STRUCTURE, CONDUCT AND PERFORMANCE OF DATE PALM MARKETING IN KATSINA STATE, NIGERIA

BY

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY, ZARIA, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE DEGREE IN AGRULTURAL ECONOMICS.

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DECLARATION

I hereby declare that this thesis titled "**Structure, Conduct and Performance of Date Palm Marketing in Katsina State, 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 duly acknowledged in the text and a list of references provided.

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CERTIFICATION

This thesis titled '**Structure, Conduct and Performance of Date Palm Marketing in Katsina State, Nigeria**, by Jamila Rabe **MANI** meets the regulations governing the award of the Degree of Master of Science of the Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

I dedicate this piece of work to my humble grandparents Alhaji Isa Mani and Alhaji Ahmadu Saleh (Ma'aji). Thank you for laying the foundation. May their souls rest in perfect peace amin.

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All praise be to Allah lord of the world, who taught man what he knew not. May the mercy and blessings of Allah be upon His Prophet.

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ABSTRACT

The study examined the structure, conduct and performance of date palm marketing using structured questionnaire administered to 112 randomly selected date palm traders in Katsina State. Data was analysed using descriptive statistics such as frequencies and percentages, gini coefficient, concentration ratio, market margin and efficiency analysis, gross margin analysis and logit regression analysis. Two measures of concentration; Gini coefficient and Concetration ratio (CR_4) were used to determine the structure of the market. The gini coefficient analysis showed that there is a high level of inequality in buyer/seller concentration among the importers (0.52), and retailers (0.56), and low concentration among the wholesalers (0.47), a concentration ratio of 38.8% indicated a weak oligopolistic structured market. The performance of the market was efficient and profitable, average marketing margin of 34.69/100kg bag with retailers in Daura having the highest margin 80.77/100kg bag. Daura market was more efficient (449.92%) than Jibia (336.85%) and Katsina (217.08%) markets. Gross margin of ₦653,973.45/week, rate of return of 1.45 and ₦9,693.75/week, rate of return of 1.21 were obtained as profitability measures of importers/wholesalers and retailers respectively. The transaction costs affecting the efficiency of the traders were the costs of transportation, loading/offloading, market charges, and storage facilities. Only the cost of loading/offloading was found to be significant ($t<0.05$) in the importer/wholesaler and pooled logit regression analysis, while all costs were not significant to the retailers. The three major problems of date palm traders were pest and insect infestation, lack of capital and market seasonality. Hence, the study recommended the provision of appropriate storage facilities, loans and physical market facilities in the area especially by the associations and formal credit institutions such as BOA, as well as increasing local production to produce marketable surpluses that will reduce the high rate of importation and all year round availability of fresh date palm fruit. The study also created awareness on the economic potentials of date palm marketing in katsina and the need for the state to record its level of date palm production.

Chapter 1

INTRODUCTION

1.1 Background to the Study

Date Palm (*phoenix dactylifera*) is considered a symbol of life in the desert because it tolerates high temperature, drought and salinity more than many other fruit crop plant species. It is a popular food in the Middle East, found in abundance in the desert and around oases. Hays (2009) stated that many parts of the Middle East would be uninhabitable were it not for date palms, one of the few crops that grow in the desert. It has been described as the "tree of life." Botes and Zaid (2001) opined that date palm fruit (dates) is marketed all over the world as a high value confectionary and fruit crop, and remains an extremely important subsistence crop in most of the desert regions. Thus, the heavenly religions honored the date palm and showed concern for its cultivation and care (El-juhany, 2010). The holy Qur'an for instance, mentions dates and date palm in many Suras (chapters) and Verses. Furthermore, the Prophet of Islam (Mohammed, peace be upon him) is reported to have said that the best property is the date palm, that dates cure many disorders, and he urged people to eat dates and tend to the date palm (Zaid and De Wet,1999). Also in the story of Maryam (the mother of Jesus, peace be upon them), it was reported that when childbirth pains drove her to the trunk of a palm tree, she was ordered to eat from the fresh ripe dates to ease her pains.

The world production of dates has increased from about 1.8 million tonnes in 1961, to 2.8 million in 1985 and 5.4 million in 2001. The increase of 2.4 million shows an annual expansion of about 5 percent. In 2011, world production of dates was about 7.5 million tones, and the top 10 producing countries were Egypt, Saudi Arabia, Iran, United Arab Emirates, Pakistan, Algeria, Iraq, Oman, Libya, and Tunisia (Kader and

Hussein, 2009). In Africa, Egypt is the highest Date producer with 1350000metric tonnes (MT), followed by Algeria 600696MT, Sudan 339300MT, Tunisia 145000MT, Libya 160101MT and Morocco 72000MT (Dada *et al.,* 2012). FAO statistics from West Africa show that Mauritania is the highest date producer with total production of 37794MT, followed by Chad 20000MT and Niger 18780MT.

Date fruits are commonly consumed in Nigeria, especially in its ecological areas (Sani *et al.,* 2010). It is believed that date palm had been introduced in Nigeria in the early 8th century by Arab traders from North Africa. The crop is cultivated in natural spontaneous groves and as a homestead crop in most of the Sudan-Sahel region of Nigeria, and sold in the open market along other staple foods. In short it has become a widely consumed fruit among the people of northern Nigeria. Its importance and cultivation in the country is increasing and farmers rely on seedlings or side suckers to raise new plantings. Nigeria has the potential of exporting date fruits and it's bi-products to the international market, but Nigeria is more of a consumer and importer of date fruits. Date palm is also now being used as shelter belt vegetation for soil conservation and to mitigate desertification in Nigeria (Aisueni *et al.*, 2009).

The fruits are highly valued among many communities in Nigeria, especially during ceremonies and festivals. The national consumption of dates in 2009 is estimated at 89 580 metric tonnes (Sani *et al.,* 2010), which placed the country among the top 10 world consumers of date. This has therefore made date to be a crop of importance in terms of marketing in Nigeria, with significant economic and cultural importance. Bakshi (1997) reported that Nigeria produced about 20,000 metric tonnes in the 1990s. Abdul-Qadir *et al.* (2011) has put the recent production figure of date palm in Nigeria at about 21000 metric tonnes. Therefore consumption of date fruit in Nigeria far outstrips

local production, and consequently the fruits are imported from the Middle East and neighboring countries thus depleting foreign exchange (Dada *et al.*, 2012).

1.2 Problem Statement

Recognizing Nigeria's tremendous agricultural potentials, the government has accepted the view that the country should resolve most unequivocally to make agriculture the mainstream of the economy (ARCN, 2010). Agricultural development means among other things increasing agricultural productivity to generate substantial surpluses. The issue of surpluses leads to the issue of marketing. Production of surpluses should occur simultaneously with adequate processing, storage and efficient distribution if the surpluses are not to go to waste.

Generally, the specific ways in which efficient marketing systems play a leading role in economic development have been widely developed (Harris-White, 1999). Agricultural or food marketing can be regarded as the main driving force for economic development yet a neglected aspect of agricultural development in Nigeria. The abolishment of the Nigerian marketing boards in 1986 has made it very difficult to efficiently monitor the level of importation of dates into the county and the nature of competition in date palm market. The deregulation has led to full private participation in the market and it was expected that it would afford the sellers a fair return on investment compared to the days of the commodity board. The research therefore seeks to find out whether the date marketing system is effectively competitive and to analyze the return on investment of the traders.

Ajala and Adesehinwa (2008) reported the marketing systems in developing countries to be generally exploitative, collusive and economically inefficient. In Nigeria, the extent to which this is true for date palm marketing is uncertain due mainly

to the fact that the state of knowledge on fruits marketing largely comes from studies on other indigenous fruits such as pineapple, orange, banana and water melon. Nigerian agricultural trade policy ensures food security, promotes domestic trade, enhances access to agricultural raw materials, and encourages participation in preferential trade arrangement as well as promotes the use of modern technology and promotion of quality agricultural exports. However, a large number of marketing functions affecting the conduct of the market in Nigeria are poor, thus, limiting the responsiveness of marketing processes (Okwoche *et al.*, 2010).

Date fruits are economically important commodities, yet there are no sufficient research studies to identify the functioning and efficiency of its marketing system. There is inadequate information on the supply of date fruits in Katsina state, the bulk of which is imported into the state. The increasing demand for the fruit in line with rapid population growth requires a more efficient marketing system. In an attempt to determine the functioning, profitability, and efficiency of date palm marketing in the study area, the research will seek to answer the following questions:

The questions this study will address include:

i. Who are the participants of date palm marketing in the study area?
ii. What is the structure and conduct of the date palm marketing in the study area?
iii. What is the marketing margin and efficiency of date palm marketing in the study area?
iv. What is the profitability of date palm marketing in the study area?
v. What are the transaction costs affecting the efficiency of date palm marketers in the study area?
vi. What are the problems associated with date palm marketing in the study area?

1.3 Objectives of the Study

The broad objective of this study is to determine the structure conduct, and performance of date palm marketing in the study area.

The specific objectives are to:

i. identify the various participants of date palm marketing in the study area;
ii. determine the structure and conduct of the date palm marketing in the study area;
iii. evaluate the marketing margin and efficiency of date palm marketing in the study area;
iv. determine the profitability of date palm marketing in the study area;
v. determine the transaction costs affecting the efficiency of date palm marketers in the study area; and:
vi. identify the problems associated with date palm marketing in the study area.

1.4 Justification of the Study

Ndubizu (1982) stated that Nigeria is passing through a period of rapid population and economic growth. Food supply has not been able to keep pace with population growth. Shortages of horticultural produce especially fruits are often very acute because of low levels of technology in production, harvesting, processing and storage, as well as increasing high demand for fruits arising from rapidly improving standard of living. Although the harvesting, utilizing and marketing of fruits and nuts have been central to the livelihoods of majority of rural communities throughout the country, it can make a difference during the period of food insecurity and can substantially boost rural and urban income and employment opportunities. Date palm shows great promise as a means to help overcome some of the severe problems of developing countries; famine,

malnutrition, deforestation and poverty. Therefore, it is important to study its marketing and its effect on the national economy.

Date is a fruit which has gained world recognition because of its high economic and nutritive value. Because of its important health benefit its production and consumption has increased over the past 40 years (Botes and Zaid, 2001). Despite the significance of date palm fruit to human life, there is no sufficient study conducted on its marketing system especially in a country like Nigeria. The study therefore aims at studying the complete structure, conduct and performance of the commodity in the study area. The study will provide useful information to the market participants and policy makers in formulating marketing development programs and guide lines, that will improve the efficiency of the fruit marketing. This will be of immense contribution to Katsina State Government in its strive to reduce poverty, achieve food security and promote commercial agriculture.

