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## Determinants of Youths' Participation in Rural Agriculture in Imo State, Nigeria

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**Abstract:** The lack of empirical data on the determinants of youths' participation in rural agriculture necessitated this study that investigated the rate of youths' participation, agricultural activities participated in and the factors that determined their participation in Imo State, Nigeria. Data were generated from 230 youths from the three agricultural zones of the state using questionnaire and interview schedule. These were analyzed with the aid of frequency tables, simple percentage counts and logit regression model at 0.05 level of significance. The results indicated about 84% participation in land clearing, planting, fertilizer application, collection of fodder for livestock etc. The participation was determined by their ages, education, marital status, parents' income, parents' occupation, household size and youths' dependence status. It was recommended that institutional support services for agriculture should be extended to the youths and intervention strategies for youths' agricultural activities should be guided and guarded by their ages, education, marital status, parents' income, parents' occupation, family size and youths' dependence status.

**Key words:** Youths' participation, rural, agriculture, Imo State, Nigeria

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### INTRODUCTION

In Imo State, farming is a family enterprise (Nnadi and Amaechi, 2004). The farm family is closely-knit that trodden lines cannot be easily drawn to distinguish definite roles and responsibilities of members in agricultural production. Three major stakeholders unequivocally exist in a rural household's agriculture-father, mother and children, who invariably constitute the youths (Akwiwu *et al.*, 2005). Youth, the state of being young is a transitional period in personality development that bridges the years between childhood and adulthood (D'Souza, 1970). The age bracket varies among authorities ten to twenty years (Shingi *et al.*, 1980) and 10-30 years (Anonymous, 2000). In some societies, as long as one remains a bachelor or spinster, one is a youth! Youths possess unique capabilities; dynamism, strength, adventure, ambition, hilarity etc. (Udah, 2001; Waldie, 2004; Akwiwu *et al.*, 2005). These are assets for agriculture. Youths sometimes have their farms or gardens and on the other hand complement parents' farm effort by supplying labour for a wide variety of activities. They receive farm information and in some cases assist parents in analyzing innovations.

It is however unfortunate that in spite of the enormous contributions of youths to household agriculture, empirical data are lacking on their

participation. Thus, the fold and scope of their involvement have not been scientifically ascertained. The attendant knowledge gap has not permitted the formulation of articulate policies for improvement. Also several youths' programmes on agriculture have operated and failed due to lack of data and information on what determines youths' participation in rural agriculture for the design of appropriate intervention strategies. More so, studies in the past have not addressed the determinants of youths' participation in rural agriculture. Rather efforts were made at examining how to harness their potentials (Akwiwu *et al.*, 2005), youth migration (Angba, 2003), preference for agriculture discipline (Ajaero and Njoku, 2005) and youths' restiveness (Adesope *et al.*, 2000). This study sets out to analyze the determinants of youths' participation in rural agriculture in Imo State, Nigeria with a view to making policy recommendations.

The broad objective of the study is to analyze the determinants of youths' participation in rural agricultural production in Imo State, Nigeria. The specific objectives include:

- To investigate the rate of youths' participation in rural agricultural production
- To identify and describe the rural agricultural activities that youths participate in

- To analyze the factors that determine youths' participation in rural agriculture
- To make policy recommendations

**Hypothesis:** The participation of youths in rural agriculture is not determined by certain personal, social and economic factors.

### MATERIALS AND METHODS

The study was conducted in Imo State, Nigeria between January and July, 2005. The state, one of the nine states in Eastern Nigeria Agricultural Zone, is made up of twenty-seven local government areas categorized into three agricultural zones of Orlu, Owerri and Okigwe. With a population of 2.49 million (NPC, 1991), the major economic activity of the people is farming which is carried out mainly at subsistence level. Crop production features the cultivation of yam, maize, cassava oil palm, pineapple and different types of vegetables. The animals reared include poultry, sheep, goat, pig, cattle and most recently snail and grass-cutter. Fish farming is also practiced.

Two seasons, rainy and dry, April to October and November to March respectively are experienced in the tropical climate of Imo State. The rainfall ranges from 1500 to 2000 mm (Onu, 2005) and the temperature is between 26 and 28°C with relative humidity of 80-90% (Ugwu and Lekwa, 1988).

