of the market.

The ease with which potential participants can enter the various functions is commonly used as a means of assessing the degree of competition in an industry (Scarborough and Kydd, 1992). Stigler (2005) suggests about three points that can create barriers to entry: legal barrier (franchise and patents), economies of scale and pace of entry.

Market conduct is the pattern of behavior of enterprises in determining prices, sales promotions and coordination policies and the extent of predictor or exclusionary tactics directed against established rivals or potential entrants (Pomeroy and Trinidad, 1995). The determinants of conduct indicators are price setting behavior, buying and selling practices, advertising, merging together others that make traders profit. Market conduct indicates the ways by which firms compete, whether they look for new techniques and apply the techniques early as practicable or whether they are dis-investing and transferring funds elsewhere (USAID, 2008).

The sole aim of marketing is the successful movement of produce from point of production to the ultimate consumer putting into consideration time, price and quality of produce at the point of consumption. The terms market conduct means the pattern of behaviour in the market between the sellers and the buyers.

Performance of a market reflects the impact of the structure and conduct on prices, costs, volume and the quality of the product. There are such practical indicators of how well a certain marketing system is operating. In addition, quantity supplied, equity (distributional and informational), access to market information are main performance indicators (USAID, 2008).

1.2 Problem Statement

The recognition of critical role of markets in economic development led to sweeping marketing reforms across a number of developing countries. In spite of these reforms, symptoms of poorly functioning markets in tropical Africa are evident in the segmentation of markets, low investment in the market infrastructure, the persistence of high margins and limited progression towards more complex arrangements (Eleni, 2001).

Nwawe (2005), observed that Nigeria ranked the largest producer and exporter of palm oil in the 1970's, but now palm oil marketing is not as competitive as it was within Nigeria and even in the world market. A properly functioning market (such as pricing system) for agricultural products is generally perceived as the best. In Nigeria, the production of palm oil is constrained by seasonal conditions as a result the variation in its supply in rural and urban market is seen. Furthermore, the marketing activities and their characteristics in the eastern and northern states have not been fully described.

There was study on the marketing activities that takes place in the two study areas, the inter-transit factors that affects the competition on palm oil marketing in Nigeria and reducing information gap on the subject. The following research questions was answered:

- i. What are the socio –economic characteristics of the palm oil marketers in Abia and Kaduna states?
- ii. What is the structure and conduct of palm oil marketing in Abia and Kaduna states?
- iii. What is the performance of the palm oil marketing in the two states?

- iv. What factors influencing the performance of palm oil marketing in the two states?
- v. What are problems being encountered by the palm oil marketers in Abia and Kaduna states?

1.3 Objective of the Study

The general objective of the study is to describe the structure, conduct and performance of palm oil marketing in Abia and Kaduna states of Nigeria.

The specific objectives of the study are to:

- i. describe the socio economic characteristics of the palm oil marketers in Abia and Kaduna states.
- ii. describe the structure and conduct of palm oil marketing in Abia and Kaduna states.
- iii. describe the performance of palm oil marketing in the two states.
- iv. determine the factors influencing the performance of palm oil marketing in the two states.
- v. describe the problems faced by the palm oil marketers in the two states.

1.4 Justification of the Study

In Nigeria, palm oil marketing is concerned with all stages of operation that aids movement from the producers to the final consumer. These include: assemblage, storage, transportation, grading and financing. Marketing of palm oil in Nigeria takes place in homes of the processors, road sides, local/periodic market centres and stalls. These can involve both wholesalers and retailers in both rural and urban markets.

Distribution and marketing of agricultural products are as essential as the product itself (FAO, 2002). The findings of this study are also believed to be useful to oil palm producers, traders and marketing agents to make informed decisions. The work also serves as a reference document for researchers to embark on studies of the same or related kinds in other parts of the country. The study is also envisaged to generate valuable information on palm oil marketing that would assist policymakers in designing appropriate policies for intervention. Governmental and non-governmental organizations that are engaged in the palm oil industry would benefit from the results of this study.

The study will give detailed information on how oil palm marketing is currently functioning in the study areas. It points out factors that constrain oil palm production and marketing system. The study also generates information that will help formulate palm oil marketing development programs and guidelines for interventions that would improve efficiency of the palm oil marketing system. It's important to know the activities that happen beyond the palm oil producing states especially the marketing aspect so as to improve on the competitiveness of palm oil marketing all over Nigeria and beyond to close the wide gap in knowledge between marketers and the final consumer. With the recent move of the government to improve the transportation sector such as rehabilitating the railway system, the transporting of the palm oil from the South eastern part of the country to the northern part. This study showed if the price of palm oil will be reduced if the railway lines become fully functional. This study provides a clearer understanding of organisational characteristics such as the actors involved in the palm oil marketing specifically in Abia and Kaduna states. It knows what happens around the palm oil marketing ie activities been carried out from where its been brought into the

markets in Abia state and then how it gets to the selected markets in Kaduna state. This study will help us know the level of performance in the marketing of palm oil and how to improve on it between the selected markets in Abia and Kaduna State.

The successful application of oil palm trunk to multi- industrial usages portends huge economic opportunities for our people. This offers opportunity for wealth creation and economic empowerment of our people if properly harnessed. The study will close the gap between the participants in palm oil marketing such as the wholesalers, commission agent, retailers and the consumers by providing adequate information such as the price, season when palm oil is more in the market so that they could always have fresh palm oil at low prices.

The study made effort to identify and proffer solutions to problems that prevail in the palm oil marketing between supply and demand areas. I believe that investors in the palm oil industry will find this research useful.

CHAPTER TWO

LITERATURE REVIEW

2.1 The Origin of Palm Oil.

The African oil palm (*Elaeis guineensis*) is a native to West and Southwest Africa, occurring between Angola and Gambia (Mathew, 2009). In West Africa the oil palm grows naturally throughout the rain forest belt, wherever the mean annual rainfall is over 150cm. Many plantations of oil palm have and are being established in West Africa, but most palm produce is obtained from growing wild (Mathew, 2009).

The oil palm gives rise to two distinct oils; palm oil – from the mesocarp of the fruit, and palm kernel oil-from the kernel. Palm kernel oil is distinct from palm oil in terms of its fatty acid composition. The bulk of palm oil that is produced goes into food applications; hence its nutritional properties have been extensively studied. Palm oil is currently the second largest traded edible oil and accounts for about one quarter of the world's fats and oil supply (Ibekwe,2008).

A rapid expansion of the palm oil export trade was accompanied by a marked growth in the plantation sector of production. Between 1962 and 1982, world exports of palm oil rose from about 500,000 to 2,400,000 million tonnes per annum, and Malaysia emerged as the world's largest producer, accounting for 56 percent of world production and 85 percent of world exports of palm oil in 1982. Expanded production in Malaysia was achieved mainly by the privately owned estate sector, which increased its oil palm holdings more than tenfold in the 1960s and 1970s; and by the Federal Land Development Authority (FELDA), whose large-scale schemes organized oil production along plantation lines, although ownership was vested in the workforce of "smallholders" (Khera 1976; Moll 1987). By 1990, world production had reached nearly 11MT per annum, with a worldwide trade of 8.5MT (Mielke, 1991).

2.2 Oil Palm Production in Nigeria

Between 1961 and 1965, world oil palm production was 1.5 million tons, with Nigeria accounting for 43%. However, since then, oil palm production in Nigeria has virtually been stagnated. But today, world oil palm production amounts to 14.4 million tons, with Nigeria which is one of the largest producers in West Africa, accounting for only 7%.

In Nigeria 80% of production comes from dispersed small holders who harvest semi wild plants and use manual processing techniques. Several million smallholders are spread over an estimated area of 1.65 million hectares in the southern part of Nigeria. In addition to the agro climatic and structural factors (size and scale of production and processing sectors) there are other constraints like little use of modern inputs and extension service; low provisions of market information, standards and quality control (Dogondaji et al, 2010).

Olagunju (2008) reported that because of the increased demand for palm oil resulting from an increase in population and income growth, relative to the low productivity of the oil palm sector, Nigeria has become a net importer of palm oil. Several million smallholders are spread over an estimated area of 1.65 million hectares in the southern part of Nigeria. In addition, to the agro climatic and structural (size and scale of production and processing sectors) there are other environmental and coordination factors like little use of modern inputs and extension service; previously controlled by monopoly marketing board; low provisions of market information, standards and quality control (Udom, 1986) Since independence in 1960, Nigeria's agricultural sector has experienced slow output growth that has not kept pace with population increases. According to the USDA, in their analysis based on estimated production and import figure, the shortfall in supply (the supply gap) is about 150,000 MT of palm oil from

1964 – 2010. This has resulted in declining agricultural exports and domestic food supplies.

Oil palm (*Elaeis guineensis*) is one of the most important economic oil crops in Nigeria. According to World Rain-forest Movement, oil palm is indigenous to the Nigerian coastal plain though it has migrated inland as a staple crop. Cultivation of oil palm serves as a means of livelihood for many rural families and indeed the farming culture of millions of people in the country. The reference to oil palm as a crop of multiple value underscores its economic importance. Oil palm is made of essential components, namely; the fronds, the leaves, the trunk and the roots which are used for several purposes ranging from palm oil, palm kernel oil, palm wine, broom, and palm kernel cake (PEDEP, 2011).

In Nigeria, oil palm cultivation is part of a way of life. Indeed, it is the culture of millions of people with an estimated 2.4 million hectares of land under oil palm cultivation (Nwawe *et al.*, 2005). Also, between 1987 and 2005, 13.834MT of palm oil was produced (CBN, 2005). In the 1960s foreign exchange from palm produce was a major source of revenue for Nigeria's economic development. The bulk of palm oil production in Africa came from Nigeria and constituted over 78% of total world production (Nwawe *et al.*, 2005). After 1965, Nigeria ceased from being the leading producer and exporter of oil palm because of over reliance on traditional production methods, excessive tapping of palm trees for palm wine and the civil war from 1967 to 1970 and discovery of crude petroleum deposit in commercial quantity (USDA, 2003). By 1974, the country had become a net importer of palm oil, falling from 43% in 1980 to 7% in the 1990 of the total global output (Nwawe *et al.*, 2005).

In his study, Iwena (2002), found that on commercial basis, both palm oil and palm kernel are important products of oil palm. Oil palm stands out as one of the important food security crops for Nigeria mainly because of its usefulness. Oil palm is known for the production of various important products such as palm oil, palm kernel oil, palm wine, palm kernel cake and broom. Amongst the products derivable from oil palm, palm oil is the most useful and important. According to Adelekan *et al.* (2002), palm oil is the principal source of much of the edible oil consumed in Nigeria and the rest of the West African region.

Ayeni and Kolawole (1997), explained that extracted oil can be used in the manufacture of soaps, margarine and, candles. Other uses of palm oil include its use in the manufacture of baking fats, tin plate and sheet steel materials (Adeniji *et al.*, 1997).

Thus Nigeria's first goal is to meet the domestic demand and then if possible seek to become competitive in export markets. Nigeria palm oil production is potentially competitive in the domestic market if oil palm industry would enhance the overall economic development through the income and employment effects in the rural and urban economies.

The oil palm sub-sector of the agricultural sector of the economy presented itself as a potential productive sector that could be used to diversify the economy after years of neglect. Ahmed (2001) highlighted the importance of oil palm in providing direct employment to about 4 million Nigerian people in about 20 oil palm growing states in Nigeria and indirectly to other numerous people involved in processing and marketing of palm oil. (Omoti, 2001)

Beyond this problem, there has been a steady decline in the nation's domestic supply of palm oil. This has been attributed partly to the crude palm oil extraction methods employed by palm fruit processors, which results into low quantity and poor quality oil. The scarcity of palm oil at particular period of every year leads to increase in the price. Also, varying quality and drudgery involved in the processing of palm fruits are some of the important reasons responsible for the recurrent short fall in domestic palm oil supply in the country.

The development of the economic oil palm had continued to attract the attention of various administrations in Nigeria since the colonial period to date. This was not unconnected with its economic importance as a very important source of edible and technical oils of a huge National revenue earning potentials. Palm oil and palm kernel oil, the major products of oil palm, were once very vital to Nigeria's export trade as Nigeria was a leading producer of oil palm produce in the world. However, since 1965, there has been a noticeable decline in her palm oil production (Mgbeje, 2004).

