ANALYSIS OF ASSET OWNERSHIP AND NON- FARM ACTIVITIES AMONG FARMING HOUSEHOLDS IN OGUN STATE, NIGERIA

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ABSTRACT

This study focused on analysis of asset ownership and non-farm activities among farming households in Ilaro Agricultural Zone, Ogun State, Nigeria. The data analysis was carried out with the use of primary and secondary data through the use of structured questionnaire administered on 80 sampled farmers. The respondents were selected by multistage sampling techniques. Descriptive analysis was used to analysis the socio- economic characteristics of the farmers in the study area. Budgetary analysis was also used to estimate the cost and return structure of the farmers in the study area. Multiple regression analysis was done to determine the effect of analysis of asset ownership and non- farm activities among farming households. Also, stochastic frontier production function was used to access the effect of socio economic factors on non- farm activities. The findings revealed that 33.8% of the farmers had formal education up to tertiary level and 85% had farming as their main occupation. The budgetary analysis showed that analysis of asset ownership and non- farm activities was quite profitable in the study area. The average gross revenue N292,406.45 and the net farm income was N258,654.71, the stochastic frontier analysis result revealed that some variables such as educational level, farm experience have negative coefficient and statistically significant , which implies increase in these variable will decrease the technical inefficient and positive coefficient variables will increase the technical efficiency of the asset ownership. Based on the finds of this study, the following recommendations were made: there is need to design a policy to ensure that farmers have good access to fertilizer through adequate supply and efficient distribution so as to increase productivities. This could be achieved through the expansion of domestic production and the development of rural infrastructure, especially rural roads that can facilitate accessibility at lower cost of the farmer. Also policy attention should also be directed towards providing labour saving technology to ease farm operation.

Keywords: Asset, Ownership, Farm, Labour, Capital.

1. INTRODUCTION

Asset ownership is the person or group of people who have been identified by management as having responsibility for the maintenance of the confidentiality, availability and integrity of the asset. The asset ownership may change during the lifecycle of the asset (Coelli 2005).

Asset ownership on agricultural productivity will evaluate as amyl as possible project in rural and development communities funded by several organisations. Control over and ownership of

assets is a critical component to well – being. Reregulates from a study on the relationship between ownership and control over tangible assets key to agricultural productivity (including land, labour, livestock, capital and machinery) conclude that the combination of asset inequality and market failures has a negative impacts on growth and that inequalities tend to reproduce inequalities. Asset – based approaches view well - being as a cumulative process, resulting from a life time of stored efforts and accrued wealth. Saving and stored wealth (assets) are necessary for the kinds of cushioning and security needed to exit poverty. This is especially true for poor women, who typically have lower levels of ownership and control over assets than men, who controls these assets within the household is critical to household and individual well – being (Golas and Kozera (2003).

Assets within households are held individually by the men, women and children who comprise household. Family operation is efficient and tends to dominate other forms of farm- level organization, because production uncertainty and seasonality in farming (which generate unpredictable and lumpy labour demand), and task complementarily (which limits grain from specialization), both limit the total number of workers that can be effectively employed with a given set of assets. However, the family farm scenario they consider, where a single worker is full residual claimant on farm output and owns the entire farm's assets, is indistinguishable- from a scenario where the single worker owns no farm's assets (Brent 2004). The set of assets a farmer owns condition his incentive for acquiring asset specific human capital, and for taking unobserved actions that affect the market value of the farm's assets (e.g, actual depreciation of machinery). The assets owned by an intermediary condition her benefit from monitoring farmers' behaviour.