The three agricultural zones of the state were included in the study for adequate coverage and representation of the diverse interests of the youths. Three local government areas were randomly sampled from each agricultural zone. From each local government area, three communities were sampled and from each community, ten youths were randomly sampled. In all, 270 youths were sampled to provide data for the study.

The instruments for data collection comprised structured questionnaire and interview schedule. These were validated by the scrutiny and rational judgement of experts in Agricultural Extension and Rural Sociology. The questions were tested for internal consistency using test-re-test after being administered to 30 youths in Oru West Local Government Area of Imo State (not included in the study) at one-month interval to yield a coefficient of 0.68 at 0.05 level of significance. A total of 230 copies of the questionnaire was valid and used for the analyses.

The analyses involved the use of descriptive tools-simple percentage counts and frequency tables for objectives a and b. The rate of use of a technology or involvement in a programme was defined by Nkonya *et al.* (1997) as the percentage of farmers who have adopted a given technology or participated in a given programme. Thus, simple percentage was used to determine the rate of

youths' participation in objective a. For inferential purpose, the logistic regression model was used at 0.05 level of significance for objective c, from which the hypothesis was derived. Logistic regression model is a qualitative choice model used to explain relationship between a dependent discrete variable and explanatory variables (Polson and Spencer, 1991). A variety of multivariate statistical techniques are used to predict a binary dependent variable from a set of independent variables.

The logistic regression model was specified as follows:

$$Y = \text{Ln} \left( \frac{P}{1-P} \right)$$

$$\text{Ln} \left( \frac{P}{1-P} \right) = b_0 + b_1 x_1 + b_2 x_2 \dots B_9 X_9 + e$$

Where:

- Y = Dependent binary variable (participate = 1, do not participate = 0)
- P = Probability of participating in agriculture
- Ln = Natural logarithm function
- b<sub>0</sub> = Constant
- b<sub>1</sub>-b<sub>9</sub> = Regression coefficients
- X<sub>1</sub>-X<sub>9</sub> = Explanatory variables; X<sub>1</sub>-Age (Years), X<sub>2</sub>-Sex (Male = 1, Female = 0), X<sub>3</sub>-Marital status (Married = 1, Single = 0), X<sub>4</sub>-Education (No. of years spent in formal schooling), X<sub>5</sub>-Household size (No. of persons in the same household), X<sub>6</sub>-Distance from school or any other place of major engagement (kilometers), X<sub>7</sub>-Dependence status (Yes = 0, No = 1), X<sub>8</sub>-Parents' occupation (Farming = 1, others = 0), X<sub>9</sub>-Parents' income (Naira)
- e = Stochastic error term
- (<sup>P</sup>/<sub>1-P</sub>) = Odd ratio (odds in favour of participation)

Chi-square was used in place of R<sup>2</sup> to measure goodness of fit (Gujarati, 1988):

$$\sum_{i=1}^M \frac{N_i (P_i^0 - P_i^*)^2}{P_i^* (-P_i^*)}$$

Where:

- N<sub>i</sub> = No. of observations in the ith cell
- P<sub>i</sub><sup>0</sup> = Actual probability of event occurring
- P<sub>i</sub><sup>\*</sup> = Estimated probability
- M = No. of cells

For the large sample size, the chi-square was distributed according to the chi-square distribution with M-K degree of freedom, where K is the number of parameters in the estimating model (K < M).

**RESULTS AND DISCUSSION**

**Rate of youths' participation in rural agriculture:** The rate of youths' participation in rural agriculture was measured by calculating the percentage of those that participated and those that did not participate following Nkonya *et al.* (1997).

The result in Table 1 shows that 83.91% of the youths indicated yes; participated in rural agricultural production, while 16.09% identified with no; did not participate. The predominant rate of participation in agriculture could be attributed to the availability of farm land and the dependence on land for existence by rural dwellers. However, when the youths were further probed, diverse reasons were indicated for their participation. A total of 65% noted that rural agriculture is synonymous with rural households' livelihood, thus they were born and bred to embrace farming. Another 60% indicated that agriculture is the first employment to rural youths while 55% remarked that at the formative and dependent stages of existence, parents' interest often determined ward's interest, hence predominant parents' agricultural engagements influenced youths agricultural interest. Again, 43% noted that with the prevalent subsistence farming practice, poverty is unparalleled and it becomes difficult to mobilize resources for engagement in other livelihood activities. The only choice available is the agricultural band-wagon employment. The result is in consonance with the finding of Obuh (2005) that most youths in Ogba, Rivers State, Nigeria are much involved in rural development of which agriculture is a component.

