Analysis of Income Gap between Wholesalers and Retailers of Rice Marketing In Abia State, Nigeria

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Abstract

This study investigates income gap between wholesalers and retailers of rice marketing in Abia State, Nigeria. It specifically examined income distribution and differentials of these middlemen, estimated factors influencing income of the marketers and identifies challenges of rice marketing in the study area. As a survey research, mixed research method was employed in the selection of 100 wholesalers and retailers of rice from the three agricultural zones of Abia state. Data were obtained with structured copies of questionnaire and analyzed using descriptive statistics, Gini-coefficient and Cobb-Douglas function of multiple regression models. The results showed that marketers in the area have very infinitesimally low level of education in addition to marked difference in start-up capital disparity due to their individual capacities, consequently, there exist a huge differential in their income as shown by the Gini-coefficient which posted 0.17 for retailers and 0.42 for wholesalers respectively. It was discovered that age, initial capital, quantity bought, selling price and purchase were retailer's weapon for increase income, while age, experience, sources of income and quantity bought were statistically significant for the wholesalers. The study therefore recommends that government should expand the scope of operation of medium finance schemes and make loans accessible to rice marketers. There is also need for government through the agricultural growth enhancement scheme to encourage more farmers to go into rice production in order to reduce further import bill on rice and importation of food items in Nigeria. Finally, improvement in market and other infrastructure facilities that hinder cost reduction.

Introduction

Investigations into the Agricultural Transformation Agenda (ATA) have confirmed the commitment of government to make Nigeria self sufficiency in food production in response to rising global food prices. More importantly, this is calculated to counter the food importation growing at the rate of 11 percent per annum and meet global demand to accelerate food security and poverty reduction. ATA drive has resulted in the reduction in food import bill from ₦1.1 trillion (about $6.9 billion) in 2009 to ₦ 684.7 billion (about $4.35 billion) in 2013 representing more than 63.04 percent in four years. This figure is expected to reduce further with massive investment in local food production such as rice in which Nigeria spent N365 billions to import in 2010 according to Nigeria ministry of agriculture (Ogunsumi *et al.*, 2013). For example, value chain activities through growth enhancement support (GES) in rice production have birthed more than 15 large integrated private sector rice with more than 534,000 metric tons (FMARD, 2013). The need for rice availability as a measure of nation's commitment to achieving post-development agenda cannot be over-emphasized. Food availability is one of the dimensions of food security (FAO, 2008); and guarantees a healthy and productive nation.

In recent times, rice (*Oryza sativa* or *Oryza glaberrima*) has found a place in global food security and it is an important staple food with rich cultural identity. In Thailand, rice is described as the essence of life; In China, it is referred to life and generally the root of Asian civilization (Gomez, 2001). In addition, rice has a rich nutritive value. According to FAO (2008) and Inuwa *et al*., (2011), many people depend on it for about 80 percent of their calorie requirement; as a result, there is hardly any country in the world where it is not utilized in one form or the other. In Nigeria, rice is one of the few food items whose consumption has no cultural, religious, ethnic or geographical boundary (Ibitoye *et al* 2014) Consequently, its demand and consumption have continued to witness momentous changes with increasing population across all socio-economic classes (Ogunsumi *et al.*, 2013) as represented in Table 1.

Unfortunately, rice production in Nigeria has not kept pace with the increasing population. The annual growth rate of food sub-sector is 2.0 percent while the annual population growth rate is 3.3 percent (NBS, 2002). This means that a wide gap exists between food supply and the demand for food by Nigerians. For instance, Nigeria's annual demand consumption for milled rice exceeds domestic output of 3.3 million metric tons per annum by over 2.2 million MT per annum (FMARD, 2013).

