ANALYSIS OF GINGER MARKETS IN HAWUL LOCAL GOVERNMENT AREA BORNO STATE, NIGERIA

Anjikwi Yakubu[1],*, Bashir Alhaji Baba[2], Adamu A. Gadzama[3]

[1]Department of Agricultural Economics, University of Maiduguri, Borno State, Nigeria.
Email: y.anjikwi@gmail.com, phone: 08036267312

[2]Department of Agricultural Economic and Extension Lake Chad Research Institute, Maiduguri
Email:bashir5880@gmail.com, phone: 08025485009

[3]Department of Agricultural Technology and Applied Science, Ramat Polytechnic Maiduguri, Borno State, Nigeria.
Email:.alhassanadamu120@gmail.com, phone: 08038075160

ABSTRACT

The study examined ginger markets in Hawul Local Government Area Borno State, Nigeria. Sixty respondents were randomly selected for this study. Primary data were obtained using questionnaires and multi-stage sampling techniques was employed to select 60 respondents. The Gini coefficient, gross margin and marketing margin were used to measure the structure and performance of market. The average age of the respondents was 40 years, household size was 7 persons, and years of farming experience was16 years. 76.7% of the respondents were married and 52.5% had no formal educated. The gini coefficient of 0.5797 was recorded with the marketing margin of 15.79%. It was concluded that the farmers made more than 100% profit after the transaction period. The market structure of ginger in the areas under study was characterized by monopolistic mode of competition with marketing margin of 6.67% which indication that there are no barrier to entry giving rise to the competitive pricing within the market. It was recommended that the farmers , registering and participate in cooperative society that promoting new innovation and marketing strategies should be paramount important to keep educating and updating their old and traditional way of transaction and government should enact a policy towards creation of industries that will add value to the products and marketing places.

KEYWORDS: Ginger; Markets, Gross Margin, Gini Coefficient.

JEL Classification: D4, C4

1. INTRODUCTION

Ginger belongs to *Zingiberaceae* family and is originated from South-East Asia. Tropical areas having high rainfall and hot and humid weather conditions are favourable for Ginger. The name 'ginger' is derived from the Sanskrit word *'Srngaveram'* which means 'horn root'. In South East Asia the most popular form of ginger is raw ginger. It is revered as one of the most important and valued spices of the world Sukhjinder (2015). For over 5000 years ginger has been recognized as the "universal medicine" by the ancient Orientals of China and India. Dohroo, Kansa l,and Ahluwalia (2012). Today ginger remains a component of more than 50 percent of the traditional herbal remedies and has been used to treat nausea, indigestion, fever and infection and to promote vitality and longevity. Ginger contains 2-3 per cent protein, 0.9 per cent fat, 1.2 per cent minerals, 2.4 percent fiber, 12.3 per cent carbohydrate and a good source of calcium, phosphorous, iron and vitamins Sukhjinder (2015). Ginger is one of the plants that can only grow in the tropics, planting can only be done in equatorial regions such as Western African, one of which is Nigeria. Ginger rhizomes, especially those harvested at a young age do not last long if stored in warehouses. For these reasons, the processing is needed as soon as possible so it remains fit for consumption. To get quality ginger rhizomes, ginger is harvested at the age of not too young nor too old. Fresh ginger is marketed in the form of processed ginger, also marketed in the form of fresh ginger, that is after harvest, ginger is cleaned and sold to the market. Ginger that is ready to be marketed to herbal companies must be of good quality so a strategy for marketing

Ginger was introduced to Nigeria in 1927 and it mainly cultivated in Kaduna State (Obinatu, 2003; Nmadu and Marcus, 2013; Makarau et al., 2013; Ayodele and Sambo, 2014). Yields of 35 to 50 tonnes/hectare can be obtained under good agronomic practices (Asumugha et al., 2006; Jakes, 2007). Its cultivation started around Kwoi, Kubacha, Kafanchan and Kagarko areas of southern Kaduna State and around the neighboring parts of Plateau State (Kaduna State Agricultural Development project, 2000). Northern Nigeria is the largest user of ginger in the country (Abah et al., 2018). In 2000, the world production was estimated at 717,461 tonnes from a land area of 296,650 hectares mainly from Nigeria, India, China, Indonesia, Bangladesh, Thailand, The Philippines, and Jamaica. In terms of area under ginger cultivation, Nigeria ranks first with 56.23 % of total world area under cultivation. This is followed by India (23.6 %), China (4.47 %), Indonesia (3.37 %) and Bangladesh (2.32 %) (Asumugha et al., 2006).