Chapter 2

LITERATURE REVIEW

2.1 Description of Date Palm

Malcolm (2006) said that date palm trees grow tall towards the infinite heavens where there is promise of life eternal. The ancient date palm tree, it has been suggested is the oldest fruit bearing tree on earth, and palm trees grow worldwide from sandy deserts to tropical forests. The palm has been grown in grove plantings since the ancient people understood the food value of the dates and the exotic appearance and shading on the landscape of the desert sands. Palm trees were often planted near an oasis as a source of water shade and food. Dates are among the earliest crops known, and they have been cultivated around the Tigres and Euphrates in Mesopotamia since at least 2000 B.C

Date palm or date is the common name for the palm tree *phoenix dactylifera* which is characterized by pinnate feather like gray green leaves and an edible fruit in the form of a drupe with a thin papery skin, and a single narrow hard seed (NewWorldEncyclopedia, 2011). Morton (1987) stated that the date is an erect palm of 100-120feet (30.5-36.5m), the trunk clothed from the ground up with upward pointing, overlapping persistent woody leaf bases and from which after the first 6-16years numerous suckers will arise around its base. The skin is thin and papery when unripe, they are green, and change to yellow, golden brown, mahogany red or black as they ripen depending on variety (Herbst, 2001). He further stated that as a characteristic of the phoenix genius, the plants are dioecious with male and female flowers on separate plants.

The genius is unique among members of the family *coryphoideae*, being the only one with pinnate rather than palmate leaves (Riffle and Craft, 2003). Also the name

is derived from a new Latin form of *(φοῖ νιξ/phoenix*), the Greek word for "date palm" probably referring to the Phoenicians who brought the palm with them in their travel or may be from (φοινός/red colored) referring to the color of dates.

2.2 History of Date Palm

Alphonse de Candolle claimed that the palm ranged in prehistoric times from Senegal to the basin of the Indus River in northern India especially between latitudes 15^0 and 30^0 (Morton, 1987). Furthermore, there is archeological evidence of its cultivation in eastern Arabia in 4,000B.C. It was much revered and regarded as a symbol of fertility as depicted in bas relief and on coins. It is believed that nomads planted the date at oases in the deserts, and Arabs introduced it into Spain. It has long been grown on the French Rivera, in southern Italy, Sicily and Greece. Though, the fruit does not reach perfection in these areas.

The date palm had a tremendous effect on the history of the Middle East, Barraveled (1993) wrote;

"One could go as far as to say that, had the date palm not existed, the expansion of the human race into the hot and barren parts of the old world would have been much more restricted. The date palm not only provided concentrated energy food which could be easily stored and carried along on journeys across the deserts, it also created a more amenable habitat for the people to live by providing shade and protection from desert winds. In addition, the date palm also yielded a variety of products for use in agricultural production and for domestic utensils, whilst all parts of the palm had a useful purpose."

2.3 World Date Palm Production

The world date cultivation is concentrated mostly in near East and North Africa, favored by the suitable dry sub-tropical and high temperature climate prevailing in these regions (Sawaya, 2000). According to the report of FAO, about 75% of the world production of dates in 2008 is in Arab countries, half of these is in the gulf area (including Iraq and Yemen) and the other half is in north African countries (including Sudan) (FAO STAT, 2009). Thus, the production of dates in Arab countries stood at 5,096.99 tonnes produced from 82,346.08 date palm trees (AOAD, 2008). This clearly indicates that most of the world's date production is concentrated in a few countries in the same region.

Accurate statistics on the quantity of date palm produce are not always available and not easy to collect (Zaid, 2001). The quantity of date palm produce presented in publications could sometime be deceptive as one cannot know whether the trees are mature producing trees or young palms. Table 2.1 shows the present status of date production in the main date growing countries;

Table 2.1 Top ten world producers of date palm (2011)

Country	Quantity(1000 Metric Tonnes)
Egypt	1,373.57
Saudi Arabia	1,122.82
Iran	1,016.61
United Arab Emirates	900.00
Algeria	690.00
Iraq	619.18
Pakistan	557.28
Oman	268.01
Tunisia	180.00
Libya	165.95
World total	7462.51

Source:UN Food & Agriculture Organisation (FAO, 2011)

2.4 Date Palm Production and Marketing in Nigeria

Dates production in Africa was about 2.2 million MT in 2001 and 2.4 million MT in 2006 with Egypt as the highest Dates producer (Abdul-Qadir *et al.*,2011), while in West Africa Niger is the highest producer. Nigeria is not listed among the date producers at the international listings. Though the Sahelian and Guinea savannah zones of northern Nigeria is known for many economic tree crops such as gum arabic, date palm, guava, mango and orange among other crops (Sani *et al*., 2010) which are supported by the weather and climatic factors that favor the production of these crops. It is reported by the World Bank in 2010 that Nigeria has about 85.10% hectres of agricultural land but only 37.33% hectres are used. The area under date palm cultivation in the country is estimated at only over 1,466 hectres with an estimated annual production of over 20,000 tonnes of date fruit per annum (Bakshi, 1997). The estimated annual dates production in Nigeria as reported by Abdul-Qadir *et al*. (2011) is given in table 2.2;

Table 2.2: Statistics on annual date palm production in Nigeria

States	**Annual production in Metric Tonnes**
Adamawa	200
Bauchi	6000
Borno	1000
Gombe	1500
Jigawa	5000
Kano	6000
Plateau	Insignificant
Taraba	Insignificant
Yobe	2000
Kaduna	NA
Nasarawa	NA
Katsina	NA
Zamfara	NA
Kebbi	NA
Sokoto	NA
Total	**21700**

Source:Abdul-Qadir *et al.*(2011) NA-Not Available

The Nigerian date palm industry is an asset for national economic growth and development. Awoyemi *et al*. (2011) stated that the industry has potential for food

provision, employment and income generation, animal feed, shelter belt, and poverty reduction. Employment opportunities exist in the areas of nursery production, plantation establishment, harvesting and marketing. But even with the current production the fact remains that date palm production is not really an attractive business venture in the country as it is yet to be considered a cash crop. Ikheola *et al.* (2000) stated that the majority of the date palms grown in northern Nigeria have become too old and their productivity have been impaired because many farmers have no knowledge of the optimum production period of the date palm, so they harvest their palms until they die or become unproductive.

Bender and Bender (2005) reported that three main cultivar groups of date exist, soft (e.g Barhee, Halawy, Khadrawy, Medjhool), semi dry (e.g Dayri, Deglet Noor, Zahdi) and dry (e.g Thoory). The type of fruit depends on the glucose, fructose and sucrose content. In soft dates about 80% of the dry matter is invert sugar a mixture of equal parts of glucose and fructose, in semi dry dates about 40% of the dry matter is invert sugars and 40% is sucrose while dry dates have about 20-40% of the dry matter is invert sugars and 40-60% is sucrose. Only cultivars in the soft group are produced in Nigeria.

2.5 Marketing of the Fruit

There are 220 kinds of dates, of which only about 20 kinds are commercially available (Hays, 2009). Thus, the international trade in dates is volatile, changes are often associated with political and economic instability in the main producing countries as well as unseasonable weather which can lead to production and storage wastage (Botes and Zaid, 2001). They further reported that from 1998-2000 an average of almost 500,000 tonnes of dates were exported from the producing countries annually, with a total value of about $258million and when this figure is compared with total production

it is clear that the bulk of the dates produced are consumed within the producing countries. Of the 5000,0000 tonnes exported, 225,000 tonnes were imported by India, and about 60,000 tonnes by the European countries.

The five leading net exporting countries since 1991 have been Saudi Arabia, Iran, Pakistan, Tunisia, Algeria. Of these five countries, Algeria achieves $1400/tonnes in 2000 due to their strategy of targeting the high value European markets, while Iran which exports much lower quality dates only achieved $240/tonne in 2000.

The Nigerian date industry has the potential of exporting date fruits and its bi-products to the international market, but Nigeria is more of a consumer and importer of date fruits and the non-availability of plantations and data on production level hinders the country from becoming one of the top exporters of date products. It is stated by Umar *et al*. (2011) that the marketing of the fruits involve its processing, manufacturing, packaging and sales of the products. The processing industry use the date palm in the manufacture of cable insulators, local fan, furniture, rope, foot mat e.t.c. According to Isyaku *et al.* (2010) indigenous varieties marketed locally in the country include palm 300 (a locally improved NIFOR substation material) and Shuwarim produced by Shuwarim village farmers in Dutse, Jigawa State. While the imported varieties in the country include Tigyal, Deglet noor from Algeria as well as Dan Mali from Mali.

2.6 Processing and Uses of Date Palm

2.6.1 Processing

According to Herbst (2001), dates are eaten fresh or dried, with dried dates available all year round and sold pitted or putted. The pitting may be done in factories either by crushing and sieving the fruits or with more sophistication by piercing the seed out leaving the fruit whole (Morton, 1987). The calyces may also be removed.

Dates are also processed into cubes, paste, spread, date syrup or “honey” called “dibs” powder (date sugar), vinegar or alcohol (FAO, 1993). Recent innovations include chocolate covered dates and products such as sparkling date juice used in some Islamic countries as a non- alcoholic version of champagne for special occasions and religious ties such as Ramadan. Morton (1987) stated that cull fruits are dehydrated, ground and mixed with grain to form a very nutritious stock feed.

2.6.2 Uses

The relevance of date palm cannot be over emphasized. Dates contains elemental fluorine that is useful in protecting teeth against decay, selenium an element believed to help prevent cancer. It is also important in immune function and a source of fruit the common man can afford (Al-sahib *et al.*, 2003).

Malnutrition is an underlying factor in more than 50% of childhood mortalities in Nigeria (ARCN, 2010). Moreover there are different types of malnutrition of which the most important are protein/energy malnutrition and deficiencies in micro-nutrients such as vitamin A, iron, iodine and zinc. Hence, in many ways dates may be considered as an almost ideal food, providing a wide range of essential nutrients. The protein in dates contains 23 types of amino acids some of which are not present in most popular fruits such as oranges, apples, and bananas (Al-sahib et al., 2003). It also contains at least six vitamins including small amount of vitamins C, B1, B2, Niacin, and vitamin A. therefore, the fruit has great potential health benefits which can help reduce the problem of malnutrition in the county.

Fresh dates may be stored for up to two weeks in a refrigerator wrapped in plastic bags, while dried dates can be stored in an airtight container for up to six months at room temperature or up to a year in a refrigerator (Herbst, 2001). A 100-gram portion

of fresh date is a premium source of vitamin C and supplies 230 kcal (960kj) of energy. They are a good source of Protein and Iron.

According to FAO (1993), the following are most important uses of date palm;

***2.6.2.1 Seeds*:** Date seeds are soaked and ground up for animal feed, and their oil is suitable for use in soap and cosmetics. The seeds also can be processed chemically as a source of oxalic acid, burned to make charcoal for silversmiths, and can be strung into necklaces. They are also ground and used in the manner of coffee beans, or as an additive to coffee.

***2.6.2.2 Leaves*:** Date palm leaves are used in the celebration of Palm Sunday in Christian religion, and in the feast of the Tabernacles in Judaism, and as a lulav in the Jewish holiday of Sukkot. . In North Africa, they are commonly used for making huts. Mature leaves also are made into mats, screens, baskets, and fans. Processed leaves can be used for insulating board. Dried leaf petioles are a source of cellulose pulp, used for walking sticks, brooms, fishing floats, and fuel. Leaf sheaths are prized for their scent, and fiber from them is also used for rope, coarse cloth, and large hats.

