Research Paper

Socioeconomic Determinants of Off-Farm Income Generating Activities Among Smallholder Rice Farmers in Anambra State

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ABSTRACT

The study examined the socio-determinants of off-farm income among small-holder rice farmers in Anambra State. Specifically, it described socio-economic characteristics, off-farm income generating activities, and level of participation in various off-farm income generating activities in the study area. Multistage sampling procedure involving purposive and random sampling methods were used to select two agricultural zones, four LGAs, eight communities, thirty smallholder rice farmers and two hundred and forty (240) respondents for the study. Primary data were collected by means of structured questionnaire. Data were analyzed using descriptive statistics (means, frequency distribution, percentages, tables and mean ranking) and Simpson participation index. Findings showed that majority of the farmers are within the age limit of 41-50 years and majority had no access to credit due to bottleneck activities and collateral requirements in obtaining the loan from most financial institution. Result on off-farm income generating activities showed that many of the smallholder rice farmers are into trading (54.2%), handcraft (52.5%), repair (50.8%) and many others that help them to generate extra income in the study area. Result of level of off farm participation by smallholder rice farmers revealed that moderate level of off-farm income participation had a high percentage of 52.5% with mean value of 0.49. Thus, smallholder rice farmers participated in off-farm income generation activities moderately. Government should of necessity address the issue of fuel subsidy removal which has a gross effect on the movement of farmers and insufficient extension workers in the State should be addressed by relevant stake holders were recommended.

KEYWORDS: Determinants, off-farm, Income, rice farmers.

INTRODUCTION

Nigeria is one of the sub-Saharan African Counties of which agriculture was the back bone of her economy before the oil boom of 1970s, and still remain her major source of food and accounts for about 35% of merchandised export, 75% of employment (Ezeano, Ume, Okeke and Gbughemobi, 2017 and Gbughemobi, Meludu and Nkamigbo, 2021). Isibor and Nkamigbo (2019) opined that agriculture is an engine room for sustaining growth of Nigeria economy and still remains the main stay of her economy by providing food for teeming population, creates jobs as well as wealth, raw material for the industrial sector and foreign exchange earnings. Off farm activities is the participation of farmers in remunerative work outside the participants own farm. It is alternative source of income which may be used to finance agricultural production, increase farm investment leading to higher productivity (Anag, Richard and Yeboah, 2019). It refers to activities from which farmers earn extra or more income apart from their own farm (Babatunde, Olagunju, Fakayode & Adejobi 2010; Ibekwe, Eze, Onyemauwa, Henri-

Ukoha, Korie, & Nwaiwu (2010) and Ogbanje, Chidebelu & Nweze, 2014a). This has been recognized to play an increasingly essential role in sustainable development and poverty reduction particularly in rural areas. Bezu, Barrett &Holden (2012) stated that it is a means for reducing rural-urban income gap, poverty reduction, slowing down rural-urban migration, building local industry, improvement of food security status, provision of off-season income, reducing risk at the advent of declining agricultural output, absorbing surplus labour for youths and women augment farm production in the face of credit and liquidity constraints; increasing farm households' income.

Diversification is a deliberate although strategic response to crisis which serves as a safety net for the poor. Income diversification by farm household maybe attributed to dwindling and uncertain farm income rising poverty and emerging opportunities for off-farm work. Anang et al (2019) reported the off farm sector in employment creation, income, poverty reduction especially in developing Countries. It also reduces income uncertainty, enables smooth running of household family, and quenches risks associated to certain farm activities. The agricultural landscape in Nigeria is dominated by rural-based small-holder farmers, inadequate finance and impeded access to farm credit facilities constitutes the major constraint faced by these farmers. Hence, farmers resorted to off-farm work in order to generate fund for farm investment (Ogbanje et al., 2014b). (Ogbanje, Chidebelu & Nweze, 2014a). Rice is the primary staple food for most of the populace in Nigeria, especially the rural area, with about 6% of global rice consumption, Africa accounts for about 4% of the world production making the continent the second largest consuming and producing region (Abdul-Gafar and Yu 2016). According to Uba 2003 (as cited by Ggbughemobi et al, 2021), about 70% of Nigeria feeds on rice, while 30% of their cereal-based diets are also from rice.

