DETERMINANTS OF SMALLHOLDER FARMING HOUSEHOLDS' PARTICIPATION IN OFF-FARM EMPLOYMENT IN EZZA NORTH LOCAL GOVERNMENT AREA, EBONYI STATE, NIGERIA

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ABSTRACT

The study examined the determinants of smallholder farming households' participation in off-farm income generating activities in Ezza Local Government Area (LGA) of Ebonyi State. The objectives of the study were to describe the socio-economic characteristics of the smallholder farming households in the study area, identify reasons why smallholder farming households participate in off-farm income in Ezza North LGA of Ebonyi State and to identify the various off-farm income activities engaged by the various households. Descriptive (frequency, percentage and mean) and inferential statistics (probit regression model) were used to analyze the data generated through structured questionnaires and interview schedules. The study established that the variables: age (-0.017) (-3.001), farm size (-0.018) (-2.636) membership of organization (-0.136) (-0.712) and farm income (-0.198) (-0.412) were negative determinants of small holder farming household participation in off farm employment in the study area. The also established that the variables educational level (0.017) (3.001); household size (0.427) (0.036), marital status (0.046) (0.652)and gender (0.316) (0.413) were positive determinants of the respondents engaged in off-farm employment in the study area.. Based on findings, the study advanced some recommendations. It was recommended that government should make microfinance available to potential off farm investors. It was also recommended that the government should ensure that off farm investor were not over taxed. The study also recommended that touts and illegal collectors of money from private investors should be abolished.

Keywords: Smallholder, Farmers, Participation, Agriculture, Off-farm, Employment, Investments

INTRODUCTION

The role of agriculture in a contemporary society like ours (Nigeria) cannot be overemphasized. It however supplies food to the populace, employment generation to about 70% of the teaming population, generate foreign exchange, provide raw materials for our industriesand provide about 32 percent of the Gross Domestic Product of developing nations, just to mention but a few (Rahman, 2007).This is way Kaine and Awolumate (2017) opined that agriculture is the most important none oil economic activity in Nigeria. However, it is of note that the rural sector which is dominated by the smallholder farming households is very essential in the economic development of many countries including Nigeria (Adebayo and Okuneye,

2005). The smallholder farming households are usually characterized by the use of poor and simple farm tools, low access to improved farm technologies, lack of finance, poor access to agricultural markets and irrigation services (Ume *et al.*, 2017).The authors noted that these shortcomings go a long way in negatively affecting the proceeds of the smallholders' farm.

In order to revamp these myriads of problems plaguing the smallholder farming households some form of participation in off-farm activities is necessary. Such participation is assumed will go a long way in helping to boost or improve the economic status of the farmers, who will in turn plough the gains into his/her farming activities.

Participation is defined as a process of taking part in different spheres of social life: political, economic, social, cultural and others activities (Sidorenko, 2006). Okwuokenye (2014), on his partopined that participation is the process by which people with common interest either voluntarily or by coercion come together to take part in activities that involve them.Nevertheless, participation in off-farm employment, just like in group organization, would help remove the ugly socio-economic situations such as poverty, low income, among others.

Off-farm employment is defined as the participation of individuals in remunerative work away from a plot of land, which can be seen to play a progressive role in sustainable development and poverty reduction, especially in rural areas (Haggblade *et al.*, 2007).The authors indicated that off-farm employment has been identified to provide wage employment in agriculture related activities (like processing, canning, bagging, among others) and self-employment in hair dressing and salon operation, bike riding others among (Haggablade *et al.*, 2007). To this end, the relevance of off-farm employment to the development of the socio, political and economic status of the citizenry of the nation cannot be overemphasized. Eboh (2002) emphasized that besides income generation, off-farm employment is capable of reducing rural – urban migration, promotes income distribution and diversification and intersectional linkage which is capable of leading to a vibrant rural economy. Eboh and Ocheoha (2001) further stated that income generated from off-farm employment would help the farmers to handle the problem(s) arising from the seasonality of agricultural production especially in where farm output, labour and farm income are concerned. The authors also noted that off-farm income generated could be used to handle other problems that could emanate from the farm like decrease in farm labour availability for farm work and increased expenses on farm inputs and investments.

