

Nexus of Agricultural Commercialization among Farming Households in Southwest, Nigeria

Adetule, F. S., Owoeye, R. S.* and Sekumade, A. B.

Department of Agricultural Economics and Extension Services, Ekiti State University, Ado Ekiti, Nigeria

***Corresponding Authors:** Owoeye, R. S, Department of Agricultural Economics and Extension Services, Ekiti State University, Ado Ekiti, Nigeria

Abstract: The study was designed to assess nexus of agricultural commercialization of farming households in Southwest, Nigeria. The study determined the extent of agricultural commercialization; estimated the determinants of agricultural commercialization; and examined various constraints militating against farming households in the study area. Multi - stage sampling technique was used to collect data from 300 farmers with the aid of structured questionnaire. Descriptive statistics, Household Commercialization Index, Tobit regression model was used to analyze the data collected. From the result, it was revealed that 88.3% of the respondents were males, and majority (87.3%) of them were married with mean age of 51 years. The mean value of household size was 7 persons and that of years spent in schools was 9.4 years. From the findings, the mean value of years of farming experience was 15.98. Majority (68.3%) of the sampled farmers used inherited land with mean farm size of 2.74 hectares. The result of household commercialization index showed that among all the crops sampled, none attained a ratio of 30%. Maize commercialization was the highest with a ratio of 26%. Cassava ranked second with a ratio of 22.13%. Yam commercialization ranked third with a ratio of 21.81%. The result of Tobit regression for the determinants of household commercialization index depicted that the coefficients of years spent in school, experience in farming, farm size, access to farm mechanization and number of visits of extension services were all significant at various probability levels and with different signs influencing agricultural commercialization in the study area. Agricultural commercialization was however fraught with multiple constraints with price fluctuation being the highest. Therefore, it was concluded the farmers needed the government intervention to boost agricultural commercialization and alleviate poverty in the area. It is therefore recommended that there should be focus on training farmers to view farming as a business; equipping farmers with marketing and negotiating skills. Also, food importation should be totally discouraged to enhance large scale and massive food production in the country.

Keywords: Agricultural commercialization, household commercialization Index, Tobit

1. INTRODUCTION

Agriculture continues to be a strategic sector in the development of most low-income nations. It employs about 40% of the active labour force globally (Carletto *et al.*, 2017). What makes agriculture more critical in Nigeria is that the sector is mainly based on smallholder farms and contributes about half to the total Gross Domestic Product (GDP) and the livelihoods of more than 80% of the citizens (Diao, *et al.*, 2017). This implies that developments and transformation of the agricultural sector can have significant effects in uplifting lives of the poor and agriculture dependent nations. However, many developing countries have not fully utilized agriculture for its multiple functions (Pingali, 2010). Farmers in developing countries, who constitute the bulk of the rural poor have also not fully benefited from agriculture's multiple opportunities because they predominantly practice consumption-oriented small scale agriculture which excludes them from the formal market system and the related income-mediated IFPRI, 2015; World Bank, 2008).

Commercialization of agriculture can lead to productive growth, income growth, employment growth, and poverty reduction (Bellemare and Novak, 2017; Barrett, 2008). Agricultural commercialization also improves food supply in urban areas, with broader growth and welfare effects. Previous studies confirmed that commercialized farms have higher household incomes than subsistence- oriented farms, also after controlling for other relevant factors (von Braun, 1995; Strasberg, *et al.*, 2009). A few studies also showed that commercialization contributes to poverty reduction among African smallholders (Boka, 2017; Muriithi and Matz, 2015; Olwande and Melinda, 2015).

However, in the Southwest Nigeria, the soils and the weather conditions are favourable for some of the food crops grown and consumed in the region. Some common foods consumed in the region include; yam, cassava, maize, rice, plantain, cowpea, fruits and vegetables. But, unfortunately, these food crops are only cultivated in smaller quantities and seasonally. There is no enough food for all; more than 7 million people in the Southwest, Nigeria are chronically undernourished (Olutumise and Ajibefun, 2019)). Millions of people in the region simply cannot obtain the food they need for a healthy and productive life.