MATERIALS AND METHODS
The Study was carried out in Anambra State. It has an estimated population of 6,358,311 million people. It lies on the longitude 6220°N and 7021°E and latitude of 5038°N and 6930°E with a population density currently rated at 992.1p/Km (Wikipedia, 2022). It comprises of 21 Local Government Area, four Agricultural zones – Aguata, Anambra, Awka and Onitsha. The State is embedded by five (5) major rivers and their tributaries. These are River Niger, Anambra River, Ezu River, Idemmili River and Ulasi River. However, there are smaller streams like Oyi, Nkisi and Obizi. The State experiences dry season from late October to early May and has at least 6 dry months in the year and rainy season occurs from April to November. The major rice producing areas in the state are Anambra East and West, Orumba North and South, Awka North and Ayamelum Local Government, farmers in Anambra State cultivate the following rice varieties: FARO-40, 44 among others but the popular variety cultivated by the farmers is FARO- 44 rice variety. The population of the registered farmers is the State is 20,056 (Twenty thousand and fifty-six) (Agricultural Development Programme (ADP) 2022) which is the sample frame.

Sampling Techniques
Anambra State comprises of four zones: Awka, Anambra, Aguata and Onitsha zones. A Multi-stage and random sampling procedure were used to select respondents for the study.

Stage I: Two agricultural zones were purposively selected from the four agricultural zones of the State. This is as a result of their intense participation and popularity in rice production among others in the State, namely Aguata and Anambra zones.

Stage II: Two Local government were randomly selected from each of the selected

two agricultural zones making it a total of four LGAs. Aguata (Orumba North and Orumba South) and Anambra Agricultural zone (Ayamelum and Anambra East LGAs).
Stage III: Two communities were purposively selected from each of the four LGAs (based on their popularity in rice production) making it a total of eight communities for the study.
These communities include Omogho and Ajali in Orumba North LGA, Aguleri Otu

and Nando in Anambra East LGA, Omor and Omasi in Ayamelum LGA and Ezira and Ogboji in Orumba South LGA, totaling eight (8) LGAs.
Stage IV: Thirty (30) rice farmers (respondents) were randomly selected each from the already selected LGAs making a total of two hundred and forty (240) respondents for the study which is the sample size.

Table 1 Sample of the Zones /LGA, Blocks, Circles and Respondents.

Zones	Local Govt Areas	Communities	GPS Coordinates	Respondents.
Aguata Zone	Orumba North	Omogho	6^023N , $7.144E$	30
		Ajali	6.2971^0N, 7.1339^0E	30
	Orumba South	Ezira	5.9965^0N, 7.2194^0E	30
		Ogboji	6^01^102N, 7^015^1107E	30
Anambra Zone	Anambra East	Aguleri Otu	$6.3333N$, $6.8833E$	30
		Nando	6.3114^0N, 6.9075^0E	30
	Ayamelum	Omor	6.5056^0N, 6.9753^0E	30
		Omasi	6.6354^0N, 7.0283^0E	30
Total: 2 Agric Zone	4 LGAs	8 Communities		240 Respondents

Source: Field Survey, 2023.

Data Collection and Analysis
The population of the registered farmers is the State is 20,056 (Twenty thousand and fifty-six) (Agricultural Development Programme (ADP) 2022) which is the sample frame. Primary data were obtained using structured questionnaire administered to the respondents through enumerators trained by the researcher. Descriptive statistics such as tables, mean, frequency distribution, percentages and Simpson participation index were used to analyze the data.
Where DOOFI = socioeconomic determinants of off-farm income among small holder rice farmers (dependent variable)
X_1 = age in years.
X_2 = farm size (FS)
X_3 = education level (EDU)
X_4 = marital status, (single = 0, married=1and widow/divorce) (MRS)
X_5 = household size (measured by the number of people living under one roof) (HHS)
X_6 = hours spent on farm (HSOF)
X_7 = access to credit (AC)
X_8 = farm income (FI)

X_9 = Farming experience (measured in years) (FEXP)
X_{10} = Gender (male =0, female =1) (GEN)

Simpson Participation Index.
To determine the level of participation in income generating activities, Simpson participation Index was used.
The implicit formula
SPI= n/N
Where n= actual number of participations
N= Total activities to be participating ranging from 1-0
SPI= Simpson participation Index.

RESULTS AND DISCUSSION
Socio-economic characteristics of the respondents
Socioeconomic characteristics of the farmers in Table 2 indicates that majority of the farmers are within the age limit of 41-50 years. This implies that the farmers are relatively young. The finding is in tandem with Osuafor (2015) who stated that the farmers belong to the active labour force and are expected to take appropriate decision towards income diversification of farm activities so as to achieve maximum output. The result of gender in Table 2