Alimba (2009) reported that most of the common off-farm economic activities that take place in rural areas of Nigeria are; petty trading (food stuff sales, fruit sales, provision sales, etc), fashion designing, hair dressing, palm wine tapping and selling, craft making (wood and calabash carving, clay pot making, weaving, etc), carpentry and upholstery. Alimba (2009) further identified other off-farm employment to include vulcanizing, welding, hair dressing salons, and auto repairs and technicians in their various fields.

From the foregoing, it could be deduced that off-farm employment has helped farming households to a large extent in not only meeting

family needs but also solving farm economic crisis. It is against this background that the researchers advocate that policy options be put in place on how best to improve the profitability of off-farm income employments. Unfortunately, not much seem to have been done or researched on in the diversification and determinants of small holder farming households especially in the study area. This research hopes to bridge this gap. The broad objective of the study is determinants of smallholder farming households' participation in off-farm employment in Ezza North Local Government Area (LGA) of Ebonyi State.

Specifically, the objectives of the study were to:

i. Describe the socio-economic characteristics of the smallholder farming households in the study area.
ii. Identify reasons why smallholder farming households participate in off-farm income in Ezza North LGA of Ebonyi State.
iii. Identify the various off-farm income activities engaged by the various households.
iv. Evaluate the determinant factors to farmers participation in off-farm income, and

Identify the constraints limiting farming households' participation in off-farm income.

HYPOTHESIS OF THE STUDY

H_{oi}: Socio-economic characteristics of smallholder farming households have no significant influence on off-farm employment.

METHODOLOGY

The study was conducted in Ezza North Local Government Area (LGA), Ebonyi State. The local government is located between Longitude $7^0$31 and $7^0$31E of Greenwich Meridian and Latitude $5^0$41 and $6^0$45Nand altitude 116 meters above sea level. The study area has an area of about 305Km^2. The National Population Commission (NPC, 2006) reported that the study area has a total population of about 145, 619 people. The area is endowed with minerals and has tropical climate with annual rain fall of about 1800mm – 2000mm, its mean temperature is between 28^0C – 42^0C and average relative humidity of 65%.The inhabitants are mainly mostly farmers. Crops grown include rice, yam, cassava and oil palm among others. Animals reared include sheep, goat, pig and poultry. The inhabitants also engage in other economic activities such as vulcanizing, hunting, salon, auto repairs and civil service jobs.

Multi-stage sampling technique was used to select small holder farming households. First stage involved the selection of communities. Three communities were randomly selected. The second stage involved the selection of villages. Three villages were randomly selected from each of the selected communities. This gave a total of nine villages. The third stage involved the selection of smallholder farming households. Ten smallholder farming households were randomly selected from each of the nine villages given a total sample size of ninety households that were used for the study. The information used for the study was derived from primary and secondary sources. The primary data were sourced from the use of structured questionnaires and interview schedules. The former were administered to the literate farmers while the later were administered to the illiterate farmers. The secondary source was elicited from review of

related literature, text books, conferences, seminars, journals and published thesis. Other secondary sources include workshops, internet and government publications.

Data Analysis Technique

The data generated for this study were analyzed with the use of descriptive and inferential statistics. Descriptive statistics involved the use of percentage, frequency tables and mean. These were used to analyze objective i, ii and iii. On the other hand, inferential statistics involved the use of Probit regression model analysis and it was used to analyze objective iv and the hypothesis of the study. Objective v was analyzed with Likert scale technique. The factors limiting smallholder farming household from participating in off-farm activities were measured on a four (4) – point Likert scale. The scale ranged from 'Strongly agree' (coded 4), 'Agree' (coded 3), and 'Disagree' (coded 2) and 'Strongly disagree' coded 1. The weighted mean score of 2.50 was used to determine the factors that limited participation and those that did not. Factors with a mean score of 2.50 and above were considered as limiting factors to participation, while those with values less than 2.50 were regarded as not limiting. Probit model analysis is expressed as;