***2.6.2.3 Fruits*:** Stripped fruit clusters are used as brooms. In Pakistan, a viscous thick syrup made from the ripe fruits is used as a coating for leather bags and pipes to prevent leaking.

***2.6.2.4 Wood*:** Date palm wood is used for posts and rafters for huts; it is lighter than coconut but not very durable. It is also used for construction such as bridges and aqueducts, and leftover wood is burnt for fuel.

Where craft traditions still thrive, such as in Oman, the palm tree is perhaps the most versatile of all indigenous plants, with virtually every part of the tree utilized to make functional items, ranging from rope and baskets to beehives, fishing boats, and traditional dwellings.

2.7 Food Marketing System in Nigeria

Food marketing is a very important but rather neglected aspect of agricultural development. In the 70s, 80s and 90s, most African countries maintained a heavy investment in their agricultural marketing policies. Negassa *et al.* (2003) has reported that governments controlled the quantity of food marketed and the prices received by farm households, restricted private traders participation and inter-regional food movement. However, over the last several years, the governments in developing counties have embarked on various market reform measures which have influenced food marketing development in these countries.

The Nigerian agricultural policies as indicated by Olayemi (1982) are usually enacted to increase food production with little or no consideration on how to distribute the food produced efficiently, which will further enhance increased productivity. Hence, food availability at the household level requires that food must be available through their own farm production or by purchasing from the market. However, food marketing by farmers and their families, mostly in the immediate post harvest period usually involves a lot of costs. According to Ahmad and Rustagi (1987), these costs are so high that lowering the cost through efficient marketing system may be as important as increasing agricultural production.

Over the last two decades, the world has witnessed a landslide moment towards market liberalization. As a result, the Nigerian state controlled marketing boards were

abolished or scaled down. Onu (2000) opined that the domestic trade in agricultural products was then taken over by a myriad of small operators operating in rudimentary fashion with the presence of a large number of traders, suggesting that competition is fierce. Thus, market liberalization has resulted in de-concentration and specialization in poorer countries like Nigeria.

2.8 Structure-Conduct-Performance Paradigm

Pomeroy and Trinidad (1995) reported that the structure-conduct-performance approach was developed in United States as a tool to analyze the market organization of the industrial sector, and it was eventually applied to assess the agricultural marketing system. They further stated that as hypothesized in industry organization theory, a casual flow exist between structure, conduct and performance. This theory can be tested using indicators that determine the existence of and extent of deviations from the perfectly competitive model. While factors accounting for efficiency can be evaluated by examining enterprise for structure, conduct and performance using the efficient structure hypothesis.

Edwards *et al.* (2005) stated that there are two competing hypotheses in the SCP paradigm: the traditional "structure performance hypothesis" and "efficient structure hypothesis". The structure performance hypothesis states that the degree of market concentration is inversely related to the degree of competition. This is because market concentration encourages firms to collude. This hypothesis will be supported if positive relationship between market concentration (measured by concentration ratio) and performance (measured by profits) exist, regardless of efficiency of the firm (measured by market share). Thus firms in more concentrated industries will earn higher profits than firms operating in less concentrated industries, irrespective of their efficiency.

While the efficiency structure hypothesis states that performance of the firm is positively related to its efficiency. This is because market concentration emerges from competition where firms with low cost structure increase profits by reducing prices and expanding market share. That is, increased profits are assumed to accrue to more efficient firms because they are more efficient, and not because of collusive activities as the traditional structure-conduct-performance paradigm would suggest (Molyneux and Forbes, 1995).

2.8.1 Market structure

Market structure is the environment in which the firms operate. It can be defined as those characteristics of an organization of a market which seem to influence strategically the nature of competition and pricing behavior within the market (Olukosi *et al.*, 2005). The structural characteristics of the market which influence its nature of competition can also be used as a basis for classifying it. Adegeye and Dittoh (1985) emphasized the characteristics of the market to include size and number of buyers and sellers ensuring an adequate intensity of price and quality of competition, freedom of entry and exit and adequate size of sellers so as to encourage increased investment. It is in this regard that one can categorize markets as perfectly competitive, monopolistic or oligopolistic (Pomeroy and Trinidad, 1995).

In food marketing, very large number of producers and consumers at each end of the marketing chain is suggestive of competitive conditions and, therefore, the focus in analyzing market structure is in the numbers and sizes of enterprises within the system, and the potential access of additional participants to it (Teka, 2009). Hence, a high number of buyers and sellers along the market chain, ease of entry into all functions and

widely available market information together carry a strong presumption of competitive conditions.

2.8.1.1 The gini coefficient

The gini coefficient was developed by Corado 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.

2.8.1.2 Concentration ratio

Market concentration is defined as the number and size distribution of sellers and buyers in the market. According to Pomeroy and Trinidad (1995) the greater the degree of concentration, the greater the possibility of non-competitive behavior, such as collusion. The commonly used measure of market power, or seller concentration, is given by the proportion of total industry sales accounted for by the four large enterprises in the industry. Kohls and Uhl (1985) suggest that, as a rule of thumb, a four enterprise concentration ratios of 50% or more is indicative of strongly oligopolistic industry, if it

is between 33% and 50% a weak oligopoly, and less than that, an un-concentrated industry.

2.8.2 Market conduct

Market conduct implies the analysis of human behavioral pattern that are not readily identifiable, obtainable, or quantifiable (Olukosi *et al.*, 2005). Thus, the conduct refers to the behavior of firms or the strategies used by the firms, for example in their pricing, buying, selling e.t.c. These activities may require the firms to engage into informal cooperation or collusion. Therefore in the absence of a theoretical frame work for market analysis, there is a tendency to treat conduct variable in a descriptive manner (Pomeroy and Trinidad, 1995).

2.8.3 Market performance

Giroh *et al.* (2010) reported that market performance is concerned with technological progressiveness, growth orientation of agricultural firms, efficiency of resource use and product improvement, and maximum market services at the least possible cost. It thus refers to the impact of structure and conduct on prices, costs and volume of output. Olukosi *et al.* (2005) reported that market performance is the appraisal of the extent to which interactions of buyers and sellers in a market stimulate result that is consistent with social purposes. The two approaches to measure marketing performance are: marketing margin and marketing efficiency (Teka, 2009).

2.8.3.1 Marketing margin

Olukosi *et al*. (2005) viewed marketing margin as the difference between the price paid by the consumers and that received by the producers. Adgeye and Dittoh (1985) stated that marketing margin is the representation of the difference in price paid to the seller and that paid by the buyer. Therefore, man earns a sort of margin for the duties

performed in the marketing chain. The size of margin is mostly influenced by the degree of processing of the commodity, its bulkiness, and unit value, as well as perishability (Olukosi *et al.*, 2005)

2.8.3.2 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. Therefore, it consist of the following two major components viz; the effectiveness with which a marketing service would be performed and the effect on the costs and the method of performing the service on production and consumption (Teka, 2009). 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.

Chapter 3

METHODOLOGY

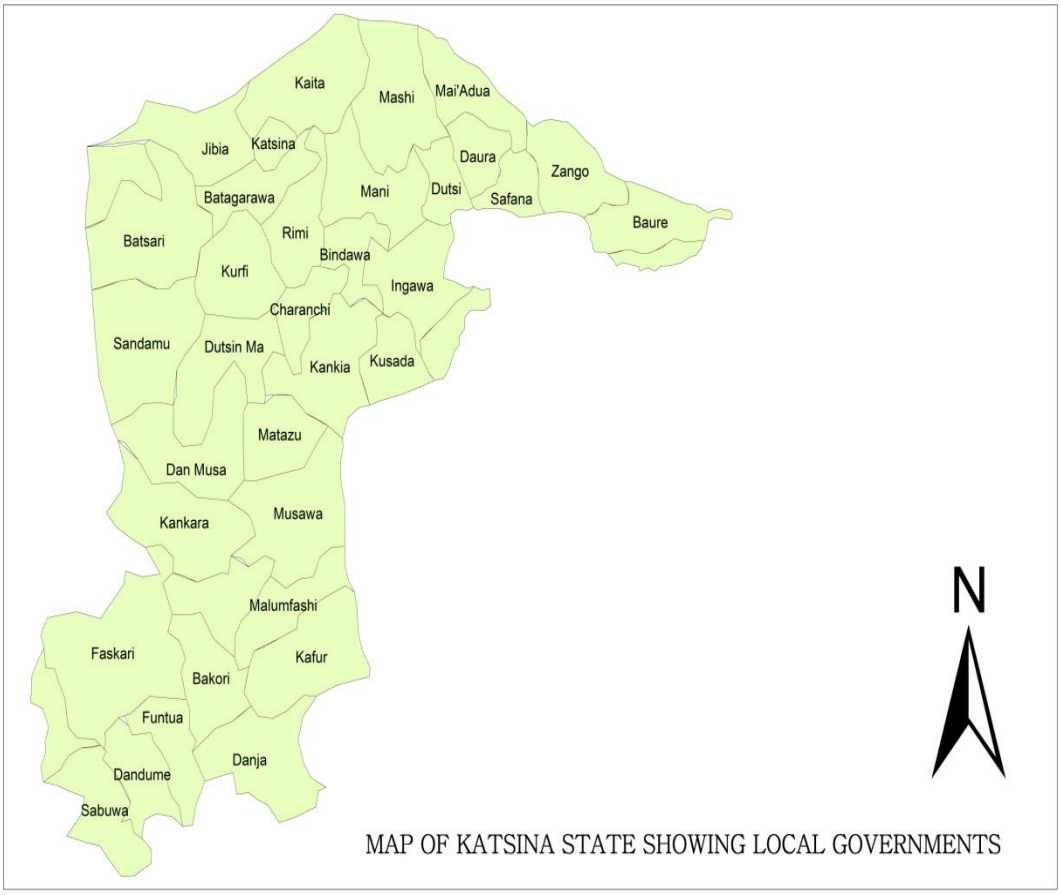
3.1 The Study Area

Katsina State is located between latitude $12^0 15'$ north and longitude $7^0 30'$ east of the equator. The state is located in the Sahel Savannah region of northern Nigeria, covering a total land area of 24,308.40sqkm with a total projected population of about 6,998,046 in 2012 (2006 census) with growth rate of about 3%, (kurfi, 2011). The state borders Zamfara and Sokoto states to the west, Jigawa and Kano states to the east, Niger Republic to the north while Kaduna state is to the south. Generally, the climate conditions of Katsina State vary considerably according to month and seasons. A cool dry season from October to February; a hot dry season from March to May; warm wet season from June to September (nigeriagalleria, 2011). Kurfi (2011) indicated that farming is the main occupation of its people and the state currently plays a leading role in the production of the following cash and food crops; cotton, ground nut, millet, guinea corn, maize, rice, wheat, vegetables and date palm. Although there is no recorded data on date palm production, it is indicated by Abdul-Qadir (2010) as one of the 15 states that produces date palm in Nigeria.