In recent times, ginger cultivation has been introduced into South Eastern and South Western agricultural zones of Nigeria, but Kaduna State remains the largest producer of ginger in Nigeria (Nmadu and Marcus, 2013). The country is one of the largest producers and exporters of ginger in the world especially the split dried ginger (Folorunso and Adeniga, 2013). Among other vegetables in Nigeria, it is the only vegetable that is grown on commercial scale for export; it is mainly exported in split dried form, while exports of fresh ginger are negligible (Eze and

Agbo, 2011). According to the United Nations Food and Agriculture Organization (FAO, 2004), there are two major varieties of ginger grown in Nigeria which differ in the colour of their rhizomes namely, the reddish and yellow varieties. The yellow variety appears to be widely planted than the reddish variety.

Producing for a "market" requires some basic assets and skills. There must be basic infrastructure, such as roads, communication facilities, and farmers must have access to productive resources - land, water, seeds, initial capital, etc. On top of the technological production skills, farmers also need farm management skills to plan their activities, manage cash flows and keep records to gain a proper understanding of the costs involved. Due to the differences in the accessibility to such assets and skills, different farmers can only go through different markets ranging from local (village market stall), national (urban market), regional (neighboring region) to international (export) markets in that order of increasing sophistication (ITC,2010). On these notes the study therefore, analyzes ginger markets in Hawul Local Government Area Borno State, Nigeria. With the specific emphasis of structure and market performance of ginger in the study.

2. **Review of Empirical Studies on Ginger in Nigeria**

Experience has shown that any strategy for agricultural development, however carefully formulated, cannot go very far to stimulate production without the pre-requisite of an efficient marketing system (Pearce, 2003). A well-developed marketing system is expected to complement production effort towards the realization of desirable goal through the provision of time, space, possession and form. Though, ginger as an export commodity has recorded an annual price growth of 39% between 2008 and 2012 (Ewuziem, *et al*., 2015), and that the unit price for Nigeria ginger remains higher than the world average.

Empirical studies in the field of structure-conduct-performance (SCP) suggest certain level of concentration at which non-competitive behaviour for sellers begins in certain enterprises. For instance Dessalegn *et al.,* (1998) analyzed the structure of grain markets in Ethiopia. The computed Gini coefficient was 0.56, indicating a high degree of inequality in terms of volume annually handled. Similarly, Bila and Bulama (2005) reported an imperfectly competitive market for cattle in Borno State Nigeria. Giroh, *et al.,* (2010) examined the structure, of farm gate marketing of natural rubber in Edo and Delta States of Nigeria using the Gini coefficient. The Gini coefficient analysis showed the market was concentrated (0.256), indicating the possibility of non-competitive behaviour among marketers. In a study of fresh okra marketing in Ebonyi State Nigeria, Anuebunwa, (2008) reported Gini coefficient values of 0.812 and 0.8 at the wholesaler and retailer levels respectively, indicating that the market was imperfectly competitive. Ngigi (2008) analysed the structure, of commodity markets in south Sudan. The study used the Lorenz curve and Gini coefficient to show the market concentration. The results showed that, overall, the grain market was very concentrated with a Gini Coefficient of 0.7.

The largest 11.29 % of traders accounts for 39.06% of grain trade, but the smallest 11.29% accounts for only 0.06%.