$Y = Bxi + Ui$

Where x (0,I,) 1-1 ……n

$Y = 1\{ y > 0\} = 1$ if $y > 0$

Where Y = farmers participation in off-farm employment (participate = 1, non-participation = 2)

X_o = independent variable

X_1 = age of respondents (yrs)

X_2 = marital status (single =1, married = 2, divorced = 3, widow(er) = 4)

X_3 = gender (male = 1; female = 2)

X_4 = level of education (yrs)

X_5 = household size (numbers of persons living and feeding together)

X_6 = farm size (ha.)

X_7= membership of organization (members =1; non-members = 0)

X_8 = farm income (₦)

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Respondents

The socio-economic characteristics of the respondents are shown in Table 1. The result in Table 1 also revealed that most (92.86 %) of the respondents were males. The result of the age of the farmers indicated that that the mean age of the farmers was 40.95 years while the majority thirty one (36.91%) of the farmers fell within the age bracket of 30 - 39. The result implied that most of the farmer households were in their active age group. The mean age of 40.95 yeas observed in this study was higher than the mean age of 37.50 observed by Kaine and Ume (2017). Age has an influence on the ability of individuals to engage in either agricultural activity or off-farm employment or both. Anriquez and Daidone (2010) observed that physical fitness of respondents has so much to do with their ability to work in farm or engage in off-farm employment, thus support this finding.

A further analysis of the educational level of the respondents revealed that the literacy level was high. About seventy eight (93%) of farmers had one form education or the other. Taiye *et al*. (2006) reported that education enhances farmers' capacity to understand and work with new ideas. The result of the marital status of indicated that, fifty three (63.10%) of the farmers were married. Household size result as indicated Table 1, revealed a large a

large household size with a mean household size of five persons. Onemolease, 2005 reported that large household size may reduce economic welfare of the household especially when the proportion of dependent is high. Majority (94.05%) of the respondents belonged to one form of farm organization or the other. Through personal communication, they stressed that they mainly join the organizations so as to have access to funds which they often use to better their farming activities and family lives. This assertion was in line with the findings of Abegunde (2009) who noted that households' participation in groups can go long way to ameliorate their poverty level and facilitate the farmer's socio-economic development.

The average farm size of the respondents was 3.7 ha, and majority (51.19%) belonged to this category (2 < 4 ha.). The result implied that the respondents were smallholder farmers. This assertion agrees with the report of Okwuokenye and Onemolease (2010). They stated that farm size of less than 4 ha, is a small farm holding.

Table 1: Distribution of Respondents According to Socio-economic Characteristics

Characteristics	Categories	Frequency	Percentage	Mean
Gender	Male	78	92.86	
	Female	6	7.14	
Age	< 30	12	14.29	
	30 – 39	31	36.91	
	40 – 49	26	30.95	
	50 – 59	9	10.71	
	60 and above	6	7.14	40.95
Educ. Level	No Pri. Educ.	6	7.14	
	Pri. Educ.	21	25.00	
	Sec. Educ.	52	61.91	
	Post Sec. Educ.	5	5.95	
Marital Status	Single	8	9.52	
	Married	53	63.10	
	Divorced	16	19.05	
	Widow(er)	7	8.33	
Membership of organization	Yes	79	94.05	
	No	5	5.95	
Household size	< 2	7	8.33	
	2 – 4	30	35.71	
	5 – 7	41	48.81	5
	8 - 10	6	7.14	4.7
Farm size (ha.)	< 2	15	17.86	
	2 < 4	43	51.19	
	4 < 6	12	14.29	
	6 < 8	9	10.70	
	8 and above	5	5.95	3.71

Source: *Field Survey, 2016*

Table 2: Farm Income Earned by the Respondents (₦'000 per annum)

Most (36.91%) of the respondents earned a farm income of between ₦200,000 – ₦300,000. The average farm income was ₦275.60 and majority belonged to this category. About 42 % of the respondents earned farm income of ₦300,000 and above while on the other hand, about 21% earned below ₦200,000. This implies that the farmers are low income earners operating at low level of income.

