DETEMINANTS OF MARKET ORIENTATION AMONG CASSAVA PRODUCERS IN ABIA STATE, NIGERIA

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Abstract
The study was conducted to empirically investigate determinants of market orientation among cassava producers in Abia State, Nigeria. Structured questionnaire was used to obtain data from the respondents. A multi-stage randomized sampling procedure was used to select 96 respondents for the study. The data collected were analysed using descriptive statistics and ordinary least square (OLS) multiple regression model. The results of the descriptive statistics showed that majority of the respondents were married with mean household of 6 persons. Dominance of male (54%) as against 45% female, suggests that cassava production is gender sensitive and requires innate physical exertion of carefully selected force, they are also educated. The result of the study further indicated that out of the 10 variables fitted in the model, eight (8) were significant. The significant variables included age, level of education, household size, farming experience, income, cooperative membership, market information and available market as major determinants of market orientation among cassava household producers. The Ordinary Least Square parameter estimates of the Exponential functional form of the multiple regression model as the lead equation shows that the coefficient of multiple determination (R^2) was 0.9961, was high significant at 1% probability level, indicating that 99.6% of the variation in cassava market orientation among producers were significantly explained by the variables investigated in the study. F-ratio value of 1785.82 is statistically significant at 1%. This implies goodness of fit in the model. The study indicates that market orientation among cassava producers was beneficial to the respondents as it enhanced their income. Hence, more income could be obtained if processing machines are provided at a reduced cost to farmers as well as farm inputs like hiring of farm machinery, provision of fertilizers and chemicals to farmers at a subsidized rate.

Keywords: Market Orientation, Cassava producers and Abia State

Introduction
Subsistence agriculture cannot guarantee sustainable food security and welfare. However, majority of the population in Nigeria live in rural areas and depend on small scale agriculture for food and income (Onubuogu and Onyeneke, 2012). Faced with challenges for rural industrialization, small-holder farming remains the major engine of rural growth and livelihood improvement for some time. Nigeria require some form of transformation of the rural subsistence, low-input, low productivity farming systems that currently characterize much of rural areas in Nigeria in order to overcome the problems of rural income improvement. However, for rural income improvement market orientation is therefore required (Gebremedhin and Hoekstra, 2007).

Market orientation philosophy is a dynamic and an efficient way of increasing and enhancing productivity in the entire sector. Market orientation practices can aid globalization (Idachaba, 2000). Market oriented production in practice can respond adequately to the needs of the domestic economy, increase market shares of all world export markets and ward off competition from imports of agricultural products. This is true because efficient market oriented production in practice could guide farmers towards opportunities for crops with high productive potential, incorporating varieties and initiation of programmes that will reduce crop failure; encourage adoption of modern and better practices and improvement in response to demand and price changes;

create and stimulate new demand by improving and transforming farm produce into different varieties which are attractive and convenient to the consumers.

In Nigeria, cassava is one of the world's most important food crops, with annual global production at approximately 276 million metric tons (MT) in 2013. The top producing countries globally in 2013 were: Nigeria (accounting for~19% of the total), Thailand (~11%), Indonesia (~9%), Brazil (~8%) and Democratic Republic of Congo (~6%) (Nteranya and Adiel, 2015). It is a major source of dietary food energy for the entire populace living in the lowland tropics and much of the sub-humid tropics of West and Central Africa (Echebiri and Edaba, 2008). Nigeria is currently the largest cassava producer in the world with estimated annual production of about 40 million metric tonnes. About 90% of this is however, consumed as food. Cassava is a very versatile commodity with numerous uses and by-products. Production, processing, sale and consumption of root and tuber crops especially cassava is common in southeast zone, Nigeria. However, in Abia State, no empirical evidence exists as regards the constraints to market orientation in cassava production. This neglect in research has caused a wide gap in knowledge as regards the market orientation and its problems in the area.