2.3 Palm Oil Marketing and its Future Prospect

The oil palm subsector of the agricultural sector present itself as a potential productive sector that could be used to diversify the economy after years of neglect. Ahmed, (2000) highlighted the importance of the economic tree crop in providing direct employment to about 4 million Nigerian people in about 20 oil palm growing states in Nigeria and indirectly to other numerous people involved in the processing and marketing. Omoti (2001) stated that Nigeria has enormous potential to increase her production of palm oil and palm kernel primarily through application of improved processing techniques.

Eleni (2001) opined that the improved technologies that meet both growth and sustainability goals can be effectively used by oil palm processors. However, most technologies are designed for developed rather than developing countries. Nevertheless, most farmers in developing countries use improved seed materials obtained from research stations but without a corresponding application packages which are meant to be used with them. Jalani (2000), stressed that oil palm processors should embrace well integrated capital-intensive, high volume and high extractive rate in their processing method in order to encourage high transformation of oil palm industry in the country.

Kei *et al.*, (1997) highlighted that the stagnation in the oil palm sector in Nigeria was influenced by the overall agricultural policies that could be classified into three periods. Following the independence (1960-1970), the industrialization was financed by export taxes through commodity boards which monopolized commodities such as cocoa, groundnut, palm oil, cotton and rubber. The resulting producer price had a damaging effect on the production of export crops. Also, the commodity marketing was established to organize marketing efficiency. The commodity boards became exploitative of the primary producers: because the prices they paid were relatively low to cost of production, average world prices and the prices of other crops (Olukosi and Isitor, 1990). In addition, the civil war from 1967-1970 had a damaging effect on the economy. In the oil export boom period (1970-1985) with OPEC's intervention, oil prices in 1970 increases fourfold and oil became the dominant export commodity and source of government revenue.

The appreciation of the Naira and the reduction of duties on food imports made food imports cheaper than domestic staples. These actions created biases against agricultural

exports (Forest 1993). During the SAP period (1993- 2003), on the positive side there was a rise in output prices and a sharp increase in the cost of living relative to nominal income (CBN/NISER, 1992). So, national – level consumption has declined following SAP implementation. Kei et al., (1997) in their study observed that because of the increased demand for oil palm products resulting from an increase in population and income growth, relative to the low productivity of the oil palm sector, Nigeria has become a net importer of palm oil.

According to Chief Charles Ugwu who was the former president of manufacturers association of Nigeria (MAN), the oil palm industry has a current estimated value of \$155bn and future projected value of \$1165bn by the year 2020. The market price of oil palm produce is very attractive for investment in the oil palm industry. Apart from the fact that palm oil sells at higher price per metric tonne than crude oil, World palm oil price has been on a steady increase, rising from \$424 per metric tonne in 2006 to \$824 in 2007 and to \$1146 in 2010. Today, a gallon (3.75l) of palm oil sells for between \$18 and \$25 depending on the grade. Besides, at the current annual growth rate of 7.88 per cent, World consumption of oil palm is expected to rise from 29.12 million tonnes in 2004 to 43.2 million tonnes in 2020 (www.agricjournal.com).

Different segments of the industry that can be explored include palm oil extraction and processing; palm kernel oil extraction and refining; production of glycerin, animal feed formulation and processing; palm wine tapping; palm wine processing; oil palm nurseries development and marketing and research and development. Others are palm oil and kernel processing plants development and installation; manufacture of soaps and detergents; pomades, margarine, biscuits; transportation and marketing of palm

produce; plantations development and management, harvesting and post – harvesting handling. The successful application of oil palm trunk to multi- industrial usages portends huge economic opportunities for our people. This offers opportunity for wealth creation and economic empowerment of our people if properly harnessed (Omoti, 2001).

2.4 The Role of Marketing in Agriculture and Economic Development

Omoti (2001) stated that Nigeria has enormous potential to increase her production of palm oil and palm kernel primarily through application of improved processing techniques and marketing. Ehirim (2004) estimated the net profit level of palm oil marketers to be as high (38%)and the marketing efficiency index of 1.87 which implied that the level of satisfaction derived in consuming a unit volume of palm oil at a reduced cost was high and Olagunju (2008) stressed that profitability analysis of processing techniques in palm oil industry in Nigeria was profitable.

Marketing plays an important role in the economic development of the nation. An economic growth and information of any nation depends greatly on the ability to design an effective marketing system (Meijer,1994). He further stated that efficient food marketing therefore, is concerned here as that in which costs of marketing are minimized, waste are eliminated so that supply of available product for consumption rises and a stable pricing system gives the farmers the incentive to innovate and to increase output. Thus, an efficient food marketing system will make important contributions to the development in Nigeria not only because it will increase the amount available for consumption but also because it will induce co-related sectors to develop. Marketing can also be defined as the sum of all total business activities in the movement

of commodities from production to consumptions (Adelekan *et al.*,1998). In any marketing system there are specialized activities performed, these activities are referred to as marketing functions which enhance efficient production and marketing.

A major determinant of the rate of economic development is the efficiency with which sources are allocated which in turn depends upon the functions of the marketing system. Abbott (1993) argues that marketing fulfils the role of stimulating the extending development. This could be achieved by making a person with some land to move from semi-subsistence of growing produce regularly from sale. He added that an efficient marketing sector does not merely link sellers and buyers and react to the current situation of supply and demand but also plays a dynamic role in stimulating output and consumption, the essentials of development. On the task and responsibilities of marketing in stimulating agricultural growth and thus, economic development, Ehirim (2004) summarized them as finding a buyer and transferring ownership, assembling, transporting and storing, sorting, packing and processing, providing the finance for marketing and risk taking, assorting and presenting to consumers.

2.5 Roles and Function of Market Stakeholders

In the marketing system, there are many stakeholders that are involved in the market activity. The stakeholders start from the farmers as the producer of the output, trader and government as the policy maker in the market. All the stakeholders must accomplish many specific tasks which contain two general aims. First, they have to determine demand and changes in demand for products. Second, they have to consider the efficiency in the marketing process by improving pricing and operational efficiency (Cramer, 2001).

Marketing is defined as the performance of all business activities involved in the flow of the products and tend to be the value that is added on to the farm output (Kohls 2002; Makeham *et al.*, 2005). In a market economy, every scarce commodity commands a price, and the price is determined by the demand and supply of products. A large number of other suppliers also detect and respond to changes in demand for the products or services. In a competitive system, producers will increase the output as response to higher prices because by doing so they can improve their earning. It is the motive of profit that makes the market system work.

The study of marketing involves various approaches, but there are three common approaches that are used in the marketing study. First, the functional approach studies marketing in terms of the activities that are conducted in getting farm products to the consumer. By using this approach, it is feasible to analyze the activity and to compare them against others doing the same job or against standard of performance. Second approach is the institutional approach which examines the activities of business organization or people involved in the marketing. The effectiveness of marketing institution depends on the involvement of relevant stakeholders in the market. The third approach is the market structure approach that emphasizes the nature of market competition and attempts to relate the variables of market performance to types of market structure and conduct.

Analyzing the functions of stakeholders that involve in the market is partially helpful to evaluate the marketing costs. Functional approach is also useful in understanding the different marketing costs of various products. There are two characteristics of marketing function. First, the function of the market affects not only the cost of marketing product

but also the value of products to consumers. Second, marketing function can be performed by anyone and anywhere in the market system (Kohls, 2002).

In a commodity system approach, the functional and the institutional analysis are based on the identification of marketing channel. The analysis of marketing channel is focused on providing the knowledge of the flow of goods and services from the farmer as the producer to the final destination or consumer (Scott 1995; Cramer 2001). The analysis of marketing channels is intended to provide a systematic knowledge of the flow of goods and services from their origin (producer) to their final destinations (consumers) (Mendoza et al., 1995). This is acquired through studying the participants, with the first step to determine what and which final markets are. While the sources and destinations are clearly identified, the study of participants within the channels, the activities they perform and the overall actions can easily be investigated.

Ramakumar (2001) identified the different marketing channels from which he computes ranking based on different performance indicators to arrive at marketing efficiency. The indicators include what producers share in the consumer's price, marketing cost of intermediaries, marketing margin of intermediaries and return per money investment.

2.6 Theoretical Framework for Studying Marketing

Agricultural marketing can be defined from both the micro and macro view point. The micro view point is concerned with the farmer or the business firm. Olukosi and Isitor (1990), defined agricultural marketing as the performance of all business activities which direct the forward flow of goods and services to the consumers in order to accomplish the producer's objective.

The macro view point of marketing on the other hand, is a big picture view. It examines the total system of economic activities concerned with the flow of agricultural products from producer to the final consumer. The kind of institution and the price making mechanisms that guides those flow, the interaction among consumers, agro-business, farmers even government that determines the level of expenditures and income to market participants.

Scholars have postulated various analytical frameworks for the study of marketing. These frameworks are generally attempts to break down marketing systems into parts, which can be understood more readily. These approaches include the functional approach, the institutional approach, the analytical approach, the problem identification approach, the commodity approach, the performance criteria approach and the structure-conduct-performance approach (Admasu, 2000)

2.6.1 Functional approach

The functional approach attempts to understand marketing through classifying the activities, which occur in the market process by breaking them into functions. Marketing function is referred to as major specialized activities performed in accomplishing the market process (Meijer, 1994). A marketing function is defined as a major specialized activity performed in accomplishing the marketing process. This topic discusses a widely acceptable list of marketing functions which includes exchange functions, physical functions and facilitative functions. Exchange functions are mainly composed of buying and selling while physical functions are comprised of storage,

transportation and processing. However, facilitating functions are composed of standardization, financing, risk bearing and market intelligence.

2.6.2 The institutional approach

The institutional approach analysis is by studying the various institutions, agencies and business structure, which carry out the marketing process. Meijer (1994), explained that marketing institution be grouped into merchants, agents, speculators and processors of products. The merchant normally holds title to the product they handle. Agents could either be brokers or commissioned agents. Speculators are merchants who would buy products with the major purpose of profiting from price fluctuation and therefore bear the risks associated with any unfavorable changes in price.

2.6.3 Structure-conduct-performance approach

Kari, Jaafar, Allen, and Couvillion (2002) investigated the relationship between Profitability and market power in the trucking industry that transported agricultural commodities. The aim of that investigation was to determine if the Motor Carrier Act of 1980 had produced the desired market structure. The research method was based on the SCP paradigm. Results of this study indicated that efficiency is the driving force behind performance of firms. These results suggest that the 1980 Motor Carrier Act of 1980 had produced its intended purpose in the agricultural commodities transport industry. A structure-conduct –performance relationship is assumed to exist even though in the view of some analysts, the relationship could occur in the reverse direction, performance-conduct-structure approach.

2.7 Market Structure

This refers to those characteristics of the market which strategically influence the nature of competition and pricing (Olukosi and Isitor 1990). The characteristics considered important in determining market structure according to Olukosi and Isitor (1990) are the number and relative size of buyers and sellers, the degree of product differentiation, the ease of entry and exit of buyers and sellers into and out of the market, status of knowledge about costs, prices and market conditions among the participants in the market. In other words the term market structure refers to those organizational characteristics of a market which influence the nature of competition and pricing within the market. A market can exhibit any of the following structures: monopolistic competition, perfect competition, oligopoly or pure monopoly.

(Kotler, 1999) opined that the three theoretical market models often used in analyzing market structure are the perfectly competitive market, oligopolistic market and the monopolistic market. Some market structures result in highly competitive and efficient markets, but others tends to be less satisfactory. The structure of a market is in turn, an important indicator of the conduct and economic performance of the market

2.8 Market Conduct

Market conduct indicates the ways by which firms compete, whether they look for new techniques and apply the techniques early as practicable or whether they are dis-investing and transferring funds elsewhere. The sole aim of marketing is found on the successful movement of produce from point of production to the ultimate putting into consideration time, price and quality of produce at the point of consumption.

The terms market conduct means the pattern of behaviour in the market between the sellers and the buyers. It is the behaviour which enterprises follow in adapting to the market in which they sell or buy. In particular, the method employed to determine prices, sales promotion and coordination policies and the extent of predators or exclusionary tactics directed against established rival(s) or potential entrants (Ham, 1993).

This relates to the behavior of the firms or the decisions that firms make relating to their pricing and output policy and other competitive tactics (Olukosi and Isitor 1990).

According to them, the most important factor used in assessing market conduct are;

- Methods of determining price of output;
- Sale promotion policy;
- Presence or absence of exclusionary tactic directed against established rivals;
- Research and development.