Despite the abundance Agricultural potentials in the Southwest, Nigeria, most of the food we consumed is being transported from the North with high cost of transportation and remarkable spoilage on transit. This has probably led to high cost of food in the region. Internal crisis in the North, natural disaster like flooding or drought in the North will greatly affect the availability and prices of staple foods in the Southwest. The Southwest region is at risk because food is inevitable and indispensable basic need of human survival. Therefore, the most obvious way is to promote sustainable food production structure in the region, where there is often huge potential to improve production. This will make more food available in local markets and provide jobs and income, especially in rural areas where about 70 percent of the world's poor live Jennifer and Tina (2014).

2. METHODOLOGY

This study was carried out in Southwest, Nigeria. The region is bound in the north by Kogi and Kwara States, in the east by Edo State, in the west by Republic of Benin and in the south by Atlantic Ocean. The States are mainly dominated by Yoruba ethnic group and it is the largest ethnic group in West African coast and one of the largest and longest established ethnic groups in African continent (Ayinde, 2005). The total population of this area is approximately 27,511,992 with land area of about 114,271 km² which is about 12% of the total land mass of Nigeria. It lies between Latitude 4⁰21¹N and 9⁰23¹N of the equator and Longitude of 2⁰25¹E and 6⁰31¹E (National Population Census (NPC), 2006; National Bureau of Statistics (NBS), 2015).

The area experiences both dry and rainy seasons. The rainy season commences from March till October while dry season commences from November till February in most locations of the six States. The rainforest zone of the Southwest Nigeria is characterized by an annual rainfall of about 2,000mm – 2,500mm and high humidity of 85% to 95% at rainy season and 60% or less at dry season. Temperature ranges between 21°C and 29°C with high humidity (Omoare *et al*, 2014). The dry season brings harmattan dust; cold dry winds from the northern deserts blow into the southern region around this time. Hence, crop and livestock production are not constrained by the amount and distribution of rainfall. The soil type in the zone is well drained but highly leached soils. These elements favour the cultivation of arable crops such as cassava, maize, sorghum, yam, rice, cocoyam, beans, cowpea, and perennial crops such as cocoa, cashew, oil palm, kola nut, pineapple and plantain.

Sampling Procedure and Sample Size

A multi-stage sampling technique was used in the study. The first stage was the random selection of three states from the region which are Ekiti, Ogun and Osun. The second stage was the use of random sampling technique to select 5 Local Government Areas from each state. This was closely followed by random selection of two communities from each Local Government Area. Ten (10) respondents were randomly selected from each rural community. This made a total of twenty (20) respondents per Local Government Area, 100 respondents per state to make a sample size of 300 respondents.

Data collection

The primary data were collected through administration of pre-tested structured questionnaires that consist of close and open ended questions. Trained enumerators under the supervision of the researcher administered these questionnaires. This involved interview schedule and permitted educated respondents to write the answers.

Method of Data Analysis

The analytical tools used in the study to analyze the data collected include:

Descriptive statistics

Descriptive statistics including frequency table, mean, charts and percentage were used to analyze the socio-economic characteristics of the respondents.

Household Commercialization Index

$$HCI_{ij} = \frac{\text{Gross value of crop sales hh i year j}}{\text{Gross value of all crops production hh i year j}} \times 100 \dots\dots\dots (1)$$

The household commercialization index (HCI_{ij}) was used to determine household specific level of commercialization (Govereh *et al.*, 1999; Strasberg *et al.*, 2009). The index measures the ratio of the gross value of crop sales by household *i* in year *j* to the gross value of all crops produced by the same household *i* in the same year *j* expressed as a percentage. The index measures the extent to which household crop production is oriented toward the market. A value of zero would signify a totally subsistence oriented household and the closer the index is to 100, the higher the degree of commercialization. The advantage of this approach is that commercialization is treated as a continuum thereby avoiding crude distinction between “commercialized” and “non-commercialized” households. This effectively brings subsistence food production to the centre of discussions about commercialization.

Tobit Regression Model to determine factors that determine the Household Commercialization

In estimating the determinants of household commercialization, the Tobit regression model was used and the implicit form of the regression is stated as follows:

$$y_i = x_i\beta + \epsilon_i \dots\dots\dots (2)$$

$$y_i = 0 \text{ if } y_i \leq 0$$

$$y_i = y_i \text{ if } y_i > 0$$

Where

y_i is the dependent variable of HCI

Note: $HCI_{ij} = \frac{\text{Gross value of crop sales hh i year j}}{\text{Gross value of all crops production hh i year j}} \times 100$

β is the parameter to be estimated,

x_i is a vector of explanatory variables and ϵ_i is a random variable which is normally distributed with mean zero and constant variance.

