

## **THE DETERMINANTS OF INCOME AMONG POOR FARM HOUSEHOLDS OF THE NATIONAL DIRECTORATE OF EMPLOYMENT (NDE) IN ABIA STATE, NIGERIA**

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### **ABSTRACT**

The research focused on the determinants of incomes among poor farm households of the National Directorate of Employment in Abia state, Nigeria. The study covered the three (Aba, Ohafia, and Umuahia) agricultural zones of Abia state. Simple random technique was used to select 120 beneficiaries. Instrument of data collection was via structured and pre- tested questionnaire, the data was analyzed using the poverty line model, multiple regression analysis, frequencies, mean and percentages. The result of the multiple regression analysis with linear functional form showed that wealth index, labor employment and value of NDE inputs positively influenced farm income at 1% and 5% risk levels respectively while age of household head negatively influenced farm income at 5% level. It is however, recommended that government policies geared towards repositioning of NDE to achieve higher incomes for the farmer should be encouraged

**Key words:** Income Determinants, Poor Households, NDE, Nigeria

### **INTRODUCTION**

Majority of the farm household populace in Nigeria either depend entirely on farming and farming activities for survival and generation of income, or depends on these activities to supplement their main sources of income (World Bank, 1993). Therefore, productive gains in farming activities are a sine-qua-non for self –sustaining economic development (Mafimisebi Okunmadewa & Oluwatosin, 2004). Most farming households, who are the backbone of the Nigeria economy, are peasant and poorly endowed in terms of resources and income (Akinwumi, 1999), but these farm households account for up to 95% or more of food produced for consumption in the country (Olayide, 1980; World bank, 1993; Olaitan, 2000). The non-availability/inadequate use of modern inputs followed by low resources endowment of the poor farmers has made Nigerian agriculture remain rudimentary and traditional. A major requirement for improving this situation is injection of investible funds and provision of modern farming inputs into peasant agriculture (Obike, Ukoha & Nwajiuba, 2007). This is however, necessary because the needed funds cannot be provided by the resources – poor farming households owing to low productivity (Olayemi, 1999).

The fortunes of the poor farmer stand out as the most accessible determinants of the farming household standard of living. Determinants of income among these target population serves as social indicators of their standard of living. Adebayo (1985) suggested that the income levels of poor farming communities may be attributed to certain crucial factors and understanding these factors may hold the keys to effective rural development policy formulation. This in part

led to the submission of Olatona (2007), that a closer look at the determinants of rural income provides an in – depth knowledge into the factors that explain low income yield and poverty in rural regions where these rural farmers constitute about 90% of the total population (Olayemi, 2000; Olatona,2007). Adebayo (1985) also suggested that any rural development policy aimed at poverty alleviation should concentrate on farming activities which is the main occupation of the poor. One of government policies in addressing poor farmers’ issues is the establishment of the National Directorate of Employment (NDE) in 1984. The NDE has remained relevant in supporting farmers in Nigeria (NDE, 1992). The aim of the National Directorate of Employment in agriculture is to generate employment in farming activities. This is done by the provision of farm lands, fertilizers, improved seedlings, hand tools, pesticides, cash credit and training of farmers in modern agricultural practise.

Broadening strategic thinking on employment–growth- poverty link places employment into the context of an antipoverty strategy with a mix of four components: Structural reform, employment creation, social services and participation (Streeten, 1981). Dollar and Kraay (2000) found that the average income of the poor increased at the same rate as average income fall, and that growth was thus good for the poor. It is evident that poverty among farmers is linked to the problem of unemployment and low human capital of farmers (World Bank, 1993).

Credit is one of the most potent instruments for alleviating poverty and can be made viable, sustainable and effective if appropriately delivered (Christen, Rhyme & Vogel, 1995) by programs that are well designed and managed like the NDE. Empirical evidence on the nature of poor farm household and the extent of influence of the source of income on agriculture is quite essential for sound policy choices. This of course imposes the need to evaluate the factors determining incomes of NDE farm household. Findings in this study will serve as a framework for recommending policies for improvement of poor farm household incomes through the NDE program.