Table 1: Nigeria milled rice domestic consumption annual growth rate

Market year	Domestic consumption	Unit of measure (1000 MT)	Growth rate
2004	3750	1000	2.18%
2005	3800	1000	1.33%
2006	4040	1000	6.32%
2007	4100	1000	1.49%
2008	4220	1000	2.93%
2009	4350	1000	3.08%
2010	4800	1000	10.34%
2011	5600	1000	16.67%
2012	5300	1000	-5.36%
2013	5800	1000	9.43%
2014	6100	1000	5.17%

Source: United States Department of Agriculture (USDA), 2014

This shortage reflects expectation of continued increases of import by Nigeria as a measure to ensure rice food security by eliminating scarcity, because of combination of poor harvest as a result of low technology and/or fast expanding consumption base (FAO, 2014). This measure has implications – pricing efficiency and marketing. One, it makes it very difficult to control prices of rice because it depends on the world market for rice, with its great price volatility. It is easier to stabilize domestic food prices using domestic production (Timmer and Thomas, 2010).

The increase in consumption of rice has implications for its marketing in order to ensure availability. Marketing has come to be seen as a central business discipline making a profitable connection between supply and demand. In Nigeria rice value chain, the main actors on the supply side are farmers, paddy trader, millers, rice wholesalers and retailers adding value activities in production, harvesting, storage and paddy aggregation at traders' level while parboiling, milling, wholesaling and retailing (Ibitoye *et al.*, 2014) aimed at the demand side – final consumer. These activities make marketing a cardinal determinant of frequency and intensity of product distribution facilitated through marketing intermediaries who add value along the supply chain. The number and conduct of the participants along the chain determine its efficiency, pricing and returns accruing to each participant at every state (GVCI, 2007).

Unfortunately for these marketing intermediaries in Nigeria, their value adding activities are performed in an unstable environment constrained by external shocks such as global food crises with attendant food insecurity and made worse by the rising prices of staple foods, large percentage of which arises through the operations of the price mechanism (Ohen and Abang, 2011). More so, vagaries in foreign exchange as a result of drop in prices of crude oil culminate in devaluation of currencies and serious inefficiencies. These characterize the operations of agricultural marketing system in most developing countries as a result of so many socio-economic, political and other constraints militating against marketing efficiency (Obasi, 2008).

The emerging scenario results in sharp increases in prices of rice and other food items; drop in stock level and shelf inventory, with huge implication on profit and by extension income of wholesalers and retailers affecting in most cases the traditional parameters of assessing market performance.

The unpredicted income gap between wholesalers and retailers of rice according to Akande *et al.* (2011) may have risen from lack of access to finance, consumers direct dealings with wholesalers, trade credit transaction between wholesalers and retailers and the paucity of operation between the marketers among other factors. Given this understanding, there is therefore the need to ascertain income differential between these middlemen within the marketing system. The significance of this study will to a large extent contribute to good policy formulation and market strategies aimed at addressing issues of widening income inequalities in our society and challenges of marketing inefficiency that affects pricing efficiency and customer welfare. To achieve this, this study compares the socio-economic profiles of wholesalers and retailers of rice; ascertains the income of marketers and the differentials and estimate the factors affecting income of the marketers.

Income Gap Perspective in Rice Marketing

One of the main causes of poverty in the world is income inequality; it has continued to exacerbate the gap between the rich and the poor in all spheres of human endeavor. Nigeria in spite of its impressive growth is among the most unequal countries in the world with respect to income distribution, with the poorest half of the population holding only 10 percent of national income (British Council, 2012; Idowu *et al.*, 2011). Income inequality situation is worst in the rural areas where more than 60 percent of the population resides and are mostly farmers (Nwachukwu *et al.,* 2014). The differential between rural and urban income, most times, exacerbates income inequalities and hinders food security (Agwu and Oteh, 2014). This differential has two implications. First, it highlights the structural imbalance in the marketing of agricultural produce, leading to a situation where middlemen exploit marketing inefficiencies of the marketing system to receive higher reward for their investment at the expense of other groups - producers and consumers. Secondly, it exposes the prevalence of income diversification that exists mostly in Africa. Comparative evidence suggests that diversification of rural household income sources is greatest in rural Africa (Reardon *et al.*, 1998). The cumulative effect are gaps in income between and among groups.

