# DETERMINANTS OF AGRICULTURAL LABOUR PARTICIPATION AMONG YOUTHS IN ABIA STATE, NIGERIA

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**Abstract**

*The general objective of the study was to determine the factors that influenced youth participation in agricultural labour in Abia state, Nigeria. The specific objectives were to; identify the types and composition of farm labour engaged by the respondents in the study area, determine the factors that influence participation of the youths in agricultural labour; and make recommendations based on the findings. This study employed a multi-stage sampling technique in the selection of the respondents; where 4 local government areas (LGAs) were selected from each of the agricultural zone, 10 communities randomly selected from each of these local government areas and finally, 10 youth farmers were chosen from the 10 communities. In all, a total number of 100 farmers were used for the study. The source of data was primary and so used questionnaire to solicit information from the respondents. Descriptive statistics and probit model were employed in the analysis of the data. Apart from bush clearing and mound making where males participated majorly, female's percentage in the participation of all other farm operations outnumbered those of men. Estimates of the determinants of agricultural labour participation among youths in the study area showed that the coefficients of education of the respondents, income from non-agricultural sources, occupation of the parents, education of the father, farm size and the rate of mechanization influenced agricultural labour participation among the youths in Abia State, Nigeria. Apart from the coefficient of farm size that had a positive sign, the other variables had negative relationship. The study recommended that the cost of mechanization should be made affordable amongst other things to attract youths in agricultural participation.*

**Key words:** *Agricultural labour, participation, probit, youth*

## 1. Introduction

Agriculture has been an important sector in the Nigerian economy in the past decades, and is still a major sector despite the oil boom. Basically it provides employment

opportunities for the teeming population, eradicates poverty and contributes to the growth of the economy. Economic history provides us with ample evidence that agricultural revolution is a fundamental pre-condition for economic growth, especially in developing countries (Eicher & Witt, 1964; Oluwasanmi, 1966; Woolf & Jones, 1969). Ukeji (2003) submits that in the 1960's, agriculture contributed up to 64% to the total GDP but gradually declined in the 1970's to 48% and it continued in 1980 to 20% and 19% in 1985, this was as a result of oil glut of the 1980's. Historically, the root of the crises in the Nigerian economy lies in the neglect of the agricultural sector by the Federal Government towards developing dependence on a mono-cultural economy based on oil.

International Food Policy Research Institute (IFPRI) (2008), had noted that the declining importance of agriculture in the Nigerian economy can also be seen in the steady fall in the share of the population residing in rural areas, the share of the labour force employed in agriculture, and the share of the nation's export earning derived from agricultural commodity exports. Interestingly, the relative importance of agriculture declined even though private investment in the sector increased as a share of overall private investment in the country (Manyong *et al*., 2005). Between 1981 and 2000, aggregate domestic capital investment in agriculture, measured by gross fixed capital formation in the sector, steadily increased as a share of domestic capital investment across all sectors, rising from around 5% early in the period to around 14% during the later years (Manyong *et al*., 2005; IFPRI, 2008).

Economists have traditionally identified three factors of production: land, labour and capital. Capital and labour were wedded to the land, and economic power belonged to those who could control its use. With the industrial revolution, capital became the critical economic factor. In the modern society, the role of labour as a factor of production is becoming increasingly important (Levitan *et al.,* 1972).

Farm labour is a major source of employment opportunity for the rural labour force in Nigeria. Evidence abound that there has been a steady decline in the percentage in farm labour supply in Nigeria. Declining farm labour supply is compounded by the fact that the agricultural sector, with a few exceptions, has the worst poverty conditions (Ruben and van der Berg, 2001). Studies indicate that shortage in farm labour supply results in low farm productivity which eventually culminates in poverty among rural farming communities. This situation has been considered a major problem especially in developing countries like Nigeria (Gebremedhin & Switon, 2001).

The size of labour force in a country is determined by the number of people in the age group of 15-59 years as generally children below 15 years and old people above 59 years do not participate in production activity. According to Otumara (2000) as cited in Onemolease and Alakpa (2009), individuals between the age bracket of 18 and 40 years were considered as youths. Available evidence suggests an ageing farming population in Nigeria, with an average age of 47 years and life expectancy at 47-50 years in 2008 (NBS 2008; Oboh *et al*., 2009).