## **METHODOLOGY**

The study was carried out in Abia state situated in the eastern part of Nigeria; it is surrounded by Enugu state on the north, Rivers state on the south, Imo state on the west and Akwa Ibom state on the east. Abia state has 17 local government areas clustered in three agricultural zones namely Aba, Ohafia, and Umuahia. The state lies on latitudes 4<sup>0</sup>N to 47<sup>0</sup>N of the equator and longitudes 5.6<sup>0</sup>E to 62<sup>0</sup> E Green Wich Meridian (National Root Crops Research Institute ”NRCRI”, 2003).The state was chosen for the study because agricultural activities form the major occupation of the state inhabitants. The state is endowed with land suitable for growth of various tropical crops and rearing of various livestock. The major crops cultivated in the state are maize, rice, wheat, sorghum, beans, yams, cassava, oil palm, cocoa, groundnut, rubber, and cotton. Major animals reared include chicken, duck, turkey, goats, sheep cattle and pigs.

### **Sampling**

The instrument for data collection was a set of structured and pretested questionnaire. A total of 120 questionnaires were administered to farmers who registered with the NDE agricultural program from where the sampling units of 120 farmers were selected by a simple random method (from a total list of 600 farmer beneficiaries).

## Analytical Technique

The techniques for data analysis include frequencies, percentages, means, poverty line measure and multiple regression analysis. In order to identify factor determining income among farmers we estimated the poverty line, this was then regressed on the variable which showcased NDE services and other relevant variables.

The objective which shows the use of farm income by farmers was analysis by the use of line frequencies, percentages and means, while the objective that captured the determinants of farmer's income and how NDE interventions affected the farm household income was analyzed by the use of poverty line measure and multiple regression analysis.

The Poverty line is given a

$$PL = \frac{1/2(\sum HI)}{n} \quad (\text{World Bank, 2000})$$

Where:

PL = Poverty line – This is the threshold income below which one is considered poor.

$\sum HI$  = Summation of household income

n = Number of household studied

The implicit form of the equation for income determinant is given as:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, e)$$

Where:

Y = Total annual farm household income (₦)

X<sub>1</sub> = Wealth Index (Incomes (₦) for no services were offered: imputed rental value of houses

Imputed value of goods consumed and services received in return for employment)

X<sub>2</sub> = labor participation rate (Number of income received in the respondents household

Divided by the number of individual in the household (%)

X<sub>3</sub> = Land provided by NDE as a percentage of total farm land

X<sub>4</sub> = Household size

X<sub>5</sub> = Farming experience (years)

X<sub>6</sub> = Labor employment in all enterprises (mandays)

X<sub>7</sub> = Levels of education of household head (years)

X<sub>8</sub> = Value of inputs supplied by NDE (₦)

X<sub>9</sub> = Age of household head (years)

X<sub>10</sub> = Cash credit received from NDE (₦)

e = Stochastic variable

## RESULTS AND DISCUSSION

The Poverty Line: From preliminary analysis, the mean income of all (poor and non- poor) farmers was ₦57, 675.50 per annum. The poverty line is an income-based threshold line that divides the poor and the non – poor farmers in the study

area. The value of poverty line is estimated as ₦28, 837.75 per annum. Farmers whose income fell below the poverty line were considered poor. Out of 120 farmers only 41 or 34.17% of the NDE farmers were deemed poor. This estimate is comparable to income–poverty line measure in Ogun state (Olubanjo, 1998).

The uses to which poor farmers put the income generated from farming activities are shown in Table 1.0. Majority of the farmers applied the income generated to satisfying varied needs. Three crucial needs; family food, children requirements and medical expenses accounted for 39.77%, 28.17% and 13.22% respectively of farm income generated per annum. Only about 5.85% of income generated was ploughed back into farming activities. This level of plough back can be considered too low for the boost required in farming operation. This low amount of money re-invested into farming activities probably explains why farmers’ income remained low in the study area.

Table 1.0 Uses of Farm Income by Poor Farmers

S/N	Uses	Number of Farmers	Average Proportion of Income Used (%)
1	Family Food needs	27	39.77
2	Children School Requirement	5	28.17
3	Medical Expenses	3	13.22
4	Plough Back to Farm Work	1	5.85
5	Purchase and Maintenance of Household Items	4	7.68
6	Contribution/Savings	2	5.31
	<b>Total</b>	41	100