Analyzing market margins is an important means of assessing the efficiency of price formation in and transmission through the system and thus market performance. Results of analysis of marketing costs and margins are used to determine whether there are excess profits and serious inefficiencies or whether wide margins are due to technical constraints. Nwaru *et al. (*2011) studied the socioeconomic determinants of profit in wholesale and retail banana marketing in umuahia, Abia State, Nigeria. The result indicated that the wholesalers had a lower margin of 46 percent, while the retailers had a margin of 74 percent. Mari (2009) examined the marketing margins for vegetables in Pakistan. The results of price spread across marketing chain revealed that the share of producers were 58, 66 and 65 per cent for onion, tomato and chillies respectively, while the rest went to commission agents, wholesalers and retailers. In a study of frozen fish marketing in Ogun State, Nigeria. Coster and Otufale (2010) observed a high marketing margin compared to the marketing cost, an economic implication that the fish marketers in the study area are making profit. Emam, (2011), evaluated the marketing efficiency of tomato in Khartoum State central markets. The result showed that wholesalers generally got higher marketing margins than retailers with exception of Khartoum market, where retailers got higher marketing margins than wholesalers. In a similar study Fakayode *et al.* (2010) estimated the distribution of net margins among wholesalers and retailers of sweet orange markets in Kwara State, Nigeria. The findings indicated that wholesalers got lower net margin. The problems of food marketing and security in Kwara State Nigeria, was analysed by Babatunde and Oyatoye (2005)

2.1 Gaps in the literature and value addition

The production of ginger in Nigeria is marketed by a high degree of seasonality. Uncertainty in crop prices makes it difficult for farmers in Nigeria to be confident, that they will obtain a sufficient return from the sale of the additional harvest. This is because the storage process is technically difficult and expensive, agricultural prices are therefore subject to strong seasonal variations. This is alleviated by fluctuations of provision of information and market news services that assist producers in organizing supply and enabling farmers to re-rout goods to other markets which suffer from a shortage of supply or high-demand markets.

Moreover, in view of that little or no effort has been made to analyzed ginger market in the study area that could be used as a benchmark for improvement of works targeting product quality and sustainable market supply of the products. Marketing performance of ginger, marketing margin, market structure and problem/constraint of ginger and reduce benefits to farmers engaged in its production and marketing were not adequately understood by policy makers and agricultural extension workers in the study area. This study therefore, analyzed ginger markets in the study area with the specific objectives of identifying marketing

performance of ginger, marketing margin, market structure and problem/constraint of ginger markets.

3. Methodology

The Study Area

The study area has an area of 2,098km^2 and is located between latitude $10^0$15′N and 11^0 40′N and longitudes $12^0$00 ′E and $12^0$37 ′E. It is bounded to the north by Biu local government area, Askira Uba local government are to the East, Gombi (Adamawa State) to the south, and Shani and Kwaya kusar local government area to the West. The Hawul local government had an estimated population of about 120,733 (NPC, 2006), and it was estimated to increase to about 176,190.45 by 2018 based on the National Population Commission (NPC) annual growth rate of 3.2%. The mean annual rainfall of the area is between 650-1000mm with the highest recorded in July and August. The dry season lasts for 7-8 months (October-April). The average mean temperature is about 27^0 with temperature as low as 7^0 and as high as 44^0 (Yakubu, 2009). The soil consist of wide spread series of sand, clay, silt and sandy clay soil. The area has transitional vegetation type of Northern Guinea Savanna located in the Northern Sudan Savanna area of Nigeria. The people of Hawul Local Government Area are mainly small scale famers, while some are engaged in businesses and livestock production.

Source of Data

The data collected for the study includes socioeconomic characteristic of retailers, quantity and price of ginger and constraint of ginger marketing through the use of structure questionnaire in 2018.

Sampling Technique and Data Collection

Two stage sampling techniques were used in the study. The first stages involved purposive selection of four gingers markets which comprises (Shaffa, Kukurupu, Marama and Mbulatawiwi). This is because not all the markets in the study area sales ginger. The second stage involved simple random sampling to select fifteen (15) respondents from the each of four (4) identify markets making a total of sixty (60) respondents.