indicates that females (59.1%) are more in off farm income generation than male. This may be as a result that female are more concern with the daily activity and up keep of the family now there is serious economic crisis in the Country. This supports the findings of Effiong, Effiong and Udo (2015) and Ekpunobi, Nwigwe and Nkamigbo (2020) who reported female dominance in cassava production in their study areas. This contradicts the findings of Gbughemobi et al. (2021) who reported that rice farmers in their study were mostly male (60.3%) while the rest 39.7% were female. The report on marital status indicates that there is high percentage of married folks (43.33%). This implies that the children of the married folks do assist their parents in off farm activities to generate more revenue to the family. The result analysis indicates that the farmers in the study area have one form of education or the other. This implies that the farmers are enlightened and are ready to adapt to changes in off-farm activities in generating income to their family. This is contradicting Nkamigbo and Okeke (2013) who reported that more than 60% of farmers in their study area had no formal education. The result on access to credit indicates that majority of the farmers had no access to credit due to bottleneck activities and collateral requirements in obtaining the loan from most financial institution. This has led to self-sponsorship and other activities that will generate income and revenue to the family thus off-farm activities. The result of household size indicates that 5-8 persons living together had 53.75%. This implication of this is that large family serves as family labour force to achieve family gain and profit in off-farm activities in the study area. This corroborates Ekpunobi et al. (2020) who reported that 7-8 persons

living together in their study area had 42.3% which serves as a tool for expansion on their activities. The result of the analysis of farm size shows that less than 10 plots had 16.25%, 10-20 plots had 62.91% and 21-30 plots had 20.83%. This implies that majority of the rice farmers that engage in off farm income activities had over 10 plots of rice farms. They engage in these activities for fund for their farms and left over for their families and other needs. From the result of analysis of farming experience shows that farmers with less or equal to 5 years are 24.58%. 5-10 years had 51.25% and 15 years and above had 8.33%. The implication of this is that younger farmers engage more in off farm income generating activities more than farmers who had spent many years in rice farming. This maybe as a result that age is longer on their part or they have acquired more financial resources to assist their personal farms and other family needs. The result of analysis of hours spent on the farm revealed that farmers who spent less than 6 hours working on the farm had 36.25% while above 6 hours had 63.75%. The implication of this is that majority of farmers spent much hours on their trade in order generate much fund. Also farmers who work for other farmers prefer bargaining as a whole than daily pay. This makes them spent much time than necessary to finish the work at their own pace and also to make ends make and make more fund. From the result of farm income by the farmers, farmers who made less or equal ₦50, 000 monthly had a percentage of 36.25% while 63.75% belongs to farmers who made ₦50, 000 and above. This implies that majority of the farmers makes reasonable amount of money in the off-farm income generating activity in the study area.

Table 2: Socioeconomic characteristics of off- farmers N=240

VARIABLES	FREQUENCY	PERCENTAGES
Age		
≤ 20	21	8.75
21-30	54	22.5
41-50	95	39.58
51 and above	70	29.16
Total	240	100
Gender		

Male	98	40.83
Female	142	59.16
Total	240	100
Marital Status		
Single	47	19.58
Married	104	43.33
Widow/Divorced	89	37.08
Total	240	100
Educational Status		
0-6	55	22.91
7-12	159	66.25
13-18	26	10.83
Total	240	100
Access to credit		
Yes	09	3.75
No	231	96.25
Total	240	100
Household Size		
1-4	89	37.08
5-8	129	53.75
9 and above	22	9.16
Total	240	100
Farm size		
$\leq$ 10 plots	39	16.25
10-20 plots	151	62.91
21-30 plots	50	20.83
Total	240	100
Farming Experience		
$\leq$ 5 years	59	24.58
5-10	123	51.25
10-15	38	15.83
More than 15 years	20	8.33
Total	240	100
Hours Spent		
$\leq$ 6 hours	87	36.25
Above 6 hours	153	63.75
Total	240	100
Farm income		
$\leq$ (₦)50,000 monthly	99	41.25
Above (₦)51,000.00	141	58.75
Total	240	100

Source, field survey, 2023.

Off- farm income generating activities by smallholder rice farmers

The analysis off- farm income generating activities by smallholder rice farmers in the study area is presented in the Table 3. From the analysis, the smallholder rice farmers were engaged in so many off-farming income generating activities categorized as follows: handcraft, agro-processing, trading, animal husbandry, transport business, repairs, renting and teaching activities. The result analysis shows that many of the smallholder rice farmers are into trading (54.2%). They are involved in marketing of various agro-inputs, agricultural produce and other items where they retire after farming. This enables them to make more money outside farming. Another income generating activity by the smallholder rice farmers in the study area is handcraft (52.5%). They combine handcraft with their rice farming activities to generate income. In the study area it is a known phenomenon for one to do something with his hands outside farming and this trend is common with the farmers who sends some of their children to learn craft in combination with farming. Also, repair (50.8%) is another income generating activity of great importance in the study area. Most of the male farmers are engage in repair of various farm tools, radio and television mechanic, car and motorcycle mechanic and several other repair in the study area. Others were engaged in agro-processing of rice, garri, oil seedlings in other to generate additional income for their farms and family. Other activities embarked by the smallholder rice farmers in the study area are transport business (47.5%) while some are into keke