The model is explicitly expressed as

$$Y_i = B_0 + B_1X_1 + B_2X_2 + B_3X_3 \dots + B_{17}X_{17} + e_i \dots\dots\dots (3)$$

Y_i is the latent variable that is observable

X₁ – *X₁₇* = Independent variables

β₁ – *β₁₇* = Independent variables coefficient

e_i = Error term

The independent variables used in the model

These are the explanatory variables are the assumed factors determining agricultural commercialization among farming households in the study area.

X₁ = Respondent’s age in years.

X₂ = Respondent sex (1 = male, 0 = female)

X₃ = Actual number of years spent in schools)

X₄ = Assets Naira value

X₅ = Farming experience in years

X₆ = Farm size in hectares

X₇ = Membership of agric association (Membership = 1, none member = 0)

X₈ = Access to credit (access = 1, no access = 0)

X₉ = Years in Commercial agriculture (Actual number of years)

X₁₀ = Poverty reduction (Agricultural commercialization reduces my poverty = 1, No = 0)

X₁₁ = other income generating activity of the respondents (Yes = 1, No = 0)

X₁₂ = Access to Farm mechanization (access = 1, no access = 0)

X₁₃ = Record keeping by the respondents (Yes = 1, No = 0)

X₁₄ = Mechanization amount (Actual amount spent on farm mechanization in Naira)

X₁₅ = Manual amount (Actual amount spent on farm operations manually in Naira)

X₁₆ = Number of visit by Extension Workers (0= no visit, 1= weekly, 2 = fortnightly, 3= monthly and 4= quarterly)

X_{17} = Irrigation practice binary variable 1 = if yes, 0 = if otherwise.

B_j = is a vector of the estimated parameter.

ϵ = error term

3. RESULTS AND DISCUSSION

Socio economic characteristics of the respondents

Table 1 of the study revealed that most of the respondents from the three States were male and were above 50 years. Huge proportions (87.30%) of the respondents were married with relatively large household sizes with a mean value of 7 persons. The mean value of years spent in school was 9.4 years. Most of the respondents depend solely on agriculture for their livelihood despite the fact that they participated in other income generating activities and belonged to various agricultural associations. The mean income of the respondents was ₦313,385:00 per cropping season. Higher percentage (68.30%) of the interviewed farmers said they acquired their farm land by inheritance from their ancestors. The mean value of farm size of the respondent was 2.74 hectares. This implies that they have average of more than 2 hectares of farm size because the research purposively target commercial farmers. The study further revealed that 57.70% claimed to have access to farm mechanization on their farms and the remaining 42.30% said they did neither have access non used farm machines for their farms operations. Membership of agricultural association indicated that 64.30% of the respondents belong to one farmers' association or the other. Access to agricultural credit indicated that 50.00% of the farmers surveyed farming households claimed to have access to credit either from formal or informal sources.

Table1. Analysis of socio-economic variables of the respondents

Variables	Frequency	Percentage
Age (years)		
<30	14	4.70
31 - 40	45	15.00
41 - 50	74	24.70
51 - 60	92	30.70
61 - 70	59	19.70
> 70	16	5.30
Gender		
Male	265	88.30
Female	35	11.70
Marital Status		
Single	18	6.40
Married	263	87.30
Widowed	7	2.30
Divorced	12	4.00
Years spent in Schools		
No formal Education	37	12.30
1 - 6	82	27.30
7 - 12	92	30.70
13 - 18	76	25.30
19 - 24	13	4.30
Other Income Generating Activities		
Public service	7	2.30
Teaching	14	4.70
Trading	50	16.70
Civil service	31	10.30
Driving	10	3.30
Artisans	70	23.30
Student / Apprentice	5	1.70
Retiree	13	4.30
Others	28	9.30
Farm Size in Hectares		
≤ 2	166	55.30
2.1 - 4.0	81	27.00
4.1 - 6.0	42	14.00
> 6	11	3.70
Access to Agric. Credit		
Yes	150	50.00
No	150	50.00
Mode of Operation		
Manual	170	56.30
Mechanical	73	24.30
Both	57	19.00
Access to Farm Mechanization		
Yes	173	57.70
No	127	42.30

Source: Field survey, 2019.