Data Analysis Techniques

Descriptive statistical tools such as frequency distribution, Percentages, gross margin, marketing margin and Ginni coefficient were used to summarize and describe the data.

Gross margin

The Gross margin is determined using the formular:

GM = TR – TVC……....1

Where

GM = Gross Margin

TR = Total Revenue (Ginger)
TVC = Total Variable Cost

Marketing margin

Marketing margin is obtained by the formula;

Marketing margin = $\frac{\text{Ps}}{Sp} X\ 100$…….……2

Where,
Ps = price spread
Sp = sale price
Price spread = sale price – purchase price

Ginni coefficient

Gini coefficient is obtained by the formula;

GC= $\sum xy$.....3

Where,
GC= Gini Coefficient,
x is the percentage share of each class of seller,
y is the cumulative percentages of the sales.
The Gini coefficient ranges from zero to one.
GC = 1 market is imperfect, and if GC = 0 market is perfect and competitive. Abah et al. (2015) posited that GC greater than 0.35, indicates inequitable distribution of sales income. Studies that have utilized Gini Coefficient to analyze market structure include Giroh et al. (2010), Abah et al. (2015) and Girei et al. (2015).

4. RESULTS AND DISCUSSION

Socio-economic variables

Table 1 showed 51.7% of the respondents were within the age bracket of between 26 and 45 years with the mean age of 40 years and 16 years of farming experience.

This could be to the fact that at there present age, they are occupy with more family and parental responsibility, and as such must engage in one trade or the other inorder to meet there needs. It could also be for the fact that at this age range (26-45), they are able and active people who can convey the bulky agricultural produce within, to and fro the various markets. These categories of retailers could also be considered to be economically viable as they are young and active and less caution of undertaking new risk, thus implore and adopt new method in order to enhance their willingness and eagerness to economic position.

The result further revealed 76.7% of the respondents were married, 23.3% single. A significant proportion of the respondents were married. This could also be attributed to the fact

that marriage comes with more responsibilities as a result of large family size, and hence, the need for household head to engage in multiple livelihoods that could provide sufficient income for the family up keep. This result agrees with Ojo and Jibowo (2008) who reported that married people being responsible, their views are likely to be respected within rural communities as they participate in decision making .

Majority (50.0%) of the respondents had a household size ranging from 6 to 10 people with a mean household size of 7 persons. Household size is crucial to rural marketers where the main source of information about markets price is the family in developing countries particularly Nigeria.

Education affects the way farm business is managed as well as overall production. This is acceptable on the ground that educational level plays a good role in adoption of new policy and undertaking risks (Nkang et al, 2009). Table 1 shows the educational level of the respondents. 15.0% had primary education. 30.0% had secondary, 3.3% had tertiary, and 51.7% had no formal education. The study reveals that majority of the respondents had secondary education, and this suggests that most of the respondents are literate enough to give room for effective communication in undergoing their marketing business in the study area. The more educated the respondents are, the greater their chances of accessing the readily available modern marketing strategy and improved practices.

Measurement of Market Performance

Gross margin

The efficiency of marketing ginger can be understood through the calculated gross margin which measures profitability especially in small scale marketers where fixed costs are negligible. Costs are generally of two types-fixed and variable. Fixed costs are those costs incurred on fixed inputs which do not change as production changes. Variable costs are those costs that relate directly to the level of production. In this study, only the variable costs were considered because in small scale marketers especially in rural areas fixed cost is very negligible and usually ignored. The variable costs considered in this study are costs incurred on variables such cost of ginger, transportation, loading and unloading and other cost items.