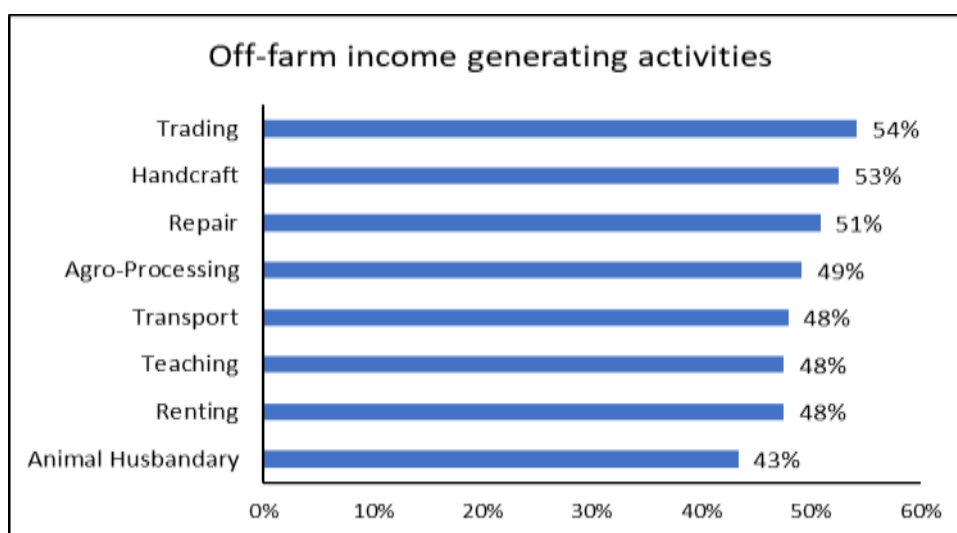and bus driving and okada riding. Some of the smallholder rice farmers are into renting of chairs, canopies etc to argument their living. The least off-farm income generating activity observed in the study among the smallholder rice farmer were animal husbandry (43.3%).

Table 3: Off- farm income generating activities by smallholder rice farmers

Off-farm income generating activities	Frequency	Percentage (%)
Handcraft	126	52.5
Agro-Processing	118	49.2
Trading	130	54.2
Animal Husbandry	104	43.3
Transport	115	47.9
Repair	122	50.8
Renting	114	47.5
Teaching	114	47.5

Sources, field survey, 2023. (Multiple responses).

The above is graphical representation of off-farm income generating activities of the farmers in order of preference.

Level of off farm participation by smallholder rice farmers

The analysis of level of off- farm participation by smallholder rice farmers in the study area is presented in the Table 4. The analysis used Simpson participation Index which categorized the off-farm participation into low level, moderate level and high-level participation of off-farm income among the farmers. From the result of the analysis, moderate level of off-farm income participation had a high percentage of 52.5% with mean value of 0.49. This implies that in the study area, smallholder rice farmers participated in off-farm income generations activities moderately.

Table 4. Level of off farm participation by smallholder rice farmers

Categorization/Level of participation	Participation index	Frequency	percentage	Mean
Low level of off-farm income participation	0-0.49	86	35.8	
Moderate level of off-farm income participation	0.50-0.69	126	52.5	0.491
High level of off-farm income participation	0.70-1.0	28	11.7	
Total		240	100	

Source, Field survey, 2023.

SUMMARY AND CONCLUSION

Findings on socioeconomic analysis showed that females (59.1%) are more in off farm income generation than male. This may be as a result that female are more concern with the daily activity and up keep of the

family now there is serious economic crisis in the Country. Smallholder rice farmers were engaged in so many off-farming income generating activities categorized as follows: handcraft, agro-processing, trading, animal husbandry, transport business, repairs, renting and teaching activities. Level of off farm participation by smallholder rice farmers were categorized into low level, moderate level and high-level participation of off-farm income among the farmers. Socio-economic determinant of off-farm income among small-holder rice farmers in Anambra State is a profitable venture in the study area. The farmers were efficient in the enterprise and the level of income would improve if adequate measures are taken by government to address the off-farm constraints in the study area. The issue of fuel subsidy removal which has a gross effect on the movement of farmers and insufficient extension workers in the State should be addressed by relevant state holders.

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