Market conduct is heavily influenced by the market structure. It is the link between structure and performance. The behavior of sellers could affect the efficiency of the entire marketing system, government throughout the world watch closely the conduct of the market to make marketing of agricultural products more efficient.

2.9 Market Performance

Market performance is defined as the strategic end result of market adjustment engaged in by buyers and sellers. In other words, market performance is the appraisal of the extent to which the interactions of buyers and sellers in a market stimulate results that are consistent with social purposes (Olukosi, 1990). According to Olukosi and Isitor (1990), it is difficult to measure market performance because of the subjective nature of

performance measure. However, performance measures could be modified to suit the nature of the particular problem.

The term performance has come into increasing use in place of efficiency even though it is less precise but probably more generally applicable. Performance is believed to be more generally applicable because it embraces a wider dimension than efficiency, thereby giving a better picture of the marketing system.

Jalani (2000) described market performance as a measure of how its aims are accomplished. On the whole, efficiency of agricultural and food marketing system in Nigeria can be improved upon when the knowledge of market structure, conduct and performance are properly applied.

The measures used in economics are physical measures, nominal price value measures and fixed price value measures. These measures differ from one another by the variables they measure and by the variables excluded from measurements. The measurable variables in economics are quantity, quality and distribution. Comparison of basic measure types are variables, physical measure, fixed-price value and nominal price value (Stigler, 2006).

2.9.1 Variables considered in marketing

Quality as a variable refers to qualitative changes in the production process. Qualitative changes take place when relative of different constant-price input and output factors alter. Distribution as a variable of the production refers to a series of events in which the unit prices of constant-quality products and inputs alter causing a change in income

distribution among those participating in the exchange. The magnitude of the change in income distribution is directly proportionate to the change in prices of the output and inputs and to their quantities. Productivity gains are distributed, for example, to customers as lower product prices or to staff as higher pay.

2.9.2 Physical measure

A physical measure can measure the quantity of a variable with unchanged quality. Using a physical measure provides that the quality of the measurement object has been specified and the quality remain homogeneous. If the presumed unchanged quality is not realized, the measurement gives results which are hard to interpret. In this case, the results are affected by changes in both quantity and quality but in which proportion is unknown. Values of the objects being measured are by no means related to the physical measures, hence, changes in prices do not affect the measurement results. Normally it is not possible to combine physical measures. They neither are best suited for narrow-focused measurements with neither quality nor value alterations. Therefore, physical measures are best for measuring the real process, and this is why they are used a lot as tools of operative management. Typical ratios in a real process are capacity, efficiencies, lead times, loads, faults, product and process characteristics, etc.

2.9.3 Fixed-price value

A fixed-price value measure is used to measure changes in quality and quantity. True to its name, prices are kept fixed for a minimum of two measuring situations. For this reason, it is possible to define the changes in quality and quantity of a most varied and wide range of commodities, keeping apart the changes in income distribution. Fixed-price measures are suited for wide-ranging measurement because it is possible to combine different commodities based on their value. In a fixed-price measurement, a

change in quality means that the relative quantities and relative prices of various commodities change. The best known applications of this are the productivity formula and the production function. The production function is always presented with fixed-price ratios, i.e., its variables, productivity and volume, are fixed-price values.

2.9.4 Nominal price value

The most common figures in measuring business are the figures because they can describe the profitability of business process. Variables in the nominal price measurement are quality, quantities and distribution (prices). There are no excluded variables. Nominal price measures of value are suited for measuring profitability and its components as well as the value of reserves. Return and costs in the loss and profit statement are typical examples of a nominal price. In short-term reviews with only little production income distribution taking place, nominal price values are well suited for estimates of fixed price values.

2.10 Marketing Margin

In a community subsystem approach, the institutional analysis is based on the identification of marketing channels. This approach includes the analysis of marketing costs and margins (Mendoza et al, 1995). A marketing margin can be defined as a difference between the price paid by consumers and that obtained by producers; or as the price of a collection of marketing services that is the outcome of the demand for and supply of such services (Jalani, 2000). It measures the share of the final selling price that is captured by a particular agent in the marketing chain (Mendoza *et al.*, 1990).

As Mendoza *et al.* (1995) argued, when there are several participants in the marketing chain, the margin is calculated by finding the price variations at different segments and

then comparing them with the final price to the consumer. The consumer price is then the base or the common denominator for all marketing margins. Computing the total gross marketing margin (TGMM) is always related to the final price or the price paid by the end consumer and expressed as a percentage. In marketing chain with only one trader between producer and consumer, the net marketing margin (NMM) is the percentage over the final price earned by the intermediary as his net income once his marketing costs are deducted.

$$\text{TGMM} = \frac{\text{Consumer price} - \text{farmer price}}{\text{Consumer price}} \times 100 \dots \dots \dots (1)$$

$$\text{GMMP} = \frac{\text{Price paid by consumer} - \text{marketing gross margin}}{\text{Price paid by the consumer}} \times 100 \dots (2)$$

$$\text{NMM} = \frac{\text{Gross margin} - \text{marketing cost}}{\text{Price paid by the consumer}} \times 100 \dots \dots \dots (3)$$

Where,

TGMM = total gross marketing margin

GMMP = gross marketing margin of producers

NMM = net marketing margin

2.11 Marketing Channel

Goods are designed for exchange. This take place when the goods are physically moved from production premises into the outlets for onward transmission to various consumers. The outlets consist of middlemen and agents. Hence, the path through which a product moves from the producers to the final consumers is referred to as marketing channel (Olukosi and Isitor, 1990).

Marketing channels are important in evaluating the marketing system as they indicate how the various market participants are organized to accomplish the movement of a

product from the producers to the final consumers. They also facilitate the distribution of products at lower cost per unit than the producer could. Thus, the activities of market participants enhance the buying needs of the consumer.

However, the number of exchanges involved in the selling of a product is determined by the number of market participants in a particular channel, hence the succession of markets through which products pass until they reach the consumer is referred to as marketing chain. This could be long or short. A long marketing chain implies that the commodity changes hands many times before reaching the consumer. A short marketing chain implies that the commodity changes hands few times before reaching the consumer. The longer the chain, the higher the price the consumer will have to pay and vice versa (Olukosi and Isitor, 1990).

2.12 Empirical Studies on Palm Oil Marketing in Nigeria

Eleni (2001) noted that the structure of the palm oil producer and wholesaler markets in his study area was oligopoly while the structure of retail market was competitive. The common conducts of the markets he identified were collusion through formation of association. The associations were mainly used to control the market price of the palm oil product. They were more organized and effective in the wholesale segment, hence they could control producer and retail price by their bulk purchases. He also reported that wholesalers used future purchase to make profit. The wholesale also made bulk from remote neighbouring villages and sell to the retailers to make greater margin. The palm oil was usually packed in white 20 litre jerry can for wholesale and retail market participants. Retailers used 1 litre bottles for bit sales to final consumers. The price paid by final consumer was usually prevailing market price and that was the retail price.

Peace and development projects (2011) reported that there is adequate competition among the processors in the market and no single individual or organization can influence the market. The introduction of a liberalized system of marketing in the palm oil trade ushered in a lot of buyers and sellers in marketing of the palm oil thereby creating job opportunities for thousands of people and eliminating the imperfection of the monopsony earlier created by the Commodity Boards in the country.

Nwaru (2011) noted that the total cost items for processors are larger in value than that of non processors (₦19,085.83 against ₦17,183.50). This is because much task is involved in processing which incurs cost too. Also the revenue per drum of palm oil is higher for processors due to aggregate sales of other products such as palm kernel, shell, fibre etc. Even though the cost of storage and marketing per drum of palm oil is higher than the non-processors, their marketing margin is still higher than expected. Revenue from sales of the bye-products more than compensate for the increased cost of processing and storage. Interest was imputed into the storage cost for the length of time the product was in the store. An average rate of 8.75% interest was charged for storing 1 drum of palm oil for an average period of 6 months. Storage starts from the month of March to May and sales of stored product starts from August. He further noted that the average gross marketing margin per drum of palm oil of the respondents who process palm oil they stored and marketed is higher than those who do not process same by themselves. This confirms the argument that net returns resulting from storage of palm oil is more compared to when palm oil is not stored (Iwena, 2002). On the basis of the findings, the study recommends that processors of palm oil acquire knowledge on the modern ways

of processing palm oil and government to provide incentives such as modern method of processing palm oil to encourage youths into the business.

2.13 Review of Analytical Tools

2.13.1 Marketing efficiency

Marketing efficiency is the degree of market performance. According to Giroh *et al.* (2010) it is defined as the maximization of ratio of output to input in marketing. They further reported that the marketing inputs are the costs of providing marketing services while the marketing outputs are the benefits or satisfaction created or value added to the commodity as it passes through the marketing system. Hence markets are efficient when the ratio of the values of output to the value of input throughout the marketing system is maximized; the higher the ratio, the greater the marketing efficiency (Olukosi *et al.*, 2005).

Marketing cost is measured by cost of resources used in providing marketing services. Hence it is the current expenses incurred in the performance of the marketing functions as a commodity moves from the importers to the ultimate consumers. It includes the costs of transportation, marketing charges, costs of loading/offloading and storage. The marketing inputs are the costs of providing marketing services while the outputs are the benefits or satisfaction created or value added to the commodity as it passes through the marketing system.

2.13.2 The gini coefficient

The gini coefficient was developed by Corrado Gini an Italian statistician of the early 20th century (Investopedia, 2013) and published in his 1912 paper titled “Variability and Mutability”. It is typically expressed as a percentage and often used to measure income

distribution. Thus, the concept can easily be adapted to visualize information regarding industry concentration. Gini coefficient is most easily calculated from unordered size data as the “relative mean difference,” that is the mean of the difference between every possible pair of individuals, divided by the mean size (Taru *et al.*, 2010). They further stated that the gini coefficient ranges from zero to one. A perfect equality in concentration (low) of sellers is expected if gini coefficient tends towards zero, while perfect inequality in concentration (high) of sellers is expected if gini coefficient tends towards one. If gini coefficient equals to one then the market is imperfect and if Gini coefficient is equals to zero the market is perfect and competitive.

2.13.3 Concentration ratio

In economics, a concentration ratio is a measure of the total output produced in an industry by a given number of firms in the industry. The most common concentration ratios are the CR₄ and the CR₈, which means the market share of the four and the eight largest firms. Concentration ratios are usually used to show the extent of market control of the largest firms in the industry and to illustrate the degree to which an industry is oligopolistic. The standard tools of competition economists and competition authorities to measure market concentration are the Herfindahl index (HHI) and the concentration ratios (CR(n)). These two are known as the traditional structural measures of market concentration (based on market shares). The concentration of firms in an industry is of interest to economists, business strategists and government agencies. for example CR₄=0 %, the four largest firm in the industry would not have any significant market share. Total concentration100% means an extremely concentrated oligopoly. If for example CR₁= 100%, there is a monopoly. Low concentration0% to 50%. According to Kohls and Uhl (1985) rule of thumb, a four enterprise concentration

ratios of 50 percent or more is indicative of strongly oligopolistic industry, of 33-50 percent a weak oligopoly, and less than that, an un-concentrated industry

2.13.4 Multiple regression

Regression analysis is a technique which examines the relationship of a dependent variable (response variable) to specified independent variables (explanatory variables). Regression analysis can be used as a descriptive method of data analysis (such as curve fitting) without relying on any assumptions about underlying processes of generating the data.

The key relationship in a regression is the regression equation. A regression equation contains regression parameters whose values are estimated using data. The estimated parameters measure the relation between the dependent variable and each of the independent variables. When a regression model is used, the dependent variable is modeled as a random variable because of either uncertainty as to its value, or inherent variability. The data is assumed to be a sample from a probability distribution, which is usually assumed to be a normal distribution (Eboh, 1998).

There are two commonly used methods of parameter estimation: (1) Least Square Estimator (LSE) (2) Maximum Likelihood Estimator (MLE). Both are used in estimating the unknown parameter. The key idea behind the maximum likelihood is the likelihood function. The Ordinary Least Square (OLS) is concerned with picking parameter estimates that yield the smallest sum of squared errors in the fit between the model and data, while MLE is concerned with picking parameter estimate that imply the highest probability or likelihood of having obtained the observed data i.e. it consists in estimating the unknown parameters in such a manner, the probability of observing the

given Y's is as high (or maximum) as possible (Liao, 1994; Johnston and Dinardo, 1997).