From an economic perspective, income gap is generally a gap in income between one group and another. In its commonest form, it is between the rich and the poor. Given this understanding, in this study we defined it as the monetary difference which businesses receive from their investment in a particular transaction conducted over period of time. When reconstructed, income gap between wholesalers and retailers of rice marketing are differences in income which roll in as accumulated profits received by either the wholesaler or retailers for investing their resources in the business. Like in other businesses, lack of diversification, dwindling customer base, weak linkages to the market, poor infrastructure, lack of market opportunities and disconnection from the market present huge constraints. The implication of this situation for wholesalers and retailers is very clear. There is a tendency for income to become more unevenly distributed among the middlemen. Akinbode (2003) had observed this trend in his study on rice enterprises that income gap between wholesalers and retailers of rice enterprises are the money worth of wholesalers over retailers and vice versa in rice market resulting from choices of market location, customer relationship built by wholesalers and retailers in the market place, level of credit accessibility and the paucity of marketers operations in the market place among others.

Based on the foregoing, we propose that income gap between the rice wholesaler and retailer is an extension in the widening income inequality conduit that pervades the world. Unlike in other cases of income inequality, income gap between middlemen occurs mostly as a result of market inefficiencies laced with unnecessary price fluctuation and inability of middlemen to cope and withstand economic shocks in terms of capabilities and assets, in addition to other external forces.

Rice marketing like other food marketing in Nigeria is increasingly susceptible to external influences and risks due to shortages of supply and high demand. This situation exposes marketers to a variety of challenges such as financial, accessibility, prices, resources risk and even unstable income (Ugwu and Adpetun, 2008). This study is therefore an attempt to examine some of the problems encountered among marketers that encourages income gap.

Methodology

This study covered the three agricultural zones of Abia State – Abia North, Abia South and Abia Central from where a total sample of 100 traders that consist of wholesalers and retailers of rice were selected randomly from Ngwa road market and Ariaria International market (Abia South), Umuahia main market, Ahia Ukwu, Ndi Oro (Abia Central) and Afor Umuoche (Abia North). Data for the study consist mainly of primary data collected with structured questionnaire.

In order to realize the objectives of the study, descriptive statistics, Gini-coefficient and Cobb-Douglas functions of multiple regression model were employed.

Gini coefficient was used to analyze income distribution between wholesalers and retailers/ the model and is given as:

$$G = 1 - \sum_{I=0}^{K-1} (Y_{i+1} + Y_i)(X_{i+1} - X_i) \qquad (1)$$

Where
Y= cumulated proportion of the income of wholesalers
X= cumulated proportion of the income of retailers
G = Gini Coefficient

The Gini Coefficient formula proposed above is in line with Brown (1994) and Dangard and Weiner (2000).
To estimate the factors influencing income of marketers, Cobb-Douglas production function was employed given that it was found to be the most appropriate representative of the data employed and because it yielded better results with respect to sign, values and levels of significance for regression estimators. This view is in line with those of several authors such as Ibekwe *et al* (2010); Ghafoor *et al.* (2010); Banaeian and Zangeneh (2011) and Majid *et al.*, (2011). In its simplest form, Cobb-Douglas production according to Gujaranti (1995) is expressed as

$$Y = f(x) \exp(U) \qquad (2)$$

The above equation (2) can be transform to represent a linear function and be further re-written as:

$$\ln Y_i = a + \sum_{I=0}^{K} a_j \ln (X_{ij}) + e_i \qquad I = 1, 2, 3, \ldots\ldots n \qquad (3)$$

where *Yi* denotes the income of the *i*th marketer, *Xij* the vector of *j*th factors influencing income of marketers in *i*th market, a the constant term, *αj* represent coefficients of inputs which are estimated from the model and *ei* is the error term of *i*th farm.

For the purpose of estimation, Eq. (3) can further be expanded in accordance with the assumption that income is a function of different sets of factors such as initial capital: The model is specified thus:

$$\ln Yi = \alpha_0 + \alpha_1 \ln X_1 + \alpha_2 \ln X_2 + \alpha_3 \ln X_3 + \alpha_4 \ln X_4 + \alpha_5 \ln X_5 + \alpha_6 \ln X_6 + \alpha_7 \ln X_7 + \alpha_8 \ln X_8 + e_i \qquad (4)$$

Where:
ln = Natural logarithm
α_0 = Coefficient parameter
Y = Income (Naira)
X_1 = Age (Years)
X_2 = Educational Attainment (years)
X_3 = Experience in marketing (years)
X_{42} = Initial capital (Naira)
X_5 = Source of finance (informal=1; Otherwise = O)
X_6 = Quantity of rice bought for sale in (kg)
X_7 = Selling price (Naira)
X_8 = Purchasing price (Naira)
E = Error term