Table 2: Farm income of the respondents of the study Farm income (Per annum in ₦ '000)

Categories	Frequency	Percentage	Mean
< 100	7	8.33	
100 < 200	11	13.10	
200 < 300	31	36.91	
300 < 400	24	28.57	
400 < 500	7	8.33	
500 and above	4	4.76	275.60

Source: *Field Survey, 2016*

Distribution of Respondents on Reasons for Participating in Off-Farm Employment

Table 2 shows the distribution of respondents on why they participated in off-farm income employment. The responses were reported in order of population size. Results revealed that all the respondents (100%) participated in off-farm employment. They acknowledged that this involvement could help to expand the scope of their farms for high production and productivity. This implies that they were not satisfied with the income generated from their farm hence they had to get themselves engaged in off-farm employment where they could raise more money to better their livelihood and living standard. In addition, 96.43 percent of the sampled households engage in off-farm employment in order to offset households' welfare challenges. Through personal communication, the respondents noted that such welfare needs include payments of their children's school fees, payments of house rents and purchasing of food stuffs for family consumption. Alimba (2009) supports this finding as he noted that most of the family economic challenges are found to include fees and rent payments, in addition to purchasing food items for the family.

Furthermore, a good proportion (71.43%) also engages in off-farm employment for reasons of purchasing farm inputs. They indicated that they do this in order to acquire income that is used to hire labour and purchase improved farm varieties of crops and animal breeds in their farms. The reason for this is because most improved crop varieties and animal breeds' are costly to procure. This assertion corresponds with findings of Asiabaka (2002) who opined that financial constraints has been a major problem to poor adoption of improved farm inputs in most developing countries of Africa. More so, 55% of the sampled households' heads embarked on off-farm employment with the desire to manage farm produce and market risks. Such funds generated from off-farm income could help to offset marketing risks that may arise from loss of revenue from spoilage of produce and disposing their farm produce at farm gate immediately after produce, where it (produce) commands low prices, among other factors (Ume *et al.*, 2016).

Table 3: Respondents Reasons for Participating in Off-farm Employment

Reasons for Off-Farm Employment	Frequency	Percentage
- Need to earn income to finance farm investment	84	100.00
- Desire to manage agricultural produce and market risks	67	79.76
- As collateral for agricultural loans	32	38.10
- Welfare for the family	81	96.43
- Purchasing improved farm inputs, crop varieties and animal breeds and Hiring labour for agricultural production	60	71.43

*Multiple responses by the farmers

Source: Field Survey, 2016

Distribution of Respondents According to Off-farm Employment

Table 4 shows the distribution of respondents according to off-farm employment. The Table was presented in three major categories. They are self-employment, wage employment and skilled labour employment categories. In the self-employment category, most (82.14%) of the respondents were involved in self-employment activities of which *okada* (motor cycle) riding dominated as shown in the Table. The reason for *okada* domination could be as a result of the bad nature of our rural roads and poor road networks. As a result of the poor road network, motorcycle business thrives substantially as a source of transportation.Petty trading was next (61.91%) in this category. The respondents saw it as a source of acquiring extra money to the households' farming income.Through personal communication, the respondents identified operation of provision store, marketing of agricultural produce, among others as the business they were into.