Katsina state of northern Nigeria and the southern city (Maradi) of Niger have been one of the oldest trade paths open for centuries to the gulf of guinea, North Africa and the Middle East (CIP,2007). The United Nations in 2006 reported that the intensive trade that thrives between the two countries is that of agricultural products, especially livestock from Niger and cereals from Nigeria; and products are re-exported to Nigeria via Niger coming from Algeria and Togo/Benin. The formation of the Economic Community of West African States (ECOWAS) trade block (Niger was officially

recognized as a republic), the African Union, African Development Bank, the Nigeria-Niger Joint Commission for Cooperation (NNJC), resulted in the non formal free movement of traders between the two countries.

Figure 1



Map of Katsina State showing local governments Source : Mani, 2012

Figure 2



Map of Nigeria showing Katsina state Source: Mani, 2012

3.2 Sampling Procedure and Sample Size

Multistage sampling procedure was used in this study. The first stage involved the purposive selection of three local government areas from the state. This selection was based on the intensity of date palm marketing activities. A reconnaissance survey revealed the predominance of date palm traders in Daura, Jibia and Katsina (LGAs) in Katsina State. The second stage involved the random sampling of date palm traders in these areas for administering of questionnaire and oral interview.

A total of 47 date palm traders were randomly selected in Jibia (LGA) out of the 470 identified. In Daura (LGA) a total of 20 respondents were randomly selected out of the 200 identified as date palm traders, while in Katsina (LGA) a total of 45 respondents out of a population of 120 were randomly selected. These samples represent 10%, 10%,

and 38% of the identified date palm traders in the respective sampled markets of the three local government areas in the state. The percentage in katsina was chosen because of the relative higher intensity in date palm marketing in the area. To achieve this, the number of date palm traders was obtained from the chairmen of date palm traders association in Jibia and Katsina, while in Daura an estimated number of the traders was obtained from Katsina Agricultural and Rural Development Authority (KTARDA) Daura zone.

3.3 Method of Data Collection

Primary data was used for this study. The primary data was obtained through structured questionnaire administered to the selected traders. The information obtained from the traders of date palm included: cost of purchase, sales, cost of transportation, credit facilities and interest (if any), marketing problems, storage facilities, market information, product channel, loading and off loading cost, commission agent, and market charges among others.

3.4 Analytical Tools

The tools of analysis used in the study are:-

a) Descriptive statistics
b) Structure analysis
c) Marketing margin
d) Marketing efficiency
e) Gross margin analysis
f) Inferential statistics

3.4.1. Descriptive statistics

The descriptive statistics used were frequency, mean, range and percentages to achieve objective 1 and 6.

3.4.2. Market structure analysis

3.4.2.1. Gini coefficient

The gini coefficient is a numerical representation of the degree of inequality in a population. The gini coefficient ranges between 0 and 1used 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 (2). 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….n, with X_0=0 and X_n=1

Y_K= the cumulated proportion of the income variable, for k = 0.....n, withY_0=0 and Y_n=1

∑=summation sign.

3.4.2.2. Concentration ratio

The concentration ratio measures the market share of each supplier in the market. It measures the cumulative market share of the largest *n* firms (Stead, 1996). 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= sales volume of largest four firms X 100
Total volume of sales

It was used to achieve part of objective (2)

3.4.3 Marketing margin

Marketing margin is the difference between the price paid by consumers and that received by producers (Olukosi *et al*., 2005). It was used to achieve objective (3)

$$MM = \frac{selling\ price - purchase\ price}{selling\ price}\ x\ 100$$

Where MM=marketing margin.

3.4.4 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

$$ME = \frac{value\ added\ by\ marketing}{cost\ of\ marketing\ services} \text{X}100$$

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 objective (3).

3.4.5 Gross margin analysis

Gross margin analysis involves evaluating the profitability of an individual enterprise and used when fixed capital is negligible (Olukosi and Erhabor, 1988). Gross margin is the difference between revenue and costs. The costs include variable costs such as cost of transportation, cost of loading/offloading, cost of storage, and market charges. This was used to achieve objective (4)

GM=TR-TVC

Where GM=gross margin

TR=total revenue

TR=QP

Where Q=quantity of date palm purchased (per week)

P=selling price of the date palm (per week)

TVC=total variable cost

In this study the variable costs that were considered include transportation, market charges, loading and off loading, and cost of storage.

3.4.6 Inferential statistics

The inferential statistical tool used was the logit regression model. The probability of a trader's efficiency was determined by an underlying response variable that captures the economic status of the trader. The underlying response variable Y in the case of binary choice is defined by the multivariate logit regression relation. This was meant to show the relationship between the dependent (trader's efficiency) and the independent (costs of transportation, loading/offloading, storage and market charges) variables. The logit regression model was used to analyze the transaction costs that affect the efficiency of the traders. The model used for the logit regression analysis are as follows;

$$Y = \Sigma x_i \beta_j + \mu$$

where $\beta_j = \beta_1, \beta_2, \beta_3, \beta_4$

$$X_i = X_{i1}, X_{i2}, X_{i3}, X_{i4}$$

The relevant logistic expressions are given as:

$$Prob(Y = 1) = 1 - F * (\Sigma X_i \beta_j) = \frac{e^{\Sigma X_i \beta_j}}{1 + e^{\Sigma X_i \beta_j}}$$

$$Prob(Y\ = 0) = F * (\Sigma X_i \beta_j) = \frac{e^{\Sigma xi\beta j}}{1 + e^{\Sigma xi\beta j}}$$

Where F = The cumulative distribution function for $\mu_{i,\ldots}$

The explicit logit model is expressed as:

$$Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + u$$

And Y= $\frac{value\ added\ by\ marketing}{cost\ of\ marketing\ services} X100$

Where Y = trader's efficiency

(1=efficient; 0=inefficient)

x_1= cost of transportation (₦/100Kg bag)

x_2= cost of loading/offloading (₦/100Kg bag)

x_3= market charges (₦/100Kg bag)

x_4= cost of storage (₦/100Kg bag)

$\beta_1 - \beta_4$= The coefficients for the respective variables in the logit function

u = error term

This statistical tool measures association of dependent variable with each independent variable. This tool is usually employed when there are more than one independent variable associating with a dependent variable having numerical values (Atibioke *et al.*, 2012). It was used to achieve objective (5).

Chapter 4

RESULTS AND DISCUSSION

4.1 Description of Date Palm Market Participants

The types of date palm market participants identified in the study area are importers, wholesalers, retailers, and commission agents. These participants perform various market functions at different stages to facilitate the utilities of time, place and possession.

4.1.1 Importers: The importers have very large capital base (N250,000-N40,000,000), they have apprentice working under them (usually family members), and can store their product for a long period of time. The importers have knowledge of timing, costs and prices of the product. Some own the vehicles (truck) they use for transporting date palm from Niger Republic while others use commercial vehicles.

Plate I



An importer haggling over price in Jibia

Plate II



Imported dates into the country (Jibia)

4.1.2 Wholesalers: The wholesalers have relatively large capital (N40,000-N500,000) when compared to the retailers, but their capital is not as large as that of the importers. They often have more knowledge on demand of the fruit in urban and rural areas. They purchase their product from the importers and can also store their products, but mostly in rented shops. Marketing of their products is at designated spots and have regular retailers that buy in small quantities from them.

Plate III



A section of wholesalers in Katsina

Plate IV



A section of wholesalers in Jibia

4.1.3 Retailers: Retailers buy date palm fruit in small quantities from wholesalers because of their low capital or lack of it (N2,000-N60,000). The retailers have direct contact with the consumers, therefore have knowledge on consumer behavior and needs. They do not have designated spots where they sell their products, rather, they sell their

products at markets, streets and sometimes pushing on wheel barrows from place to place. Most often than not retailers sell date palm along with other products such as tiger nut.

Plate V



A retailer pushing dates on wheelbarrow in Daura

4.1.4 Commission Agents: agents purchase products on behalf of the wholesalers that buy date from the importers from other parts of the country. They do not take title to the product they buy, mostly because they lack the capital that will allow them to venture into the business. They have knowledge about market conditions and have established good relationships with the importers.

4.1.5 Trading experience of the participants

The trading experience for date palm traders in Jibia, Katsina and Daura are presented in table 4.1. The result revealed that the traders have an average trading experience of

8.2, 4 and 7.8 years for Jibia, Daura and Katsina respectively. This shows that Jibia traders have more experience than those of Daura and Katsina. The result also revealed that new entrants into the business (one year or less) are more in Daura recording up to 55%, though Jibia and Katsina markets show more entrants into date palm marketing business with 41.5% and 48.7% respectively. The average years of experience is 11.6 years. This shows that the traders must have gained some level of expertise over the years, which further gave 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 profession/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.

Table 4.1 Distribution of respondents according to marketing experience

Years of experience	**Daura**		**Jibia**		**Katsina**	
Status	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
1-8	11	55	17	41.46	19	48.72
9-16	8	40	13	31.70	8	20.51
17-24	1	5	4	9.75	3	7.69
25-33	0	0	6	14.63	8	20.51
34 and above	0	0	1	2.44	1	2.56
Total	**20**	**100**	**41**	**100**	**39**	**100**
Average=11.6	minimum=1year		maximum=40years			

4.1.6 Amount of capital available for date palm marketing and sources of finance

4.1.6.1 Amount of capital available for date palm marketing

On the average, a total of ₦2,532,378/week is the amount of working capital devoted to date palm marketing per week by the importers in Jibia, while in Daura and Katsina, an average of ₦87,400/week and ₦403,157.9/week are the amount of working capital for

date palm trading by retailers and wholesalers respectively (table 4.2). The result showed that Jibia traders have more working capital than their counter parts in Daura and Katsina. The differences between the three markets could be because majority of the traders in Jibia are involved basically in the importation of the fruit into the country which requires a huge amount of capital.

Table 4.2 Amount of capital available for date palm marketing in the study area

Participants	**Maximum (₦)**	**Minimum (₦)**	**Average (₦)**	**Standard error**
Importers	40000000	250000	2532378	16341.32
Wholesalers	500000	40000	403157.9	25412.56
Retailers	60000	2000	87400	464.21

Importers and wholesalers needed higher amount of capital as a result of their peculiar costs of marketing services such as transportation, storage, market charges, loading/offloading which they incur while the retailers incur no such costs hence their relative low capital.

4.1.6.2 Sources of finance

The study identified three major sources of finance available to date palm marketers. These sources are;

i. Family and friends
ii. Personal savings
iii. Wholesalers (Ubangida)

Finance from family and friends constituted 34.95%. Personal savings contributed about 29.12% of the sources of finance, while wholesalers (Ubangida in Hausa) contributed 29.12%. There are a few of the traders who obtained credit from their cooperative society consisting of only 2.91% of the respondents, while 3.88%

inherited the business. The implication of this is that date palm trading in the surveyed markets is based on familiarity and kinship as well as a family business.