Several factors affect market orientation of households thus affecting the conditions of commodity supply and demand, factor, output prices, marketing costs, risks faced by producers, traders and other market factors (Pender, 2006). In 2002, the president of Nigeria announced an initiative to use cassava as a foreign revenue earner. Unfortunately, no supply chain structures exist for the commercialization of secondary cassava products as primary source of raw materials for agro industries (Ezedinma *et al*, 2002). At the farm level, production costs for cassava are high relative to other countries. Production is not oriented towards commercialization but instead farmers produce and process cassava as a subsistence crop. The policy did not create much impact because the programme was not backed by law. Hence, there is need to look at the level of market orientation of cassava farmers within the rural sector in Abia State Nigeria.

Methodology

The study was carried out in Abia State, Nigeria. Abia state lies between longitudes $04^045^{'}$ and $06^007^{'}$ North and latitude $07^000^{'}$ and $08^o10^{'}$ East. It is bounded by Imo State on the West, Ebonyi and Enugu States on the North, Cross Rivers and Akwa Ibom States on the East and Rivers State on the south. Its population density is 580 persons per square kilometer and a population of 2,833,999 persons (NPC, 2006). Structured questionnaire was used elicit information from the respondents (cassava farmers). Multi-stage random sampling techniques was used to select three local government areas, they are Ikwuano, Bende and Umuahia South Local Government Areas. Four communities were selected from the two local government areas. Also one village was selected from each community making it a total of four villages. Finally, twelve farmers were randomly selected from the villages, however, a total of 96 respondents were selected for the study. Data was analyzed using descriptive, inferential statistics and principal component model. Descriptive statistics include frequency, mean and percentages, inferential statistics involved the use of multiple regression while principal component model also includes factor analysis. The regression model is explicitly stated as:

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_9X_9 + \beta_7X_7 + \beta_{10}X_{10} + e$
Where;
      Y = Market orientation (volume of cassava sold and harvested in tonnes)
      β_0 = Constant
      β's = regression coefficients explaining changes caused in Y by changes in the independent
      variables $X_1 - X_{10}$,
Where:
X_1 = Age of household (Years)

X_2 = Level of education (Years)
X_3 = Household size (Number)
X_4 = Farm size (hectare)
X_5 = Availability of market (dummy variable, yes = 1, No = 0)
X_6 = market income (N)
X_7 = Access to market information (dummy, yes =1, No = 0)
X_8 = Membership of co-operative or any agricultural associations (dummy member, Yes = 1, No = 0)
X_9 = Farm experience (in years)
X_{10} = Distance (km)
e = Error term.

While,
Principal component factor analysis with Varimax – rotation and factor loading of 0.30 was used. Therefore, variables with factor loading of less than 0.30 and variables that loaded in more than one factor was discarded (Ashley *et al.,* 2006, Ayichi and Maduekwe, 2004).
The principal component factors analysis model is stated thus:

$$Y_1 = {}^a_{11}X_1 + {}^a_{12}X_1 + {}^a_{13}X_2 + \ldots {}^a_n X_n$$
$$Y_2 = {}^a_{21}X_1 + {}^a_{22}X_1 + {}^a_{23}X_1 + \ldots {}^a_{2n} X_n$$
.
.
.
$$Y_3 = {}^a_{31}X_1 + {}^a_{32}X_1 + {}^a_{32}X_1 + \ldots {}^a_{3n} X_n$$
$$Y_n = {}^a_{n1}X_1 + {}^a_{n2}X_1 + {}^a_{n3}X_1 + \ldots {}^a_{nn} X_n$$

Where; Y_1, $Y_2 \ldots Y_n$ = observed variables/constraints of market orientation among cassava producing households.
${}^a_1 - {}^a_n$ = Factor loadings or correlation coefficient
X_1, $X_2 \ldots X_n$ = Unobserved underlying factors constraining market orientation among cassava producing households.

Results and Discussion
Socio-economic characteristics
Table 1 show the distribution of cassava producing households in Abia State based on their socioeconomic characteristics. The results pointed out that 85% of the respondents were within the age range of 35-44 years with a mean age of 40 years. This implies that majority of the respondents were young and are ready to accept innovations, in line with Poison and Spencer (1991). Dominance of male (54%) as against 45% female, suggests that cassava production is gender sensitive and requires innate physical exertion of carefully selected force. This is in agreement with Anyiro *et al.,*(2013). Also majority (90.6%) of the respondents were married. This implies that majority of the respondents found to be married are among the households that produces cassava in order to increase their income and experience. This result is in agreement with the findings of Ikwuakam, (2013) who discovered that most cassava farmers, processors and marketers in South East, Nigeria were married.