Since the mid 1970s, the pattern of population change was characterised by a "rural exodus", and increasing urbanisation. Rural population declined as the young and able left to seek better employment prospects in urban areas. Those remaining formed an increasingly ageing population, with declining local services, particularly agriculture where majority of the population are engaged in.

The ageing of the rural and farm workforce and the need to accommodate or reduce the flow of young people out of the countryside presents a serious challenge to the sustainability of the any rural economy, and accounts for the emphasis upon demography within the current project. The age structure of the workforce, together with the level of participation by young people in many rural regions, also raises important questions in relation to social and economic cohesion.

The rural exodus is now restricted to the remoter and less prosperous regions, and mainly involves young people, who are still attracted to cities as they set out on their careers. Rural development is the heart of country's economic development. It is not only sufficient to raise the agricultural productivity but it is necessary to provide employment opportunities to rising rural population by enhancing their incomes. Further rural development takes place by providing with necessary facilities like better houses, paved streets, health and education services, improved socio economic infrastructure. In nutshell, the socio economic condition of rural people may be uplifted by attaining the goals of increased productivity, employment opportunities and income redistribution, which agricultural labour is capable of providing (Faridi & Basit, 2011). Many studies show that participation in rural labour markets is an important strategy for poverty alleviation and food security in developing countries. Given the wide spread poverty, food insecurity and unemployment in Nigeria, this study was conceived to answer the question of what factors influence youth participation in agricultural labour force in Abia  state, Nigeria. Specifically it identified the types and composition of farm labour engaged by the respondents in the study area; determined the factors that influenced participation of the youths in agricultural labour force; and made recommendations based on the findings.

## 2. Methodology

### 2.1. Study Area

This study was conducted in Abia state, Nigeria. The state is located in the south east geopolitical zone of Nigeria. It lies around the latitude $4^0$ $40^{'}$ and $6^0$ $14^{'}$N and longitudes $7^0$ $10^{'}$ and $8^0$ $00$'E. The state covers a land mass of about 5,243.7km$^2$, approximately 5.6 percent of total land area in Nigeria (INEC 2008). The state has an average population of 2, 833,999 persons (NPC, 2007; INEC, 2008). It shares common boundary with Rivers state on the south; Imo state on the west; Ebonyi and Enugu state on the North and  Akwa Ibom and Cross Rivers state on the East. The state comprises of seventeen (17) Local Government Areas (LGAs), with Umuahia as its capital. Agriculturally, the state is divided into three (3) Agricultural zones, namely; Aba, Ohafia  and Umuahia zones.

The state is a typical rainforest area which is a typical characteristic of a tropical region. Agriculture is a major occupation of the rural people and the average farm land consists of small parcels of land with farm size ranging from about 0.1 to 10 hectares. The major crops grown include yam, cassava, sweet potatoes, plantain, banana, fluted pumpkin, oil palm, garden egg, melon, and small herds of sheep, pigs, goats and poultry.

### 2.2. Method of Selection of Respondents

A multi-stage sampling technique was employed in the study. Firstly, 4 LGAs were selected from each of the agricultural zones. Secondly, 10 communities were randomly selected from each of these LGAs. Finally, 10 youth farmers were chosen from the 10 communities. In all, a total number of 100 farmers were used for the study.

### 2.3. Method of Data Collection

The source of the data was primary source. For this reason the study employed the use of questionnaire which was administered to the respondents.

### 2.4. Method of Data Analysis

In analyzing the data, descriptive statistics was used in describing the types and composition of farm labour engaged by the respondents in the study area, while probit model was employed in the estimates of the determinants of agricultural labour participation among youths in Abia State, Nigeria.

### 2.5. Model Specification

The probit model is specified thus:

$$Y_i^* = \beta_0 + \beta_1 \times 1_i + \beta_2 \times 2_i + ..... + \beta_k x k_i + V_i \qquad (1)$$

and that:

$Y_i = 1$ If $y^* > 0$

$Y_i = 0$ otherwise;

Where: $x_1$, $x_2$,….. $x_k$, represent vector of random variables, $\beta$, represents a vector of unknown parameters and v represent a random disturbance term (Nagler, 2002).