4.2 Structure and Conduct of Date Palm Marketing

4.2.1 Market structure and conduct

Harriss (1993) 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, organization of date palm traders, identification of the different types, varieties and forms, market information, marketing channel, and entry and exit conditions were analysed to examine the influence of the existing market structure on the market conduct.

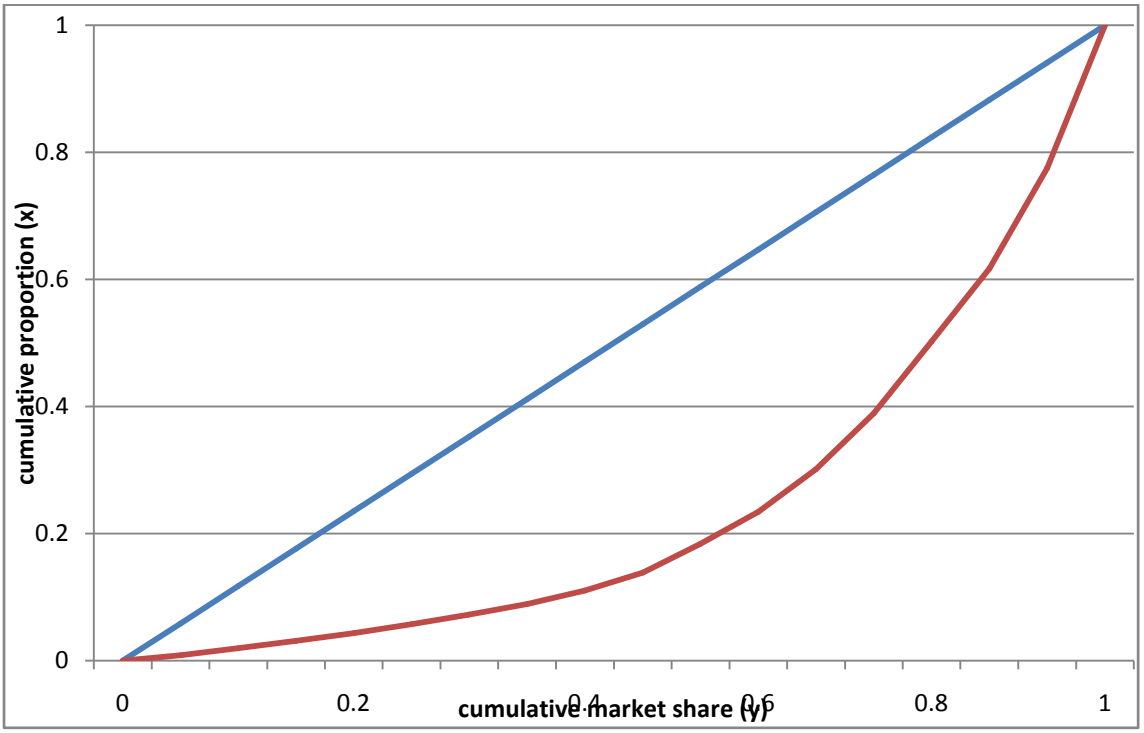
4.2.1.1 Number and size of market participants

The market was found to have numerous buyers and sellers. The importer, wholesaler and retailer gini coefficients were calculated as 0.52, 0.47 and 0.56 respectively. Figures 1, 2 and 3 showed the Lorenz curves which graphically depict the nature of seller concentration that was quantitatively analysed using gini coefficient. On the graph, the cumulative market share was plotted on the x axis while the cumulative proportion of the total number of traders (importers, wholesalers and retailers) were 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^{o} line. The degree of inequalities in market share (starting with the lowest value) amongst the traders are shown by the curves which form an arc with the 45^{0} 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.

Thus, at the importer level, the value of the gini coefficient (0.52) is tending towards unity indicating that there is an inequality or high level of seller concentration at this level. Further, from the Lorenz curve (figure 3) the extent of deviation of the curve from the line of equality shows an imperfect market competition (52% gini), such that no particular date palm market participant is large enough to have the market power to set the price of date palm, but only a few of the traders handle the major share of the quantity transacted at the market.

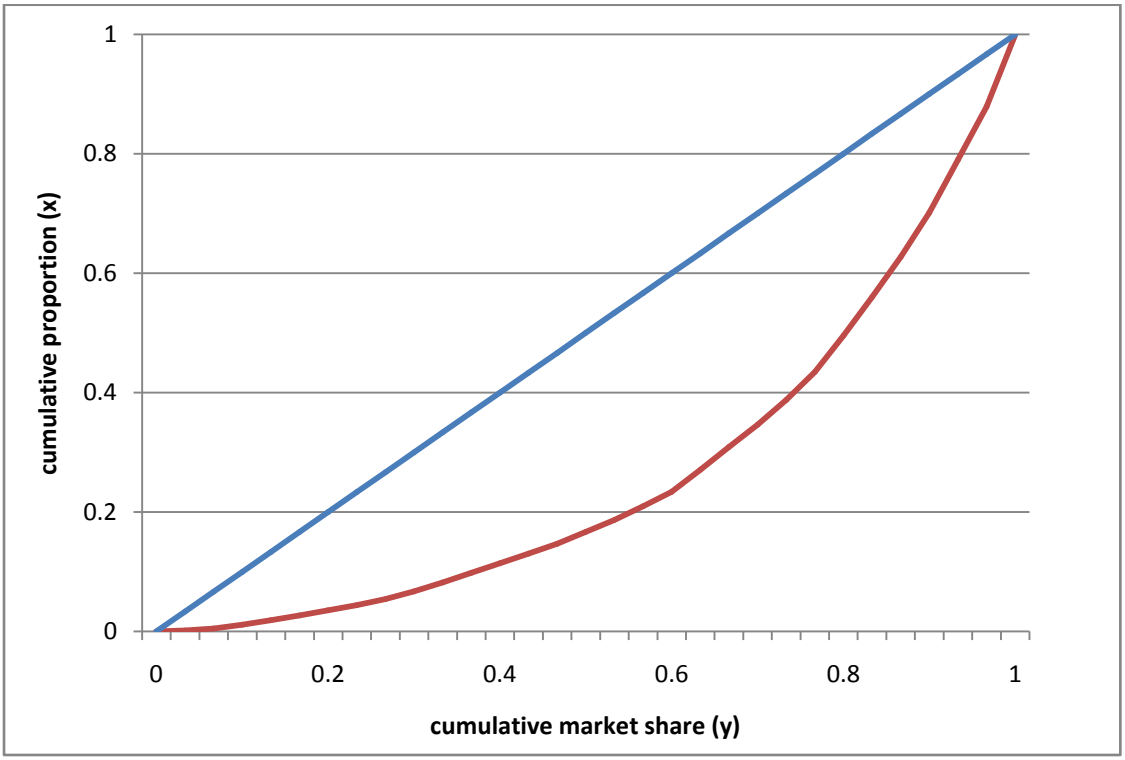
Figure 3



Lorenz curve for importers

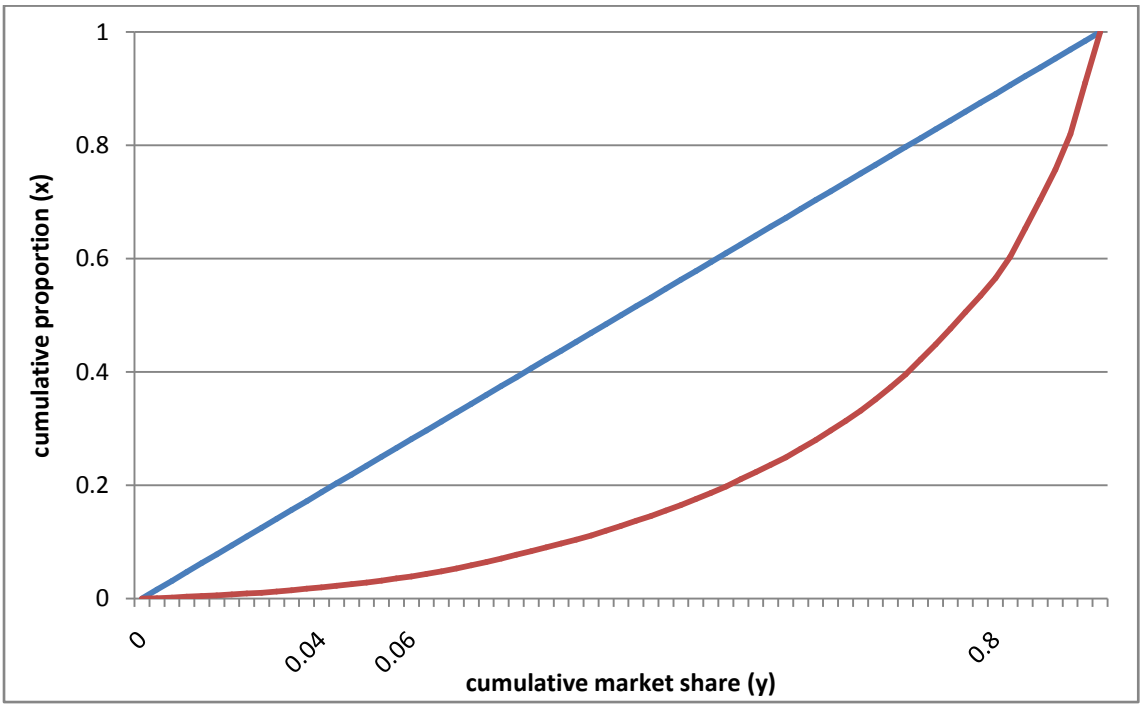
In the case of the wholesalers, the market was found to be purely competitive (gini coefficient of 47%) as indicated in the Lorenz curve (figure 4). Additionally, the calculated gini coefficient (0.47) pointed towards a low level of seller concentration in the wholesaler category.

Figure 4



Lorenz curve for wholesalers

Figure 5



Lorenz curve for retailers

While at the retail level, a gini coefficient of 0.56 is indicative of a high level of seller concentration with an imperfect market competition as shown in the Lorenz curve (figure 5) that is a gini of 56%. The nature of market competition is imperfect. Though there are many sellers in the market selling a standardized product of date palm, there is also the existence of full market knowledge at this level.

Thus, the characteristics of date palm marketers include;

i. There are many buyers in the market purchasing a standardized product (date palm). Therefore it can be said that the structure is purely competitive.

ii. There are many participants, especially retailers and commission agents that enter into date palm marketing during the Muslim holy month of Ramadan only and/or when the fresh date palm is in season, usually between the months of June - July to make short-term seasonal trading. These retailers and commission agents are either farmers or are involved in trading of other products such as sugar cane.