Extent of agricultural commercialization of the respondents

The result of household commercialization index showed that among all the crops sampled, none attained a ratio of 30.00% which indicated that agricultural commercialization in the study area was very low. Maize commercialization was the highest with a ratio of 26.00%. Cassava ranked second with a ratio of 22.13% .This was so because virtually all the respondents interviewed planted maize and cassava. It was closely followed by yam commercialization with a ratio of 21.81%. However, plantain and rice took 4th and 5th with a commercialization ratio of 7.60% and 7.49% respectively. Cowpea cultivation was not common among the respondents but few that cultivated them do so at relatively large size hence, it ranked 6th in the pooled data. Pepper and tomato ranked 7th and 8th with a ratio of 3.78% and 3.39% respectively. Moreover, Cocoyam commercialization ranked 9th with a ratio of 2.82% among the farming households in the study area.

Table2. *Distribution of respondents by extent of crops commercialization in the study area*

Crops	Value of Crop Sale (₦)	Value of Crop Consumed (₦)	Percentage Ratio	Rank
Yam	26,612,500	5,425,600	21.81	3 rd
Cassava	22,870,900	2,878,700	22.13	2 nd
Rice	7,153,000	1,533,000	7.49	5 th
Maize	23,709,100	1,914,700	26.00	1 st
Cocoyam	1,264,100	841,000	2.82	9 th
Cowpea	4,349,000	477,000	4.98	6 th
Plantain	1,472,500	594,200	7.60	4 th
Tomato	2,603,900	441,100	3.39	8 th
Pepper	2,757,500	453,000	3.78	7 th
Total	92,792,500	14,558,300	100	

Source: Computed from Field Survey, 2019.

Determinants of Agricultural Commercialization

The Tobit model estimated the determinants of agricultural commercialization among farming households in the study area, some socio economic and farm specific characteristics of the respondents were regressed as shown in the Table 3. The result showed that age was not statistically significant at any level of significance with negative coefficient. This implies that there were tendencies for reduction in agricultural commercialization as age of the respondent increases. This is so because of reduction in their vigor and strength to cope with the stress of large scale farming. The findings disagreed with the findings of Awoyemi (2004) as cited by Igbalajobi (2015) that as person gets older, he/she is less likely to engage in large scale farming.

Year spent in school was found to be statistically significant at 10 % with negative coefficient. The implication of this is that the more years the respondents spent in acquiring formal education, the less their level of agricultural commercialization. The more the years spent in school; the more the exposure to new ways of life, the more the ability to take risk, the more the exposure to information and technology. The better the opportunities for greener pastures outside the agricultural sector. Consequently, the less the level of participation in agricultural commercialization among the respondents. The findings corroborates the report of Marchetta (2013) that education is a key factor to pursue opportunities in the off farm sector. Experience in farming follows aprior expectation as it was statistically significant at 10% with positive coefficients. The more the years of farming business, the more they learn on the job and the better their farm produce and the higher their extent of agricultural commercialization.

Farm size indicates the hectareage of land cultivated by the respondents. As it is expected, large farm size should translate to higher commercialization. Large farm size, if well managed will definitely bring about more yields and this will increase the agricultural commercialization. It was statistically

significant at 10% positive coefficient. The implication of this was that respondents with large farm size will have large quantity to feed their household members as well as having excess for sale.

Membership of farmers association was not statistically significant in any of the states sampled. This negates the submission of David (2016), Onubuogu *et al.* (2014) and Esiobu, Nwosu and Onubuogu (2014) that membership of farmer association enables the farmers to share information on modern farming practices, access to credit facilities and bulk purchase of farm inputs required to enhanced productivity. Also, Chikezie (2015) affirmed that membership of farmers association promotes special interest or meets certain needs that cannot be achieved by the individual effort. FAO, (2008) indicated that membership of farmers’ organizations is beneficial in overcoming barriers faced by small agricultural producers especially women, through empowering their members economically and socially.

Agricultural credit was analyzed and found to be statistically insignificant but with positive coefficient. This implies access to credit does not influence the household commercialization index of farming households in the study area. This could be interpreted to mean access to credit by farmers in the sampled states made them to divert the credit to none agricultural purposes like marrying more wives, building more houses or purchase of motorcycle for commercial purpose.