Maximum likelihood is the most efficient (and sometimes the only) way to estimate the parameters of specifications that involve limited dependent variables. The OLS estimator is used in linear regression model and has advantage than MLE in ease of interpreting results. Unfortunately, this model is applied only to cases in which the dependent variable is continuous. The MLEs are most attractive because of their large sample or asymptotic properties. This method is better than OLS (Ordinary Least Square) because of the assumption about the probabilistic nature of the disturbance term.

CHAPTER THREE

METHODOLOGY

3.1 Study Area

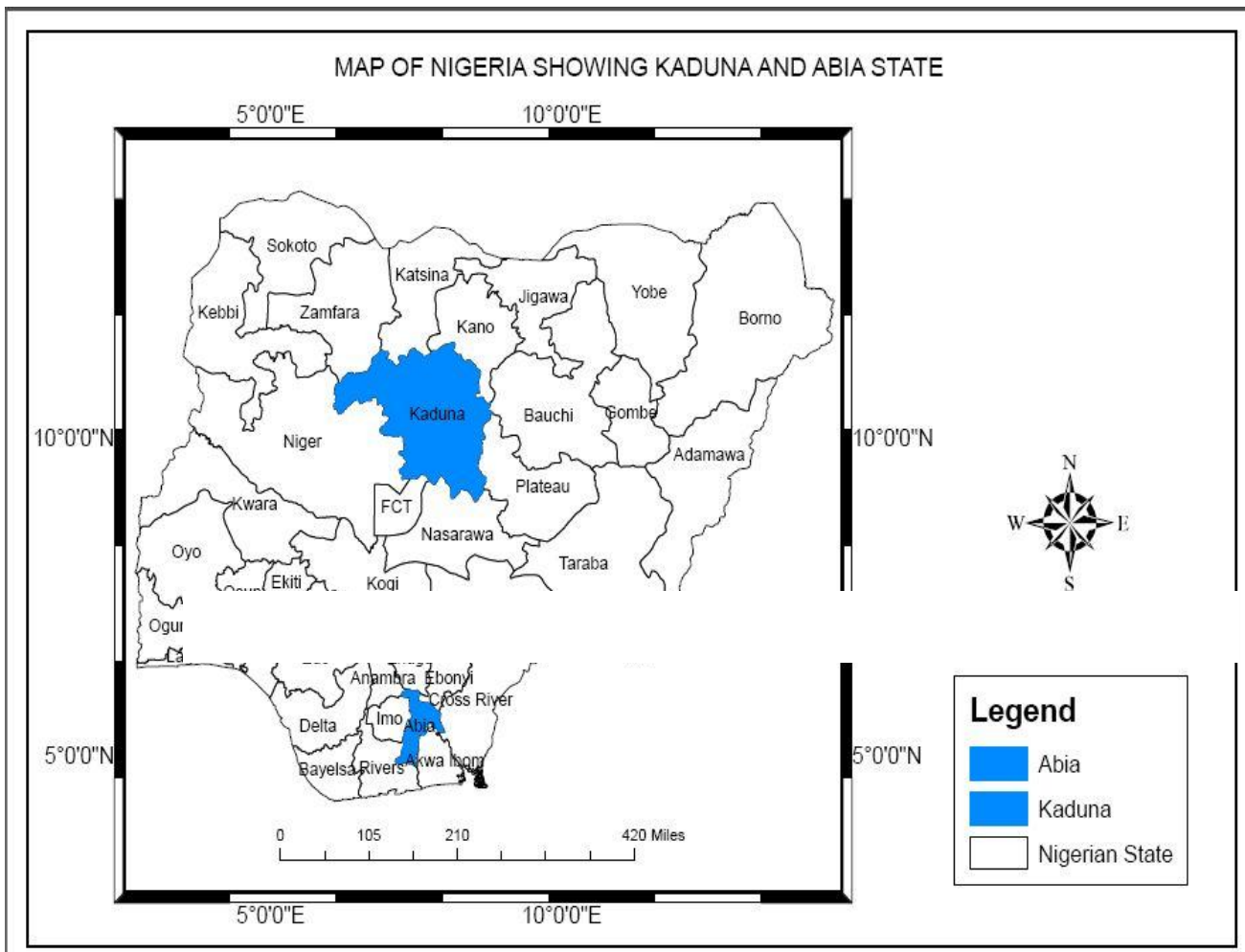
Abia state is one of Nigeria's 36 states. It consists of 17 Local Government Areas. Abia State is located in the Southeast region of Nigeria, it lies within approximately latitudes $4^{\circ} 40'$ and $6^{\circ}14'$ North, and longitudes $7^{\circ} 10'$ and 8° East. Abia State is bounded on the north and north east by Anambra, Enugu and Ebonyi States. To the West of Abia is Imo State, to the east and Southeast are Cross River and Akwa Ibom States and to the South is Rivers State. The southern part of the State lies within the riverine part of Nigeria. It is low lying with a heavy rainfall of about 2400mm/year which is intense between the months of April to October. The rest of the State is moderately plain. It has a projected population of 3,278,699 in 2011 from 2006(2006 population census).

Agriculture is the major occupation of the people of Abia state. This is induced by the rich soil which stretches from the northern to the southern parts of the state. Subsistence farming is prevalent and about seventy percent of the population is engaged in it. A few farmers also produce on a large scale. Farming in the state is determined by the seasonal distribution of rainfall (Nwaru, 2011). The main food crops grown are yam, cassava, rice, cocoyam and maize. The cash crops include oil palm, rubber, cocoa, banana (Galleria media limited, 2004).

Kaduna State lies between latitudes 10° and $11^{\circ}31'N$ and longitudes $7^{\circ}30'$ and $9^{\circ}E$ of the prime meridian (Ahmed, 2001). There are 23 Local Government Areas (LGAs) in Kaduna State. Kaduna State is within the derived Savannah zone of Nigeria. The weather is characterized by dry and wet seasons. Temperature ranges between $28^{\circ}C$ and $34^{\circ}C$. Farming is the main occupation of the people with emphasis on the cultivation of

cereal like maize, sorghum, rice, millet and legumes like cowpea, soya bean and groundnut which are rain fed.

Figure 3.1 Map of Nigeria showing Abia and Kaduna States



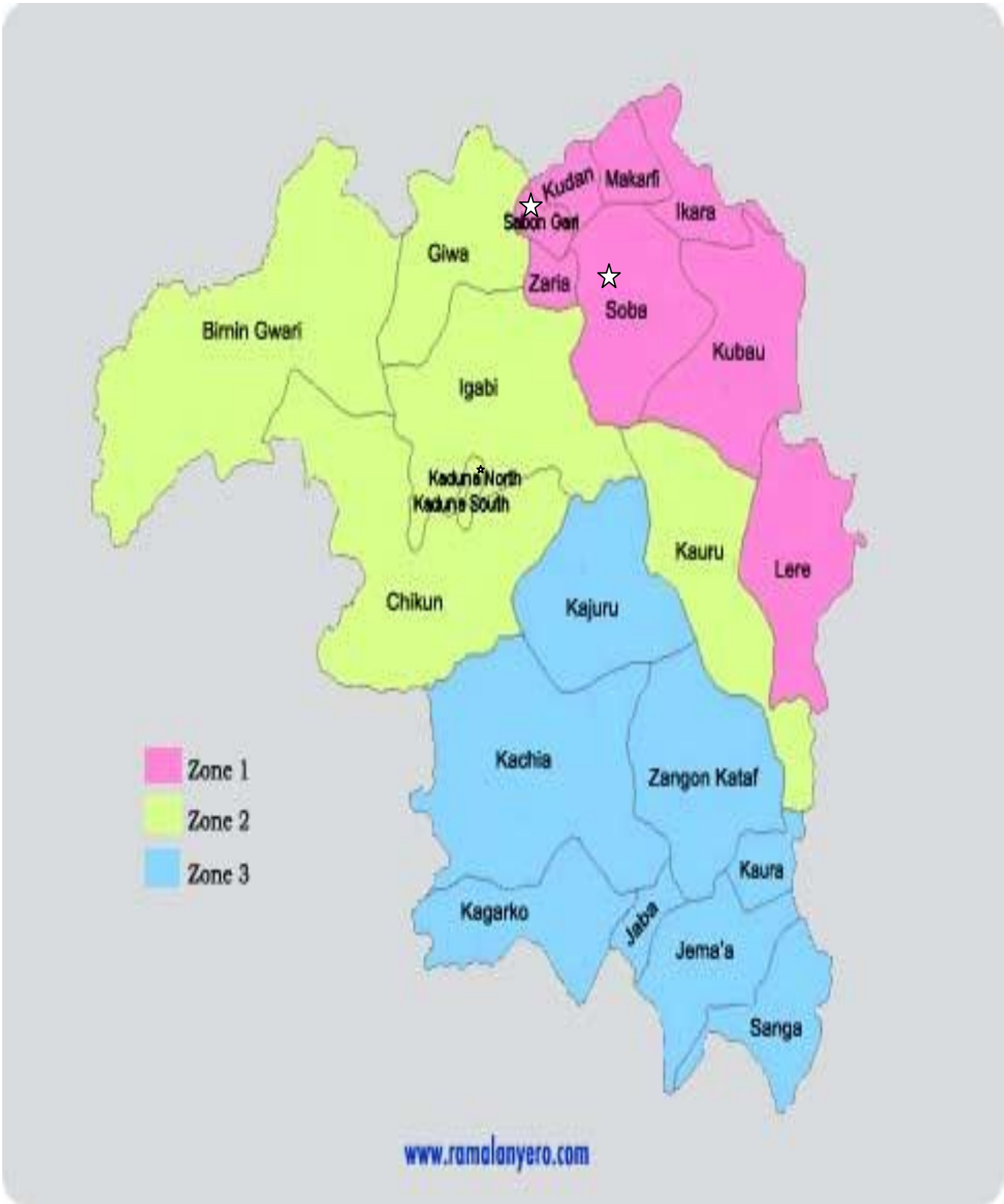


Fig 3.2: Map of Kaduna state showing the selected local government areas



Fig 3.3: Map indicating the selected local government areas in Abia state

3.2 Sampling and Data Collection Methods

Data for this study was obtained from primary and secondary sources. The primary data was cross sectional data collected using personal interviews using structured questionnaire among the oil palm marketers in the study areas. Multi-stage sampling technique was used for this study. In the first stage, three Local Government areas each were randomly selected from Abia State and Kaduna State. The Local Government areas selected from Abia were Umuahia north, Aba and Isialangwa south while the Local Government areas selected in Kaduna State were Sabon-gari, Soba and Kaduna

North. In the second stage, two markets were randomly selected from each of the Local Government areas and these were Ekeapara, Umuokpara, Old goodshed, new goodshed, Afor-Umuda, Eke-Umuda, Central market, Railway, Railway, Bayan gidaniya, Tundun and Diyan market. Finally fifteen marketers was randomly selected from each of the selected market giving a total of 180 respondents, these included the middlemen between the villagers that produce the oil and the wholesalers that gathers them in cans, drums and then sell to marketers(wholesalers) from the north which in turn sell to the retailers was used for the study. Focus groups were used to get response from the target audience.

3.3 Analytical Tools

The analytical tools used for this study were:-

- a) Descriptive statistics
- b) Market structure analysis
- c) Marketing margin
- d) Marketing efficiency
- e) Regression model

3.3.1. Descriptive statistics

The descriptive statistics used were frequency, mean, range and percentages to achieve objective i and iv.