Results and Discussion

Table 2 showed that mean ages of the wholesalers and retailers of rice were about 36 years and 31 years respectively. This implies that both groups of rice sellers fall within active and productive age bracket and as such, are still energetic. This rather indicates decreasing number of old and aged population in the enterprises. This result is comparable to a related study in Ethiopia that posted a mean age of 42.69 years for rice marketers in that country. With the mean number of years spent in school of 2.04 years for the wholesalers and 1.86 years for the retailers, it indicates that rice marketers in the study area have very infinitesimally low level of education. Increasing ability to read and write enhances the marketer's capability to scan for market opportunities and capacity to manage and utilize resources effectively for higher returns.

In terms of experience, the wholesalers have far better experience than their retail counterparts. By implication, the wholesalers seem to have wealth of experience which probably played a role in the sustenance of their capacity in the enterprises. Ezeh (2007) opined that experience has been shown to enhance more efficient use of scare resources. With the mean of household size of about 6 persons for wholesalers and 4 persons for the retailers, there is an indication that the culture of maintaining a large household is still subsists among the wholesalers. Although it holds a huge promise for labour in the enterprise, it also has strange implication in terms of pressure on household income. Finally, the marked difference in the startup initial capital of wholesalers and retailers is rather anticipated due to disparity in their individual capacities. As a springboard, properly managed initial capital is expected to lift the entrepreneur far and above the spiral cycle of backwardness. According to Verheul and Thurik (2001), such a difference in groups can be attributed to the type of business, type of management and experience of the entrepreneur. With a mean of N186,784.00 for the wholesalers and N4,646.00 for the retailers, there exists a huge differential in their income. Invariably, the retailers are grossly low income earners and this may be attributed to the paucity of their operation.

Table 2: Mean Values of Some Socio-economic characteristics of wholesalers and retailers of rice

Variables	Wholesalers	Retailers
Age of marketers (years)	35.88	31.06
Education (years)	2.04	1.86
Marketing experience (years)	10.40	5.18
Households (N)	5.84	4.44
Initial capital (Naria)	139,800.00	21,300.00
Income (Naria)	186,784.00	4,646.00

Source: Field survey, 2014

In a bid to analyze the income of the marketers and assess their distribution, descriptive statistics and Gini-coefficient were employed and the result is presented in Table 3. From the result, it could be observed that 40.00% of the wholesalers realized less than ₦100,000 per month while 86.00% of retailers fall within that same earning capital bracket. Apart from the huge concentration of retailers in the least income earning capacity bracket, the result also showed that only infinitesimal proportion of the marketers from both categories belong to the high income earners' group. However, the mean disparity clearly shows that the wholesalers on the average have higher income earning capacity, despite the fact that both made a margin of profit. It could still be considered low if compared with the average earning of N298,481.43 for rice marketers in Udu Local Governement Area of Delta State, Nigeria as recorded by Akarue and Ofoegbu (2012).

The Gini coefficient posted by the retailers and wholesalers were 0.17 and 0.42 respectively. This implies varying degree of income inequality among the marketers. However, the level of inequality among wholesalers is higher than that of the retailers. According to Dillion and Hardaker (1993), any value of Gini-coefficient greater than 0.35 is high and also an indication that there is inequitable distribution of income or sales. Such high coefficients imply high level of inequality and consequently high inefficiency in the market structure. However, this result is at variance with Afolabi (2007) who had a Gini coefficient of 0.88 for poultry egg marketers in south western Nigeria.