Other income generating activities of the respondents had negative coefficients but it was not statistically significant at any level of significance. The implication of this was that farmers who had other source of income may not have enough time for farming. This led to reduction in productivity and farm output. Higher percentage (76%) of the sampled farmers claimed to have other source of income apart from farming. Therefore, they devote little time for farming occupation. The more other occupations they have, the less commercial farming and subsequent lower level of agricultural commercialization.

Access to farm mechanization had positive coefficients in all the states sampled and the pooled data. However, it was also significant at 1% pooled data. This implies that Respondents with access to farm mechanization will be able to cultivate large expanse of land thereby lead to higher productivity and better agricultural commercialization index. More so, amount spent on farm mechanization had negative coefficient the pooled data. This is because higher amount of money spent on tractor hiring, high cost of inputs such as herbicides, pesticides discourages farmers from using them. Hence, they preferred using crude implements such as hoes and cutlasses. This suggest that amount spent on farm operations manually greatly influenced their extent of commercialization in a positive direction. This indicated that respondents who had higher money to spend for their farm operations manually will have more farm produce to sell. Consequently, higher commercialization index will be recorded by such categories of farmers.

Table3. Tobit Regression Results for the Determinants of Agricultural Commercialization of Farming Households in the study area.

Variables		Coefficients	Standard Errors	(P> t)
Age	(X ₁)	-0.0021	0.0015	0.159
Sex	(X ₂)	-0.0484	0.0418	0.248
Years spent in Sch.	(X ₃)	-0.0044	0.0026	0.099*
Assets	(X ₄)	5.31e-08	1.25e-07	0.672
Farming experience	(X ₅)	0.0038	0.0023	0.092*
Farm size	(X ₆)	0.0168	0.0099	0.090*
Farmers association	(X ₇)	-0.0584	0.0358	0.104
Agric credit	(X ₈)	0.0486	0.0327	0.139
Years in Comm.	(X ₉)	-0.0034	0.0025	0.174
Comm. Reduce Pvt	(X ₁₀)	0.0111	0.0574	0.846
Other income act.	(X ₁₁)	-0.0046	0.0045	0.304
Record keeping	(X ₁₂)	0.0123	0.0284	0.664
Access to Mech.	(X ₁₃)	0.1446	0.0377	0.000***
Mechanization amt	(X ₁₃)	-1.69e-08	1.18e-07	0.886
Manual amount	(X ₁₄)	5.42e-08	1.89e-07	0.774
Number of Ext. visit	(X ₁₅)	0.0079	0.0149	0.596
Irrigation	(X ₁₆)	0.0699	0.0468	0.137
Constant		0.7499	0.0972	0.000

Number of Observation = 300, Log Likelihood = 21.348933

Pseudo R² = 2.6494 Prob >chi² = 0.0000, LR chi² (18) = 68.59

Note: *** Significant at 1%, * Significant at 10%

Source: Computed from field data, 2019.

Constraints to Agricultural Commercialization in the study area

Table 4 presented some identified problems militating against commercial agriculture in the study area as stated by the respondents. Price fluctuation was the highest impediment factor as 65.7% of the respondents complained about unstable prices. This was closely followed by high cost of tractor hiring as 60.7% of the sampled farmers highlighted it as a constraint. The study further identified inadequate credit facility (52%) as one of the prevalent constraints to agricultural commercialization in the study area. This result indicated that 51.7% of the respondents in the study area complained of poor storage facility as major impediment to their agricultural commercialization. This is one of the biggest challenges facing farmers in the study area and Nigeria at large. About 46% of the respondents identified attack of pests and diseases as major constraints to their agricultural commercialization in their domain while 39% of the respondents complained of poor or lack of processing facilities. Inadequate rainfall was mentioned by 31.3% of the respondents as obstacle to agricultural commercialization in their farms. Insufficient land was also a major constraint as it was reported by 23.3% of the respondents. This was due to other factors competing for land use. Herdsmen invasion was also reported as a major predicament to agricultural commercialization as 41.7% of the sampled farmers were disturbed by herdsmen invasion. In the recent times herdsmen invasion had been a topic of national discourse as so many farmers-herders conflicts had been reported.