Table 2 shows the calculated gross margin is ₦1,320.00 per 50kg bag. The most interest of the values is the total variable cost and the total revenue. The Table, 2, shows that there is a gap between the calculated gross margin and total variable cost of the marketers. This is fairly profitable for the marketers this agree with the findings of (Nwaru, *et al.,* 2010). The cost of purchasing 50kg bag of ginger was ₦8,000.00 which constitute about 97.8 % of the total variable cost and about ₦90 per 50kg bag for transportation was incurred. Labour for loading and unloading has less cost of about ₦40 each per 50kg bag other cost incurred on variable inputs such as sack, tax was ₦50 per 50kg bag. Table 2 revealed the total variable cost of transacting 50kg bag of ginger in the study area was ₦ 8,180.00. The gross return was

calculated by multiplying the 50kg bag of each respondent by the average unit price. This gave a gross income of ₦ 9,500.00 per 50kg bag. The average rate of return was calculated to be ₦1.61 implying that for every naira invested a profit of ₦0.61 was realized.

Marketing Margin

The marketing margin is the difference between the price paid by the consumer and that received by the producer. The average selling of 50kg bag of ginger during the period of study was ₦9,500 while the average cost price per 50kg bag was ₦8,000, the result are shown in Tables 3. The analysis revealed that the marketing margin for ginger in the study area was 15.79% the marketing margin consists of marketing costs as well as the profit made by the marketers from their marketing activities. The low marketing margin of 15.79% signified fairness in the distribution of sales as neither the consumer nor the producer were exploited by the marketers. Theoretically, the level of margin is related to the market structure of a particular category of markets. It is usually higher in more concentrated markets than in least concentrated ones. From the result of the structure of ginger marketers in this study, the market was found to be concentrated in the hands of few individuals due to entry barriers of huge capital requirement and economies of scale.

Market Structure Analysis

Market structure analysis is important in marketing studies as it is used to classify a particular market been studies. Calculation leading to the determination of the Ginni coefficient used in classifying the market are presented in Table 4. The Gini coefficient of 0.5797 was obtained meaning a very high variation of revenue generated from sale of ginger amongst the marketers. This signified that action of some marketers could have had some influence on other marketers as they had high market power, thus resulted uncompetitive market conditions.

The high variations observed in sale income inequality in (Tables 4) can be attributed to many factors including, inability of most marketers to raise adequate capital, as capital is the most important factor in ginger marketing. Another factor that could have contributed to the observed income inequalities is the Insecurity in the study area. Girei et al. (2015) and Nzima and Dzanja (2015) corroborated this study finding they found out high income inequalities in retail levels of marketing and attributed their findings to different levels of investment and possibly barriers to entry. On contrary, Enibe et al. (2008) refuted these findings as they found out that wholesale, retail and farmer level of banana marketing was very competitive depicted by low level of income inequalities. Some other studies which negate this finding include Mauyo et al. (2003) and Kibiego et al. (2003) who found moderate market concentrations levels depicting fairly perfect markets.

Constraints to Ginger Marketers

Table 5 shows the main problems found in the marketing of agricultural produce in the study area. From the table, it shows that the major problem that respondents face is that of low sales 35% complained seriously on the high cost of transportation, 25% stated that if they had good road and transports, they would be able to increase the quantity of produce and thereby, making more profit. 18.0% of the respondents admit that their major problem in the marketing activities is Lack of capital. 17.0% indicate high cost of ginger produce and 6.0% started their major problem is Insecurity.

Table 1 Socioeconomic characteristics of sesame marketers

Socioeconomic characteristics	**Frequency**	**Percentage**	
Age (Years)			
25	2	3.3	
26-35	6	10.0	
36-45	25	41.7	40
46-55	8	13.3	
Above 55	19	31.7	
Marital status			
Married	46	76.7	
Single	14	23.3	
Household size			
1-5	10	16.7	
6-10	30	50.0	7
11-15	18	30.0	
above 15	2	3.3	
Level of education			
No formal education	31	51.7	
Primary	9	15.0	
Secondary	18	30.0	
Tertiary	2	3.3	
marketing experience			
1-5	2	3.3	
6-10	7	11.7	
11-15	14	23.3	16
16-20	21	35.0	
above 20	16	26.7	

Source: Field Survey, 2018

Tables 2 estimated average cost and returns for ginger marketing (₦/50kg bag)