According to Nagler (2002), probit model constrains the estimated probabilities to be between O and 1 and relaxes the constraint that the effect of the independent variable is constant across different predicted values of the dependent variable. This is normally experienced with the linear probability model (LPM). The probit model assumes that while we only observe the values of 0 and 1 for the variable Y, there is a latent, unobserved continuous variable Y* that determines the value of Y. The other advantages of the probit model include believable error term distribution as well as realistic probabilities (Nagler, 1994).

## 3. Results and Discussions

### 3.1. Types and composition of farm labour engaged by the respondents in the study area

Table 1 below showed the types and composition of labour engaged by the respondents. The following were identified: bush clearing, bush burning and gathering of stumps, mound making, planting, weeding and harvesting operations. Males were fully engaged in bush clearing, constituting 100 percent of all the respondents. This means that bush clearing is an exclusive type of operation reserved for the male gender in the study area. Ninety two percent of the respondents in the female category were always engaged in bush burning and stump collection, while 33.33 percent of their male counterparts were involved in this type of operation. In mound making operations, 98.67 percent of the males were involved in it, while 40 percent of the females took part in the operation.

About 16 percent of the males were always engaged in planting, whereas, all the females constituting 100 percent were involved in one form of planting or another. This is also applicable in weeding operations, where 100 percent of the females are engaged leaving only 8 percent for their male counterparts. Among the females, 92 percent of them were always engaged in the harvesting of crops. However, only about 37.33 percent were engaged in the harvesting of crops always.

**Table 1. Distribution of agricultural labour types and patterns engaged by the youths in the study area.**

| Types of labour | Gender involved | Frequency | Percentage |
|---|---|---|---|
| Clearing of bushes | Males | 100 | 100 |
| | Females | - | - |
| Bush burning | Males | 25 | 33.30 |
| | Females | 23 | 92.00 |
| Mound making | Males | 74 | 98.67 |
| | Females | 10 | 40.00 |
| Planting | Males | 12 | 16 |
| | Females | 25 | 100 |
| Weeding | Males | 06 | 8.00 |
| | Females | 25 | 100.00 |
| Harvesting | Males | 28 | 37.33 |
| | Females | 23 | 92.00 |

**Source:** Computations from field Survey, 2012

### 3.2. Determinants of Agricultural Labour Participation among Youths in Abia State, Nigeria

The data analysis and computers II manual (n.d) had noted that if none of the independent variables in an analysis had a standard error larger than 2.0, then there are no problems of multicollinearity. Given this, it was concluded that there were no problems of multicollinearity in the model.

Estimates of the determinants of agricultural labour participation among youths in the study area as indicated in Table 2 below, showed that the coefficients of education of the respondents, income from non- agricultural sources, occupation of the parents, education of the father, farm size and the rate of mechanization were major determinants of agricultural labour participation among the youths in Abia State, Nigeria. The coefficients had different signs and were at different levels of significance or probability level.

**Table 2. Estimates of the determinants of agricultural labour participation among youths in the study area**

| Constant | Coefficient | Standard error | Z |
|---|---|---|---|
| Age | 0.01357 | 0.07231 | 0.19 |
| Education | -0.04945 | 0.02376 | -2.08* |
| Income from non agricultural sources | -0.09980 | 0.04201 | -2.38** |
| Occupation of the parents | 0.00011 | 0.00003 | 3.67*** |
| Education of father | -0.09462 | 0.03585 | -2.64*** |
| Farm size | 2.9507 | 1.2238 | 2.41** |
| Rate of mechanization | -0.5237 | 0.1428 | -3.67*** |
| Chi $^2$ | 32.52 | | |
| $R^2$ | 0.681 | | |

**Note:** ***, **, * denotes 1%, 5%, 10% level of significance respectively.
**Source:** Computations from field Survey, 2012.

The coefficient of education of the respondents was significant at 10 percent probability level but had a negative sign. This meant that with increasing educational attainment among the youths, the probability of the youths participating in agriculture reduces. In the study area, it is believed that higher educational attainment increases ones chances of obtaining a white collar job with a better payment and other related benefits. Therefore, with that in mind, these youths strive towards attaining higher schools which is situated far away from their villages and of course do not participate in agricultural labour. Faridi and Basit (2011) had opined that higher educated rural workers are likely to participate in off farm labour markets. The result of this present study is consistent with theirs and those of Glauben et al. (2008) and Zhang et al.(2003).