Consider a model with two parties; a farmer and an intermediary. The farmer used land without combination with his human capital and other inputs to produce an agricultural output. This output can be sold to the intermediary or to some third party. Per unit value of output depends on investment as x and y by the intermediary and farmer. After the investments are made and observed by both parties, the intermediary offers the farmer an incentive contract (Ezedinma 2000)

There are 3 types of farm assets. They are as follows:

Capital asset, financial asset, intangible assets

- **Capital Asset**: This includes its factory warehouse, vehicle, plant real estate represent, equipment, fixed or capital investment. These are not easily identified with specific return also they do not possess the same degree of liquidity as financial assets.
- **Financial Asset**: This includes issued common stock, the preferred stock and bonds issued by corporations and a government.
  Financial assets have the following characteristics

  (1) easily identify with specific returns
  (2) They are available from wide varieties of sources
- **Intangible Assets**: These include items like loyalty, patent, trademark and contract which can be used to earn profit. It shares the characteristics of either the financial or capital assets in that they may or may not be easily identified with specific returns. They may or may not be liquid (Idowu 2010)

Farm labour is the only active and productivity production factor and it constitutes a direct production factor. The quality and quantity labour available to the household in terms of number, educational levels, skill and health constitute the human capital that becomes the basis for constructing households livelihood strategies (Carney, 2005; Ellis 2000; and Freema, 2005; Scones, 2008; Scoones and Wolmer; 2002). It also focuses on how to improve worker productivity, the remuneration of labour is suppose to be based on the productivity of labour, since labour supports the livelihood of nearly 90% of the rural production in which most work as full time farmers on their own land, others involved in causal agricultural labour government of Malawi 2000; Mkandawaira 2000; Zgovu 2000. The types of labour used in agricultural productivity can be broadly classified into categories:

(i) Family labour   and (ii) Hired labour

The importance of family labour in farm work and lack of mechanization in agricultural production imply that the availability of family is a prerequisite for a household to increase farm size. The increase in farm size using abundant family is possible only under the condition that land is readily available for the expansion of family's farm (Takane, 2008). A part from family labour available within the households, labour exchanges among relatives that involved other households were also practiced. Such labour was used for farm tasks that required mush labour at a given time. When a house has insufficient family labour to complete the farm tasks, hired labour is used. There are two types of farm tasks in which hired labour was most commonly used. Farm labour that required physical strength such as land preparation and weeding, for these tasks, hired labour was frequently sought both by wealthy households that had enough capital to pay for the labour and by the labour – deficient households such as households headed by female by a female or elderly person who could not fulfil these strength demanding tasks (Woinishet Asnake Sisay 2010).

Since agricultural productivity plays an integral part in the process of industrialization and development also testify to it that countries with high levels of productivity growth and only modest discrimination against their agricultural sectors were successful industralizers, and that countries with low levels of productivity growth and a strong bias against agriculture through trade and pricing policies were unsuccessful industrializer.

Most statistics tend, however to neglect non-farm wage employment and self employment activities in which rural household are increasingly involved, giving rise to a portfolio of income sources. Moreover, the importance of uniform development has been neglected in most rural development policies and programmes. Attention is usually focused on derived from agricultural production, while options for improving household food security or intensifying cropping systems financed with non farm income receive little attention. Recently the potential role of non-farm employment has been emphasized, looking for option to enhance household expenditures and investment opportunities through selective engagement in the labour market (Kormawa *et al*, 2002). Non-farm employment is considered as an important device for income diversification, consumption smoothing and risk management (Anthe and Pingali, 2005). Farm income changes can be compensated through labour market participation (Takane 2008). Engagement in nonfarm employment can be helpful to overcome credit market failures (Reardon, *et al.*, 2000). Nonfarm income represents important sources to finance land acquisitions and the purchase of farm inputs and food.

Objectives of the Study

The broad objective of this study is to examine the asset owners and non-farm activities among farming households in Ogun State, Nigeria.

The specific objectives are to:

i. examine factors affecting non-farming activities and asset owned farmers' production efficiency
ii. determine the cost and return structure of the asset owned farmers' production in the study area
iii. examine factors associated with farmer's technical efficiency in the study area.