3.3.2. Market structure analysis

3.3.2.1 Gini coefficient

The gini coefficient is a numerical representation of the degree of inequality in a population. The gini coefficient ranges between 0 and 1 used in determining the level of concentration in the market structure. A gini coefficient of 0 is indicative of a perfect equality in seller/buyer concentration while a coefficient of 1 means perfect inequality, the higher the concentration, the higher the inefficiency in the market structure. It was used to achieve part of objective ii. Mathematically expressed as

$$GC = 1 - \sum_{k=0}^n [(X_k - X_{k-1})(Y_k + Y_{k-1})]$$

Where GC=Gini coefficient

X_k = the cumulated proportion of the population variable, for $k = 0 \dots n$, with $X_0=0$ and $X_n=1$

Y_k = the cumulated proportion of the income variable, for $k = 0 \dots n$, with $Y_0=0$ and $Y_n=1$

Σ =summation sign.\

3.3.2.2. Concentration ratio

This was used to measure part of objective ii. The concentration ratio measures the market share of each supplier in the market. The greater the degree of concentration, the greater the possibility of non-competitive behavior in the market. It was used in part to determine the market structure. This can be calculated as;

$$CR = \frac{\text{sales volume of largest four firms}}{\text{Total volume of sales}} \times 100$$

3.3.3.1 Marketing margin:

This was used to achieve part objective iii. It is the difference in price between what the farmer (producer) receives for a certain product and the amount the consumer pays for an equivalent amount of that product (Olukosi *et al.*, 2005). The marketing costs and profits of market participants are both integrated here. Marketing costs includes all the expenses of making the product available from point of production to point of consumption. These marketing costs are; costs of processing, transportation costs, loading and offloading costs and the cost of handling at all levels of the marketing process (Kohl and Dawney, 1972, Olukosi and Isitor, 1990). Marketing margin can be expressed in percentage terms as:

$$\text{Marketing margin} = \frac{\text{Sellingprice} - \text{costprice}}{\text{sellingprice}} \times 100$$

Where: selling price = retail price

Cost price = producer price

3.3.3.2 *Marketing efficiency*

Olukosi *et al.* (2005) defined marketing efficiency as the maximization of the ratio of output to input in marketing. Marketing efficiency is calculated as

$$ME = \frac{\text{valueaddedbymarketing}}{\text{costofmarketingservices}} \times 100$$

Where ME= Marketing Efficiency

Value added is measured by the prices that consumers are willing to pay in the market for farm products. This was used to achieve part of objective (iii).

3.3.4 **Multiple regression analysis**

This was used to achieve objective v. The model is specified below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + + e$$

Where,

Y = Marketing performance(Naira)

X₁ = Age of trader (years)

X_2 = Education (years of formal schooling)

X_3 = Years of experience in oil palm marketing (years)

X_4 = Membership of cooperative association (years)

X_5 = Access to market information (dummy 1= access, 0 = otherwise)

X_6 = Gender (dummy 1= male, 0 = female)

β_0 = constant term

$\beta_1 - \beta_8$ = coefficients for the respective variables in the regression model

e = error term

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Socio – Economic Characteristics of Palm Oil Marketers

4.1.1 Age distribution of the palm oil marketers

The results presented in Table 4.1 result reveal that in Abia State, the marketers 12.5% of marketers are within the age of 21 to 30 years. Those within the age of 31 to 40 years are 45%. About 27% of the marketers are within the age of 41 to 50 years, 11.3% fall within 51-60 years of age. Only 3.8% were above 60 years of age. The average age of the marketers was 38 years. In Kaduna State, the marketers within the age of 21 to 30 years were 18.3%, those within the age of 31 to 40 years are 43.3%. 23% were within 41-50 years. Those within 51-60 years were 10%. Only 5% were more than 60 years of age. The average ages of palm oil marketers in Abia and Kaduna were 38 and 36 years respectively. These results indicate that in both study areas, young marketers are more in the marketing of palm oil. This agrees with Admasu (2001) that age greatly determines the extent of participation in any form of business. This implies that palm oil marketing need able bodied men and women to carry out tasks such as loading, offloading, boiling of the palm oil in the drums which are some of the activities carried out in palm oil marketing.

Table 4.1: distribution of participants based on their age

Age (Year)	Abia Frequency	Kaduna Frequency	Combined States Frequency
21 – 30	10 (12.5)	11(18.3)	21(15.0)

31 – 40	36(45.0)	26(43.3)	62(44.3)
41 – 50	22(27.5)	14(23.3)	36(25.7)
50– 60	9(11.3)	6(10)	15(10.7)
>60	3(3.8)	3(5)	6(4.3)
Total	80	60	140
Average	20	15	32
Educational Qualification			
No formal education	14 (17.5)	8(13.3)	22(15.8)
Primary	25 (31.3)	17(28.3)	42(30)
Secondary	36(45)	28(46.7)	64(45.7)
Tertiary	5(6.3)	7(11.7)	12(8.6)
Marketing Experience			
1 -10	22(27.5)	22(36.7)	44(31.4)
11 -20	11(13.8)	6(10)	17(12.1)
21 -30	44(55.0)	27(45)	71(50.7)
31 -40	3(3.8)	5(8.3)	8(5.7)
Total	80	60	140
Minimum	3	5	8
Maximum	44	27	71
Average	24	16	40

Figures in parentheses are percentages

4.1.2 Gender of the respondents

The result in Table 4.1 shows that male marketers were 72.5% and the female marketers 27.5%. In Kaduna State, 75% were male while 25% were female. This implies that men are more than women in palm oil marketing. Gender differentiation comes as a result of the specific experiences, knowledge and skills which women and men develop as they carry out their productive and reproductive responsibilities assigned to them (Idu *et al.*, 2005).

4.1.3 Educational qualification of palm oil marketers

The results presented in Table 4.1 showed the level of education of the marketers in the study area. It was revealed that in Abia state, 45 % of the respondents had secondary education. About 31% of the respondents had primary education. Those who do not have formal education are 17.5%. Only 6.3% have tertiary education. In Kaduna state, 46.7% of the respondents had a secondary education. Those found with primary education were 28.3%. About 13% of the respondents had no formal education. Only 11.7% of the respondents have tertiary education. These results imply that majority of the marketers had one form of education or the other. Education is very important in marketing business because it will influence decision making process. Educated marketers may have better access to market information compared to non educated marketers thereby increase his or her marketing efficiency.

4.1.4 Marketing experience of palm oil marketers

As shown in Table 4.1, majority of the respondents do have marketing experience in palm oil business. In Abia state 13.8% had between 11- 20 years of marketing experience. This was followed by 27.5% of the respondents which have had 1 to 10 years of experience. Then 55.0% of the respondents had 21 -30 years of experience.

Only, 3.8% had marketing experience between 31 to 40 years. In Kaduna state, 10% had between 11 to 20 years of marketing experience, followed by those who had between 1 to 10 years of business experience which constitutes 36.7%. Those who had 21-30 years constitute 45%. Only 8.3% of the respondents had between 31 – 40years of experience. This shows that palm oil business had been an age long business and also those that have between 1 to 10 years of business experience implies that more people are recently entering the business because of its profitability. Furthermore, the results implied that palm oil marketers must have gained some level of expertise over the years, which further give them a better understanding of socio-economic factors that affect their trading. Abdulsalam (2004) stated that people gain more expertise and mastery with experience in their professions/vocations. He further reported that experience influences a person's perception and understanding of climatic, socio-economic policies and factors that affect the vocation over the years.

4.2 Market Structure and Conduct

Allen *et, al.*, (2005) said that the market structure consist of the characteristics of the organization of a market which seems to influence strategically the nature of competition and pricing within the market. While there is no universally accepted method of analyzing the elements of market conduct, parameters such as number and size of buyers and sellers, entry and exit conditions, marketing channel and market information were analysed to examine the influence of the existing market structure on the market conduct. Examination of the palm oil marketing in Abia and Kaduna states were concentrated on (i) barriers to entry (ii) nature of product (iii) market integration and (iv) market information.

4.2.1 Barriers to entry

As shown in the results presented in Table 4.2, it was revealed that there was no any condition governing entry and exit into the industry. Anybody that has capital and can to enter the firm at any time is free to do so at the retail level. Although in the study areas in Abia, palm oil sellers were mostly wholesalers and middlemen who are in the palm oil traders' union. The reason was to prevent adulteration. In Kaduna state, it was not a must that one belongs to the union but according to respondents in unions, there are benefits in belonging to the union such as the ability take loan, avoid intimidation from those called market heads.

Table 4.2: Distribution of palm oil marketers in palm oil marketers' union

Operating as a member of the palm oil traders' union	Abia State Frequency (%)	Kaduna State Frequency (%)
Yes	46(80.7)	32(69.6)
No	11(19.3)	14(30.4)
Total	57	46

Figures in parentheses are percentages

4.2.2 Nature of the product

The result in Table 4.3 revealed that palm oil sold was red and taste fresh. This was because in Abia state the wholesalers and the middlemen patronize villages that used manual mean (oil mill). In the study areas in Kaduna state, the palm oil sold red and although some respondents complained that they had to boil the palm oil in drums so as to remove the water that was not totally removed so as to retain the freshness of the oil.

Table 4.3: Nature of the product

Red colour of the palm oil determine your market sales	Abia State Frequency (%)	Kaduna State Frequency (%)
Yes	55(68.8)	55(91.7)
No	25(31.3)	5(8.3)
Total	80	60

Figures in parentheses are percentages

4.2.3 Market information

The results presented in Table 4.4 revealed the importance of price information for commodity marketing cannot be over emphasized because the price of a good determines the relationship between buyers and sellers. The study showed that palm oil marketers had prior knowledge of the prevailing prices of the palm oil before they are either sold or bought palm oil. Most respondents in Kaduna state got their information about cost of palm oil from the middlemen in Abia state through mobile phones. Since the information flow is within the marketers, the network makes it difficult for a single buyer or seller to raise the price of palm oil . This has led to increased participation and market efficiency.

Table 4.4: Respondents based their access to market information

Access to information	Abia State Frequency	Kaduna State Frequency
Yes	70(87.5)	55(8.3)
No	10(12.5)	5(91.7)
Total	80	60

Figures in parentheses are percentages

4.2.4 Marketing channel

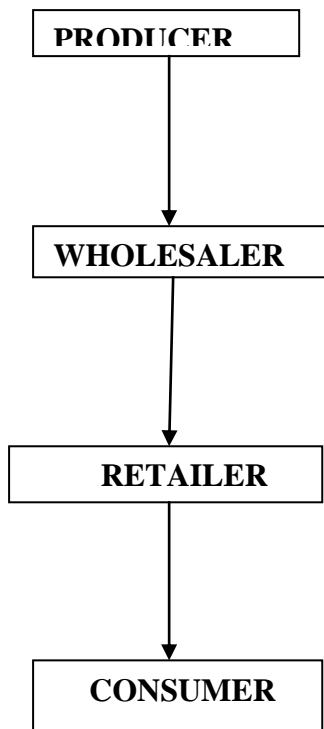


Fig 4.1: Marketing Channel of palm oil marketers in Abia state

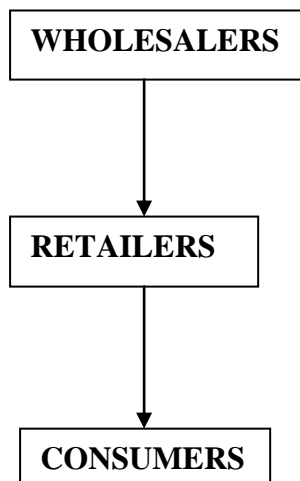


Fig 4.2: Marketing Channel of Palm Oil Marketers in Kaduna state

Marketing Channel

Figure 4.1 as shown above represents the sales flow of palm oil from the producer to final consumer within the selected markets in Abia state. The wholesalers and the middlemen often buy from the producers found at oil mills or those that come to the markets. In turn, the wholesalers and middlemen sell to wholesalers and retailers from Kaduna state. Figure 4.2 as shown above represents the sales flow of palm oil within the selected markets in Kaduna state. Wholesalers sell to the retailers directly due to the absence of middlemen in the selected markets. The retailers then sell to the final consumers.

4.2.6 Number and size of market participants

The results presented in Figure 4.3 and 4.4 showed the Lorenz curves which graphically depict the nature of seller concentration that was quantitatively analysed using gini coefficient. As shown on the graph, the cumulative market share was plotted on the x axis while the cumulative proportion of the total number of traders was plotted on the y axis. A perfectly equalised degree of concentration is depicted by the straight diagonal line $y=x$ called the line of perfect equality or the 45° line. The degrees of inequalities in market share among the traders are shown by the curves which form an arc with the 45° line (line of equality). The extent of deviation of these curves from the line reveals the level of seller concentration among the traders and the nature of market competition in the study area.

The value of gini coefficient (0.65) for oil palm trader in Abia State is tending towards unity indicating that there is a perfect inequality or high level of seller concentration at this level. Further, from the Lorenz curve (Figure 4.3) the extent of deviation of the curve from the line of equality shows an imperfect market competition (65% gini), such that no particular oil palm market participant is large enough to have the market power

to set the price of oil palm, but only a few of the traders handle the major share of the quantity transacted at the market.