The coefficient of income from non – agricultural sources was significant at 5 percent probability level with a negative sign. By implication, the result meant that as income from non- farm sources increases; the tendency of youth participation in agricultural labour reduces. Off-farm employment of farm household members is an important phenomenon throughout the world and it seems to alter on-farm labour supply (Anderson 2002; Babikir & Babiker, 2007). It is also known that returns to non-agricultural labour hours are higher than for agricultural labour hours, a result that is consistent with other studies in the literature (Sicular & Zhao, 2002).

Given the subsistence nature of agricultural production in the rural areas, many households seek for additional income through other livelihood activities. These activities may be fetching them more income when compared to farming and the tendency of participating in farm labour reduces. In effect, income from these non – farm sources act as backups. Similar findings have been reported by Mc-Nally (2002), Holthausen (2002), Goodwin and Mishra (2004), and Babikir and Babiler (2007).

Occupation of the parents was also highly significant at 99 percent probability level with a positive sign. This variable had been dummied and the result was in favour of those whose parents were farmers. The indication is that the probability of participation in agricultural labour increases among those whose parents are engaged in agricultural activities. Pabilonia (1999) had opined that parental employment status influences youths' attitudes toward youth employment. This may explain the result of the present study. This result is also in line with Nnadi and Akwiwu (2008).

Education of the father was significant at 1 percent probability level but with a negative sign. This means that as the education of the father increases, the probability to participate in agricultural labour reduces. This result is plausible given that parental educational attainment may influence the parents' attitudes toward raising their children. In this case, parents with higher education are likely to dissuade these youths who are their children into participating in agricultural labour.

Farm size was significant at 95 percent confidence level with a positive sign. This implies that the larger the farm size, the greater the probability of participation in agricultural labour among the youths in the study area. Larger farm sizes have often been associated with higher output and profitability. This therefore, could be an attraction to participation in agriculture among the respondents.

The level of mechanization was significant at 1 percent probability level and negative. This means that the higher the level of mechanization, the probability of the youths participating in agricultural labour reduces. According to Gould and Saupe (1989); Babikir and Babiler (2007) , households' labour supply is affected by the amount and quality of inputs and natural resources under the control of the household. For the fact that agricultural mechanization is still very capital intensive coupled with other institutional problems,

farmers in the rural areas will hardly afford it and therefore, the chances of participation in agriculture decreases.

## 4. Conclusion and Recommendations

The study has revealed the determinants of youth participation in agricultural labour in Abia State, Nigeria. The study therefore recommends that attempts should be made to boost income from the farm. The result had concluded that because non- farm sources provide better and higher income; youths tend to go for them, leaving out agriculture. Furthermore, the cost inputs and other related factors should be made affordable to the farmers. Although cost of inputs was not included as one of the variables, it should be noted that mechanization which ordinarily should have attracted youths towards agriculture came out with a negative sign. This could probably mean that because of the high cost associated with mechanization of which youths may not be able to afford and participation becomes difficult.

## References

Anderson, A. (2002). The Effect of Cash Cropping, Credit, and Household Composition on Household Food Security in Southern Malawi. *African Studies Quarterly*, 6,1–2.

Babikir O. M. & B.I. Babiker (2007). *The Determinants of Labour Supply and Deman in Irrigated Agriculture: A Case Study of the Gezira Scheme in Sudan.* USA: Blackwell Publishing Ltd.

Data analysis and computers II (n.d). Logistic Regression – Complete Problems Outliers and Influential Cases Split-sample Validation Sample Problems. Available at *http://www.utexas.edu/sw388r7/*

Eicher, C & L. Witt (1964). *Agriculture in Economic Development New York:* Mcgraw Hill, London.

Faridi, M.Z. & A. B. Basit (2011). Factors Determining Rural Labour Supply: A Micro Analysis. *Pakistan Economic and Social Review,* 49 (1), 91-108.

Gebremedhin. B & S. Swinton (2001). Reconciling Food-For-Work Project Feasibility with Food Aid Targeting in Tigray, Ethiopia. *Food Policy*, 26, 85–95.