2. RESEARCH METRODOLOGY

The Study Area

The study area is Yewa South Local Government Area in Ogun State, Nigeria. Yewa South Local Government Area is one of the twenty Local Government Areas in Ogun State and of these, it is the second largest after Yewa North Local Government Area. The Local Government Area share boundaries with Yewa North and Ipokia Local Government Areas in North and South respectively and in the west and east by Ifo and Ado–Odo/Ota Local Government Areas. Yewa South Local Government Area is naturally endowed with a large expanse (broad extent) of land measuring about 163,720 square hectares and a population of 168,850 (NPC 2006)

Sources and Methods of Data Collection

Both primary and secondary data were used for this study. As a result, primary data were collected through structured questionnaire coupled with oral discussion from respondents; while secondary data were obtained using past records, journals, magazines, internet and periodic publications; as information related to the study such as socio-economic variables, input and labour cost, labour man–day, gender differentials, farm size, output etc. were properly elicited for the achievement of the objectives.

Sampling Techniques and Sampling Size

Multistage sampling techniques were used to select the respondents for the study, because Local Government Area is divided into several towns and villages. The second stage was however involved a sampling of 6 towns (Ilaro, Owode, Erinja, Idogo, Iwoye, Ajilete) from the Local Government Area and twenty household heads were selected randomly from each town giving a total of 120 sampled respondents.

Methods of Data Analysis

Data collected were analysed using both descriptive and inferential statistics. Descriptive statistics such as percentages, means, and frequency tables was used to describe the socio-economic characteristics of farmers such as age, household size, marital status and so on as well as to identify the various constraints facing farming households regarding production activities in the study area. While, inferential statistics such as multiple regression was used to examine the effect of socio-economic variables on asset ownership of the farm and non-farm activities; and budgetary analysis was used to examine cost and return structure of farmers' production.

Model Specification

Maximum Likelihood Estimation and Multiple Regression was used to examine the effect of socio-economic variables on asset ownership and non-farm activities.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \varepsilon$$

Where:

Y = Asset Ownership (Value in naira)

$X_1, X_2, \ldots, X_9$ are independent variables.

X_1 = Educational Level (years).

X_2 = Extension Visit (Number of times)

X_3 = Age (years)

X_4 = Farming experience (years)

X_5 = Hired to total labour ratio

X_6 = Capital to labour ratio

X_7 = Credit to cost ratio

X_8 = Non-farm to farm income ratio

X_9 = No of farm plot (number)

U = Error Term

β_0 = Constant or intercept

$\beta_1, to \beta_9$ are coefficients attached to each of the independent variable.

The right hand side of the variable is defined as follows:

X_1 = Age (years)

X_2 = Marital status (married = 0; non married = 1)

X_3 = Education Level (years)

X_4 = Occupation

X_5 = Farm experience (years)

X_6 = Annual income

U = Error Term

Determination of cost and return structure of the farmers' production

The cost – return structure of farmers was estimated using budgetary techniques. Gross margin analysis was to assess the level of profitability of the business venture. This was estimated as follows:

Gross margin (GM) = TR – TVC .... (1)

NFI = GM – TFC or TR – TC .... (2)

NRDI = NF/TC .... (3)

Where:

GM – Gross Margin

TR = Total Revenue

NFI = Net Farm Income

TC = Total Cost

 TFC = Total Fixed Cost

NRDI = Net Return on Investment

Net income will be expressed to measure the worth of input used by farmers inthe study area.

This will be estimated as:

NI = GM – TFC

 Where:

NI = Net income

GM = Gross Margin

TFC = Total Fixed Cost

3.RESULTS AND DISCUSSION

Table 1: Socio-Economic Characteristics of Respondents

Variables	Frequency	Percentage	Cumulative Percentage
Age (years)			
< 30	5	6.3	16.3
31 – 40	12	15.0	46.7
41- 50	23	28.8	68.0
51 – 60	16	20.8	85.5
Above 60	24	30.8	97.8
Sex Distribution			
Male	69	86.3	86.3
Female	11	13.3	100.0
Marital Status			
Single	9	11.3	11.3
Married	54	67.5	78.8
Divorced	2	2.5	81.3
Widow/Widower	6	7.5	88.8
Separate	9	11.3	100.0