4.2.1.2 Concentration ratio

The concept of concentration ratio was also used to further determine the structure of the market. The concentration was computed according to Kohls and Uhl (1985) rule of thumb. They suggested that as a 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. The concentration was therefore computed by computing the total monthly sales of the largest four firms and then divided by the total monthly sales (importers, wholesalers and retailers). The result showed a concentration ratio of 38.8%, indicating the weak oligopolistic nature of the market. The result further agrees with the findings of Abdulsalam (2004) on cross-border grain marketing. In spite of its oligopolistic nature, the market does not show any

of the characteristics of a pure oligopolistic 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).

$$CR = \frac{260200000}{669884220} X100 = 38.8\%$$

4.2.1.3 Organization of date palm market participants

Largely, about 98% of the date palm in Nigeria is imported into the country from Niger Republic while the remaining 2% is what is grown locally in Jigawa, Kano, Adamawa, Bauchi, Borno, Gombe and Yobe states (AbdulQadir *et al.*, 2011). The study area is one of the major areas which the bulk of the date palm is imported into the country through Jibia and Mai'Adua borders. Traders in Jibia go to Tawa (Niger Republic) to purchase the produce from the bulking market. Tawa is the major town where dates are produced and also where those imported from Algeria and Mali are assembled. Therefore, traders have little or no contact with the farmers or producers. Some of the traders, however, go as far as Mali to purchase the date palm.

Jibia market is the bulking market of the imported fruit in Nigeria. Though the market operates on sunday, importers of date palm transport and trade in the market on saturday. It is in this market (Jibia market) that wholesalers purchase the fruit to retail or wholesale again at other markets. At this market, there are wholesalers from different parts of the country some in person while others use the services of commission agents. The only wholesalers who don't use agents are those from Katsina.

Inheritance, familiarity and kinship were found to play a leading role in date palm marketing, therefore, there is a network of buyers and sellers who transact business with each other rather than anyone else. Most often than not it is on this basis

that products are given out to other traders on credit which is to be paid in a week or two depending on how well the relationship is established. The use of agents by other traders from other parts of the country is a further indication of the relationship that exist between the traders. As stated in their own words, the wholesalers use agents because they know the market and have a better rapport with the importers. They can therefore negotiate better prices than the wholesalers themselves.

4.2.1.4 Identification of the different types, varieties and forms of dates

Two types of date fruits (local type and foreign type) were traded in two LGA of the study area; viz: Katsina and Daura, while the foreign type is what is traded in Jibia LGA mainly. The most widely traded type of date palm fruit in the surveyed markets are the foreign type (Deglet Noor, Danmali or Empress and Tagyal) which are available in all the three LGAs. The local type of date palm marketed is in its fresh form while the foreign type is in its dry form. It was noticed that the processed form of date palm which is more expensive than the unprocessed dates is not marketed in any of the surveyed markets because its demand is very low. The predominance of the foreign type of date in the study area shows the high rate of importation of the fruit into the country.

The marketing participants used the following methods to identify the different varieties, namely: colour, size, shape and taste. Traders reported that when held up to the sun, the centre of Deglet Noor appears light or golden, it is semi dry and not very sweet. Deglet Noor is further sub divided into a high quality grade I (giredi in Hausa) and a lower quality grade II by the traders. Some of the traders are of the opinion that there is not much difference between the two grades but that the differentiation is used as a marketing strategy. Danmali (empress) is bigger in size than Deglet Noor, somewhat softer and sweeter and has a light tan top half and brown bottom half. Tagyal is the sweetest amongst the three and is very dark skinned.

The most preferred and widely traded type of date fruit in the surveyed markets is the Deglet Noor probably because it is the chief export cultivar in the world and its higher level of consumer preference. It is cheaper and readily available at the bulking market and stores relatively better than the other types. The Deglet Noor is still the preferred type of date palm fruit by the consumers because it is cheaper and not very sweet when compared to other types of the fruit.

4.2.1.5 Market information

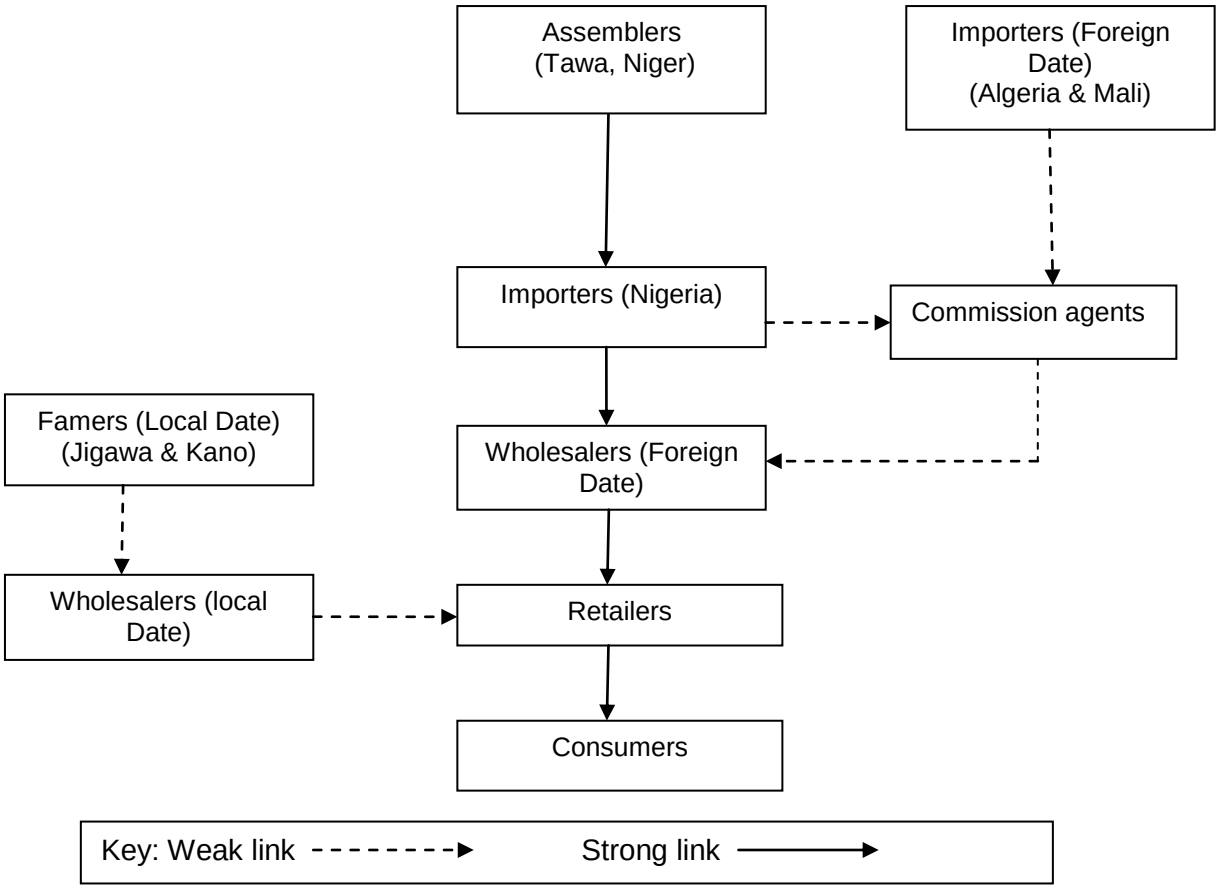
Market information is the knowledge that enables buyers and sellers to take decisions in the market. Available market information will allow buyers and sellers to take more rational decisions. Informal market information is not communicated between the participants of date palm marketing (importers and wholesalers). The traders and buyers usually take advantage of market situations through negotiations and haggling. The case is different with the retailers who very often than not obtain market information through co-traders or from their wholesalers. According to the importers and wholesalers, date fruit has a fairly regular price and majority of the traders are aware of when prices are likely to go up; during the Muslim holy months of Ramadan and Dhulhajj due to high demand of the fruit in these periods when Muslims fast and perform pilgrimage. And the prices are said to fall during the harvest of new fruit (Muharram, the first month of the Muslim calendar).

4.2.1.6 Marketing channel of date palm

The date palm marketing channel identified in the study area revealed the participation of 5 major actors. These participants were involved in the channeling of date palm from the farmers to the consumers. At every stage of the channel the participants perform marketing functions such as loading/offloading, transportation and storage. The

participants include importers, wholesalers, commission agents, retailers and consumers. Figure 3 shows the marketing channel of date palm in the study area;

Figure 6



Date Palm Marketing Channel in Katsina State

4.2.1.7 Entry and exit conditions

This refers to the ability of a firm to enter or leave a market. There was no apparent restriction to entry into and exit from date palm marketing as is the case with most agricultural marketing. However, there was a monetary or high start-up capital needed in becoming an importer or a wholesaler. This agrees with the findings of Sambo (2005). He stated that entering into or moving to another status in Gum Arabic marketing is influenced by size of capital. An exception to this condition was found in few traders in Katsina (central mosque market), where they have entry conditions such

as agreements on standard selling price based on the same standard method of measurement and acquisition of shop shade from the chairman of date palm marketers association (Katsina central mosque area). The research found out that inheritance, experience, kinship and honesty to some extent influenced the conduct of the marketing system, since a greater percentage of the transactions carried out are based on credit. About 99% of the respondents interviewed revealed that entering into date palm marketing system is influenced by size of capital, kinship and honesty. Therefore the conduct between the importers, wholesalers and retailers is solely based on kinship and honesty. There are no exit conditions from the market.

4.3 Market Performance Analysis

The results of the marketing margin and efficiency that were employed in this study to measure the market performance are presented in tables 4.5 and 4.6. The average prices and cost of marketing services in Naira per 100kg bag of date palm in the study area is presented in table 4.3. The data in this table were used to calculate the marketing margin and efficiency.

Table 4.3 Average costs and prices of date palm (₦/100kg bag)

Market services/participants	**Markets price of services**			
a. *Cost of purchase(₦)*	**Jibia**	**Katsina**	**Daura**	**Average**
Importer	19375	NA	NA	19375
Wholesalers	20000	22600	NA	21300
Retailers	20667	24000	19250	21306
b. Cost of m*arketing services(₦)*				
Transportation	300	174.4	150	208.1
Storage	49.1	69.8	0	59.4
Market charges	10.0	58.0	10.4	26.1
Loading/offloading	75.0	43.3	25.0	47.8
Total cost	***434.1***	***345.5***	***185.4***	***335.2***
c. *Selling price(₦)*				
Importers	22000	NA	NA	22000
Wholesalers	23000	27250	NA	25125
Retailers	23400	28000	23833	25078
Total selling price(₦)	***69400***	***55250***	***23833***	***73203***

NA: not applicable

4.3.1 Marketing margin analysis for participants of date palm marketing

Market margin represents the difference at two market levels and is most commonly used to refer to the difference between what the consumer pays for a commodity and what the farmer (producer) gets. However, Scarborough and Kydd (1992) elaborated that market margin describes price differences between other points in the marketing chain (i.e it may be between producer and wholesale, or wholesale and retail prices). The size of the market margin reflects the effect of the characteristics of the marketing

functions that must be performed as the product passes through the marketing system (Olukosi *et al.,* 2005).