In the case of oil palm marketers in Kaduna State, the wholesalers, the market was found to be purely competitive (gini 48%) as indicated in the Lorenz curve (Figure 4.4). Additionally, the calculated gini coefficient (0.48) pointed towards a low level of seller concentration. It could be said that there are many buyers in the market purchasing a standardized product. Therefore, the structure is perfectly competitive.

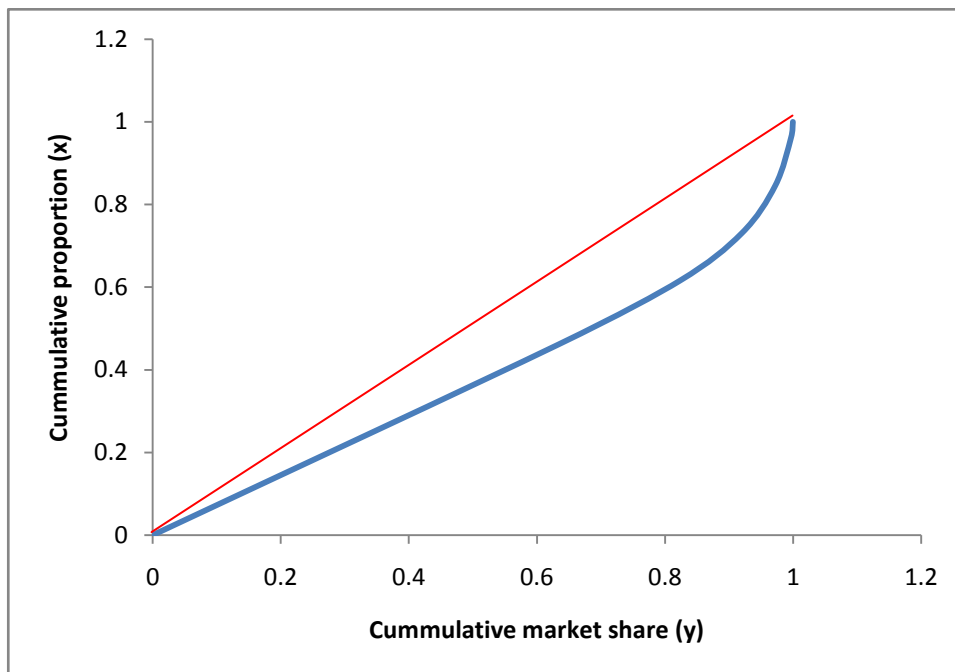


Figure 4.3: Lorenz curve for palm oil marketers in Abia State

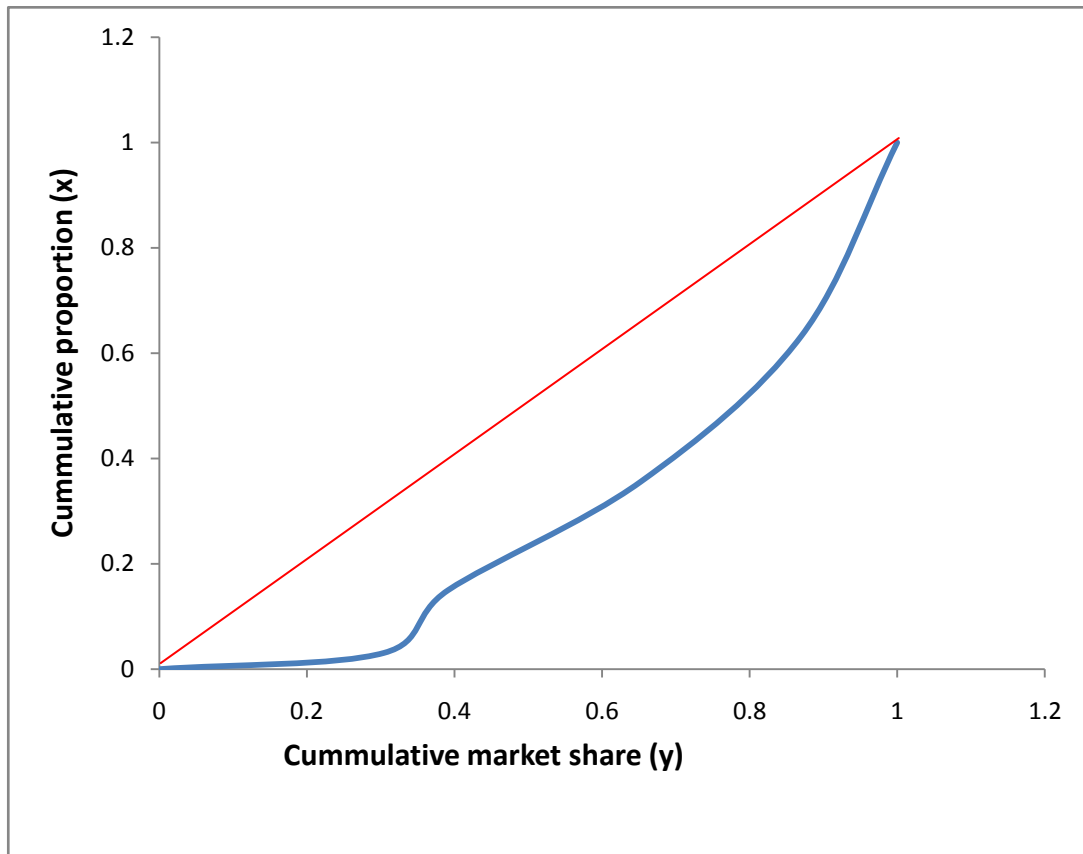


Figure 4.4: Lorenz curve for palm oil marketers in Kaduna State

4.2.7 Concentration ratio

The concept of concentration ratio was used to further determine the structure of oil palm marketing in Abia and Kaduna States. The concentration was therefore computed by computing the total monthly sales of the largest four firms and then divided by the total monthly sales of the traders. The result revealed a concentration ratio of 35.05%, indicating the weak oligopolistic nature of the market while the concentration ratio for oil palm marketers in Kaduna was 24.74% which indicates an un-concentrated market. An oligopolistic market is a market where firms are engaged in selling differentiated products, they are price makers and a simple move by one firm or trader can have an influence on the others (Olukosi and Isitor, 1990).

$$CR = \frac{1697800}{4844198} \times 100 = 35.05\%$$

$$CR = \frac{1310600}{5298880} \times 100 = 24.73\%$$

4.3 Market Performance of palm oil marketing

Market performance is defined as the strategic end result of market adjustment engaged in by buyers and sellers. In other words, market performance is the appraisal of the extent to which the interactions of buyers and sellers in a market stimulate results that are consistent with social purposes (Olukosi, 1990). It is basically the progressiveness of the players in the industry. Because of its subjective nature, the major indicators for analyzing market performance are marketing margins and net returns.

4.3.1 Marketing margin

This refers to the difference in price paid for a commodity at different stages of the marketing system. The margin is determined by calculating the average cost of marketing for each participant in the various stages involved in the transaction of palm oil business. The major participants are wholesalers, retailers, middlemen/commission agents. The result in Table 4.5 shows the average cost and net return of marketing palm oil. It was revealed that in Abia state, the middlemen had a marketing margin of 1.29% which signifies their profit making otherwise known as commission, the retailers had a marketing margin of 1.43% and the wholesalers had a marketing margin of 1.25%. In Kaduna state, the retailers had a marketing margin of 1.21% and the wholesalers had theirs as 1.25%. In comparison, the wholesalers in Abia state had more profit.

Table 4.5: Marketing margin

Marketers in Abia State	Item	Average cost/210litres (₦)	Average sale 210litres (₦)	margin	Net return
Middlemen	Purchase	38000			
	Commission	500			
			38500	1.29	500
Wholesaler	Supply price	38500			
	Empty drum	100			
	transportation	800			
	Storage	100			
	Security	100			
		39600	40100	1.25	500
Retailer	Supply price	40100			
	Empty drum	100			
	transportation	1000			
	Storage	100			
	Security	100			
		41400	42000	1.43	600
Marketers in Kaduna State					
Wholesalers	Supply price	40000			
	Empty drum	100			
	transportation	3000			
	Shop rent	1500			
	Loading	50			
	Others	300			
		44950	45500	1.21	550
Retailers	Supply price	45500			
	Empty drum	100			
	Transportation	100			
	Shop rent	1500			
	Others	200			
		47400	48000	1.25	600

4.3.2 Marketing efficiency

The result in Table 4.6 showed the marketing efficiency of oil palm in Abia and Kaduna State. For the wholesalers in Abia and Kaduna States, costs of marketing services were ₦1100 and ₦4950 respectively; values added were ₦500 and ₦1000 respectively also, then marketing efficiencies were 45% and 20% respectively. For the retailers in Abia and Kaduna, cost of marketing services were ₦1400 and ₦1900, the values added to marketing of oil palm were ₦600 each for respectively. The marketing efficiencies were

43% and 32% which implied that marketing of oil palm in the two States were efficient. Marketing of oil palm was more efficient in Abia compared to Kaduna; this was attributed to long distance to the source of production and processing which is the southern part of the country which increase the cost of transportation thereby reduces the efficiency of oil palm marketing in Kaduna. For the middlemen, the cost of marketing services was ₦400, the value added was ₦50 and market efficiency was 13%.

Table 4.6: Market efficiency of palm oil the study area

Marketers	Estimates	Abia	Kaduna
Middlemen	Cost of marketing services(₦)	400	
	Value added(₦)	50	
	Market efficiency (%)	13%	
Wholesalers	Cost of marketing services(₦)	1100	4950
	Value added(₦)	500	1000
	Marketing efficiency (%)	45%	20%
Retailers	Cost of marketing services(₦)	1400	1900
	Value added(₦)	600	600
	Market efficiency (%)	43%	32%

4.4 Factors Influencing Performance of Palm Oil Marketing in Abia and Kaduna States

The results presented in Table 4.7 below showed the factors influencing the performance of palm oil marketing in the study area. It was revealed that age of the marketers was significant at 5% had exert negative influence on marketing performance this implies that increase in age would decrease the efficiency of oil palm marketing. Age is very important in marketing activities because it determines the physical strength of the marketers. Young people tend to withstand stress and may be willing to take risk. Educational qualification was positive and significant at 10% showed that the higher the

educational qualification, the higher their performance rate. Education is one of the important variables in marketing because it influences decision in marketing activities. The study further revealed that years of marketing experience was positive and significant at 1% level of probability. This implies that increase in years of experience would increase the efficiency of palm oil marketing. Membership of union, gender and marital status were not significant this implies that these variables were not important in oil palm marketing.

Table 4.7: Factors influencing the performance of palm-oil marketing

Variables	Coefficient	Std. Error	t-value
(Constant)	454001.814	2543180.433	0.179
Age	-148989.068	64016.830	-2.327**
Gender	1546807.612	1192692.275	1.297
Marital status	308295.901	1218050.220	0.253
Educational qualification	779071.889	399968.600	1.948**
Marketing experience	215647.807	64051.197	3.367***
Membership in palm oil union	391897.277	739363.409	0.530
Price	610116.132	340763.118	1.790*

*** Significant at 1% ** Significant at 5% * Significant at 10%

4.5 Problems Associated with Palm oil marketing in Abia and Kaduna States

Transportation: this ranked the first and highest problem in Abia and Kaduna states as it represents 31.3% and 25% respectively of the respondents as shown in Table 4.8

below. The problem of poor transportation system is as a result of high cost of petrol and diesel, bad roads both within and outside Abia and Kaduna state and bad state of some of the vehicles used in transporting the products. The respondents suggested that if the railway system will be rehabilitated, it will go a long way in boosting the market in that the price of palm oil will be low, there will be less accident and armed robbery attack.

Inadequacy of efficient and affordable technology: in Abia state, it ranked the fifth problem in Abia state as it had the frequency mean of 12.5% and in Kaduna state, it ranked third problem faced as it had the frequency mean of 8.3% respectively. The technical problems are those problems which prevent optimum conversion of the limited fresh fruit bunch into palm oil for effective marketing and bridging the demand gap for consumer satisfaction. These include inappropriate technologies to improve yield by cultivating poor yield, technical problem of poor extraction methods of palm oil because most palm oil is produced is still relied on traditional methods of oil extraction. The hydraulic press is outside the reach of most processors. There is no scientific method of storage because it was observed that the palm oil both in Abia State and when they leave for Kaduna State, they are stored in drums. The palm oil is to remain there until it finally sold to the final consumer. The marketers say they re-boil the palm oil to remove the water that was not thoroughly removed so as to retain freshness of the oil.