Household Size (person)			
<1-3	16	19.8	14.7
4-6	35	43.8	61.3
7-9	16	20.0	82.7
10 above	13	16.3	100.0
Educational Level			
SSCE	27	33.8	33.8
Primary Six	35	43.8	77.5
Tertiary	10	12.5	90.0
No formal education	8	10	100.0
Major occupation			
Farming	68	85.0	85.0
Tailoring	4	5.0	90.0
Driving	4	5.0	96.3
Teaching	1	1.3	100.0
Civil servant	3	3.8	
Farming Experience (years)			
≤ 20	6	7.5	60.
21 – 30	45	56.3	90.5
31- 40	22	27.5	100.0
41 – 50	7	8.8	
Methods of Land Acquisition			
Personal Land	5	6.3	6.3
Inherited Land	59	73.8	80.0
Communal Land	8	10.0	90.0
Leased/rent	1	1.3	91.3
Gift	7	8.8	100.0
Planting Varieties			
Local	45	56.3	56.3
Improved	29	36.3	92.5
Local improved	6	7.5	100.0
Sources of Income			
Personal savings	20.6	25.75	25.75
Relative/friends	14.7	18.38	44.13
Farmers cooperatives	15.6	19.5	63.63
Local money leaders	10.11	12.64	76.27
Government agencies	10.9	13.63	89.9
Community bank	4	5.0	94.9
Commercial bank	4.1	5.1	100

Problems Encountered			
Inadequate finance	18.9	23.6	23.6
Lack of storage facilities	15.8	19.6	43.2
Erosion problem	10.1	12.6	55.8
Bad roads	5.2	6.5	62.3
High cost of transportation	8.7	10.9	73.2
High cost of farm inputs	10.3	12.8	86
Inadequate man power	5.2	6.5	92.5
Poor harvesting	6.0	7.5	100
Total	**80**	**100**	

Source: Field Survey, 2017

From the survey, finding revealed that the age of the respondents revealed that has a mean of 50.5 years with range of 25 to 72 years and standard deviation of 12.8 years. A total of 69.6% of the respondent was with the modal age range of 25 to 60 years as shown in Table 1. The implication of these findings is that the majorities of the farmers were within their prime age of labour productivity and might likely utilize the asset ownership obtained productively. Also, they are expected to be very active and desirous for productivity – oriented opportunities. Farming, like any other business, also require experience and managerial skill which are associated with age.

Findings from this study showed that ex distribution showed that 86.3% were male while 13.8% were female. This implies that male farmers are more willing to use asset ownership and bold to take risk and withstand difficulties involved in obtaining loan or asset than women. The distribution of respondents according to marital status showed that 67.5% of the farmers were married. This implies that majority of the respondents were settled family people and have family responsibility. It also suggests that they would be desirous of opportunities that could be applied towards increasing their income earning capacity and improving their standard of living.

The total household of the respondents comprise of their wife/wives, children and their dependants. This is agreement with the view of Oluwasanmi (2009) who stated that a household consists of a category of people who feed from the same pot. The findings revealed that the total household sizes ranges from 1 to 10 with a mean of 6 members and standard deviation of 2.6458, the respondents (43.8%) had household size of 4 to 6 people, which can be categorized as the medium-sized households of above 7 persons were in the minority, which accounted for 36.3% of the distribution while the lowest sized households of 5 persons and less accounted for 20.1%. in Africa setting, children and women labour for small-scale farming in Nigeria.

Education is an important factor in the recognition and utilization of investment opportunities. The high preponderance of respondents with formal education might be associated with the realization of the advantages of enhanced production through provision of non-farm by more educated persons and effective utilization. The study revealed that 85% were majorly farmers. Some of the farmers are involved in others occupation like tailoring 5.0%, driving 5.0%, teaching 1.3% and civil servant 38%. The diversification in occupation occurred as a result of craving for more income to improve their standing of living.

The farming experience of a farmer can be a useful guide in the use of inputs and in taking farm management decision. Data obtained from the survey showed that the mean farm experience was

27.01 years and standard deviation 10.4397 with a range of 3 to 50years. This means that few farmers were well experienced in farming business. It implies that the farmers might be able to make right decisions on the use of productive inputs adequately.