Glauben, T., T. Herzfeld & X. Wang (2008). Labour Market Participation of Chinese Agricultural Household: Empirical Evidence from Zhejiang Province. *Food Policy, 33,* 329-340.

Goodwin, B & A. Mishra (2004). Farming Efficiency and the Determinants of Multiple Job Holding by Farm Operators. *American Journal of Agricultural Economics*, 86(3), 722–729.

Gould, B &W. Saupe (1989). Off-Farm Labour Market Entry and Exit. *American Journal of Agricultural Economics,* 71(4), 960–969.

Holthausen, D. (2002). Effect of Farm Income and Off-Farm Wage Variability on Off-Farm Labour Supply. *Agricultural and Resources Economics Review,* 31(2), 187–199.

Independent National Electoral Commission (INEC) (2008). Nigeria Atlas of Electoral Constituencies. O. Balogun (Ed), INEC, Abuja, Nigeria.

International Food Policy Research Institute (IFPRI) (2008). Agricultural Public Spending in Nigeria. IFPRI Discussion Paper 00789. Available at http://www.ifpri.cgar.org

Woolf, S.S & E.I. Jones (1969). *Agrarian Change and Economic Development*: *The Historical Problem* London: Methuen.

Levitan, S. A., L. Grath Mangum & R. Marshall (1972). *Human Resources and Labour Markets*, Ed.: New York: Harper and Row, Publishers Inc.

Manyong, V.M., A. Ikpi, J.K. Olayemi, S.A. Yusuf, B.T. Omonona, V. Okoruwa & F.S. Idachaba (2005). *Agriculture in Nigeria: Identifying Opportunities for Increase Commercialization and Investment*. International Institute of Tropical Agriculture, Ibadan, Nigeria.

Mc Nally, S. (2002). Are Other Gainful Activities on Farms Good for the Environment? *Journal of Environmental Management*, 66, 57–65.

Nagler, J. (2002). Interpreting Probit Analysis. New York University. Available at http://www.nyu.edu/classes/nagler/quantz/notes/probitI.pdf

Nagler, J. (1994). Interpreting Probit Analysis. New York. Available at University.Webpage:http://www.nyu.edu/classes/nagler/quantz/notes/probitI.pdf

National Bureau of Statistics (NBS), Publications 2008 and 2010.

National Population Commission (2007). Official Results of the 2006 Population Census. NPC, Abuja.

Nnadi, F.N & C.D. Akwiwu (2008). Determinants of Youth Participation in Rural Agriculture in Imo State, Nigeria. *Journal of Applied Sciences, 8(2), 328-333.*

Oboh, V., & R. M. Sani (2009). The Role of Radio on the Campaign against the Spread of HIV/AIDS among Farmers in Markudi, Nigeria. *Journal of Social Sciences, 19 (3), 179-184.*

Oluwasanmi, H.A. (1966). *Agriculture and Nigeria's Economic Development Ibadan*. Ibadan University Press.

Onemolease, E.A & S. O. Alakpa (2009). Determinants of Adoption Decisions of Rural Youths in the Niger Delta Region of Nigeria. *Journal of Social Science, 20(1), 61-66.*

Pabilonia, S.W. (1999). The Role of the Family in Determining Youth Employment. Paper Presented at the NLSY97 Conference at the Bureau of Labour Statistics in Washington, D.C. on November 18-19.

Ruben, R. & M. V. D. Berg (2000). Non-Farm Employment and Rural Poverty Alleviation in Rural Honduras, Wageningen: Wageningen University.

Sicular, T. & Y. Zhao (2002). Earnings and Labour Mobility in Rural China: Implications for China's WTO Entry. Working Paper of the Department of Economics, Beijing University.

Ukeje, R.O. (2003). *Macroeconomics: An Introduction*, Port Harcourt Davidson Publication.

Yang, D. T. & H. Zhou (1998). Rural-Urban Disparity and Sectoral Labour Allocation in China. *Journal of Development Studies*, 35(3), 105-133.

Zhang, L., A. De Brauw & S. Rozelle (2003). Labour Market Liberalization, Employment and Gender in Rural China. In Proceedings of the 25th International Conference of Agricultural Economists (IAAE), Durban, Pp. 918-930.