**Rural agricultural activities participated in by the youths:** The result in Table 2 indicates that the youths engaged in diverse rural agricultural activities. Whereas planting ranked 1st with a percentage count of 90, 67, fertilizer applications ranked 2nd with a percentage count of 78.24. This was followed by weeding with 62.18% (3rd) and harvesting 52.33% (4th). Land clearing ranked 5th with 50.78% while haulage of farm produce to the markets ranked 6th with a percentage count of 43.52. The participation in the processing of agricultural produces ranked 7th with a percentage count of 38.86. For participating in the marketing of agricultural produce and staking, 33.23 (8th) and 34.20 (9th) percentage counts were recorded respectively. Cleaning of livestock pens had 23.32% (10th) while feeding of birds recorded 17.62% (11th). The 12th and 13th ranks were recorded by collection of fodder for livestock and compounding of poultry feed with 16.58 and 12.95%, respectively. The various agricultural activities participated in by the youths are marked by tedium and drudgery in a developing country like Nigeria.

Table 1: Youths' classification according to rate of participation in rural agriculture

Participation	Frequency	(%)
Yes	193	83.91
No	37	16.09
Total	230	100.00

Source: Field Survey Data (2006)

Table 2: Rural agricultural activities participated in by the youths

Activities	*Frequency	(%)	Rank
Land clearing	98	50.78	5th
Planting	175	90.67	1st
Fertilizer application	151	78.24	2nd
Weeding	120	62.18	3rd
Staking	66	34.20	9th
Harvesting	101	52.33	4th
Processing	75	38.86	7th
Haulage of produce to the market	84	43.52	6th
Marketing	68	33.23	8th
Collection of fodder	32	16.58	12th
Compounding of poultry feed	25	12.95	13th
Feeding of birds	34	17.62	11th
Cleaning of pens	45	23.32	10th

\*: Multiple Responses, Source: Field Survey Data (2005)

Table 3: Factors that determine youths participation in rural agriculture

Explanatory variables	Logistic coefficients	t-values
(X <sub>1</sub> ) - Age	0.6133	3.0049**
(X <sub>2</sub> ) - Sex	-0.0849	-1.1841
(X <sub>3</sub> ) - Marital status	0.0946	3.0615**
(X <sub>4</sub> ) - Education	0.0155	3.2979**
(X <sub>5</sub> ) - Household size	0.0757	3.5539**
(X <sub>6</sub> ) - Distance from school or any other place of major engagement	0.3947	1.2554
(X <sub>7</sub> ) - Youth dependence status	-0.0398	-3.7547**
(X <sub>8</sub> ) - Parents' occupation	0.0883	3.0767**
(X <sub>9</sub> ) - Parents' farm income	0.0277	3.2588**
Constant	-9.2317	-3.8641**
Model Chi-square	22.8037	
Degree of freedom	10.00	
No. of observations	230.00	

\*\* : Significant at 0.05 level, Source: Field Survey Data (2005)

This lays credence to the possession of such unique features as ambition and strength among others by youths (Udah, 2001; Waldie, 2004; Akwivu *et al.*, 2005).

Generally, crop-based agricultural activities recorded higher percentage counts than animal-based agricultural activities. The distribution suggests the dominance of crop production. This could be attributed to the age-old culture of tilling the soil to raise crops, the rural farmers' orientation and land resource availability among heirs. A similar study by Obuh (2005) confirmed the involvement of youths in these agriculture activities in Rivers State, Nigeria.

**Factors that determine youths' participation in rural agriculture:**

The logit regression equation recorded a chi-square of 22.8037 (Table 3). About 78% of the independent explanatory variables were statistically significant at 0.05 level. The variables of age (X<sub>1</sub>), marital

status ( $X_3$ ), education ( $X_4$ ), household size ( $X_5$ ), parents' occupation ( $X_8$ ) and parents' farm income ( $X_9$ ) exhibited positively significant relationship while youths' dependence status ( $X_7$ ) though significant was negatively related. These underscore the relevance of the variables in designing rural youths' agricultural policies and programmes since they determine the participation of the youths.