Inadequacy of effective marketing research: this ranked the fourth problem in Abia state as it has the frequency mean of 12.5% and in Kaduna state, it ranked the second problem as it has the frequency mean of 16.7% as shown in Table 4.8 below. Marketing stimulates research and innovations, resulting in new products that if found attractive by consumers can to full employment, higher income and higher standard of living. An

effective marketing system is therefore vital to the future of every nation developed or less developed. They respondents have not really appreciated the vital needs of marketers to carryout research to develop new product within the system.

Cheating/Stealing: this ranks the second problem faced by marketers in Abia state and in Kaduna state, it ranked the highest problem though the frequency means are 25% respectively shown in Table 4.8 below. It was observed that the commissioned agents who deal with wholesalers especially those outside Abia State engaged in cheating practices such as mixing low grade oil with the entire purchase by the wholesalers. They do this to make more profit per litre. Some commission agents will buy palm oil and sell it another wholesaler to make quick money before running around to purchase another set of oil to meet up the earlier contract thereby causing delay deliverance of goods. They do this when demand is high from the northern states because it's mostly via mobile communication.

Dirty environment/Poor hygienic state: this ranked the third problem faced by marketers in Abia state as shown in the frequency mean of 18.8% and in Kaduna state, it ranked the highest problem faced as it has the frequency mean of 25%. From the study, it was observed that both in Abia and Kaduna States, the marketing environment were found dirty and the respondents say it is worse during the rainy season as in the rain drops heaps of rubbish around the place because there is poor drainage system and this ought not to be so because palm oil is edible.

Table 4.8: Problems Associated with palm oil marketing in Abia and Kaduna States

Problems associated with palm oil marketing	Abia State Frequency (%)	Ranking	Kaduna State Frequency (%)	Ranking
Transportation	25(31.3)	1 st	15(25)	1 st

Cheating/stealing	20(25)	2 nd	15(25)	2 nd
Dirty environment/poor Hygienic condition	15(18.8)	3 rd	15(25)	2 nd
Inadequacy of effective marketing research	10(12.5)	4 th	10(16.7)	3 rd
Inadequacy of efficient and affordable technology	10(12.5)	4 th	5(8.3)	4 th

The ranking is on the descending order of importance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study examined the structure, conduct and performance of palm oil trade between Abia and Kaduna State of Nigeria. The specific objectives were to identify and describe the socio economic characteristics of the palm oil marketers in Abia and Kaduna States, describe the structure and conduct of palm oil marketing between Abia and Kaduna states, describe the performance of palm oil marketing between the two States, identify and describe factors influencing the performance of palm oil marketing between the two states and to identify the problems faced by the palm oil marketers in the two States.

Multi-stage sampling technique was employed in selecting the respondents. Primary data for the study were collected using structured questionnaire, administered to 180 respondents, these included the middlemen between the villagers that produce the oil and the wholesalers that gathers them in cans, drums and then sell to marketers (wholesalers) from the north which in turn sell to the retailers was used for the study. Focus group was used to get response from the target audience. Data were analyzed

using descriptive statistics, structure analysis, marketing margin, marketing efficiency and regression analyses.

The results showed that the average ages of palm oil marketers in Abia and Kaduna were 38 and 36 years respectively. In Abia State, the male marketers were 72.5% and the female marketers constitute 27.5. In Kaduna State, 75% were male while 25% were female. Abia state, 45 % of the respondents had secondary education while in Kaduna state, 46.7% of the respondents had a secondary education. Majority of the respondents had a reasonable experience in palm oil business.

The value of gini coefficient (0.65) for oil palm trader in Abia State is tending towards unity indicating that there is an equality or high level of seller concentration at this level. From the Lorenz curve, the extent of deviation of the curve from the line of equality shows an imperfect market competition (65% gini). In the case of oil palm marketers in Kaduna State, the wholesalers, the market was found to be purely competitive (gini 48%) as indicated in the Lorenz curve. The calculated gini coefficient (0.47) pointed towards a low level of seller concentration.

The results further revealed that in Abia state, the middlemen had a marketing margin of 1.29% which signifies their profit making. The wholesalers had a marketing margin of 1.25% and the retailers had a marketing margin of 1.43%. In Kaduna state, the retailers had a marketing margin of 1.25% and the wholesalers had theirs as 1.21%. The marketing efficiencies in Abia and Kaduna State were 3444.47 and 883.34% respectively. Factors influencing marketing efficiency were age, education, and years of marketing experience. The major constraints to palm oil marketing in the study area

were Lack of efficient and affordable technology, lack of effective marketing research and Cheating/Stealing.

5.2 Conclusion

From the study, it is concluded the market structure for palm oil in both states is purely competitive. The conduct of the marketers is affected by market structure. The behavior of the market, the decision in term of their pricing and output policy, their competitive tactics determined the structure. Their prices of palm oil are determined by the forces of demand and supply. In terms of market performance, the marketing margin and percentage returns per market participant were used as indicators for performance. The study revealed that age of the marketer significant had an inverse effect on the performance of oil palm marketing. Education and years of marketing experience increased the efficiency of palm oil marketing. The study showed that profit increases toward Kaduna state from Abia state. This increase is as a result of the additional costs and services incurred in the process of marketing. The cost of drum of palm oil in Abia and Kaduna states shows that there is significant difference at 1% level of probability. The study showed that the cost palm oil increases toward Kaduna state from Abia state. This increase is also as the result of the additional costs and transport services incurred while bringing in the palm oil to Kaduna. Palm oil marketing in Abia could be described as weak oligopolistic while in Kaduna, the nature of oil palm marketing is un-concentrated.

5.3 Recommendations

Based on the findings of this study, the following recommendations were made:

1. The Non – Governmental Organization should assist in the area of enlightenment campaigns, seminars and workshops for training of marketers on area of promoting palm oil marketing through their unions, this will help to improve the marketing system in all ramifications.
2. The railway system should be rehabilitated around the nation i.e from the palm oil producing states to the northern parts. This will help reduce accidents on highways, ease transportation of palm oil to towns; this will help in reducing the cost of palm oil.
3. The feeder roads should be rehabilitated by the government to allow for easy transfer of palm oil from villages to the towns where they are been marketed.
4. The marketing environment where the palm oil is being marketed should always be monitored by the environmental health workers to ensure cleanliness and ensure that there is proper hygienic state as palm oil is edible.
5. The government should work alongside with the agricultural researchers so that there will be improved breeds of palm oil fruits that can produce more oil that can be got at reduced price.
6. The government should ban the importation of palm oil into the country and then encouraging the oil palm producing states to grow more palm trees rather than depending on aged ones.

REFERENCES

- Abbott, J. C. (1993) “*Marketing the rural poor and sustainable in Abbott J.C (ed)*” Agricultural Aid. Food Marketing in developing countries. Selected reading CT A/C, AB International marketing from UK Pp 5-92
- Abdulsalam, Z. (2004). Economic Analysis of Cross-Border Food Grain Marketing between Nigeria and Niger republic. A Published Ph.D. Thesis Ahmadu Bello University Zaria, Nigeria. Adeniji, M. O., Udeogalanya, A. C. C., Okeke, G. C.,
- Abdullahi, Y., Iheukwumere, C. A. (1997). *Countdown to Senior Secondary Certificate Examination. Agricultural Science*, Ibadan Evans.
- Ahmed, M. (2001). *Development potential and constraints of hides and skins marketing in Ethiopia*. The opportunities and challenges of enhancing goat production in East Africa. Pp 127-138
- Allen, Albert J. and Saleem Shaik (2005), “Performance of the Agricultural Commodity. Trucking Sector in the United States,” Paper presented at the Southwestern Economics Association Annual Meeting, March 23-26, 2005, New Orleans, LA.
- Atser G. (2007). Nigeria plans to reclaim its leading position as the world’s largest producer of palm oil that it lost to Malaysia over three decades ago. The punch Publishing Co, Tuesday, October 2nd, 2007 pp26.
- Ayeni I.A, Kolawole, F. A. (1997). *Spectrum Memory Guide, Agricultural Science for Senior Secondary Certificate Examination*. Ibadan: Spectrum Books Limited.

- Bernet, T., Thiele, G. and Zschocke, T.(2006). Participation market chain approach (PMCA) – User guide. International potato Center (CIP) – Papa Andima, lima Peru.
- Chalfant J. A. and Sexton, R. J.(2002) “Marketing orders, grading errors and price discrimination”. *American journal of Agricultural Economics* 84 (1) : 53-66
- Christoph Lang(2007): *Marktmacht und Marktmachtmessung im deutschen Großhandelsmarkt für Strom*, Deutscher Universitätsverlag/GWF Fachverlag GmbH, Wiesbaden 2007.
- Daily Trust (2002), 2002, 17th November, www.dailytrust.com.
- Dogondaji, S.D. and K.M. Baba (2010), income distribution in large scale irrigation projects: A case of dry season rice farmers at Bakolori irrigation project, Zamfara state, Nigeria. Proceeding of the 25th Annual National Conference of the Management of Nigeria held at Adamawa state University, Mubi. 11th-14th October, 2010.
- Eleni, G. (2001).*Market Institution, transaction costs, and social capital in the Ethiopian grain market*. International food policy Research Institute, USA.
- Ehirim NC (2004). Economics of palm oil marketing in Owerri, Imo State.
- Ejor Tiku (1998) Structure, Conduct and Performance of Palm Oil Marketing in Cross River State. An unpublished PH.D Thesis submitted to the Department of Agricultural Economics and Extension, Faculty of Agriculture. Ahmadu Bello University, Zaria.
- FAO (1999). Marketing infrastructural innovation in developing countries: A survey. World bank staff working paper No 52. The World Bank, Washington D.C. USA. 43P
- FAO (2002).Small Scale Palm Oil Processing in Africa. Rome: FAO
- Gail, L. Cramer, C.W.J., Douglas D. Southgate, Jr., (2001). *Agricultural Economics and Agricultural Business*. New York, Susan Elbe.
- Girma Admasu, 2002. The performance of hides and skins marketing in the Ambara National Regional State: M.Sc. Thesis. Alemaya University, Alemaya.
- Gregory, J. Scott, I.P.C. (1995). Prices, Products and People: Analyzing Agricultural Markets in Developing Countries. G.J. Scott, Lynne Rienner Publishers. 11.
- Ibekwe, U.C. (2008). Role of Women in Oil Palm Fruit Processing and Marketing in Imo State. Federal University of Technology, Owerri, Nigeria. Medwell journals. 4(2): 101-109.