On educational level, 100% of the respondents were formally educated. This implies that they are all enlightened. This result is in line with the findings of Onubuogu and Onyeneke, (2012) who posited that education and training enhances farmers' productivity and market oriented production objective. Household size between 5-10 persons had 84.3% with the mean household size of 6 persons. The large household size is attributed to the need for cheap and dependable labour derivable for on-farm and off-farm activities. This finding is in agreement with the findings of

Onubuogu *et al.*, (2014) reported the most farm families have large household size between 5 to 10 persons with mean 6 persons.

About 92.7% of the respondents operated farm sizes of between 4-6 hectares with mean farm size of 4 hectares. Also the respondents had mean farming experience of 11 years. This implies that they were experienced and knowledgeable in cassava production and agrees with the findings of Omonona *et al.,* (2010) who reported that farmers' level of experience in the production of a particular commodity is one of the determinants of their ability to maximize output using available inputs. Furthermore, 60.3% of the respondents fell within the monthly income level of ₦41,000 - ₦60,000, with mean income of ₦45,620. This shows that market orientation of cassava can be found to be very lucrative as the income of the farmers are higher than normal. Majority (60.4%) of the farmers were civil servants, this corroborates with the findings of Jaworski and Kohli (1990), Tuominen and Möller (1996) that a full understanding of market orientation requires knowledge of both actual behaviour of organizations, and the quality of this behaviour, to investigate the quality of organizational behaviour we need insight in underlying beliefs, knowledge, structures and systems. However, in terms of access to market information, about 85% of the respondents agree that they are properly informed.

Table 1: Distribution of respondents based on socio-economic characteristics of farmers

Variables	Frequencies	Percentage	Mean
Age			
25 – 34	1	1.0	
35 – 44	82	85.6	40
45 – 54	9	9.3	
55 and above	4	4.1	
Total	**96**	**100**	
Gender			
Male	52	54.2	
Female	44	45.8	
Total	**96**	**100**	
Marital status			
Single	9	9.4	
Married	87	90.6	
Total	**96**	**100**	
Educational Level			
Non-formal	0	0	
Primary	11	11.5	
Secondary	52	54.2	12
Tertiary	33	34.4	
Total	**96**	**100**	
Household size			
0 – 4	11	11.5	
5 – 10	81	84.3	**6**
11 and above	4	4.2	
Total	**96**	**100**	
Farm size			
1 – 3	2	2.1	
4 – 6	89	92.7	4
7 and above	5	5.2	
Total	**96**	**100**	
Farming experience			

6 – 10	58	60.5	
11 – 15	20	20.9	11
16 – 20	11	11.5	
21 – 25	5	5.1	
26 and above	2	2.1	
Total	**96**	**100**	
Income			
1000 – 20000	14	14.7	12,620
21000 – 40000	14	14.5	
41000 – 60000	58	60.3	
61000 and above	10	10.5	
Total	**96**	**100**	
Occupation			
Retired	6	6.3	
Civil servant	58	60.4	2
Farming	16	16.7	
Civil servant/farming	8	8.3	
Business/farming	6	6.3	
Business	2	2.1	
Total	**96**	**100**	
Access to market information			
Non-access	14	14.6	
Access	82	85.4	
Total	**96**	**100**	
Total	**96**	**100**	

Source: Field survey data, 2016

Determinants of market orientation among cassava producing households
Table 2 showed the regression analysis of determinants of market orientation among cassava producers in the study areas. Among the four functional forms, the exponential form was selected as the lead equation because of a high R^2 (0.9961) value. The R^2 value of 0.9961 means that 99.6% of variation in the dependent variable was explained by the independent variables included in the model and the F-ratio of 1785.82 which is significant at 1% shows the goodness of fit of the overall model.