Source: Field survey, 2004

Farm income is one broad arm of income to a household (Murphy and Spray, 1986). The estimates of factors determining farm income of respondents are presented in Table 2.0. The linear multiple regressions gave the best fit among the four functional forms and were chosen as the lead equation based on statistical and econometric criteria. Four of the explanatory variables;  $X_1$ ,  $X_6$ ,  $X_8$  and  $X_9$  were significant at the conventional levels of 5% and 1%, the parameter estimates of each of these variables also carried signs, which conformed to *a priori* expectations. The result shows that the coefficient for wealth index( $X_1$ ) is positive and significant at 1%. This implies that with increase in wealth index, there will be a correspondent increase in total annual income for the farmer. This confirms to *a priori* expectation and agrees with Paul, (1988) that suggests strong source of wealth can boost farm income. Also, there is a positive relationship between labor employment( $X_6$ ) and annual farm income. This implies that labor employment positively influences income for the farmer. Also, there was a positive relationship between NDE farm inputs and income of the farmer at 5% significant level. This suggests that supply of NDE farm input positively influences farm income. However, there was a negative relationship between age of the farmers and income. This is in conformity with *a priori* expectation, because the older the farmer becomes the less productive he gets. This result agrees with work done by George, (1991).

All the explanatory variables together accounted for about 87% of the variation observed in the annual farm income of the NDE farmers.

Table 2.0 Regression Results of Income Determinants

Variable	Linear +	Semi Log	Cobb Douglas	Exponential
Constant	31249.06** (2.016)	-226091100** (-2.419)	0.326 (0.176)	10.780*** (26.124)
Wealth Index(X <sub>1</sub> )	2.295*** (12.847)	350791.59*** (5.216)	0.852*** (7.360)	4.404E-06*** (9.265)
Labor Participation(X <sub>2</sub> )	-374.935 (0.0704)	-5816.25 (-0.428)	-0.184 (-0.787)	5504E-06 (-0.001)
NDE Land(X <sub>3</sub> )	85.266 (0.075)	-42953.37 (-0.428)	-6.422E-02 (-0.421)	-7229E-05 (-0.024)
Household size(X <sub>4</sub> )	-3.68711 (-0.3080)	48822.636 (0.303)	-0.251 (-0.904)	-3.070E-02 (-0.976)
Farming Experience(X <sub>5</sub> )	5727.696 (1.4780)	243813.76* (1.541)	0.316 (1.162)	3.950E-02 (0.383)
Labor Employed(X <sub>6</sub> )	379.555** (2.036)	26268.112 (0.234)	2.671E-02 (0.11)	-6.16E-04 (-1.242)
Level of Education(X <sub>7</sub> )	-5813.429 (-0.953)	24261.892 (0.354)	0.114 (0.964)	-9.702E-03 (-0.958)
NDE Inputs(X <sub>8</sub> )	85393.312** (2.303)	-46706.2 (-0.210)	-0.634 (-1.378)	-2.594E-03*** (3.786)
Age (X <sub>9</sub> )	-42393.322** (-2.371)	-5373.2* (-1.746)	-0.364 (-1.378)	-3.483E-02 (0.590)
NDE Credit(X <sub>10</sub> )	4.186E.02 (0.011)	36750.198 (0.451)	0.135 (0.965)	5.933E-06 (0.590)
R <sup>2</sup>	0.872	0.614	0.766	0.816
Adjusted R <sup>2</sup>	0.843	0.522	0.710	0.714
F- Cal	29.88***	6.654***	13.665***	19.371***

Source: Computation from field survey data 2004

Figures in parenthesis are the t-ratios

+ = Lead equation      \*, \*\*, and \*\*\* are significant at 10%, 5% and 1% levels respectively.

## CONCLUSION AND RECOMMENDATION

This study has analyzed the determinants income among poor NDE farm households in Abia state Nigeria: A National Directorate of Employment (NDE) experience. The result showed that ₦57, 675.00 was the mean income for both the poor and non-poor farmers, while the poverty line estimate was ₦28, 837.75. The farmers whose income fell below this figure were deemed poor. More so, the result indicated that family food, children's school requirement and medical

expenses accounted for 39.77%, 28.17%, and 13.22% respectively of usage of farm income generated by farm household. Only about 5.85% of farm household income was ploughed back to farming activities which may have been responsible for low return to farm income.

The result posted that the critical determinants of NDE farmers household income to include wealth index, Labor employment and value of NDE inputs positively influences farm income while Age of household head negatively influences farm income, engagement of farmers with better wealth index and family labor employment can achieve a higher farm income for the farming household, government policies can capitalize on this to achieve expected result of higher income for the farmer. Policies that can encourage the NDE to deliver higher quantities of NDE inputs that are affordable to farmers should be encouraged as this have been shown to increase farm income. The government policies that will encourage the engagement of younger farmers instead of old farmers can boost farm income should be encouraged.

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