- Idu, E. E., Ama, I. and Obinne, A. D. E (2005), Gender and Indigenous Knowledge in the Neighbouring Communities of the University of Agriculture, Markudi; Benue State – Nigeria. In: Obinne C. P. O. (Ed) Readings On Indigenous Processing Storage and Marketing for Poverty Reduction in Nigeria. CEKARD Association (publishers), Markudi, Nigeria. PP. 40- 46
- Iwena, O. A. (2002). *Essentials Agricultural Science for Senior Secondary Schools*. Ikeja, Jonad Publishers Limited.
- Jalani.B. S.(2000) Malaysia’s contribution to improving the value and use of palm oil through modern technologies.*Burotrop bulletin*. No 19 February, 2003.Pp 25
- Johnston, J., and J. Dinardo (1997).*Econometric Methods*. Fourth edition, University of California, Irvine. 496p.
- Kari, Fatimah, Abdul H. Jaafar, Albert J. Allen, and Warren C. Couvillion (2002), “Market Structure, Market Share, and Profits in the Surface Freight Industry,” Paper presented at the American Agricultural Economics Association Annual Meetings, Long Beach, CA, July 28-31, 2002.
- Kei, K., Mywish, M. and Duncan, B. (1997). “Transformation Versus Stagnation in the Oil Palm Industry: A Comparison between Malaysia and Nigeria”. Staff Paper 97-5. Department of Agricultural Economics Michigan State University, East Lansing, Michigan 48824 p 19.
- Kohls, R., Joseph N., Uhl. (2002). *Marketing of Agricultural Products*. New Jersey, Prentice – Hall Inc.
- Liao, T.F. (1994). *Interpreting Probability Models: Logit, Probit, and Other Generalized Linear Models*. Series: on Qualitative Applications in the Social Sciences. Thousand
- Matthew, A (2009). Nigeria Palm Oil Today and Future Outlook. Paper presented at Nigerian Institute for Oil Palm Research Workshop.
- Meijer,P.W.M.(1994) The function of maize market in Benin, *Bert Broundjin, Benin*.Pp11-32.
- Mgbeje, (2004).Raw Materials Research and Development Council (RMRDC), Abuja.Report on Survey for Selected Agricultural Raw Materials in Nigeria. <http://www.rmrdc.gov.ng> Retrieved on 22/12/06.
- Nwaru, J. C. (2011). Palm oil value chain analysis in the Niger Delta, Foundation for Partnership Initiatives in the Niger Delta, Abuja Nigeria.
- Nwauwa L.O., (2010). Economic of Palm Oil Storage and marketing in Imo state, Nigeria. *African Journal of marketing management*. 3(10), pp. 253-26

- Nwawe C.N and Edokpayi A. A.(2005) "Determinations of adoption of improved oil palm production technologies in Delta State, Nigeria" *Journal of Agriculture, Forestry and Social Sciences*. 3(2):10 – 16
- Olagunju FI (2008). Processing of palm oil in South Western Nigeria. *Int. J. Agricultural Econ. Rural Dev.*, 1(2): 69 – 77. 2008.
- Olukosi .J.O. and Isitor .S.U.(1990) *Introduction to Agricultural marketing and prices: principles and application*. Living books series, GU publication Abuja, Nigeria. Pp 1-60
- Omoti.U. (2001)"the future of the oil palm industry in Africa and strategies for development. The Nigeria situation ". Paper prepared for the Africa development bank workshop on the future of oil palm industry in Africa and strategies for development, Cote d'ivoire.
- Padberg D.J., C.Ritson, L.M.Albisu, Ed (1997). *Agro-food marketing*, CAB International.
- Peace and Development Projects (2011). *Palm oil value chain analysis in the Niger Delta*, Foundation for Partnership Initiatives in the Niger Delta, Abuja Nigeria.
- Ramakumar R. (2001).Costs and margins in coconut marketing: Some evidences from Kerala. *Indian journal of Agricultural Economics*. 56 (4): Pp 668 -680.
- Stigler G.J (2005). *The theory of price*. Fourth edition. Prentice hall of India, New Delhi, India.371p.
- Taru, V.B., Jonathan R. and Lawal H. (2010).Structural Analysis of Paddy Markets in Southern Part of Taraba State, Nigeria. *Journal of Agriculture and Social Science*.,6: 110–112
- USAID,(2008). *Structure – conduct- performance and food security: FEWS NET market guidance*, No 2, May 2008. Washington DC.

APPENDIX I: WHOLESALER QUESTIONNAIRE

DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY, AHMADU BELLO UNIVERSITY, ZAIRA.

Sir/Madam,

You are humbly requested to respond with all honesty to this questionnaire. All information provided by you will be treated with utmost confidentiality.

(A) Background information on the questionnaire

- (i) Name of respondents.....
- (ii) Interviewer.....
- (iii) Date of interview.....
- (iv) Market
- (v) State.....LGA.....

(B) Socio-economic characteristics

- (1) Age of the respondents (years)
- (2) Gender (i) Male () (ii) Female ()
- 3. Marital status: (i) Single () (ii) Married () (iii) Divorced ()
- (iv) Widow () (v) Widower ()
- (4) Educational qualification
 - (i) No formal education ()
 - (ii) Primary ()(years)
 - (iii) Secondary ().....(years)
 - (iv) Tertiary ()(years)
 - (v) Others specify
- 5 How long have you been in the palm oil business? years

MARKET CONDUCT

- 1. As a wholesaler do you have a union in your area? Yes () No ()
- 2. If yes are you a member Yes () No ()
- 3. If No, why are you not a member
 - a.....
 - b.....
 - c.....
- 4. Do you pay for registration? Yes () No ()
- 5. If yes how much?.....
- 6. What benefits do you derive from being a member?
 - a.....
 - b.....
 - c.....
 - d.....
- 7. Can you operate the market if you are not a member? Yes () No ()
- 8. What problems would a non-member encounter if operating in the market?

- a.....
 - b.....
 - c.....
 - d.....
9. Who determine the price of oil in the market?
 a. seller () b. buyer () c. commission agent () d. supply and demand () e. others (specify).....
10. Did you get your palm oil from producers? Yes () No ()
11. If yes at what point? a. Home () b. Market ()
12. Do you increase the volume of the oil before selling? Yes () No ()
13. If yes how do you increase the volume?.....
14. Do you add colour to he palm oil? Yes () No ()
15. If yes what colour do you add?.....
13. When do you normally buy oil palm for sale?
 a. All year round []
 b. During festive periods only []
 c. When purchasing price is low []
 d. Others (specify).....
14. When is your peak period of purchase?.....
 (c) Why this period?.....
15. When do you sell the oil palm (months)?.....
 (b) When is your peak period of sale?.....
 (c) Why this period?.....

A. MARKET PERFORMANCE AND FACTORS THAT DETERMINE PERFORMANCE

1. How is the oil measured? A. in drum (litre)() B. in jerry can (litre) () C. in bottles (litre) ()
2. How do you sell? A. in drum (litre) () B. in jerry can (litre) () C. in bottles (litre)()
4. What quantity of palm oil do you buy and sell in the market in a day?.....litre
5. Do you increase the volume of your palm oil before selling? Yes () No ()
6. If yes what do you do

8. I make more profit by adding water to the palm oil? Yes () No ()
9. I make more profit by adding colour to the palm oil? Yes() No ()
10. I spend much in sale promotion to have a better price for my palm oil? Yes() No ()
11. What makes up the transportation cost from point of purchase to your business location?

Activity	Amount (₦)
A	
B	
C	

D
 E

12. Please list other things you do to increase your profit

A.
 B.
 C.

13. What other things do you do to improve your commission?.....

14. In a year when do you get more profit?.....

15. Why?.....

16. Did your patronizes prefer palm oil that is reddish in colour? Yes () No ()

17. If yes, what do you do to maintain them even when the palm oil you have is not red in colour?

A.
 B.
 C.

17. How many litre of palm oil did you buy and sell in

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Palm oil bought												
Palm oil sold												

B. MARKET STRUCTURE AND MARKETING COST

- As a wholesaler, do you produce the palm oil you sell yourself? Yes/no
- If yes, do you have a farm? Yes/no
- If yes, how many palm fruit bunches do you produce per month

- How many fresh palm fruit bunches are in one pick-up van load

- How much do you spend in processing the pick-up van load of fresh palm fruits into palm oil? ₦
- How many drums of oil are got from one pick-up van load of fresh palm fruits?.....
- If no, where do you get your palm oil from? A. Producer B. Middlemen
- If from producers directly, do they bring it themselves? Yes/no
- If no, how do you get the palm oil into the market?

- How much do you buy a drum of palm oil?.....

11. What determines the price you sell your palm oil?
 A.
 B.
 C.
 D.
 E.
12. Who are those that always patronize you?.....
13. How do you sell your palm oil? A. drum B. gallon C. bottle
14. How much does each go for? A. drum ₦ B. gallon ₦
 C. bottle ₦
15. What problems are often encountered in palm oil marketing in your location?
 A
 B
 C
 D
 E
16. Do you often get information about the palm oil marketing in your location? A. Yes
 () B. No ()
17. Please could you suggest or advice any of the following participants in the business?
 a. Government

 b. end users

 C. new entrants into the business

APPENDIX II: RETAILER QUESTIONNAIRE

DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY, AHMADU BELLO UNIVERSITY, ZAIRA.

Sir/Madam,

You are humbly requested to respond with all honesty to this questionnaire. All information provided by you will be treated with utmost confidentiality.

(A) Background information on the questionnaire

A. Name of respondents.....

B. Interviewer.....

C. Date of interview.....

D. Market.....

E. State.....LGA.....

(B) Socio-economic characteristics

- (1) Age of the respondents (years)
- (2) Gender (i) Male () (ii) Female ()
3. Marital status: (i) Single () (ii) Married () (iii) Divorced ()
- (iv) Widow () (v) Widower ()
- (4) Educational qualification
- (i) No formal education ()
- (ii) Primary ().....(years)
- (iii) Secondary ().....(years)
- (iv) Tertiary ()(years)
- (v) Others specify
- 5 How long have you been in the palm oil business?years

MARKET CONDUCT

16. As a wholesaler do you have a union in your area? Yes () No ()
17. If yes are you a member Yes () No ()
18. If No, why are you not a member
- a.....
- b.....
- c.....
19. Do you pay for registration? Yes () No ()
20. If yes how much?.....
21. What benefits do you derive from being a member?
- a.....
- b.....
- c.....
- d.....
22. Can you operate the market if you are not a member? Yes () No ()

23. What problems would a non-member encounter if operating in the market?
 a.....
 b.....
 c.....
 d.....
24. Who determine the price of oil in the market?
 b. seller () b. buyer () c. commission agent () d. supply and demand () e. others (specify).....
25. Did you get your palm oil from producers? Yes () No ()
26. If yes at what point? a. Home () b. Market ()
27. Do you increase the volume of the oil before selling? Yes () No ()
28. If yes how do you increase the volume?.....
29. Do you add colour to the palm oil? Yes () No ()
30. If yes what colour do you add?.....
13. When do you normally buy oil palm for sale?
 a. All year round []
 b. During Ramadan only []
 c. When purchasing price is low []
 d. Others (specify).....
14. When is your peak period of purchase?.....
 (c) Why this period?.....
15. When do you sell the oil palm (months)?.....
 (b) When is your peak period of sale?.....
 (c) Why this period?.....

C. MARKET PERFORMANCE AND FACTORS THAT DETERMINE PERFORMANCE

1. How is the oil measured? A. in drum (litre)() B. in jerry can (litre) () C. in bottles (litre) ()
2. How do you sell? A. in drum (litre) () B. in jerry can (litre) () C. in bottles (litre)()
4. What quantity of palm oil do you buy and sell in the market in a day?.....litre
5. Do you increase the volume of your palm oil before selling? Yes () No ()
6. If yes what do you do

8. I make more profit by adding water to the palm oil? Yes () No ()
9. I make more profit by adding colour to the palm oil? Yes() No ()
10. I spend much in sale promotion to have a better price for my palm oil? Yes() No ()
11. What makes up the transportation cost from point of purchase to your business location?

Activity	Amount (₦)
A	
B	

- C
- D
- E

12. Please list other things you do to increase your profit

- A.
- B.
- C.

13. What other things do you do to improve your commission?.....

14. In a year when do you get more profit?.....

15. Why?.....

16. Did your patronizes prefer palm oil that is reddish in colour? Yes () No ()

17. If yes, what do you do to maintain them even when the palm oil you have is not red in colour?

A.....

B.....

C.....

17. How many litre of palm oil did you buy and sell in

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Palm oil bought												
Palm oil sold												

D. MARKET STRUCTURE AND MARKETING COST

16. As a wholesaler, do you produce the palm oil you sell yourself? Yes/no

17.If yes, do you have a farm? Yes/no

18.If yes, how many palm fruit bunches do you produce per month

19How many fresh palm fruit bunches are in one pick-up van load

20How much do you spend in processing the pick-up van load of fresh palm fruits into palm oil? ₦

21.How many drums of oil are got from one pick-up van load of fresh palm fruits?.....

22.If no, where do you get your palm oil from? A. Producer B. Middlemen

23.If from producers directly, do they bring it themselves? Yes/no

24. If no, how do you get the palm oil into the market?

.....

25.How much do you buy a drum of palm oil? ₦

26What determines the price you sell your palm oil?

a..... ₦

- b..... ₦
- c..... ₦
- d..... ₦
- e..... ₦

27. Who are those that always patronize you?.....

28. How do you sell your palm oil? A. drum B. gallon C. bottle

29. How much does each go for? A. drum ₦ B. gallon ₦
C. bottle ₦

30. What problems are often encountered in palm oil marketing in your location?
A
B
C
D
E

31. Do you often get information about the palm oil marketing in your location? A. Yes () B. No ()

32. Please could you suggest or advice any of the following participants in the business?
a. Government
.....
.....
b. end users
.....
C. new entrants into the business
.....
.....