The result in Table 2 depict age was significant and negatively related to market orientation of cassava at 10% level, showing that the older farmers in the study area are, the less market oriented as a result of their inability to contribute self-labour into production process as a means of complementing labour supply on the farm in the absence of un-willingness of the members of the households to contribute family labour. This finding agrees with the findings of Adenegan *et al.* (2013) that market orientation of farmers in the study area decrease as their age increases. Education was significant and positively related to market orientation of cassava at 10% level. This may be because majority of the farmers in the study area have minimum education requirements to make them market oriented; at least 80% of the respondents had a basic education in line with the findings of Heierli and Gass (2001). Household size was negative and significant at 10% level of probability. Household size is expected to have positive relationship with market orientation with positive sign but this is not so in the study area as larger household size in the study area consumed more of what they produced rather than participating in the output market consistent with the findings of Lapar *et al* (2003). Also, inability of the members in the area, especially the youth to contribute their family labour thereby reduced farmers orientation and the small proportion being produced by the household-head is consumed by the entire household.

Table 2: Determinants of Market Orientation among Cassava Producers in Abia State

Variables	Linear	[+]Exponential	Semilog	Doublelog
Constant	-3.787923	-459.13	4.478935	-3.704088
	(-25.63)***	(-14.79)***	(25.84)***	(-26.72)
Age	0.1256218	-30.26081	0.0082453	0.1318368
	(4.09)***	(-0.47)*	(3.27)**	(4.39)
Educational Level	0.0092793	58.37302	-0.0026947	0.009971
	(0.83)	(2.48)*	(-0.70)	(0.95)
Household size	-0.0099271	-96.77782	0.0131309	-0.169868
	(-1.45)	(-6.7)***	(2.24)*	(-2.75)
Farm size	0.0071868	19.33743	-0.0099147	0.0080686
	(0.83)	(1.06)	(-0.84)	(0.96)
Farming experience	0.0113143	85.88824	-0.0090454	0.0126784
	(1.17)	(4.24)***	(-2.99)**	(1.40)
Income	0.9899809	534.0838	0.000512	0.977933
	(97.85)	(25.11)***	(27.24)***	(123.97)***
Distance	-0.0000442	-31.75821	0.0069357	-0.0030129
	(-0.01)	(-2.03)	(0.76)	(-0.42)
Cooperative membership	-0.0069854	-29.40706	0.0397538	-0.0158258
	(-0.94)	(-1.88)*	(1.59)	(-0.89)
Market information	-0.0027726	26.4143	-0.0052285	-0.0071003
	(-0.37)	(1.68)*	(-0.26)	(-0.50)
Available Market	-0.0184698	55.41271	0.1933229	-0.047243
	(-2.15)*	(3.06)**	(5.37)***	(-25.87)
R^2	0.9564	0.9961	0.9523	0.9960
Adjusted R^2	0.9501	0.9956	0.9467	0.9956
F ratio	151.66***	1785.82***	169.70***	2141.48***

Source: Field Survey data, 2016

Note: Values in parentheses represent the t-values; ***, ** and * implies statistically significant at 1%, 5% and 10% levels respectively, + = Lead Equation

Income was positive and significant at 1% level of probability. This implies that increase in income will enable the cassava producing households to purchase the requisite inputs for enhanced output and improved incomes. This finding is in line with the findings of Anyanwu *et al.* (2016) who stated that increase in income will enable the respondents to purchase the requisite inputs for enhanced output and income. Market information is significant at 10% level of probability implying that farmers receive information about their produce on time. Available market was positive and significant at 5% level of probability. This implies that increase in available market increased market orientation of cassava.

Constraints militating against cassava production

Table 3 showed varimax-rotated factors militating against cassava production in the areas. Three (3) factors were extracted based on the response of the respondents. Only variables with factor loading of 0.30 and above at 10% overlapping variance (Amusa *et al.,* 2011) were used in naming the factors, while variables that have factor loadings of less than 0.30 were not used (Enete and Amusa, 2010). In naming the factors, Kessler (2006) stated that each factor is giving a denomination based on the set of variables or characteristics. This procedure was adopted in grouping the variables into three major factors as: economic/institutional factor – factor 1, Techno-infrastructural factor – factor 2 and socio-financial factor – factor 3. Under factor 1 (economic/institutional factor), the specific variables militating against market orientation of root crop production in the area were: prevalence of pest and disease problem (-0.8358), production inputs (0.5009), poor yield (0.5091) and extension contacts (0.3712). Fadayomi (1988) stated that high cost of inputs; farm labour and

associated low level capital investment in agriculture due to low farm income are some of the major challenges facing most African farmers. Inadequate extension contacts by farmers is one of the institutional challenges facing farmers as Madukwe (1996) noted that ineffective transfer of agricultural technology through extension agents is a major problem facing agricultural development in Nigeria. The challenge of poor yield could be financial constraints which limit their ability to access improved crops and other farm inputs such as fertilizers.