Table4. Constraints to Agricultural Commercialization in the Study Area.

Constraints Encountered	Frequency	Percentage	Rank
High cost of Tractor	181	60.3	2 nd
Insufficient land	70	23.3	10 th
Price fluctuation	197	65.7	1 st
Lack of storage facilities	155	51.7	4 th
Lack of processing facilities	117	39	7 th
Transportation problem	91	30.3	9 th
Pests and diseases attack	138	46	5 th
Inadequate rainfall	94	31.3	8 th
Inadequate credit facility	156	52	3 rd
Inadequate extension visit	40	13.3	11 th
Herdsmen invasion	125	41.7	12 th

Source: Field survey, 2019.

4. CONCLUSION AND RECOMMENDATIONS

The study concluded that agricultural commercialization is a good income generating business that is worthwhile in the study area and the result from the study showed that various crops were thriving with different commercialization indexes in the study area. The most cultivated crops are maize, cassava and yam which ranked first, second and third respectively. These scores pointed to the comparative advantage the states have in the southwest of Nigeria and there is a need to explore more areas of improvement, so as to making these comparative advantages becoming competitive advantage. It is therefore recommended that; government at all tiers must promote agricultural commercialization even among the smallholder farmers since they are the majority practicing farming. Particular attention should be focused on training farmers to view farming as a business; equipping farmers with marketing and negotiating skills; in order to encourage the farmers to increase their scale of operations, agricultural inputs should be highly subsidized and unstable market price was the highest constraints to agricultural commercialization. Therefore, government should introduce “buy back programme” to buy produce from farmers to avoid post harvest losses and selling below production costs due to glut which often discourage many farmers from engaging in large scale production.