The findings of the empirical analyses could be interpreted as follows:

- Age had a coefficient of 0.6133 and t-value of 3.0049. The result implies that a unit increase in age increases the probability of participating by 61%. The higher the age of the youths, the higher the predicted probability of participating in rural agricultural production. This could be attributed to increasing consciousness and self-realization of the importance of agriculture with age based on experience. The finding disagrees with Matthews-Njoku (2005) but agrees with the result of Nnadi and Akwiwu (2005).
- The Table 3 shows that marriage had a coefficient of 0.0946 and t-value of 3.0615. This implies that marriage positively influenced the intensity of youths' participation in rural agriculture with an additional increase in the number of coupled youths increasing the probability of participating by 1%.

The predicted probability of participating in rural agriculture is higher for married youths. This could be adduced to ownership of land resources especially by males, who are heirs, increased concern for household welfare and food security following marital responsibilities and conviction over time of the importance of agriculture in rural livelihood. The increased participation in rural agriculture by married people concurs with the findings of Nnadi and Akwiwu (2005) that married people were more disposed to farming and adoption of new technologies.

- Increased educational opportunities increased the predicted probability of participating in rural agriculture by the youths. From Table 3, education had a coefficient of 0.0155 and t-value of 3.2979. The result implies that education level positively influenced the intensity of participating in rural agriculture with additional year of education increasing the probability of participating by about 2%. This could be explained by the fact that the youths possibly used the farms as laboratories for the theoretical knowledge from school. Also, increased understanding of the need for farming

and rendering complementary services to parents through farm activities to aid payment of school fees and meeting up with other family's financial responsibilities could motivate participation. Education is an asset for adoption decisions. Thus increased education was associated with increased adoption of farm technologies by different researchers (Nnadi and Akwiwu, 2006; Ohajianya and Onu, 2005; Onu, 2005; Matthews-Njoku, 2005; Nkonya *et al.*, 1997).

- Household size had a coefficient of 0.0757 and t-value of 3.5539. The result implies that a unit increase in household size increased the probability of participating by about 1%. Households with more residents would have greater blocks to overcome; higher food security and social needs. The positively significant relationship with participation could be explained by the rational consciousness of the enormous family and food security requirements. The result concurs with the finding that women from large households engaged in more agricultural activities for survival (Shingi *et al.*, 1980). However, the work of Karki and Bauer (2004) did not establish significant relationship between family size and adoption of agricultural technologies.
- Parents' occupations had a coefficient of 0.0883 and t-value of 3.0767. The results implies that with a unit increase in parents' engagement in farming as an occupation, the probability of youths' participating in agriculture increased by 1%. This supports the generalization that youth whose parents are farmers have greater predicted probability of participating in agriculture than youths whose parents are not farmers. The background and orientation of the youths by virtue of their parents' occupation would influence their desires, interests and engagements.
- Parents' farm income had coefficient and t-values of 0.0277 and 3.2588, respectively. This implies that participation in rural agricultural activities increased by 0.2% with a unit increase in parents' income. High income from farming could overwhelm youths into developing much interest in farming. This agrees with the finding that high farm income predisposes increased participation/adoption of technologies (Ohajianya and Onu, 2005; Karki and Bauer, 2004).
- The dependence status of youths had coefficient and t-value of 0.0398 and -3.7547, respectively. The result shows that the higher the dependence status of the youths, the lower the predicted probability of participating in agriculture. This could be explained

by the low level of responsibilities associated with youths who are still tied to the parents/guardians for welfare provision as against youths whose future welfare, food security and those of other dependants lie on their efforts.

- Sex ( $X_2$ ) and distance from school or any other place of major engagement ( $X_6$ ) do not exert significant effects on participation and should not be considered valuable while designing intervention strategies. However, the result entails that youths whether males or females, no matter the distance covered from home to school or any or any other place of engagement participated equally.

### CONCLUSION

The study analyzed the determinants of participation in rural agriculture by youths. The rate of participation was about 84%. The youths' diverse agricultural engagements included land clearing, planting, fertilizer application, weeding, collection of fodder, cleaning of pens, etc. Youths' participation were determined by such factors as age, education, household size, marital status, parents' occupation, parents' income and youths' dependence status.

Based on the findings, the following recommendations are made:

- Institutional support services for agriculture should be extended to the youths-extension education, credit provision, etc.
- Extension staff training should incorporate youth work.
- Intervention strategies for youths' agricultural improvement should be guided by their age, education, household size, marital status, parents' occupation, parents' income and youths' dependence status.

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