Table 3: Varimax –Rotated Factors Militating against Market Orientation of Cassava Production in Abia State.

S/N	Constraining Variables	Factor 1 Economic/Institutional Factor	Factor 2 Techno-Infrastructural Factor	Factor 3 Socio-Financial Factor
1	High Labour Cost	-0.1063	0.0989	**0.3170**
2	Low Production Capital	-0.0426	-0.5331**	-0.3429**
3	Poor Processing Facilities	0.1572	**0.6396**	-0.0515
4	Poor road network	0.1419	**0.5650**	-0.2237
5	Prevalence of pest and disease problem.	**-0.8358**	0.1203	0.1448
6	Poor Market Channels	0.8153**	-0.3106**	0.1059
7	Production Inputs	**0.5009**	-0.0019	-0.2977
8	High Production Cost	0.2355	0.1286	**-0.6674**
9	Poor Yield	**0.5091**	-0.2446	0.1247
10	Poor Storage Facilities	0.3303**	0.4950**	-0.3153**
11	Long Distance	-0.5486**	-0.4905**	-0.1423
12	access to mechanized services	0.2161	**0.6906**	0.1471
13	Extension contacts with the farmers.	**0.3712**	-0.2230	-0.13142

Source: Field Survey data, 2016
Note: Factor loading of 0.30 is used at 10% overlapping variance. Variables with factor loadings of less than 0.30 were not used. **Variables that loaded in more than one factor were discarded.

Variables that loaded under factor 2 (Techno-infrastructural factor) includes; poor processing facilities (0.6396), poor road network (0.5650) and access to mechanized services (0.6906), Olukunle (2013) stated that transportation for moving the products from where they are produced to where they are consumed or sold needs efficient road network. The majority of Nigerian rural roads are in very deplorable conditions and requires good road to ensure effective distribution of agricultural produce, the same is applicable for poor processing facilities. Ajibade (2000) confirmed that poor storage and processing facilities are some of the major problems of agriculture in Nigeria. Moreover, Gassill and Ndubizu (1990) reported that some of the factors that affect crop farmers in Nigeria were inadequacy of modern farm tools and machinery and poor technical knowledge. Under factor 3 (socio-financial factor) were: High labour cost (0.3170) and high production cost (-0.6674). It has been noted by several authors that socio-cultural beliefs and socioeconomic characteristics of farmers play significant role in agricultural production. Ajibade (2000) reported further that poor financial status of Nigerian farmers is a major limiting factor in agricultural production. The relatively old age of the farmers as one of the major challenges against production in the area could be linked with the reported cases of increased rural-urban migration of youths thereby living agriculture in the hands of much older farmers. Okoruwa and Ogundele (2006) stated that as

farmers grow old, their productivity tends to decline and this constitutes a major limiting factor to agricultural production in Nigeria.

Conclusion

The findings of this study have shown that the market orientation among cassava producers was beneficial to the respondents as it enhanced their income. Hence, cassava producers in Nigeria should adopt innovative orientation techniques for increased income and improved living standard. The results therefore call for policies aimed at encouraging experienced producers, processors and marketers by providing them with processing machines at a reduced cost, hire farm machinery to farmers at a subsidized rate, make available some farm inputs like fertilizers and chemicals to farmers.

References

Adenegan, K. O., Adams, O., and Nwauwa, L. E. O. (2013) Gender Impacts of Small-Scale Farm Households on Agricultural Commercialisation in Oyo State, Nigeria. *Br. J. Econ. Manage. Trade* 3(1):1-11.

Ajibade, A.S. (2000) Productivity of the Nigerian Agriculture. In: Ekemode, K.O (Ed) Introduction to Agriculture for Sustainable Development. Lagos: The Nigerian Association of Agricultural Educators (NAAGRED). Pp 28-35.