Items	Value(₦/50kg bag)	Percentage
Gross income	9,500.00	
Variable cost		
Cost of Ginger	8,000.00	97.8
Transport	90	1.1
Loading and unloading	40.00	0.5
*Miscellaneous	50	0.6
Total variable cost	8,180.00	100
Gross margin	1,320.00	
Rate of Return(GI/TVC)	1.16	

*Miscellaneous costs consist of payment for gate fees, taxes and daily wages for watchmen

Source: Field Survey, 2018

Table 3 Marketing margin analysis

Parameter/bag	**Ginger marketing(₦/Bag)**
Buying price	8,000.00
Selling price	9,500.00
Marketing margin	
Selling price/buying price *100	**15.79%**

Source: Field Survey, 2018

Table 4 Market structure for ginger marketing

weekly sales(₦)	No. sellers	Percentage of sellers(x)	Cumulative percentage	Total value of weekly sales(₦)	Percentage of total sales	Cumulative percentage(y)	xy
20,000-40,000	27	45.0	45	428987.5	19.8	19.8	0.0891
41,000-60,000	12	20.0	65	384650	17.7	37.5	0.075
61,000-80,000	10	17.0	83	488916.7	22.5	60	0.102
81,000-100,000	5	7.5	90	264583.3	12.2	72.2	0.05415
>100,000	6	10.0	100	602000	27.8	100	0.1
Total	60	100.0		2169138	100.0		0.4203

Source: Field Survey, 2018

G.c = 1 -∑xy

= 1- 0.4203

= 0.5797

Table 5 Major problem of Ginger marketers

Problem	Percentage
Low sales	34
High supply cost	17
High cost of transportation	25
Insecurity	6
Lack of capital	18
Total	100

Source: Field Survey, 2018

5. CONCLUSION AND POLICY RECOMMENDATIONS

Although marketing activity in the area can be regarded as fairly efficient, but the findings concluded that ginger market is profitable venture in the study area as the result indicated that the farmers made more than 100% profit after the transaction period. The market structure of ginger in the areas under study was characterized by monopolistic mode of competition with marketing margin of 6.67% which indication that there are no barrier to entry giving rise to the competitive pricing within the market. They suffer from a number of difficulties that reduces their bargaining power, sales, as they are deprived of getting the right price for their products such as low sales, high cost of transportation, low sales, high supply cost and lack of capital. They also constraint from lack of formal education.

Recommendation

For the attainment of the goal of increased ginger marketing in study and Nigeria, the following recommendations are postulated:-

Majority of respondent has no formal education, registering and participate in cooperative society that promoting new innovation and marketing strategies should be encourage.; Low sales and high supply cost, should be address by mean of value addition to the products in term of rebranding or processing ginger juice, ginger powder etc.; Rural infrastructure such as roads, electricity, and effective communication should be improved to facilitate and enhance marketing activities and efficiency towards reducing high cost of transportation.; Government should enact a policy towards creation of industries that will add value to the products and marketing places. Further studies are required on the performance of ginger markets under different local government areas and Borno state at large to ascertain market performance of ginger.

REFERENCE

Abah D,A., Anjeinu AG, Iorhon AP (2015). Analysis of the Structure and Conduct of Paddy Rice Marketing in Benue State, Nigeria. *Am. J. of Mark. Res.* 1(2):70-78

Abah, D, A., Mbanasor, J. A., & Agwu, M. N. (2018). Analysis of factors influencing the choice of marketing outlets by ginger farmers in Kaduna State, Nigeria. *Journal of Agriculture and Food Environment*, 5(3), 38-47.

Anuebunwa, F.O.(2008). Marketing of Fresh Okra in Ebonyi State, Nigeria. *www.patnsukjournal.com/currentissue retrieved on 26/9/2011*.

Asumugha, G. N., Anyaegbunam, H. N., Ezulike, T. O., & Nwosu, K. I. (2006). Guide to ginger production and marketing in Nigeria, *Extension Guide, 7*. National Root Crop Research Institute (NRCRI), Umudike. pp. 16.