Table 4: Distribution of responds According to off-farm Employment Categories

Categories	Types of Employment	Frequency	Percentage
Self-employment	Okada	69	82.14
	Petty trading	52	61.91
	Hair Dressing/barbing salon	8	9.52
Wage Employment	Teacher	62	73.81
	Government worker	31	36.91
	Security guard	8	9.52
Skill Labour Employment	Electrician	9	10.71
	Mechanic	6	7.14
	Carpentry	12	14.29
	Upholstery	7	8.33
Other off-farm employment		11	13.10

*Multiple responses by the farmers

Source: Field Survey, 2016

In the wage employment category, high proportions (73.81%) of the respondents were teachers in either government or private owned schools. The respondents insisted that the income generated was used to argument the meager farm income of the farming households. Ume *et al.* (2017) concurred with this result. They argued that due to the meager earnings of the farm, the farmers engage in other business/activities at least to raise family living standards. Few of them (36.91%) were government workers. They claimed that the money generated from the government jobs is also used to offset farm economic challenges while still meeting with family living standards.

For the skilled labour employment, most (14.29%) of them were into carpentry. This is followed by the electricians (10.71%) and upholstery (8.33%). Other jobs not captured but engaged by the respondents (13.10%) formed a small fraction. On a general note, they all argued that incomes generated from these jobs were used to provide for theirfamily needs and support thier farm activities.

Determinants of Farmers Participation in Off-farm Income

The variables determining farmers' participation in off-farm income are presented in their parameter estimates and coefficients as shown in Table 5.Probit model regression was used to analyze the determinants and the hypothesis of the study which states that socio-economic characteristics of smallholder farming households has no significant influence on off-farm employment. Age of the respondents had a parameter estimate and coefficient of -0.017 and -3.001 respectively. The coefficient was negative and significant at the 5% alpha level. The implication of the result is that off farm income is common among young household farmers. Young people are energetic when compared to the aged and could take risks associated with off-farm income. Babatunde (2013) was of the same opinion and so supports the finding when he noted that young people find it easier to take risks and can withstand the consequences that may emanate.Education level of the respondents was positive and significant at the 5% alpha level. The parameter was 0.031 while the coefficient was 3.121. The implication of the result is that the higher the level of education, the more they would want to engage in off-farm employment. The findings of Babatunde (2013) support this result. The however concluded that level of education has a significant positive effect on off-farm employment

Farm size has a negative and significant relationship with off-farm employment. The variable (farm size) was significant (parameter = -0.018; coefficient = -2.636) at the 5% alpha level. What this means is that respondents with larger farm size would not want to indulge in off-farm employment. This is because more time would be needed by the farmers to cater for his/her farm. Supporting this result, Reardon (2012) pointed out that household with small farm size participate more in off-farm employment.

Farm income had a parameter estimate of -0.198 and coefficient of -0.412. The variable was significant at the 1% alpha level and had a negative relationship with off-farm employment. The implication spells out that the higher the farm income; the less interested they would be in off-farm employment. This is because; the farmer household would have

been generating income that could suffice in catering for the welfare of their families.

Household size was also positive and significant to off-farm employment at the 5% alpha level. The parameter estimate and coefficient were respectively 0.427 and 0.036. It could be deduced from the result that the larger household size is, the more interested they would be in off-farm employment. The result is in line with that of Onemolease (2005) who asserted that large household size may reduce the economic welfare of the household and so, the household heads need to get engaged in off-farm employment in order to be meeting up with the demands and living standards of the family.

The result in Table 5 indicated that marital status was negatively significant to off-farm employment. Its parameter estimate and coefficient were 0.046 and 0.652 respectively. The possible explanation of the result is that the married people have more desire for off-farm employment. This could help them generate income from off-farm employment that would help them meet up with their family needs. From the foregoing, age, educational level, farm size, farm income, household size and marital status were found to be significant at different level. The study therefore concluded that socio-economic characteristics of smallholder farming households had significant influence on off-farm employment.

Table 5: Determinants of Farmers Participation in Off-farm Income

Variable	Parameter Estimate	Coefficient
Intercept	-1.847	-4.171***
Age	-0.017	-3.001**
Educational level	0.031	3.121**
Farm size	-0.018	-2.636**
Membership of organization	-0.136	-0.712
Farm income	-0.198	-0.412***
Household size	0.427	0.036**
Marital status	0.046	0.652**
Gender	0.316	0.413

, * significant at 10%, 5% and 1% level respectively

Source: Field Survey, 2016

Constraints to respondents' participation in Off-farm Employment

The famers' households have been faced with some constraints that have been hindering them from engaging in off-farm employments. These constraints affect the households' directly. The factors limiting respondent's participation in off-farm employment are shown in Table 6.