The prevalent method of farmland acquisition in the study area was by inheritance (73.8%). The implication of ownership of land by inheritance in that land obtained may not be economically sufficient to meet the family needs of the farmers. In addition, since such land belongs to the family/ community, there may be little/no impetus for high level investment on such lands. However, farmers who operate on such lands are risk- prone to communal feud and clashes, which could have otherwise mar production targets

The farmers planted either local, improved or mixture of improved and local varieties of cassava cuttings. There was no farm where a single species was planted. In other words, where mixture of improved and local varieties is planted, different cultivars are found in undefined proportion and arrangement. Across all farms, mixture of local and improved varieties predominates. Small and large farms planted about (56.3%) local, (36.3% improved, and 7.5% of local improved varieties respectively.

With respect to the source of income from which the farmers borrowed, the result shows the distribution of the farmers according to their source of income by farms sizes. The major sources of income which the farmers made use of include cooperative societies, friends/ relations, community banks and government sponsored credit institutions among others. Majority of respondents (5.0%) used personal savings while (88.8%) used personal saving and agricultural loan. Income has a direct, positive and significant relationship with the farm output.

The farmers identified a number of factors which constitute major obstacles to their production activities. These problems are as presented in Table 1. Across all the farms, inadequate finance, lack of storage facilities, erosion problem, bad roads, high cost of transportation, high cost of inputs and labour, inadequate farm power are major impediments to food crop production in Ilaro agricultural Zone. The poor storage facilities produced from the farms make it difficult for the farmers to delay the sale of their produce long after harvest. The poor financial bases and lack of collaterals force the farmers to seek for credit from informal sources which charge high costs. The problem of inadequate finance took highest percentage among the respondents, (23.6%, 19%, 12.6%, 6.5%, 10.9%, 12.8%, 6.5%, 7.5%) of different technology used by the farmers, farm sizes and cropping pattern, this may be due to low level literacy, lack of collateral or inaccessibility to sources and adequate loan. Efforts must be made to make adequate fund available for farmers' production in order to increase their farm output

Examination of Cost-Return Structure of Foodcrop Farmers
The estimated budgetary analysis for asset ownership is shown on Table 2. Analyses of cost – return structure for the asset ownership revealed that total variable cost (TVC) constituted larger percent of (100.00%) of total cost of food crop farm. Specifically. Cost of tractor hired formed 43% of total production cost. The total hired labour used constituted (38%) of total non- farm activities. This was followed by the cost of transportation (16%), while fertilizer constituted (7%) of total production cost. Total fixed cost TFC showed N33,751.74, total revenue was 292,406.45 while the net returned in production of non- farm was N258,654.71. It implies that the foodcrop farmers in the survey area are richly endowed with assets which evidently affected their production output positively and profitably.

Table 2: Cost and Return Structure of the Rural Farming Households

Items	Mean Amount	% of Total cost
Gross Revenue (TR)		
Petty trading income	292,406.45	
Off- farm income	14388.000	
Civil service income	75823.00	
Amount granted	80000.00	
Production Expenses	122406.45	
Variable Cost		
Stem Cutting	3,547.50	6%
Fertilizer	4,592.75	7%
Others Agro- Chemical	4,024.64	7%
Labour		
Family Labour	1,331	2%
Hired Labour	24,000.00	38%
Tractor Hire Service	26,553.00	43%
Transportation	10,000.00	16%
Total Variable Cost(TVC)	61,864.00	100%
Fixed Costs		
Interest on Loan	15,051.74	
Fixed Asset Depreciation	6,400.00	0.45%
Rent on Land	12,300.00	0.18%
Total Fixed Cost (TFC)	33,751.74	0.36%
Total Cost (TVC+ TFC)	95,615.74	
Net Farm Income (NI) = TR-TC or GM – TFC	258,654.71	

Source: Field Survey 2017

Factors Associated with Technical Inefficiency of the Respondents

The estimated coefficients in the inefficiency models as given in Table 8 are particular interest in this study. These coefficients were used to establish the factors (and the direction of their effects) associated with the efficiency levels of the farmers. The variables in the models are level of formal education, contact with the extension agents, age of the farmers, farmers experience, ratio of hired to total labour input, capital labour ration, ration of credit to total cost of production non-farm to farm income ratio and the number of farm plots cultivated during the year. Out of the estimated coefficient of the variable across all farms and small farm holders, only age and farming experience were not statistically significant at less than or equal to 5% level of significant. For large farm holders, experience and capital ration were not significant, while for mixed crop farmers and mono- croppers, age and capital labour ratio and experience, hired labour to total labour ration and credit to total cost ratio respectively were not significant. The direction of effect of these variables on the technical efficiency of the farms was not uniform. While some had negative effect on some farm groups, they had positive effect on other groups.