Ayodele, T. J., & Sambo, B. E. (2014). Ginger (*Zingiber officinale* Roscoe) production efficiency and constraints among small scale farmers in Southern Kaduna, Nigeria. *Journal of Agricultural Science*, 6(8), 141-148.

Babatunde, R. and Oyatoye, E. (2005). Food Security and Marketing Problems in Nigeria: the Case of Maize Marketing in Kwara State. www.tropentag.de /2005/full/102/ retrieved on 25/05/2020.

Bila, Y. and Bulama, Y. (2005). Structure of Maiduguri Cattle Market, Borno State Nigeria. *Global Journal of Agricultural Science*, 4(2): 159 – 164.

Coster, A.S. and Otufale, G.A. (2010). Economic Analysis of Frozen Fish Marketi Ijebu Ode Local Government Area, Ogun State, Nigeria. Research Journal of Social Sciences, 1(5): 96-101.

Dessalegn, G., Jayne, T. S. and Shaffer, J. D. (1998). Market Structure, Conduct and Performance: Constraints on Performance of Ethiopian Grain Markets. In: Mose, L. O. (2007). Who Gains, Who Loses? The Impact of Market Liberalisation on Rural Households in Northwestern Kenya. A Ph.D Thesis Submitted to the Wageningen University,Netherlands.

Dohroo NP, Kansal Sandeep and Ahluwalia Neha (2012). Status of Soft Rot of Ginger. *Booklet*, Department of Vegetable Science, Dr.Y.S. Parmar University of Horticulture & Forestry Nauni, Solan, Himachal Prades**h**

Emam, A. A. (2011). Evaluating Marketing Efficiency of Tomato in Khartoum State, Sudan. *Journal of Agriculture and Social Science (7)132-143*

Enibe DO, Chidebelu SAND, Onwubuya EA, Agbo C, Mbah AA. (2008). Policy Issues in the Structure, Conduct and Performance of Banana Market in Anambra State, Nigeria. J.Agri. Ext. 12(2):32-40.

Ewuziem, J.E., Onyenobi, V.O., Ironkwe, A.G. & Tokula, M.H. (2015). Nigeria in World Ginger Trade: An Analysis of Performance from 2008 – 2012. *Journal of Agriculture and Food Sciences,* 13(2), 26-42.

Eze, J.I. & Agbo, K.E. (2011). Comparative Studies of Sun and Solar Drying of Peeled and Unpeeled Ginger. *American Journal of Scientific and Industrial Research*, 2(2), 136-143.

Fakayode, S.B., Omotesho, O.A., Babatunde, R.O. and Momoh, A.A. (2010). The Sweet Orange Market in Nigeria, How Viable? *Research Journal of agriculture and Biological Sciences*, 6(4): 395 – 400.

Folorunso, S.T. & Adenuga K.M. (2013). An Analysis of Technical Efficiency of Ginger Crop Production in Jaba Local Government Area, Kaduna State, Nigeria. *Advances in Applied Science Research*, 4(5), 85-90.

Food and Agricultural Organisation (2004): Food and Agriculture Organisation of the United Nations, Database. FAOSTAT website, http//faostsat. Fao

Girei AA, Dire B, Salihu M, Iliya MM (2013). Assessment of Problems Affecting the Structure, Conduct and Performance of Cowpea Marketing in Yola North and Yola South Local Government Areas in Adamawa State, Nigeria. *Brit. J. Market. Stud*. 1:41-50

Giroh DY, Umar HY, Yakub W (2010). Structure, Conduct and Performance of Farm Gate Marketing of Natural Rubber in Edo and Delta States, Nigeria. Afr. J. Agric. Res. 5(14):1780-1783

ITC (International Trade Center), 2010. Spice Sub-sector Strategy for Ethiopia, by Spice sub – sector Strategy Coordinating Committee with collaboration of International Trade Center (ITC), February, 2010.