Table 3: Distribution of income among wholesalers and retailers N=50

Income	Wholesalers	Retailers
0.000 – 99,999	20 (40.00)	43(86.00)
100,000 – 199,999	15 (30.00)	5(10.00)
200,000 – 299,999	3(6.00)	2(4.00)
300,000 – 399,999	0	0
400,000 – 499,999	8(16.00)	0
500,000 – 599,999	4(8.00)	0
Mean	186,784.00	4,646.00
Gini coefficient	0.42	0.17

Source; field summary, 2014

Factors Influencing the Income of Rice Wholesalers and Retailers

Table 4 shows that age, initial capital, quantity bought, selling price and purchase price were statistically significant at varied levels of probability for retailers. On the part of wholesalers, age, experience, sources of finance and quantity bought were significant. Age posted a negative coefficient for the retailers and positive coefficient for the wholesalers at 10% risk level. The negative coefficient supports that younger retailers realize more income than their older counterpart. This is in line with Tiku and Ugbada (2012), who observed that rice production and marketing is done by young, active and energetic people. However, the positive coefficient of age for the wholesalers may likely hold true given that older marketers are anticipated to have acquired reasonable wealth and goodwill to be able to raise the huge capital needed for wholesale operation.

Contrary to popular expectation, experience posted an unexpected negative coefficient (-0.512) for wholesalers. The implication is that experience alone does not beget or cause income to rise. The coefficient of initial capital recorded a positive coefficient (0.158) for retailers and sparingly significant, this is true given that initial capital serves as investment and this determines the future of the enterprise. Ibekwe *et al.,* (2010) also found a positive relationship between income and investment. In addition, the coefficient of finance source (0.600) also possessed a positive sign implying that informal source tends to enhance income. This result may be attributable to the flexible nature of the informal system.

Table 4: Factors influencing the income of rice retailers and wholesalers

Variables	Retailers	Wholesalers
Constant	17. 605*	28.679*
	(1.761)	(1.738)
Age	-0.502*	1.543*
	(-2.197)	(2.184)
Education	0.005	0.397
	(0.038)	(1.370)
Experience	-0.046	-0.512*
	(-0.391)	(-2.361)
Initial capital	0.158*	0.027
	(1.851)	(0.125)
Source of finance	-0.128	0.600*
	(-0.762)	(1.871)
Quality Bought	0.914***	0.328***
	(12.206)	(4.355)
Selling price	5.066***	-2.071
	(4.687)	(-1.274)
Purchase	-3.326*	-0.495
	(-2.222)	(-1.671)
R^2	0.893	0.610
E – Ratio	42.771	6.637

Source: Field survey, 2014

According to Okonkwo (2012), finance sources are prevalent in areas where individuals are quite familiar with and confident in one another. Although, in most cases their interest maybe higher but people continue to patronize them because they consider moral hazard and also make their offer with little or no collateral. In line with *a priori* expectation, the quantity bought for retailers (0.914) and wholesalers (0.328) was significant at 1% risk level and positive, implying that the higher the quantity purchased, the higher the income. This result is consistent with the first law of supply. Similar effect is anticipated with the positive coefficient of selling price (5.066) for retailers, indicating that increasing price translates into higher income.

The diagnostic statistics showed that the R^2 (coefficient of multiple determination) of 0.893 (retailers) and 0.610 (wholesalers) indicates reasonable degree of goodness of it. Also the highly significant values of F-ratio are an indication that both models have a high explanatory power. This result is similar with Ghafoor *et al.,* (2010) who had an R^2 of 0.57 in a related study in Pakistan.

Problems of Rice Marketing

Despite the profitability and viability of rice business, there are pockets of challenges militating against its efficient marketing and value activities. They are presented in table 5.

Table 5: Problems encountered by rice marketers

Problems encountered	Mean	Rank
Seasonality of price (price fluctuation)	4.96	1st
Pest	3.93	4th
Lack of finance	4.39	2nd
High transportation cost	4.07	3rd
High labour cost	3.89	5th

Source: Field survey, 2014

NB: as a decision rule, any mean value of 3.0 is accepted, while anything less than 3.0 is rejected.

From the above result, the predominance problems identified by rice marketers are price fluctuation, lack of finance, and high transportation cost. This result is in tandem with those of Ibitoye *et al*. (2014); Akande (2004) and Afolabi (2007), who share similar outcomes in their studies. Particularly for Afolabi (ibid), it was observed that lack of finance, deterioration in quality produce and high transportation cost representing 30%, 23% and 28% respectively giving a cumulative of 81% were the problems encountered in plantain marketing.