Table 3: Production Function and Inefficiency Estimates of Food Crop Production

Variables	Parameters	OLS		MLE	
Stochastic frontier		Co-efficient	Standard error	Co-efficient	Standard error
Constant	β_0	0.175**	0.887	0.177*	0.989
Ln Capital	β_1	-0.142	0.125	-0.138**	0.647
Ln Hectares	β_2	0.213*	0.186	0.214**	0.991
Ln Labour	β_3	0.238**	0.181	0.281	0.797
Ln $(Capital)^2$	β_4	0.335*	0.896	0.165	0.613
Ln $(Hectare)^2$	β_5	-0.690*	0.182	-0.708	0.332
Ln $(Labour)^2$	β_6	-0.742	0.806	-0.988	0.863
Ln (Capital)LN(Hectare)	β_7	0.432	0.164	0.533	0.166
Ln (Capital)LN (Labour)	β_8	0.912	0.127	0.131	0.110
LN (Hectare)LN (Labour)	β_9	-0.386*	0.125	-0.733	0.111
Inefficiency variables					
Constant	δ_0			-0.682	0.107
Education	δ_1			-0.448	0.673
Extension	δ_2			-0.345	0.116
Age	δ_3			0.188	0.539
Experience	δ_4			-0.149	0.313
Hired to total labour ratio	δ_5			0.523	0.110
Capital to labour ratio	δ_6			-0.755	0.101
Credit to cost ratio	δ_7			-0.0106	0.757
Non-farm to farm income ratio	δ_8			-0.108	0.111
Numbers of farm plots	δ_9			-0.134	0.174
Variance Parameters					
Sigma- Squared	$\sigma^2 = \sigma^2 v + \sigma^2$			0.190	0.792
Gamma	$\gamma = \sigma^2 v / \sigma^2$			0.409	0.328
Log likelihood function	L(Hi)			-0.125	
Mean Technical Efficiency	XTE			0.580	

*** = Significant at 1%; ** = Significant at 5%; * = Significant at 10%.
Source: Field Survey 2017

4. CONCLUSION

The study examined asset ownership and non-farm activates among farming households in Ilaro Agricultural Zone, Ogun State, Nigeria. From the result, it was found that non- farm activities is generally profitable but the extent of profitability was depend on farm size, the total quantity of input, total of all variable expenses, total amount of family and hired labour, location of the farms, total cost of fixed inputs have positive effect on the asset ownership and non- farm activities. This indicates that the output of non- farm increased with a positive effect in the crop

production. To achieve a higher level of crop production and non-farm activities, there is need to increase the asset ownership and non- farm activities in the study area.

5.RECOMMENDATIONS

Based on the findings of this study, it is therefore recommended as follows:

(i) There is need to design a policy to ensure that farmers have good access to fertilizer through adequate supply and efficient distribution so as to increase productivity. This could be achieved through the expansion of domestic production and the development of rural infrastructure, especially rural roads that can facilitate accessibility at lower cost by the farmers. Policy attention should also be directed towards providing labour saving technology to ease farm operation.

(ii) There should be policy intervention that facilitates farmers' access to improve in non- farm activities to enhance efficiency and competitiveness in production. Closely associated with policy, the provision of adequately trained and equipped extension workers for disseminating extension messages has the potential of raising efficiency.

(iii) An analysis of the cost and return structure indicated an improvement in gross margin. In view of the huge capital outlay required to establish and maintain non- farm activities should continue to support the farm sector. Farmers should be allowed to have access to loanable funds from financial institution, and thus increase their profitability level.

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