Jakes, S. (2007). Beverage of champions. *Journal of Food Chemistry*, 101(1), 148-153.

Kaduna State Agricultural Development Project – KADP (2000): Production of ginger, An extension guide. Kaduna State Agricultural Development Project, Kaduna.

Kibiego MB, Odhiambo MO, Kimani PM. (2003). Analysis of Bean Marketing System in Urban areas of Kenya. African Crop Science Conference Proceedings. 6:587-590.

Makarau, S. B., Damina, A., Daneji, M. I. & Garba, O. (2013). Social-economic factors influencing the adoption of ginger (*Zingiber officinale*) farming technologies in Samaru Zone of the Kaduna State Agricultural Development Project (KADP). *International Journal of Humanities and Social Science Invention*, 2(7), 39-44.

Mari, F.M. (2009) Structure and Efficiency Analysis of Vegetable Production Marketing in Sindh, Pakistan. A Ph.D. Thesis Submitted To the Department of Agricultural

Economics, Sindh Agriculture University, Tando JamPakistan.*http://www.eurojournals.com/finance.htm* *Retrieved 24/05/2020.*

Mauyo LW, Kosgei DK, Okalebo JR, Irkbyr AK, Kimani P, Ugen MM, Maritim HK. (2003). Structure and Conduct of Cross-border Bean (Phaseolus vulgaris) marketing in East Africa: The Case of Western Kenya and Eastern Uganda. African Crop Science Conference Proceedings. 6: 642-648

National Population Commission. Maiduguri, Borno State; 2006.

Ngigi, M. (2008).*Structure, Conduct and Performance Of Commodity Markets In South Sudan:* Linkages Food Security Famine Early Warning Systems Network FEWS NET) Report.http://www.fews.net/docs/Publications/malawi_2008_02_final.pdf

Nkang, N.M., Ajah, E.A. Abang, S.O., & Edet, E.O. (2009). Investment in Coca Production in Nigeria: A Cost and Return analysis of three Coca Production Management Systems in the Cross River State Cocoa belt. *African Journal of Food, Agriculture, Nutrition and Development*. Vol. 9, Pp. 713-727.

Nmadu, J.N., & Marcus, P.L. (2013). Efficiency of Ginger Production in Selected Local Government Areas of Kaduna state, Nigeria. *International Journal of Food Agriculture and Economics*, 1, 39-52.

Nwaru, J. C., Agommuo, U. C. and Nwosu, A. C. (2010) Socio-economic Determinants of profit in Wholesale and Retail banana Marketing in Umuahia Agricultural Zone of Abia State. Publications of Micheal Okpara University of Agriculture Umudike, Abia State, Nigeria.

Nwaru, J. C., Nwosu, A. C. and Agommuo, V. C. (2011). Wholesale and Retail Marketing in Umuahia Agricultural Zone of Abia Stata, Nigeria.

Nzima, W. M. and Dzanja, J. (2015). Efficiency of soybean markets in Malawi: structure, conduct and performance approach. International Journal of Business and Social Science, 6(4): 162- 170.

Obinatu, N. I. D. (2003). The marketing of ginger in Kaduna State, Nigeria. University of Nigeria, Nsukka. Unpublished M.Sc thesis.

Ojo MA, Jibowo AA (2008) Socio-economic Characteristics Influencing Role Performance of Rural Community Power Actors in Agricultural Extension Delivery System in Osun State, Nigeria: J. Agric. Rural Dev., 2: 27-40.

Pearce, D. *Buyer and Supplier Credit to Farmers: Do Donors have a Role to Play?* CGAP Research Paper (2003).

Sukhjinder S. (2015). Socio-Economic Analysis of Ginger Crop in Himachal Pradesh. *Indian Journal of Hill Farming.* 28(1), 35—42

Yakubu D. An analysis of the determinants of land use dynamics in Hawul L.G.A, Borno State. An thesis in the department of Geography, university of Maiduguri. Borno state; 2009. (unpublished).