Ajuka, P.N. and Odoemelam, L.E. (2015) Indigenous Farm Management Pratices among Rural Farmers: Implications for Sustainable Environment in South-East Agro-Ecological Zone, Nigeria. Discourse Journal of Agriculture and Food Sciences 3(1):7-14.

Amusa, T. O., Babalola, F.D., Jimoh, S.O., and Popoola, L. (2011) Can non timber forest products help eradicate poverty? A case study from tropical lowland rainforest of southwest Nigeria. In: Popoola L, gunsanwo K, Idumah F (eds), Forestry in the context of the millennium development goals: proceedings of the 34th Annual Forestry Association of Nigeria Conference, 5–10 December 2011, Oshogbo, Osun State, Nigeria . Ibadan: Forestry Association of Nigeria. pp 18–36.

Anyaegbunam, H. N., Ogbonna, M. C., and Asumugha, G. N. (2006). Determinants of Adoption of cassava Technologies by Small-Scale Farmers in Abia State, Nigeria. Agricultural Society of Nigeria (ASN) 40th Annual Conference. Pp. 776-780

Anyaegbunam, H. N., Okoye, B. C., Asumugha, G. N., Ogbonna, M. C., Madu, T. U., Nwakor, N. and Ejechi, M. E. (2012). Labour Productivity among Small-Holder Cassava Farmers in South East Agro Ecological Zone, Nigeria. *African Journal of Agricultural Research* 5(21): 2882–2885.

Anyanwu, C. I., Agwu, N. M. and Okoroji V. N. (2016) Determinants of Value Addition Financing Among Cassava Producing Households in Ikwuano Local Government Area of Abia State, Nigeria. *The Nigerian Agricultural Journal,* 47(2): 49-57.

Anyiro, C. O., Osondu, C. K., Eze, C. I., and Akabueze, I.C. (2013) Resource Use Efficiency of Rural Women Smallholder Cocoyam Farmers in Onitsha Agricultural zone of Anambra State, Nigeria. *Res.Web Pub.* 1(2):12-17.

Ashley, B., S. Amber and F. Anthony. (2006). Education by Nation: Multivariate analysis. Retrieved April 22, 2008, from http://www.u sers.muohio.edu/porterbm/ Sunj/2006/start.sAyichi, D. and Maduekwe, M.C. (2004) A Comparative Analysis of Production Efficiency of Contact and Non-Contact Farmers in Nigeria. Journal of Agriculture, Technology and Education. 1(2): 40-45

Bauer, A., Simon, J., (Eds.), Marketing for an Expanding Europe. The proceedings of the 25th EMAC conference in Budapest, May 14-17, 1, pp. 1161-1182.

Berhanu, G. and Moti J. (2010). Commercialization of small-holders: Does market orientation translate into market Participation? Improving productivity and Market success (IPMS) of Ethiopia farmers" project working paper 22. Nairobi, Kenya, ILRI.

Echebiri, R.N and Edaba, M. E .I. (2008) Production and Utilization of Cassava in Nigeria: Prospects for Food Security and Infant Nutrition. *J.Produc.Agric.Technol*.4:38–52.

Enete, A. A. and Amusa, T.A. (2010) Determinants of women's contributions to farming decisions in cocoa based agro-forestry households of Ekiti State, Nigeria. FACTS Reports, *the International Journal of Field Actors*. 26(2): http://factsreports.revues.org/ 16).

Ezedinma, C.I., Kormawa, P., Adekunle, A.,Makinde, K. and Okechukwu, R. (2002) Linking Producers to the Market: the RUSEP Approach. Paper presented at the International workshop on Cassava Competitiveness in Nigeria, November 18-22, 2002, IITA, Ibadan, Nigeria.

Fadayomi, T.O (1988) Rural Development and Migration in Nigeria. Ibadan: Nigerian Institute of Social and Economic Research (NISER)

Gassill, D and Ndubizu, G.A. (2011) Corporate Tax Avoidance and Political Action Committee contributions: An Empirical Analysis. *Journal of Applied Business Research (JABR).* 6(2): 14-22.