Conclusion

One of the major challenges facing the world today is poverty and it is caused by widening gap in income between the rich and the poor. This study discovered that rice marketing can serve as one of the veritable ventures to alleviate poverty and boost economy of the study area. Based on the findings of the study, it is possible to bridge the seemingly gap in income inequality between wholesalers and retailers of rice by addressing structural imbalance in the market and marketing of rice which exacerbates the gap. These include among other increasing the access to training and education, which promises wider opportunities and better understanding of customer relations; increasing the capacities of retailers in terms of access to credit and other sources of income. The importance of finance to investment cannot be overemphasized. On the strength of the findings, the study recommends that government should expand the scope of operation of medium finance schemes and make loans accessible to the marketers in the same manner as rice producers to increase capacities of middlemen to ensure food availability, equitable distribution and cushion price fluctuation. There is also need for government through the agricultural growth enhancement scheme to encourage more farmers to go into rice production in order to reduce further import bill on rice and importation of food items in Nigeria. Finally, improvement in market and other infrastructure facilities that hinder cost reduction.

References

Agwu, M. N. and Oteh, U. O. (2014), Analysis of Income Inequalities and Food Security Among Farmers in Abia State, South Eastern Nigeria, *Scientific Papers Series Management, Economic Enginerring in Agriculture and Rural Development, 14(3): 7-14*

Afolabi, J. A. (2007), Evaluation of Poultry Egg Marketing in South Western Nigeria, *International Journal of Poultry Science*, 6: 362-366

Akande, T. (2004*), An Overview of Nigerian Rice Economy*: Nigerian Agricultural Publishing Limited, Lagos

Akande, O. O., Adebayo, J. O., Oladejo, M. O., and Ademola, A. O. (2011), Performance Analysis of the Strategic Effect of Age, Size and Sources of Funds on Micro Enterprises in Nigeria", *Journal of emerging Trend in Economic and Management Sciences (JETEMS)* vol. 2, No.6, pp. 483-489.

Akarue, O.B., and Ofoegbu, S. (2012). Marketing Analysis of Rice in Udu Local Government Area of Delta State, Nigeria. *Continental Journal of Agricultural Economics* 6(2):21-31

Akinbode, A. (2003), The Effectiveness of Market Strategy in Regional Planning and Development, *Journal of Urban and Environmental Research*, 3(1): 1-7

Banaeian, N. and M. Zanageneh (2011), Estimating Production Function of Walnut Production in Iran Using Cobb-Douglas Method. *Agricultra Tropica ETSubtropica* 44(4):177-190

Brown, Malcolm C. (1994), Using Gini-style indices to evaluate the spatial patterns of health practitioners: Theoretical considerations and an application based on Alberta data, *Social Science Medicine* 38:9,1243-1256.

Dangard, C. and Weiner, J. (2000), Describing Inequality in Plant Size and Fecundity, Ecology, 81: 1131-1142

Dillion, J. L. and Hardaker, J. B. (1993), *Farm management Research for Small Farmer Development*, FAO, Rome.

Ezeh, C. I. (2007), Poverty Profiles and Determinants of Expenditure of Rural Women Households in Nigeria, *The Nigerian Journal of Development Studies*, 6(1): 187-204

British Council (2012). *Gender in Nigeria Report: Improving the Lives of Girls and Women in Nigeria,* 2nd Edition, British Council, Nigeria. Website: http://www.britishcouncil.org.ng/gender2012

Federal Ministry of Agriculture and Rural Development (FMARD) (2013), *Agricultural Transformation Agenda 2013 Score Card*. Federal Ministry of Agriculture and Rural Development, Nigeria. www.fmard.gov.ng/

Food and Agricultural Organization (FAO) (2008*), An Introduction to the Basic Concepts of Food Security*, EC-FAO Food Security Programme, www.foodsec.org

Food and Agricultural Organization (FAO) (2014), *Rice Market Monitor*, Food and Agricultural Organization, www.fao.org/3/a-i4294e.pdf

Ghafoor A, N Hussain, K Naseer, M Ishaque, and MH Baloch (2010). Factors affecting income and saving of small farming households in Sargodha district of the Punjab, Pakistan. Pakistan. *Journal of Agriculture and Agricultural. Engineering, Vetineray. Science*., 26 (2): 27-35.