Table 4.4 Average marketing margin of participants of date palm marketing

Type of market participant	**Markets**	**Margin**		
	Jibia	**Katsina**	**Daura**	**Average**
Importer(₦)	11.93	NA	NA	11.93
Wholesaler(₦)	13.04	17.06	NA	15.05
Retailer(₦)	11.68	14.29	19.23	15.07

NA: not applicable

Table 4.5 Average marketing margin per 100kg bag in percentage of markets in katsina

Market participants	**Markets**			
	Jibia	**Katsina**	**Daura**	**Average**
Importer's share	29.52	NA	NA	29.52
Wholesaler's share	32.26	54.42	NA	43.34
Retailer's share	28.89	45.58	19.23	31.23
Consumer's share	100.00	100.00	100.00	100.00
Market Margin(MM)	***70.48***	***45.58***	***80.77***	***34.69***

NA: not applicable

The result of the analysis revealed that the importer's share of what the final consumer pay was 29.52, as shown in table 4.5. The average marketing margin was 34.69%. The retailers in Daura have the highest market margin of ₦19.23 than the retailers, wholesalers and importers in Katsina and Jibia. Furthermore the margin in Daura 80.77% is higher than in both Jibia (70.48) and Katsina (45.58). The market margin indicates that date palm marketing is profitable in the surveyed markets and is

considered very high in comparison to the cost of marketing services provided and the percentages received by the traders.

4.3.2 Marketing efficiency

The result in table 4.6 showed that Daura had the coefficient of market efficiency of 449.92%, Jibia (336.85%) and Katsina (217.08%). The higher the efficiency ratio the higher the marketing efficiency. The very high market efficiencies could be interpreted to mean an efficient marketing system.

Table 4.6 Market efficiency of the study area

Price/cost unit(₦)	**Jibia**	**Katsina**	**Daura**
Importer/wholesaler price	22000	27250	23000
Cost of marketing services	415.16	345.50	185.40
Retail price	23400	28000	23833
Value added	1400	750	833
Market efficiency	336.85%	217.08%	449.29%

4.4 Cost and Return in Date Palm Marketing

4.4.1 Gross margin analysis

The costs and returns associated with date palm marketing for importers/wholesalers in the study area is as obtained from the gross margin analysis and is presented in table 4.7;

Table 4.7 Average costs and returns of date palm/week (importers/wholesalers)

Variables	Values
a. ***Average quantity of date palm(wk)***	***4,138.79kg***
b. ***Average revenue/wk(₦)***	***2,105,626.95***
c. ***Variable costs***	
Average purchase price(wk)(₦)	1,437,976.43
Transportation	14,458.70
Loading/offloading	2,587.76
Market charges	2,730.61
Storage	3,900
Total variable cost (TVC)	***1,451,653.50***
d. ***Gross Margin (GM)(₦)***	
b-c	653,973.45
Gross margin/marketer	13,624.45
e. ***Average rate of return (₦)***	
b/c	1.45

The average quantity of date palm traded in a week by an importer/wholesaler as shown in table 4.7 is 4,138.79kg. The total variable cost (TVC) is ₦1,451,653.43. The gross margin in date palm marketing is ₦653,973.45 with an average rate of return of 1.45. This indicated that for every ₦1.00 invested in date palm trading, there was a 45% return to profit. The gross margin analysis showed that date palm marketing is profitable in the surveyed markets. Umar *et al*., (2011) obtained similar results in the evaluation of *Acacia* (Gum Arabic) species market structure, conduct and performance in Borno State, Nigeria.

Table 4.8 Average costs and returns of date palm/week/retailer

Variables	Values
a. ***Average quantity of date palm(wk)(kg)***	***237.74***
b. ***Average revenue/wk(₦)***	***57,057.60***
c. ***Variable costs***	
Average purchase price(wk)(₦)	46,948
Transportation	358.57
Loading/offloading	0
Market charges	57.28
Storage	0
Total variable cost (TVC)(₦)	***47,363.85***
d. ***Gross Margin (GM)(₦)***	
b-c	9,693.75
Gross margin/marketer	151.46
e. ***Average rate of return (₦)***	
b/c	1.21

In table 4.8, the average quantity of date palm traded in a week by a retailer is 237.74kg. The total variable cost (TVC) is ₦47,363.85. The gross margin, that is the profit of date palm trading is ₦9,693.75 with an average rate of return of 1.21. This indicated that for every ₦1.00 invested in date palm trading there was a 21% return to profit. The gross margin analysis showed that date palm marketing is profitable in the study area.

4.5 Transaction Costs Influencing the Efficiency of Date Palm Traders

The logit regression analysis was estimated to examine the nature of effect of transaction costs on the efficiency of date palm marketing. As shown in table 4.9, the result of the importer/wholesaler revealed that all the variables were positive except for cost of loading/offloading which was negative and significant. The retailers result

indicated that all variables were negative and not significant except for cost of storage which was positive but also not significant. When pooled (importers/wholesalers/retailers), the result showed that the estimated coefficients of market charges and cost of storage were positive, while cost of transportation and cost of loading/offloading were found to be negative.

Table 4.9 Estimated logit regression for costs affecting efficiency of date palm traders.

Variables	Importers/wholesalers			Retailers			Pooled		
	Reg.coeff	**Std.error**	**t-value**	**Reg.coeff**	**Std.error**	**t-value**	**Reg.coeff**	**Std.error**	**t-value**
Cost of transportation	0.000032	0.000166	0.191780^{NS}	-0.195270	219.10	-0.89125^{NS}	-0.000032	0.000163	-0.19536^{NS}
Loading/offloading	-0.000076	0.000037	-2.11460*	-0.026687	275.44	-0.96890^{NS}	-0.000137	0.000043	-3.2164*
Market charges	0.000340	0.000711	0.47950^{NS}	-0.86156	812.0	-0.10610^{NS}	0.000224	0.000681	0.33042^{NS}
Cost of storage	0.000222	0.000745	0.29852^{NS}	1.1556	1941.7	0.59517^{NS}	0.000653	0.000898	0.72716^{NS}
Constant	2.0653	0.72576	2.8457**	322.94	0.3019	0.10695^{NS}	2.7503	0.51465	5.3440**

* significant at 1%, ** significant at 5%, NS not significant

The pooled result revealed that the coefficient of cost of transportation was negative and not significant. This result agrees with the findings of Jatau (2008) on profitability assessment of *borassus aethiopum* (mart) marketing in Adamawa State. He found cost of transportation to be negative and not significant for B.*aethiopum* products. Inspite of the result showing its insignificance in the efficiency of date palm traders, the result indicated that it has an inverse relationship with the efficiency of the traders. This shows that a reduction in the cost of transportation can result in increased efficiency of the traders. Efficiency here implies the extent to which the trader's financial returns are able to offset the costs. Therefore the result further showed the ability of the traders returns to offset the cost of transportation.

The coefficient of cost of loading/offloading was negative but significant at 5%. The result shows an inverse relationship with trader's efficiency. This means that the lower the costs of loading/offloading the higher the level of efficiency of the traders. In a work done by Jatau (2008) on profitability assessment of *borassus aethiopum* (mart) marketing in Adamawa State, Nigeria he found the cost of loading and offloading to be positive and significant. The coefficient of market charges was found to be positive but not significant giving a direct relationship with efficiency. This means that a more efficient marketing system will improve the return of the traders. Storage facilities are important component of agricultural produce marketing and if they are poor could affect the efficiency of the marketers, and this was found to be positive but not significant. The results obtained on cost of storage negates the findings of Ike and Chukwuji (2005) whom found the cost of storage facilities to be positive and significant in efficiency measurement of cashew nut marketing in Enugu State, Nigeria.

Further more, as shown in table 4.9, the importer/wholesaler result revealed that the coefficient of cost of transportation, market charges and cost of storage were found

to be positive but not significant. The results obtained on cost of transportation, cost of storage negates the findings of Ike and Chukwuji (2005) whom found the cost of transportation and cost of storage facilities to be positive and significant in efficiency measurement of cashew nut marketing in Enugu State, Nigeria. The coefficient of cost of loading/offloading was found to be negative and significant at 5%, giving an inverse relationship with the trader's efficiency. This means that the lower the cost of loading/offloading the more efficient the traders. Jatau (2008) found the cost of loading/offloading to be positive and significant in his study on profitability assessment of *borassus aethiopum* (mart) marketing in Adamawa State, Nigeria.

The coefficients of cost of transportation, cost of loading/offloading, market charges and cost of storage facilities were found to have no significant explanatory power on the efficiency of retail traders of date palm in the surveyed markets (table 4.9). This is in line with apriori expectations as the retailers do not incur any of the marketing costs that may affect their transaction efficiency.

4.6 Problems of Date Palm Marketing

Date palm marketing in the study area is associated with so many problems. Table 4.10 shows the basic problems encountered by date palm marketers. The most important problems as given by the respondents are the problems of pest infestation of date palm, lack of capital, market seasonality, problems with custom officials, loan default and government policies.

Table 4.10 Problems associated with date palm marketing in katsina state

Problems	**(%)**	**Ranking**
Pest infestation	46	1st
Lack of capital	29	2nd
Market seasonality	20	3rd
Problems with custom officials	17	4th
Loan default	15	5th
Government policies	9	6th
Armed robbery	8	7th

Multiple responses were used

4.6.1 Pest infestation

Date palm fruits are subject to attacks by several pests to mention a few (such as banks grass mite, old world date mite, parlatoria date scale and red date scale) that are in most cases well adapted to the environment. Damages caused by these pests can lead to heavy economic losses. This is affirmed by about 46% of the respondents. They assert that the problem of pest occurs when the fruit is not stored under appropriate conditions and not dried to the appropriate level of moisture after harvest that will ensure that it is not sensitive to pests in the ambient environment. The traders mentioned that sorting of the fruit has to be done before selling resulting in loss of quantity of their product which further affects their profitability. The problem of pest is further associated with the lack of appropriate storage facilities.

4.6.2 Lack of capital

Date palm traders (especially retailers) have a low propensity to save; about 29% reported that they find it difficult to save in order to generate more funds into the business, due to low or lack of capital. The 29% of the respondents (majority of which

are retailers) alleged that because they purchase in small quantities from wholesalers, the rate of purchase is high, therefore there is no enough margin for them to obtain profit that will enable them to expand their business. Although most of the retailers reported that they obtain their goods on credit from the wholesalers, there is no any formal assistance from any financial institution.

4.6.3 Market seasonality

Agricultural products have special features which include seasonality. Thus the seasonal nature of farm products put some constraint on the marketing system. About 20% conveyed that there is seasonality in the marketing system of date palm because of seasonality of demand. They reported that because of its religious importance, there is a high level of demand of the fruit during the Muslim holy month of Ramadan and Dhul hajj. The traders stated that demand is very low in other months which adversely affect its profitability.

Further more, the fresh date that is available only in the months of June and July force the traders into trading of other products. The traders opinioned that the seasonality of the fresh fruit is due to lack of appropriate storage facilities that will ensure the availability of the fresh date fruit during off season.