REFERENCES

- [1] Carletto, C., Corral, P., & Guelfi, A. (2017): Agricultural commercialization and nutrition revisited: Empirical evidence from three African countries. *Food Policy*, 67, 106-118.
- [2] Diao X, Belay F, Haggblade S, Alemayehu ST, Kassu W, Yu B. (2017): Agricultural growth linkages in Ethiopia: Estimates using Fixed and Flexible Price Models. IFPRI Discussion Paper No. 00695. pp. 1- 41.
- [3] Pingali P. L. (2010): From Subsistence to Commercial Production Systems: The Transformation of Asian Agriculture. *American Journal of Agricultural Economics*, 79 (May 1997): 628 - 634
- [4] International Food Policy Research Institute [IFPRI]. (2005): The future of small farms: Proceedings of a research workshop, Wye, UK, June 26-29, Washington, DC.
- [5] World Bank (2008): World Development Report 2008: Agriculture for development. 1818 H Street, NW, Washington, DC 20433, USA.
- [6] Bellemare M.F. and Novak C.B. (2017): An Ordered Tobit Model of Market Participation: Evidence from Kenya and Ethiopia. *American Journal of Agricultural Economics* 88(2) (May 2006): 324 – 337)
- [7] Barrett, C.B., (2008): Smallholder market participation: Concepts and evidence from eastern and southern Africa. *Food Policy* 33, 299–317. <https://doi.org/10.1016/j.foodpol.2007.10.005>
- [8] von Braun, J. (1995). Agricultural commercialization: Impacts on income and nutrition and implications for policy. *Food Policy*, 20(3), 187-202.
- [9] Strasberg, P.J., Jayne, T.S., Yamano, T., Nyoro, J.K., Karanja, D.D., Strauss, J., (2009): Effects of agricultural commercialization on food crop input use and productivity in Kenya. Michigan State University, Department of Agricultural, Food, and Resource Economics.
- [10] Boka, Gutu T. (2017) :Climate Change Challenges, Smallholders’ Commercialization, and Progress out of Poverty in Ethiopia, Working Paper Series N° 253, African Development Bank, Abidjan, Côte d’Ivoire.
- [11] Muriithi B.W. and J.A. Matz (2015): Welfare Effects of Vegetable Commercialization: Evidence from Smallholder Producers in Kenya. *Food Policy* 50 (2015) 80 - 91.
- [12] Olwande John and Melinda Smale (2015): Commercialization effects on household income, poverty, and Diversification: a counterfactual analysis of maize farmers in kenya. Paper presented at the Agricultural & Applied Economics Association’s 2014 AAEA Annual Meeting, Minneapolis, MN, July 27-29, 2014.
- [13] Olutumise A. I. and I. A. Ajibefun (2019): Evaluation of Poverty Status and Time-Taken to Exit Poverty among Food Crop Farmers in Nigeria Department of Agricultural Economics & Extension, Adekunle Ajasin University, Akungba Akoko, Ondo State, Nigeria (orcid.org/0000-0003-4600-9265).
- [14] Jennifer Coates and Tina Galante. (2014): Agricultural Commercialization, Production Diversity and Consumption Diversity among Smallholders in Ethiopia: Results from the National Ethiopia Integrated Survey on Agriculture, Rural Socioeconomic Survey
- [15] Ayinde, A.O. (2005). An Appraisal of Sustainability of Women Group in Ogun State Agricultural Development Programme. Unpublished M. Agric Dissertation, Department of Agricultural Extension and Rural Development, University Agriculture Abeokuta. Nigeria
- [16] National Population Commission NPC, (2006): “The Nigeria Population Census, 2006.” Retrieved from http://www.population.gov.ng/index.php?option=com_content&view=article&id=89 (verified on 12 December, 2011).
- [17] National Bureau of Statistics (2015): "Nigerian Gross Domestic Product Report Q2 2015" Retrieved 22 September 2015.
- [18] Omoare, A.M., Fakoya, O.E., Fapojuwo, E.O. and Oyediran, W.O. (2014). Awareness of Value Addition of Sweet Potato (*Ipomoea batatas* (L.) Lam) in Osun State, Nigeria. *International Journal of Biological, Biomolecular, Agricultural, Food and Biotechnological Engineering*. Vol. 8(1): Pp. 20-24
- [19] Govereh J, Jayne T. S., Nyoro J. (1999): Smallholder Commercialization, Interlinked Markets and Food Productivity. Cross Country Evidence in Eastern and Southern Africa, Department of Agricultural Economics, Michigan, USA.
- [20] Awoyemi, T. T. (2004): Rural Non- Farm and Poverty Reduction in Nigeria. A Report submitted to AERC, Nairobi, Kenya.
- [21] Igbalajobi, O. (2015): Assessment of Poverty Status and Income Diversification among Cocoa Farmers in Ondo State. A Ph.D thesis submitted to the Department of Agricultural Economics, Federal University of Technology, Akure. 10 - 78. Nigeria.
- [22] Marchetta, F. (2013): *Migration and Non – Farm activities as Income Diversification Strategies: The case of Northern Ghana. Canadian Journal of Development Studies*. 34 (1), 1- 21.

- [23] David, I.A. (2016): Analysis of Livelihood Diversification by Farming Households in selected Local Government Areas of Kaduna State, Nigeria. M.Sc Thesis submitted to the School of Postgraduate Studies, Ahmadu Bello University, Zaria, Department of Agricultural Economics and Rural Sociology. Pp 1- 72.
- [24] 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 Journal of Agricultural Science*. Vol. 4(6): Pp. 306-318. ISSN. 2276-7118. www.scholarly-journals.com/SJAS
- [25] Esiobu, N. S., Nwosu, C.S. and Onubuogu, G.C. (2014): Economics of Pineapple Marketing in Owerri Municipal Council Area, Imo State, Nigeria. *International Journal of Applied and Research Technology*. Vol. 3(5): Pp. 3–12.
- [26] Chikezie, P.N. (2015): Impact of Community Based Agriculture and Rural Development Project on Crop Production and other forms of Rural Livelihoods in Kaduna and Bauchi States, Nigeria. Ph.D. thesis submitted to the School of Postgraduate Studies Ahmadu Bello University, Zaria, Department of Agricultural Economics and Rural Sociology. 151 Pp.
- [27] Food and Agriculture Organization of the United Nations (2008): The state of food insecurity in the world: high food prices and food security – threats and opportunities. Rome: FAO.

Citation: Owoeye, R. S, et.al., (2021). "Nexus of Agricultural Commercialization among Farming Households in Southwest, Nigeria.", *International Journal of Research Studies in Agricultural Sciences (IJRSAS)*, 7(6), pp. 16-24 DOI: <http://dx.doi.org/10.20431/2454-0706003>.

Copyright: © 2021 Authors. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.