Global Value Chain Initiative (GVCI) (2007): Institute of Development Studies www.ids.ac.uk/globalvaluechains/index.html. Retrieved on 26th March 2008.

Gomez, K. A. (2001) *Rice, The Grain of Culture*, being a paper presented at the Siam Society Lecture Series, The Siam Society, Bangkok, Thailand, 20 September, www.thairice.org/html/article/pdf_files/Rice_thegrain_of_Culture.pdf

Gujarati, D.N., (1995). *Basic Econometrics.* McGraw-Hill, USA

Ibekwe, U. C., C. C. Eze, D. O. Ohajianya, J. S. Orebiyi, C. S. Onyemauwa and O. C. Korie (2010), Determinants of non-farm Income among Farm Households in South Eastern Nigeria, *Academic Arena*, 2(8):29-33

Ibitoye, S. J., D. Idoko, and U. M. Shaibu (2014), Economic Assessment of Rice Processing in Bassa Local Government Area of Kogi State, Nigeria, *Asian Journal of Basic and Applied Sciences*, 1(2):8-17

Idowu, A.O., T.T. Awoyemi, B.T. Omonona & A.O. Falusi (2011). Non-farm Income Diversification and Poverty among Rural Farm Households in Southwest Nigeria, *European Journal of Social Sciences*, 21(1): 163 – 176.

Inuwa, I. M. S., U. B. Kyiogwom, A. L. Ala, M. A. Maikasuwa and N. D. Ibrahim (2011), Profitability Analysis of Rice Processing and Marketing in Kano State, Nigeria, *Nigerian Journal of Basic and Applied Science*, 19(2) 293-298

Majid, N. A. K. Nti and A. M. Negin (2011), Econometric Model Estimation and Sensitivity Analysis of Inputs for Mandarin Production in Mazandaran Province of Iran. *Research Journal of Applied Sciences, Engineering and Technology* 3(5): 464-470

Mbanasor, J. A., I. N. Nwachukwu, N. M. Agwu, M. E. Njoku and J. Onwumere (2014), Analysis of Income Inequality and Poverty Dynamics Among Rural Farm Households in Abia State, Nigeria, *International Journal of Food and Agricultural Economics*, 1(2): 99-104

National Bureau of Statistics (NBS) (2002) Digest of Statistics. Published by FOS printing Press Ikoyi Lagos.

Obasi, I.O. (2008). *Structure, Conduct and Performance of Rice Markets in Abia State, Nigeria*. (Unpublished Master's Thesis), Michael Okpara University of Agriculture, Umudike, Nigeria

Ohen, S. B. and Abang, S. O. (2011), Evaluation of Price Linkages within the Supply Chain of Rice Markets in Cross River State, Nigeria, *Journal of Agriculture and Social Research*, 11(1)

Ogunsumi, L. O., A. Ajayi, C. M. Amire and S. Williams (2013) Sustainability of Agricultural Transformation Agenda: The Place of Rice Farmers in Ogun State, Nigeria, *Research on Humanities and Social Sciences*, 3 (13):66-78

Okonkwo, K. (2012) *Credit Worthiness and Determinants of Loan Repayment Among Farmers Cooperators in Delta State, Nigeria.* An MSc Thesis Submitted to the Department of Agricultural Economics and Extension, Abia State University, Umuahia Campus

Reardon, T., Stamoulis, K., Balisacan, A., Cruz, M. E., Berdegue, J., Banks, B., (1998). *Rural non-farm income in developing countries*. Special chapter in The State of Food And Agriculture1998. Rome: Food and Agricultural Organization of the United Nations.

Timmer, P. and Thomas, B. (2010) *Food Security and The Changing Role of Rice*, Occasional Paper Series No. 4, The Asia Foundation

Verheul, I. and A.R. Thurik, (2001), Start-up capital: does gender matter? *Small Business Economics*, 16: 329-345.

Tiku, N. E. and Ugbada, G. (2012), Determinants of Rice Marketable Surplus In Yala Local Government Area of Cross River State, Nigeia, *PAT*, 8(2): 100-116

Ugwu, E. and Adepetun, A. (2008), *Food Prices Crisis: Nigeria Braces Up*, The Guardian, 27