4.6.4 Problem of custom officials

Importers expressed that custom duties was very high due to the non existence of standardization of duty fare by the officials as well as bribery and corruption by some of the officials. They further stated that there is also the problem of cessation of their goods, problems with immigration and police officers. These problems affected and most times than not increases transportation fare.

4.6.5 Loan default

About 15% of the importers and wholesalers in table 4.12 reported that some of the traders default on loan given to them in form of product. They stated that the implication of this is that the nonpayment of the loan reduces profitability and in some extreme cases may result to a loss of capital. It was discovered that the relationship between importers, wholesalers and retailers is sometimes based on agreement or commission. A default in loan agreement between them affects the market margin of the other.

4.6.6 Government policies

One of the problems affecting date palm marketing are government policies on currency and date production in the country. About 3% expressed dissatisfaction over the devaluation of the Nigerian currency, causing an increase in prices of the product and transportation fare. About 10% of the traders believe that an increase in date production in Nigeria can reduce the high level of importation.

4.6.7 Armed robbery/insecurity

The main problem encountered by the traders during transportation is the high level of armed robbery in some major roads. About 8% of the traders stated that this result in loss of large amount of capital (money).

Chapter 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Date palm has vast economic and environmental benefits. It is used in food, as animal feeds, baskets and mats, construction and as fuel. Additionally, date palm is considered a symbol of life in the desert where it is being utilized for environmental protection and vegetation cover to prevent soil erosion. Date palm marketing in the study area has four (4) major actors viz; importers, wholesalers, retailers and commission agents. On the average, they have 11.6years of experience. The participants of date palm marketing identified the different varieties of the date palm fruit based on color, taste, shape and size of the fruit.

The market structure analysis showed the participation of numerous buyers and sellers in the market. The calculated gini coefficients of 0.52, 0.47 and 0.56 of importers, wholesalers and retailers respectively revealed the inequality in buyer and seller concentration in the market. The Lorenz curves showed that there is a degree of pure market competition. The market was also found to be weekly oligopolistic (concentration ratio of 38.8%) meaning that only a few of the traders handle the bulk of the trade.

The performance of the market was found to be efficient. The market margin analysis showed that marketers in Jibia have the lowest margin 11.93, 13.04 and 11.68 for importers, wholesalers and retailers respectively. Higher margins were obtained by wholesalers in Katsina (17.06) and Daura (19.23). The marketing efficiency for the three markets indicated that Daura market was more efficient than the other markets

recording up to 449.92%, while Katsina has the lowest level of efficiency (217.08%). The overall average efficiency was calculated as 334.41%.

Date palm traders (importers/wholesalers) in the study area received an average gross margin of ₦653,973.45/week/trader and an average rate of return of 1.45/week. On the other hand, retailers had a gross margin of ₦9,693.75/week/trader with a rate of return of 1.21/week The analysis showed that date palm marketing is profitable in the study area.

With respect to the regression analysis in determining the transaction costs that affect the efficiency of the date palm traders- four variables viz; cost of transportation, cost of loading/offloading, market charges and the cost of storage identified as the marketing costs incurred by the traders were tested. The statistical test revealed that only the cost of loading/offloading was significant at 5% in the pooled and importers/wholesalers regression analysis. All the variables were not significant at all levels in the date palm retailer's regression result.

The major constraints associated with date palm marketing in the study area include pest infestation, lack of capital, market seasonality, high custom duties, loan default of other traders, government policies, problem of transportation and poor market information.

5.2 Conclusion

Based on the findings of this study it can be concluded that the structure of date palm marketing in the study area is weakly oligopolistic. Marketing of date palm is profitable and can therefore serve as a means of empowerment for some of the unemployed populace, as well as improving the standard of living of the traders in the study area. Economically, profit of the traders can be improved if strategies are developed to apply

the research and technological progress on ground to boost the productivity of date palm farmers in Katsina. Consumption of date fruit in Nigeria far outstrips local production, consequently fruits are imported from the Middle East and neighboring countries thus depleting foreign exchange. In order for the development of date palm marketing to result in tangible improvement in sustainable management, partnership between policy-makers, traders, and the private sector is inevitable.

Results from this study indicated that several variables in this study have no statistical significance on the efficiency of the trader. For example, the results indicated that only the cost of loading/offloading significantly affected the efficiency of the traders. However, efficiency can be increased by increasing pricing efficiency.

5.3 Recommendations

1. There should be increased investment in post-harvest storage technology research and development, where storage and processing equipment could be developed which can be used to reduce pest infestation losses and ensure the all year round availability of the fresh dates.

2. There is the need for the provision of appropriate market facilities such as storage facilities, banking facilities, water supply, fire service and security services by the traders association, government and non-government organizations.

3. The research result showed that there is absolutely no provision of any formal credit facilities among date palm traders. Therefore traders could seek for formal credit from financial institutions such as Bank of Agriculture (BOA) and other private institutions through their associations. This will entice and allow new entrants whom are hindered by lack of capital (especially the steaming unemployed youth) into the business.

4. Consumption of date fruit in Nigeria far outstrips local production and consequently fruits are imported from the Middle East and neighboring countries. Therefore farmers should be made aware of the potentials of date palm so that they may increase production there by reducing the high level and cost of importation of the fruit into the country.

5. The government of Katsina State should emulate Jigawa State by establishing date palm farm settlement scheme to accelerate the production of marketable surpluses that will add to the total economic gross domestic product (GDP), the all year round availability of the fruit and further allow the state to compete in international date palm markets.

6. The Nigerian government should improve policies on security measures that will reduce the high rate of insecurities such as armed robbery especially on high ways.

7. Policies on economic stability that will reduce the devaluation of the Nigerian currency against other currencies of the world, should be enacted by the federal government.

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APPENDIX

STRUCTURE- CONDUCT AND PERFORMANCE OF DATE PALM MARKETING IN KATSINA STATE.

TRADERS QUESTIONNAIRE Questionnaire number_____

Interviewer_____ Time started_____

A. BACKGROUND INFORMATION

1. Name-
   _____
2. Address_____
   _____
3. Name of market_____
4. Local government area_____
5. Telephone (G.S.M) No._____
6. What is your occupation
   i. Date palm marketing only [ ]
   ii. marketing+farming [ ]
   iii. marketing+other items [ ]
   iv. marketing+govt work [ ]
7. How long have you been into date palm marketing?_____years
8. What type of activity do you carry out in the market? A. wholesaler [ ] B. retailer [ ] C. broker [ ] D. Importer [ ]

B. MARKETING ACTIVITIES

9. What is the source of your date palm?
   A. local farmers [ ] B. importers [ ]
   C. my farm [ ] D. wholesalers [ ]
   E. brokers [ ] F. others (specify)_____

10. Do you have agents buying date palm for you in the market? Yes [ ]
    No [ ]
11. If yes, why do you use agents?_____
_____

12(a).When do you normally buy date palm for sale?

A. All year round [ ]
B. During Ramadan only [ ]
C. When purchasing price is low [ ]
D. Others (sepecify)_____

(b) When is your peak period of purchase?_____

(c) Why this period?_____

13. When do you sell the date palm (months)?_____

(b) When is your peak period of sale?_____

(c) Why this period?_____

14. What quantity of date palm do you buy and sell in the market in a day/month/season/year?_____

15. Where do you sell your date palm? A. market [ ] B. at home [ ] C. others (specify)_____

16. Who do you sell it to?

A. wholesalers [ ]proportion……

B. retailers [ ] proportion……

C. consumers [ ] proportion……

17. Which months is date palm available and which months are they scarce?

	Available	Scarce
Fresh		
Dried		

18. (a) Do you have access to market information yes [ ] No[ ]

(b) If yes, where do you obtain your information_____

19. What are the entry conditions into date palm marketing in the market you operate?

List them_____

20. Who sets these conditions?_____

21. Are you a member of a cooperative society yes[ ] No [ ]

(b) State the name of your cooperative and services rendered

Name_____

Services_____

_____

C. FINANCE

Financial Capital

22. Do you have access to credit yes [ ] No[ ]

23. If yes indicate the source and amount

Sources Amount

A. Bank [ ]_____
B. Cooperative [ ]_____
C. Family and friends [ ]_____
D. Personal savings [ ]_____
E. Others (specify) [ ]_____

24. How did you raise the starting capital for date palm trade?_____

_____

25. What is the amount of your present working capital?_____

.

Purchase Practice

26. What is the quantity and price of date palm you buy in a day/month/season?

---

27. Who set your purchasing price?

A. Myself [ ] B. the seller [ ] C. negotiation [ ] D.by market [ ]

E. others (specify)_____

28. If you decide on the purchasing price, how do you set the price?

A. Individually [ ] B. collude consultation with other traders [ ]

C. Others (specify)_____

29. How do you attract your suppliers?

A. By giving better price [ ] B. fair scaling [ ]

C.others (specify)_____

Selling practice

30. How much do you sell a kg of your date palm?_____

31. Who decide on your selling price?

A. Myself [ ] B. by the market [ ] C. purchaser [ ]

D. negotiation [ ] E. others (specify)_____

32. If you decide on the selling price, how do you set it?

A. Individually [ ] B. consult with other traders [ ]

C. other (specify)_____

33. What is the value of your monthly sales?

A. 0-40,000 [ ] B. 40,001-80,000 [ ] C. 80,001-120,000 [ ]

D. above 120,001[ ]

INFORMATION AND TRANSPORTATION

34. What type of date palm do you sell? A. local variety [ ] B. foreign [ ]

35. Which variety of date palm do you sell?_____

36. How do you identify the different varieties?_____

_____

37. Which form of date palm do you buy or sale? A. fresh [ ] B. dried [ ]C. processed[ ]

38. Do you pay any market charge? please specify_____

39. If yes how much do you pay?_____

40. Do you store your date palm before selling? A. Yes [ ] B. No [ ]

41. If yes, for how long?Days/weeks_____
months/year_____

42. How much does it cost you to store 100kg bag in a given period?

Quantity	Duration	Cost (N)

.

43. How much do you pay for loading and off loading of 100kg of date palm?_____

44. What means of transportation do you use in transporting the date palm from the bulking market to the market which you trade?

A. hired motor vehicle[ ] B. wheel barrow[ ]

C. personal vehicle[ ] D. others (specify)[ ]

45. How much do you pay for transporting a 100kg bag of date palm to the market which you trade?

	100kg
Naira	

46. What is the name and distance of the market to this market?

---

47. What type of road links your base market to the market where you trade?
A. all season road[ ] B. dry season road[ ]

48. Do you usually have problem in transporting date palm? Yes[ ]
No[ ]

49. If yes, what is the nature of the transportation problem (tick in order of importance)
A. vehicle not readily available[ ] B. High fare[ ]
C. transporters are not willing to ply bad roads[ ]
D. Others (specify)_____

50. what are the major problems of date palm marketing from your experience?

_____

_____

_____

51. What do you think are the possible solutions to these problems?

_____

_____

_____

52. What is the role of your association in solving these problems?

Thank you for your cooperation.

Time finshed_____