The constraints with means of 2.50 and above were "agreed" by the respondents to be the factors limiting their participation off –farm employment. These included poor access to credit to finance projects they would have liked to embark on ($\bar{x}$ = 3.08), lack of government/NGO assistance ($\bar{x}$ = 3.03) and age which was also agreed by the farmers households as a limiting factor to participating in off-farm employment ($\bar{x}$= 3.04). Other limiting factors include, high dues and levies ($\bar{x}$ = 2.97), household size of the respondents ($\bar{x}$ = 2.94) and potential members entry requirements ($\bar{x}$ = 2.76).

Table 6: Factors limiting respondents' participation in Off-farm Employment

Limiting factors	Mean	SD
Poor access to credit to finance project	3.08*	0.73
Lack of government/NGOs assistance	3.03*	0.61
Age of household	3.04*	0.76
High dues and levies	2.97*	0.58
Household size	2.94*	0.53
Potential members' entry requirements	2.76*	0.75
Frustration from the local environment	2.34	0.51
Hijacking of benefits & affair by few privileged members.	2.29	0.65
Health status of households	2.14	0.57
Educational attainment	1.93	0.49

*Agreed (mean ≥ 2.50);

Source: Field survey, 2016

Most of the farmers' households noted that they would have been into off-farm employment just that they are constraint by finance. Those of them already into a petty off-farm business indicated that if not for finance they would have expanded their business. To this end in view, finance plays a strong factor in limiting farmers from participating or expanding their off-farm business. Unfortunately, they also claimed that the government of the day is not helping matters by encouraging them to go into off-farm business. Rather, the government seems to be interested in agricultural growth and promotion without any form of encouragement via input supplies or subsidization. Age of the household is very important and considered as a limiting factor. Babatunde (2013) supports this finding as he indicated that the aged people find it difficult to take risks while the young people don't actually mind.

For the high dues and levies, through personal communication, the respondents pointed that, the dues and levies paid by the practitioners were on the high side. Again, the local government of the area asks them to pay different types of dues and at different times. This they noted is highly discouraging and frustrating. In addition, household size of the respondents played a major limiting factor.A plausible explanation is only if the household head has children who are toddlers who cannot be left alone for off-farm employment. Potential entry requirement was also indicated to be a limiting constraint and this is linked to the fact that at the point of entry, many of the bosses of the organizations where training can take place, ask for the provision of so many items, many of which are not within the reach of the potential applicant. Thus posing a discouragement to be people or person concerned.

CONCLUSION AND RECOMMENDATION

The study found that due to the low average income earned from farm activity (₦275, 000.60K), most of the farmers households participate in off-farm employment in order to be able to finance their farm investments and activities (purchasing of improved farm varieties of crop, breeds of animals and farm

chemicals) so as to be able to boost their farm productions and income. Also, the concluded that socio-economic characteristics like age, educational level, farm size, farm income, household size and marital status significantly influence off-farm employment.

Based on findings the study recommends thus;

- Lack of credit was one of the major constraints preventing the respondents from participating in off-farm employment. In this regards, government should make micro finance available to potential off-farm investors and this should be done through the state's micro finance institutions and be sure it gets to the right persons and at the right time.
- High dues and levies payment was also a constraint limiting farmers' households from off-farm employment.To this end, the government of the day should try to ensure that the off-farm investors should not be over taxed of what to pay to the government. Again, touts and illegal collectors of money from the private operators should be chassed far from reach.
- The government still needs to intervene on the entry requirements by new entrants of off-farm jobs. This is necessary because it was identified as one of the major limiting constraints. It really has to be played down so as to encourage potential interested persons to come in without impediment.

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