Gebremedhin, B. and Hoekstra, D. (2007) Market Orientation of smallholders in selected grains in Ethiopia: Implications for enhancing commercial transformation of subsistence agriculture. IPMS. (Improving Producing and Market Success) of Ethiopian Farmers Project working paper 11. ILRI (International Livestock Research institute), Nairobi, Kenya. Pp.44.

Heierli U. and Gass.T (2001) "Enhancing employment and income generation in rural areas. Paper Submitted to the operation committee of the Swiss Agency for Development and Cooperation (DEZA) on 11, October 2001.

Idachaba, F. S. (2000) Desirable and workable Agricultural Policies for Nigeria in the First Decade of the 21st Century: Tropical Issues in Nigerian Agriculture. University of Ibadan Publisher, Ibadan, Nigeria.

Ikwuakam, O. T. (2013) Determinants of socio-economic status of cassava processing entrepreneurs in South-eastern, Nigeria. *Journal of Agriculture and Veterinary Sciences*, 5(2): 140-150.

Jaworski, B. J and Kohli, A. K. . (1990) Market orientation: the construct, research propositions and managerial implications. *Journal of Marketing* 54 (5): 1-18.

Kessler, C.A. (2006). Divisive Key–Factors Influencing Farm Households Soil and Water Conservation Investment. Journal of Applied Geography 26: 40–60.

Lapar M.L, Holloway G and Ehui S. (2003) Policy options promoting market participation among smallholder livestock producers: A case study from the Philippines, Food Policy 28, 187–211.

Madukwe, M.C. (1996) Restructuring Field Agricultural Extension Services in Nigeria: Issues and Options. In: Adedoyin, S.F. and Aihonsu, J.O.Y (Eds) Sustainable Development in Rural Nigeria. Proceedings of the Eighth Annual Conference of the Nigerian Rural Sociological Association Ijebu -Igbo, Nigeria: Segeto and Company Publishers. Pp 314-320.

National Population Commission (2006) Population and Housing Census Priority table IV. Federal Republic of Nigeria,

Nteranya, S. and Adiel, M. (2015) Root and Tuber Crops (Cassava, Yam, Potato and Sweet potato), Feeding Africa, An action plan for African Agricultural Transformation. Diouf International Conference Center, Dakar Senegal.

Ogunniyi, L. T. (2011) Household Consumption of Cassava Products in Oyo State. *Global Journal of Science Frontier Research*. 11(6): 2249-4626.

Okoruwa, V. O., and Ogundele, O. O. (2006) Technical efficiency differentials in rice production technologies in Nigeria. A research paper presented at a workshop organized by The Nigerian Institute of Social and Economic Research (NISER) Ibadan, Nigeria.

Olukunle, O. F., (2013) Automated Peeling Machine for large scale industries. Conference on International Research on Food Security, National Resource Management and Rural Department, organised by the University of Hohenheim, Sept., 17-19, 2013.

Omonona B. T., Lawal, J. O. and Oyinlana, A. O. (2010) Determinants of credit constraint conditions and production efficiency among farming households in Southwestern Nigeria. *Journal of Social Sciences*, 5(4): 326-331.

Onubuogu, G. C. and Onyeneke, R. U. (2012). Market Orientation of Crops Production in Imo state, Nigeria. *Science Research Journals* 2(5): 206-216

Onubuogu, G. C., Esiobu, N. S., Nwosu, C. S. and Okereke, C. N. (2014). Resource use efficiency of smallholder cassava farmers in Owerri Agricultural zone, Imo State, Nigeria; *Scholarly J. Agric. Sci.* 7(8): 142-152.

Onuoha, B. (2007). Degree of Market Orientation in Root Crop Production in Ehime Mbano Local Government Area of Imo State. Unpublished B.Agric. Project submitted to the Department of Agricultural Economics, Extension and Rural Development, Imo State University Owerri.

Pender, J and Alemu D. (2007). Determinants of smallholder commercialization of food crops: Theory and evidence from Ethiopia. Discussion Paper No. 75. IFPRI, Washington, DC, USA.

Poison, R. A. and Spencer, D. S .C. (1991). The technology adoption process in subsistence agriculture: The case of cassava in South Western Nigeria. *Agric. Syst.,* 36: 65-77.

Tuominen, M., Möller, K., (1996). Market Orientation: A State of the art review. In: Beraçs, J.,